

Media briefing on Canadian methane regulations

Summary

- In 2016, Canada, along with the U.S. and Mexico, pledged to reduce methane emissions 40 to 45% below the 2012 baseline level by 2025.
- Recent model results from the federal government released in equivalency agreements with provinces show that the federal methane regulations will only achieve a 29% reduction below the 2012 baseline level by 2025.
- This would result in a gap of 5 to 7 million tonnes of carbon dioxide equivalent (CO₂e) below the promised commitment for 2025. This gap would be even larger when evaluated over the next few decades, due to the strong near-term impact of methane on climate.
- The impact of regulations can change as methane data accuracy and collection improves. What's missing is a clear plan and transparent processes to update the regulations as changes are encountered, in order to continue to meet targets and commitments.

What is methane?

Methane is the primary constituent of natural gas. It is also a potent greenhouse gas with more than 80 times the climate warming impact of carbon dioxide over a 20-year timespan.

In oil and gas production, methane is often released into the atmosphere, both intentionally, as in the case of venting from equipment or the release of unwanted gas, or unintentionally, because of equipment leaks.

Why does methane matter?

Methane is responsible for approximately 25% of the warming we observe today, and global emissions continue to rise, jeopardizing the attainment of international goals set out to preserve a habitable planet. This makes near-term methane reductions critical to international efforts to battle climate change.

Reducing methane emissions can also have significant air quality co-benefits. Actions that release methane emissions also emit harmful air toxics and smog-forming volatile organic compounds (VOCs). Therefore, actions to reduce methane emissions also lead to improved public health protections. Reduced flaring can also reduce black carbon

soot emissions from poorly operating combustors to achieve additional air quality and climate mitigation objectives.

Why focus on methane reduction?

Addressing methane pollution from the oil and gas sector is the most effective way to slow near-term warming, as well as one of the quickest and cheapest. Mexico, Canada and the U.S. are three of the world's largest oil and gas producing nations and represent nearly 20% of global oil and gas methane pollution. Meanwhile, inexpensive, proven technologies already exist to reduce methane emissions.

In addition, since methane is the major component of natural gas, abating these emissions is also key for avoiding the waste of a precious resource, and translates to more product in the pipeline. In Canada, over \$120 million worth of methane leaks from oil and gas operations each year, enough gas to heat every household in Montréal for a year.

What is Canada's commitment on methane?

As part of the Pan-Canadian Framework, in 2016 the Government of Canada, together with Mexico and the United States, pledged to reduce oil and gas methane emissions by 40 to 45% below the 2012 baseline by 2025.

How is this commitment being implemented?

The federal government finalized its regulations on methane in April 2018. The federal government estimated that the regulations would create \$9 billion in net benefits to Canada.

The federal regulations address major sources of emissions in the upstream oil and natural gas supply chain through frequent leak inspections, and venting limits for tanks and wells, compressors, pneumatic devices and pumps.

Federal regulations allow operators to use emerging leak detection methods to conduct leak inspections, thereby encouraging innovation that could enhance the effectiveness and reduce the cost of inspections.

What is provincial equivalency?

Canadian provinces can introduce their own regulations if they achieve equivalent emissions reductions as the federal ones. Canada's three major oil and gas provinces – Alberta, Saskatchewan and B.C. – have all written their own rules, which the federal government must approve as meeting the same level of reductions as the federal regulations.

B.C.'s regulations were granted equivalency in April 2020. As of August 2020, both Alberta and Saskatchewan have published their draft regulations and completed a 60-day open comment period and are now waiting to see if equivalency will be granted by the federal government.

What is the current situation?

Recent model results released by the federal government in draft and final provincial equivalency agreements show that Canada's federal methane regulations will only achieve a 29% reduction below a 2012 baseline by 2025, instead of the 40 to 45% commitment. Using federal government figures, this would result in a gap of 5 to 7 million tonnes of CO₂e.

The federal government, however, relies on an older, 100-year global warming potential for methane, and as such underestimates the impacts of this gap. Because methane remains in the atmosphere for less than a decade, compared with up to a thousand years for carbon dioxide, is more potent when evaluated on shorter time scales. While it is typical to evaluate its impacts compared to carbon dioxide over 100 years, 20 years is better aligned with the pace of action needed to avoid major impacts of climate change.

Using a 20-year global warming potential for methane from the International Panel on Climate Change's (IPCC) latest assessment report, the methane regulations, as currently drafted, would result in Canada emitting an extra 17 to 25 million tonnes of CO₂e in methane emissions, beyond its climate commitment for 2025.

In addition, while designated as equivalent to the federal regulations, draft and final equivalency agreements show that the provincial regulations in Alberta, British Columbia and Saskatchewan are not any stronger than the federal rules, meaning they won't result in closing any gaps. As such, this shortfall between Canada's commitments on methane and the current trajectory of emissions will remain, regardless of whether equivalency is granted.

A breakdown of our analysis is shown in Table 1.

Table 1: Federal methane emissions projections (Mt CO₂e)

Year	Baseline, Canada (2012)	Reductions from federal regulations in each province			Emissions with federal regulations in place – Canada (2025)	Reduction from 2012 baseline (%)
		AB	SK	BC		
2012	44.7					
2020	44.3	1.0	0.5	0.3	42.5	5%
2021	44.1	1.7	0.5	0.4	41.5	7%
2022	44.2	1.6	0.6	0.4	41.6	7%
2023	44.3	7.2	4.9	0.9	31.3	30%
2024	44.6	7.2	5.0	0.9	31.5	29%
2025	45.1	7.3	5.1	0.9	31.8	29%
2026	45.8	7.4	5.2	0.9	32.2	28%
2027	46.4	7.6	5.3	1.0	32.6	27%
2028	46.9	7.7	5.4	1.0	32.9	26%
2029	47.4	7.8	5.4	1.0	33.2	26%

What has changed with this most recent modelling?

The change stems from updates to the official government model from a 2018 study data from Alberta, which has caused the distribution of emissions to change.

Specifically, anticipated emissions reductions have dropped because the best estimate of baseline emissions (before regulations take effect) has shifted emissions from sources which would be deeply abated under the federal rules, such as leaks, to sources which are less effectively abated under those rules, such as pneumatics controllers. Greater understanding of emissions from some sources has also led to a reduction in the estimated effectiveness of the regulations for those sources. As a result, the current projection of the effectiveness of the federal regulations is significantly lower than previously anticipated.

What should be done?

There are two questions to be answered:

- 1) How do we adjust the current regulations in order to get back on track to meet our 2025 commitments?
- 2) How do we ensure that Canada sets out transparent processes and takes the actions needed to remain on track as our knowledge of methane emissions improves?

We propose the following actions be taken:

1. **Canada should review its projected emissions and strengthen the federal regulation** within the following 12 months to ensure it is on track to meet the 2025 methane reduction commitment.
2. The provincial equivalency agreements should explicitly state that **federal regulatory reviews resulting in changes to federal regulations will require renegotiation** of the agreement and adjustment to provincial regulations.
3. **The recently announced Emissions Reduction Fund should focus grants on projects exceeding the regulatory minimum** (i.e. not merely those necessary to comply with regulations). While progress has been made in incorporating climate considerations into stimulus spending, without specific targeting of these funds to reduce emissions beyond the regulatory minimum, these investments will only serve to reduce the cost of compliance to industry.
4. **Canada should commit to eliminating methane emissions, starting with a 2030 reduction target of at least 75%.** This goal aligns with commitments by the Global Methane Alliance, which the IEA¹ and CERI² show are technically and economically feasible in Canada.³ Addressing methane is still one of the most cost-effective ways to reduce emissions and Canada has an opportunity to demonstrate global leadership as it works to achieve its net-zero emissions targets.

¹ International Energy Agency. "Methane Tracker 2020." (2020). <https://www.iea.org/reports/methane-tracker-2020/interactive-country-and-regional-estimates>

² Canadian Energy Research Institute. "Economic and Environmental Impacts of Methane Emissions Reduction in the Natural Gas Supply Chain." (2019). <https://ceri.ca/studies/economic-and-environmental-impacts-of-methane-emissions-reduction-in-the-natural-gas-supply-chain>

³ The International Energy Agency (IAE) says, globally, the oil and gas industry can cost-effectively reduce up to 75% of its methane emissions and 50% of global methane reductions can be realized at zero net cost, using today's technology. This level of global reduction could deliver the same long-term climate benefit as immediately closing all the coal plants in China. <https://www.iea.org/reports/methane-tracker-2020/interactive-country-and-regional-estimates>