Emissions Assessment Methodology

The Order in Council of November 29, 2016, which formally approved the Kinder Morgan pipeline project, includes a brief summary of a crucial finding made by the Kinder Morgan upstream emissions assessment regarding the impact of the pipeline on Canada's total emissions.

> *The assessment indicated that incremental emissions are unlikely to be expected as oil production is expected to grow by more than the capacity of the expanded line regardless of whether the line is built.*
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> — Order in Council, Explanatory Note, "Climate Change", p. 9, emphasis added (http://www.gazette.gc.ca/rp-pr/p1/2016/2016-12-10/html/sup1-eng.html)

The assessment process, formally known as the *Trans Mountain Expansion Project Review of Related Upstream Greenhouse Gas Emissions*, released its final report on November 25, 2016.

This appears to be an assurance that the pipeline expansion will not cause higher emissions. In order to understand what it really means, we need to examine the procedure that governed how the assessment was done. On March 19, 2016, the Liberal Government released details of the Interim Measures to assess emissions associated with pipeline projects. A notice published in the *Canada Gazette* explained the procedure:

> *The assessment of upstream GHG's will consist of two parts: (A) a quantitative estimation of the GHG emissions released as a result of upstream production associated with the project, and (B) a discussion of the project's potential impact on Canadian and global emissions.*
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> — "Estimating upstream GHG emissions", *Canada Gazette,* March 19, 2016, emphasis added (http://www.gazette.gc.ca/rp-pr/p1/2016/2016-03-19/html/notice-avis-eng.php#nl4)

The document described the procedure as "the methodology". Part A of the assessment was not complicated. The first step was to calculate the "estimated throughput" (i.e., how much diluted bitumen would be carried by the project). Part A of the assessment would calculate the total GHG emissions "associated with the project" – i.e., the volume of emissions generated every year in the course of producing the amount of bitumen that *could* be transported to markets by the new pipeline, if it were built. Part B of the assessment promised to provide Canadians with "a discussion of the project's potential impact on Canadian and global emissions". But if we read the notice in full, we can see that the "methodology" designed for Part B is formulated in a particular way, which significantly limits the scope of the inquiry:

> *The second part of the analysis discusses the conditions under which the Canadian upstream emissions estimated in Part A could be expected to occur even if the project were not built.*
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> — *Canada Gazette,* March 19, 2016, emphasis added

The above wording means that in looking at the impact of "the Project", the assessment must ask this question: will the future increase in oil sands production (and therefore the future increase of emissions) made possible by the additional transport capacity of this pipeline occur *even if the pipeline is not built*? Clear guidance is given on what steps the assessment must follow to answer that question:

> *The second step involves evaluating the technical and economic potential for alternate modes of transportation to be used in the absence of the proposed project.*

Rail transport is the alternative. The assessment is therefore required to evaluate whether rail transport would be an economically viable method to transport the increased bitumen production to market, and must look at the "economic and technical potential" of the alternate mode of transport. Rail transport is more expensive than pipelines (about US$10 more per barrel, according to the assessment). The crucial question is whether long-term oil prices will be high enough to cover the extra cost of rail "in the absence of the proposed project." The Kinder Morgan report found that, provided oil prices are $80 per barrel or higher over the long-term, rail transport will be a viable alternative.

The March 18, 2016 notice was absolutely clear on how the assessment should proceed:

> *As an example, when considering whether Canadian GHG emissions would increase as a result of a crude oil pipeline project, the primary factor will be the potential increase in Canadian upstream oil production that would be expected to occur if the pipeline were not built.*

Therefore, if rail transport is an economically viable alternative, then the assessment is obliged to decide that the increased production that will be carried in the proposed pipeline *will be produced anyway, even if the pipeline were not built*. In that case, the new pipeline would not make emissions any worse – because the increased production would still occur even if the new pipeline were not approved. In that case, the pipeline will not "cause" any "incremental" emissions, according to the terminology.

Of course, in reality, emissions will increase if production grows. The Kinder Morgan assessment found that the amount of increased bitumen production carried by expanded pipeline capacity would account for an additional 13 Mt to 15 Mt of greenhouse gas emissions per year (which would represent about a 20% increase of the industry's total emissions, based on the 2015 level) – a significant increase in our total emissions.

However, in line with the methodology, the Kinder Morgan assessment was able to show that the amount of "incremental" emissions caused by the Kinder Morgan expansion will be "minimal": (see *Report*, Table 8, p. 39). Evidence was available to establish that long-term oil prices will increase to about US$78 per barrel by 2020, and will continue to rise gradually to US$102 by 2040. The assessment therefore concluded that the pipeline would cause only minimal "incremental" emissions, because the same amount of production increase (and the same emissions growth) would occur if the pipeline were not built – because rail transport would be viable as an alternate form of transport.

On the basis of that reasoning, the November 25, 2016 report to the government advised that incremental emissions from building the pipeline would be “minimal”.

In truth, the accumulating concentration of CO_2 emissions in the atmosphere is the problem we are trying to solve. In light of that problem, the distinction between pipelines and rail transport is meaningless. If we increase production by 590,000 bpd (the increased capacity added by the Kinder Morgan expansion), Canada’s total emissions will increase by 13 Mt to 15 Mt – whether the increased output is shipped by pipeline or shipped by rail.

A second pipeline expansion project, called Line 3, was also given final approval on November 29, 2016, the same day as the Kinder Morgan approval. It adds 370,000 bpd of new capacity. Line 3 is routed from Alberta to Superior, Wisconsin. The emissions assessment for Line 5 found that the additional emissions associated with the increased volume of production carried by line 3 would be approximately 10 Mt to 13 Mt of CO_2eq per year. Therefore, the combined new capacity of both Kinder Morgan and Line 3 (960,000 bpd) will generate between *22 Mt and 28 Mt of additional GHG emissions per year*. However, the upstream emissions assessment for the Line 3 project followed the same methodology, leading to an identical finding that, provided long-term oil prices reach about US$80, “incremental emissions” will be minimal.