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Oilsands expansion, emissions and the Energy East pipeline

Background

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Overview

In February, the Pembina Institute released the first public estimate of the Energy East pipeline's upstream climate impact. It showed that producing the crude needed to fill the west-to-east pipeline would generate up to 32 million tonnes of additional greenhouse gas (GHG) emissions each year — equivalent to doubling the number of cars on Ontario's roads. Or, put another way, those oilsands emissions would be roughly equal to the emissions reductions made thanks to Ontario's phase-out of coal-fired power.

Alberta now emits more carbon pollution than Ontario and Quebec — home to over 60 per cent of Canada's population — put together. At present, neither the Government of Alberta nor the Government of Canada have adopted adequate policies to manage GHG emissions from the oilsands sector. Given that context, it remains unclear how Alberta and Canada's climate targets can be met without putting an undue burden on other provinces.

Ontario and Quebec have articulated seven conditions for the proposed Energy East project.¹ One of those conditions is tied to GHG emissions: Ontario and Quebec will take into account the proposed pipeline's impact on emissions when assessing whether it should proceed.

This backgrounder provides information on the climate impacts of the oilsands and the link between pipelines, market access and oilsands expansion, as well as the regulatory context in Alberta. These factors all play into the assessment of Ontario and Quebec's fourth condition.

Pipelines are a major factor in oilsands expansion

According to the Canadian Association of Petroleum Producers, the oilsands industry plans to triple production by 2030.² Building new pipelines is necessary to realize those ambitions. There is currently enough pipeline takeaway capacity in Alberta to move the amount of bitumen currently being produced, but soon production will exceed pipeline capacity.³ Because of these constraints, and because of its proposed 1.1 million barrels per day (mbpd) capacity, Energy East would play a large role in determining how much and how fast the sector expands.

¹ Government of Ontario, "Agreements Reached at Québec-Ontario Joint Meeting of Cabinet Ministers," news release, November 21, 2014. <http://news.ontario.ca/opo/en/2014/11/agreements-reached-at-quebec-ontario-joint-meeting-of-cabinet-ministers.html>

² Canadian Association of Petroleum Producers, 2013 Crude Oil Forecast, Markets & Transportation (2013), i. <http://www.capp.ca/getdoc.aspx?DocId=227308&DT=NTV>

³ Jeff Lewis, "Oil boom will strain pipelines, may delay Canadian projects: IEA," Financial Post, May 14, 2013. http://business.financialpost.com/2013/05/14/oil-boom-will-strain-pipelines/?__lsa=06db-a5e8

Pipelines remain the oilsands industry's preferred mode of transportation, despite the increasing use of alternative modes. The estimated cost of shipping oilsands to the U.S. Gulf Coast by rail ranges from \$9 up to \$30 per barrel,⁴ compared to a smaller range of \$7 to \$10 per barrel for pipelines.⁵

Given the volatile nature of oil prices, this price differential is significant: access to global markets via large-capacity pipelines makes oilsands investments more appealing, and therefore bolsters the business case for rapid expansion of the sector. Conversely, uncertainty about — or constraints on — the future availability of low-cost crude transportation would act as a brake on oilsands expansion.

Rapid oilsands expansion is at odds with Canada's climate objectives

Meeting Canada's national 2020 emissions target will be significantly more difficult if the Energy East pipeline is approved. Oilsands production is Canada's fastest-growing source of the GHG emissions that cause climate change.

According to Environment Canada, the projected growth in GHG emissions from the oilsands between 2010 to 2020 is large enough to undo all of the emission reductions that would be made by other parts of Canada's economy over the same period.

Similarly, the International Energy Agency's 2010 *World Energy Outlook* showed that, in a world that stays below the 2°C limit on global warming, the oilsands would expand at a far slower rate than current industry projections. Rather than reaching 3.2 mbpd of production in 2020 and 5.2 mbpd in 2030, as in current industry projections,⁶ the IEA's modelling shows that oilsands production would have to be 2.5 mbpd in 2020 and 3.3 mbpd in 2035.⁷

Energy East would have a significant impact on emissions

Energy East would increase the capacity to move crude out of Alberta by one-third, so it would be a significant spur to new oilsands production — and the associated GHG emissions.

Pembina's analysis in February quantified the emissions from producing the mix of crudes that could fill Energy East: oilsands diluted bitumen, synthetic crude oil and conventional light crudes. This constitutes the line's "upstream" emissions profile — the footprint of the fossil fuel products that enter the pipe, but not the eventual "downstream" emissions from burning them.

Even in the lowest-emission upstream scenario, filling Energy East would result in 30 to 32 million tonnes of upstream GHG emissions each year. That is equivalent to adding over seven

⁴ Canadian Association of Petroleum Producers, *Transporting Crude Oil by Rail in Canada* (2014), 13. <http://www.capp.ca/getdoc.aspx?DocId=242427>

⁵ Jameson Berkow, "Energy Watch: Canadian crude-by-rail costs rival pipelines," *Business News Network*, April 16, 2014. <http://www.bnn.ca/News/2014/4/16/Energy-Watch-Canadian-crude-by-rail-costs-rival-pipelines.aspx>

⁶ Canadian Association of Petroleum Producers, *2013 Crude Oil Forecast, Markets & Transportation* (2013), i. <http://www.capp.ca/getdoc.aspx?DocId=227308&DT=NTV>

⁷ International Energy Agency, *World Energy Outlook 2010*, Chapter 4, Table 4.1. <http://www.worldenergyoutlook.org>

million cars to Canada's roads — approximately the total number in Ontario today. Put another way, those emissions would be roughly equal to the reductions Ontario made by eliminating coal-fired electricity generation (31.6 million tonnes per year in 2020).⁸

If Alberta's oilsands expand at the rate the industry projects, the burden to reduce emissions in Canada will fall disproportionately to other economic sectors.⁹ It remains unclear how Canada's climate targets could be met without putting an undue burden on other provinces.

Alberta's current regulations have little impact on oilsands emissions

Alberta was one of the first jurisdictions in North America to regulate GHG emissions from large industrial facilities with the Specified Gas Emitters Regulation (SGER). However, this regulation has had very little impact on overall emissions from the oilsands.

Under the SGER, major industrial facilities must reduce their "emissions intensity" (the emissions per unit of production) by up to 12 per cent relative to their typical performance. For example, an established oilsands facility that typically produces 100 kilograms of GHG emissions per barrel of bitumen would have a target of 88 kilograms per barrel.

A company has three options for meeting this target. It can improve performance at the facility to reduce actual emissions. Alternatively, it can purchase credits from an Alberta-based offset project, or pay into a fund at a rate of \$15 per tonne of emissions. To date, the industry has mostly chosen to pay into the fund or purchase offsets rather than reduce the emissions intensity of facilities.

Despite being subject to regulation from 2007 onwards, total oilsands emissions increased by 62 per cent between 2005 and 2011.¹⁰ Further, the sector's absolute emissions are forecasted to nearly double between 2011 and 2020.¹¹

According to the regulation, the SGER needs to be updated by January 1, 2015. The Government of Alberta has not yet announced if they will be making any changes to the regulation at this time.

⁸ Environment Canada, Canada's Sixth National Report on Climate Change: 2014 (2013), Annex 1: Canada's First Biennial Report, 215.

http://unfccc.int/files/national_reports/nonannex_i_natcom/submitted_natcom/application/pdf/final_nc_br_dec20_2013%5B1%5D.pdf

⁹ P.J. Partington, "Trending Bad: What Environment Canada's latest climate report says about Canada's carbon pollution," Pembina Institute, October 29, 2013. <http://www.pembina.org/blog/758>

¹⁰ Environment Canada, National Inventory Report: Greenhouse Gas Sources and Sinks in Canada 1990-2011 (2013), Table 2-13.

¹¹ Environment Canada, Canada's Emissions Trends 2013 (2013), Table 6.

<http://www.ec.gc.ca/Publications/default.asp?lang=En&xml=1723EA20-77AB-4954-9333-69D1C4EBD0B2>.