



Mitigating climate impacts of the tar sands

Political and policy barriers to greenhouse gas reduction in Canada

Introduction

President Obama has made it clear that the central factor in his decision to approve or reject the Keystone XL tar sands pipeline will be determined on whether or not the pipeline project will exacerbate the problem of carbon pollution¹². Keystone XL will almost certainly lead to a massive increase in carbon pollution on the order of 935 million to 1.2 billion metric tons over the pipeline's life time³. This has raised questions over whether Canada can mitigate for the impacts of its carbon intensive tar sands mines and drilling operations. Tar sands production is Canada's fastest growing source of carbon emissions and the primary barrier to the country reaching its international climate commitments.

Canada is currently on track to miss its international climate commitments by a margin greater than all of the carbon produced by the combined emissions of Canada's power plants. Rather than adopt aggressive policies to control the rapid rise of carbon pollution from its tar sands sector, the current Canadian federal government has presided over a massive increase of tar sands production and failed to act to reduce emissions from its rapidly expanding tar sands sector. Moreover, the Canadian and Albertan governments have already approved a tripling of production – further signaling the continued rapid growth in emissions from the tar sands industry⁴.

Short and long term transportation constraints are a critical barrier to this pace and scale of expansion. At current rates of growth, the tar sands will exceed existing pipeline capacity within two years. In order to handle increased production, the industry would need to find ways to transport more than 4 million barrels per day of tar sands oil by 2030⁵.

The Canadian government has eviscerated regulations that control the environmental impacts from tar sands development and repeatedly promised and failed to deliver on regulations to slow the rapid rise of greenhouse gas emissions from tar sands production. The gap between Canada's claims and its environmental performance raises serious questions regarding the credibility of the federal government's commitments on climate.

Canada should immediately take aggressive action to elevate its poor climate record and address the massive emissions from its tar sands industry. However, implementing the strong policies necessary for Canada to meet its climate obligations would limit the unchecked expansion of tar sands production which is driving the government's commitment to Keystone XL. Canada cannot credibly meet its climate commitments while proceeding with the unfettered tar sands expansion that would be enabled by projects such as Keystone XL.

In this era of dangerous climate change, there is no credible mitigation plan proposed or even being considered by Canadian provincial or federal governments that would meaningfully address greenhouse gas pollution from its growing tar sands industry. While it is critical that government and industry act urgently to bring current tar sands operations under control in terms of emissions and environmental management, the planned rapid expansion that a pipeline like the Keystone XL would facilitate simply cannot coexist with the safe climate that our governments have promised to work for⁶.

The intense debate around the Keystone XL tar sands pipeline should serve as a stark reality check for the tar sands industry and the Canadian government that the days of uncontrolled expansion are over. In order to have any social licence to continue to operate, massive improvements must be made to provincial and to federal climate policy. To address Canada's greenhouse gas pollution problem, government and industry must establish aggressive climate policies over existing projects. And they must also rethink plans to massively increase a tar sands industry facilitated by new pipelines which are incompatible with Canada's climate goals. Climate policy in Canada and the U.S. must see emissions decline rather than increase, which means an end to rapid tar sands expansion and related infrastructure projects like the Keystone XL pipeline.

The scale of the problem

The tar sands are Canada's fastest growing source of greenhouse gas pollution and if they expand as government and industry project, they will cancel out every other effort across the country to mitigate emissions⁷. By 2011, tar sands emissions had increased by 250% since 1990⁸. The proposed Keystone XL pipeline plays a critical role in industry's expansion plans, which if realized would enable tar sands emissions to double from 2010 levels by 2020⁹. With this accelerating emissions growth, Canada will miss its 2020 climate change target (one that is shared with the United States) by an amount of greenhouse gas emissions that is greater than all of Canada's power plants combined¹⁰.

The extraction, production and refining of tar sands are much more energy intensive than those processes are for conventional oil, making tar sands one of the most carbon intensive fossil fuels. Carbon emissions from tar sands

processing are 81 percent higher than those from conventional oil on a well-to-tank basis.¹¹ Even if you look at the entire lifecycle of tar sands oil, it still has 17% higher carbon intensity than average conventional oil¹². These conservative comparisons do not account for the carbon emissions from the burning of high carbon intensity by-products of tar sands refining such as petroleum coke or the emissions associated with land use impacts of tar sands production¹³.

The Keystone XL tar sands pipeline is a central piece in government and industry's plans to triple tar sands production by 2030. These expansion plans will be partly facilitated by Keystone XL which would accommodate the export of up to 830,000 barrels of tar sands oil per day, which would lead to between 18.7 and 24.3 million additional tonnes of greenhouse gas pollution per year than if the U.S. was burning average conventional oil – equivalent to increasing annual emissions by the amount generated by over 5 million cars¹⁴.

With warnings from the International Energy Agency that two thirds of known fossil fuel reserves must stay underground if the world hopes to avoid two degrees centigrade of global warming, the exploitation of some of the hardest oil to extract on the planet must be avoided rather than expanded¹⁵.

Industry plans to increase Canadian heavy tar sands production from 1.4 million bpd in 2012 to 5.8 million bpd in 2030.¹⁶ Beyond its 2030 plans to triple production, industry has proposed a long-term goal of 9.4 million bpd of tar sands bitumen production¹⁷. The impacts of this pace and scale of development would not only be catastrophic for the climate, but also lead to immeasurable damage to local ecosystems, water, air and communities.

This soaring emissions growth is not set in stone however, as the expansion of tar sands oil production hinges on the ability to transport tar sands crude out of the province of Alberta. The industry's tar sands expansion plan is contingent on the approval and completion of major pipeline projects. The most immediate of these projects is the Keystone XL tar sands pipeline. Without this pipeline, government and industry alike in Canada have made it clear that the tar sands will not be able to expand as planned¹⁸.

Canada's failure to regulate

The Canadian Government has repeatedly failed to take action to reduce climate change causing greenhouse gas pollution from its fastest growing source of greenhouse gas pollution – the tar sands¹⁹. Emissions from the tar sands are projected to double from 2010 levels by 2020, cancelling out all other efforts across the country to reduce emissions and sending Canada soaring past the 2020 climate change target that it shares with the United States (which could

now be on track to meet the goal if new rules to tackle coal pollution are implemented)^{20, 21}.

Meanwhile, Canada is striving to present itself as a sustainable manager of the tar sands. Industry, along with the Governments of Alberta and Canada, has spent millions of dollars on public relations campaigns²². Unfortunately this effort has not been matched by actual policy and regulation to limit the pollution and damage of this extreme energy project. While the federal government has made multiple public promises – carbon pollution from the tar sands remains completely unregulated at a federal level²³.

Models show that in order to curb soaring tar sands pollution enough to meet Canada's shared 2020 climate goal with the United States, regulations on the tar sands would have to establish a price on carbon of at least \$100 per tonne²⁴. Furthermore, the regulations would have to be effective almost immediately in order to get Canada back on track to meet its climate goal. This would necessitate circumventing the lengthy process environmental regulations often go through from the proposal phase through to implementation. This level of ambition does not appear to be under consideration.

The most recent information, made public by media, on the oil and gas regulations suggest that the proposal reportedly under consideration would have a negligible impact on emissions before 2020²⁵.

The most important measure of any forthcoming regulations on the oil and gas sector is whether or not they drive total emissions from tar sands downwards, or allow for continued growth beyond 2020. All current proposals on the table from government would lead to significant growth by 2020 – with limited improvement from a business as usual scenario²⁶.

Weakening of Canada's Environmental Laws

Rather than impose new regulations and policies that address the significant climate and environmental impacts of its tar sands industry, the federal government, has gutted most of the environmental legislation pertaining to this sector by removing legal barriers to pipeline and mine permits. Tabled in April 2012, Bill C-38 introduced, amended or repealed some 70 federal laws in a single bill.²⁷ This bill, now law, 'streamlined' the environmental review process to pave the way for rapid approval of industrial mega-projects like the Alberta tar sands²⁸.

At the same time, the federal government has systematically slashed funding and support for government research and scientists in general including those that

generate evidence about concerns related to rapid oil sands expansion and climate change²⁹.

In 2012, the National Round Table on the Economy and the Environment was ended, an arm's length advisory body set up in the mid-1990's³⁰. The government also eliminated support for renowned scientific research programs such as the Canadian Foundation for Climate and Atmospheric Science.

Canada's broken climate promises

The gap between Canada's rhetoric and its environmental performance raises serious questions regarding the credibility of the federal government's commitments on climate. In 2008, the Canadian government promised that any project built after 2012 would face new greenhouse gas reduction policies based on the use of carbon capture and storage that led to meaningful emissions reductions. This policy was never adopted³¹. To date, there is only one carbon capture and storage project on the table and it is being almost completely funded by Canadian tax payers, not industry. There would need to be more than 60 additional CCS facilities of a similar size in operation to offset rising tar sands emissions³².

Canada's lack of credibility to address climate change extends beyond its failure to regulate emissions from the rapidly growing oil and gas sector. Canada has dramatically reduced its support for climate research, ceased all major federal programs to support renewable energy development, gutted decade's worth of environmental legislation in order to fast track pipeline development, prevented government scientists from speaking on climate change, continues significant subsidies to the oil and gas sector, and abandoned its international climate commitments under the Kyoto protocol³³.

Canada is now on track to break its international promise made in Copenhagen by missing its commitment to reduce emissions by 17% below 2005 levels by 2020, a target that it shares with the United States who, in contrast, is currently on track to meet this goal³⁴.

Alberta's failure to regulate

The province of Alberta is home to the major tar sands deposits and its government has spent enormous amounts of time and money to promote this resource within Canada and abroad. Unlike the federal government, Alberta does have greenhouse gas regulations in place, although they have proven to be too weak to incentivize either meaningful emissions reductions or major improvements in mitigation technologies³⁵. As a result, the province of Alberta

does not have effective climate regulations in place to counter the rapidly rising greenhouse gas emissions from the sector.

The current Alberta carbon policy only taxes large emitters, only requires companies to reduce their carbon intensity by 12%, and taxes at a rate of \$15 per tonne. This means that the companies are paying a negligible \$1.80 per tonne or \$0.18 to \$0.22 per barrel.³⁶ Since the real cost of reducing their emissions is much higher through technology like carbon capture and storage, companies are better off paying this negligible tax and continuing to emit.

The government of Alberta has also been consistently criticized for inadequate monitoring of local impacts of the tar sands, and for failing to enforce existing regulations designed to protect local ecosystems and communities^{37, 38}.

Conclusion

The absence of any meaningful climate regulations at the federal or provincial level to address Canada's fastest growing source of greenhouse gas pollution, combined with policy failures across the board in terms of regulations on air, water, wildlife, climate science, renewable energy and energy efficiency have painted Canada into a corner that will be impossible to escape from unless they prove they are going to take the global climate crisis seriously.

President Obama has been clear that after many years of lagging behind, the United States is prepared to take its responsibility to the global community seriously when it comes to our shared climate. He has committed the United States to take meaningful steps to reduce its emissions by 2020, a commitment the country is on track to achieve. In this context, the President has said that a decision on Keystone XL will hinge on whether the project significantly exacerbates climate pollution.

There is no doubt that approving Keystone XL would mean a significant increase in carbon pollution. In the coming months, the question will linger as to whether Canada can and will mitigate its greenhouse gas emissions. The repeated failure of the Canadian government to follow through on promises to meet its international climate commitments in favor of facilitating a massive expansion of the tar sands industry demonstrates it will not mitigate the impacts of this industry any time soon. Even if mitigation efforts were made, in order to be consistent with the pathway to limiting global warming to less than two degrees Centigrade, these efforts would have to see Canada's emissions fall by 2020 – a scenario not on the table with plans for tar sands expansion.

The Canadian tar sands are simply not a resource that can be expanded sustainably or responsibly given the current realities of climate change. The first

and most critical steps must be controlling the current damage to local air, water and communities and reigning in the soaring pollution from existing facilities through strong regulations.

The Canadian federal government's pursuit of Keystone XL and other tar sands expansion pipelines are symptoms of its failure to address its climate emissions. The strong policies necessary for Canada to meet its climate obligations would have to address the dramatic expansion of tar sands production. While the United States should insist that Canada meet its climate commitments, Canada cannot credibly meet those commitments while simultaneously pursuing a policy of unchecked tar sands expansion and the approval of Keystone XL as a means of achieving that policy. For this reason, Keystone XL must be rejected.

As one of the wealthiest countries in the world and one of the largest emitters, Canada's greenhouse gas pollution should be on the decline. Instead, after abandoning international commitments and failing to put in place domestic promises to regulate the tar sands, the country's emissions continue to soar. Building the Keystone XL tar sands pipeline will not only exacerbate the global problem of climate change, but it will play a significant role in locking Canada further into a future dependence on reckless expansion of one of the world's most carbon intensive fuels.

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- ¹ The Whitehouse, June 25, 2013. President Obama speaks on climate change. <http://www.whitehouse.gov/photos-and-video/video/2013/06/25/president-obama-speaks-climate-change>
- ² Financial Post, August 1, 2013. Keystone XL watchers try to decipher Obama's intentions. http://business.financialpost.com/2013/08/01/keystone-xl-watchers-try-to-decipher-obamas-intentions/?_isa=149a-edb0. Accessed August 7, 2013.
- ³ NRDC, July 23, 2013. Major report shows Keystone XL tar sands pipeline would worsen climate change and fails president's climate test. <http://www.nrdc.org/media/2013/130723.asp>
- ⁴ Danielle Droitsch. NRDC, June 2013. Keystone XL will unleash tar sands expansion causing widespread impacts. http://switchboard.nrdc.org/blogs/ddroitsch/keystone_xl_will_unleash_tar_s.html
- ⁵ Anthony Swift. NRDC, July 30, 2013. Keystone XL tar sands pipeline does not pass President Obama's climate test. http://switchboard.nrdc.org/blogs/aswift/keystone_xl_tar_sands_pipeline.html
- ⁶ Ibid.
- ⁷ Oil Sands Reality Check. 2013. <http://oilsandsrealitycheck.org/facts/climate-4/>
- ⁸ National Inventory Report. Government of Canada, 2013. <http://www.ec.gc.ca/Publications/default.asp?lang=En&xml=A07ADAA2-E349-481A-860F-9E2064F34822>
- ⁹ Emissions Trends 2012. Table 5. <http://www.ec.gc.ca/Publications/default.asp?lang=En&n=3CD345DC-1#Toc330988432>. Accessed August 8, 2013.
- ¹⁰ Ibid.
- ¹¹ U.S. Department of State, Keystone XL DSEIS Appendix W pg. 64, <http://keystonepipeline-xl.state.gov/documents/organization/205563.pdf>; see also U.S. Environmental Protection Agency, Letter to Assistant Secretary Jose W. Fernandez, U.S. Department of State, April 22, 2013, <http://www.epa.gov/compliance/nepa/keystone-xl-project-epa-comment-letter-20130056.pdf>.
- ¹² Oil Sands Reality Check. 2013. <http://oilsandsrealitycheck.org/facts/climate-1/>
- ¹³ NRDC, White Paper: Climate Impacts from the Proposed Keystone XL Tar Sands Pipeline, July 2013, pg. 4.
- ¹⁴ U.S. Environmental Protection Agency (EPA), Greenhouse Gas Equivalency Calculator, accessed 8-9-13, <http://www.epa.gov/cleanenergy/energy-resources/calculator.html#results>.
- ¹⁵ Roger Harrabin. BBC News, June 10, 2013. International Energy Agency urges stop-gap climate action. <http://www.bbc.co.uk/news/science-environment-22845425>
- ¹⁶ Canadian Association of Petroleum Producers (CAPP), Crude Oil, Forecasts, Markets and Pipelines, June 2013, pg. 37, <http://www.capp.ca/forecast/Pages/default.aspx>.
- ¹⁷ Danielle Droitsch. NRDC, June 2013. Keystone XL will unleash tar sands expansion causing widespread impacts. http://switchboard.nrdc.org/blogs/ddroitsch/keystone_xl_will_unleash_tar_s.html
- ¹⁸ All Risk No Reward. <http://allrisknoreward.com/2013/06/keystone-xl-increased-carbon-emissions/>. Accessed August 8, 2013.
- ¹⁹ Clare Demerse. The Globe and Mail, July 18, 2013. Canada's "new normal" weather adds heat to climate politics. <http://www.theglobeandmail.com/commentary/canadas-new-normal-weather-adds-heat-to-climate-politics/article13296077/>. Accessed August 8, 2013.
- ²⁰ Emissions Trends 2012. Table 5. <http://www.ec.gc.ca/Publications/default.asp?lang=En&n=3CD345DC-1#Toc330988432>. Accessed August 8, 2013.
- ²¹ PJ Partington. The Pembina Institute, June 26, 2013. Who is really winning the race to end coal? A comparison of Canada and the U.S. federal regulations. <http://www.pembina.org/blog/691>

²² Mike DeSouza. Postmedia News, June 21, 2013. Federal government planned 'strong' PR campaign to promote oil industry. <http://o.canada.com/2013/06/21/federal-government-planned-strong-pr-campaign-to-promote-oil-industry/>

²³ Environmental Defence, February, 2013. Canada's climate credibility gap. <http://environmentaldefence.ca/reports/canada%E2%80%99s-climate-credibility-gap>

²⁴ Ibid.

²⁵ Clare Demerse and PJ Partington. The Pembina Institute, June 2013. Key issues to watch in federal oil and gas climate regulations. <http://www.pembina.org/pub/2456>

²⁶ Canada is currently facing a gap of 113 million tonnes of emissions between where the government projects to be by 2020 (720 MT) and where it committed to be (607MT). Rising emissions from the tar sands are responsible for the majority of this discrepancy, as they are expected to generate 72 million metric tonnes of additional emissions above their 2005 levels²⁶.

²⁷ <http://parl.gc.ca/HousePublications/Publication.aspx?Language=E&Mode=1&DocId=5524772>

²⁸ <http://www.theglobeandmail.com/news/politics/budget-bill-gives-harper-cabinet-free-hand-on-environmental-assessments/article2428091/>

²⁹ <http://www.nature.com/news/canadian-budget-hits-basic-science-1.10366>

³⁰ <http://www.theglobeandmail.com/commentary/ottawa-kills-the-emissions-messenger/article4350552/>

³¹ <http://www.pm.gc.ca/eng/media.asp?category=2&featureId=6&pageId=46&id=2131>

³² Tar sands emissions in 2005 emissions were 32 Mt. They are projected to hit 104 Mt by 2020 with current policies. The proposed CCS project would store up to 1.2 Mt/yr, so to offset the projected 72 Mt increase, you'd need 60 more.

³³ Environmental Defence, February, 2013. Canada's climate credibility gap.

<http://environmentaldefence.ca/reports/canada%E2%80%99s-climate-credibility-gap>

³⁴ Clare Demerse. The Pembina Institute, April 25, 2013. One more time with feeling: why we are not halfway there yet on climate. <http://www.pembina.org/blog/713>

³⁵ PJ Partington. The Pembina Institute, June 2013. How carbon pricing currently works in Alberta. <http://www.pembina.org/blog/708>

³⁶ <http://www.pembina.org/pub/2393>

³⁷ The Pembina Institute, January 2013. Beneath the surface: A review of key facts in the oil sands debate. <http://www.pembina.org/pub/2404>

³⁸ Hannah McKinnon. Environmental Defence, June 11, 2013. Failing on tailings.

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