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Alberta's methane regulations will fail to meet provincial reduction target

Background

The Use of Modelling in Methane Emission Reduction Policy Development

- In 2018, Environment and Climate Change Canada (ECCC) finalized rules to reduce methane emissions from the oil and natural gas industries across Canada. Under Canadian law, these rules must be implemented nationwide, but if a province puts in place rules that will reduce emissions within the province as effectively as the ECCC rule, ECCC may deem the provincial rules “equivalent,” so that the provincial rules are in effect in the province, rather than the ECCC rules.
- ECCC uses models to project emission levels from the oil and natural gas industry in future years. This allows ECCC to see if Canada is on track to meet greenhouse gas emissions reduction goals and examine the implications of different regulatory options. The models allow calculation of emissions of greenhouse gases, including methane, by province, equipment type (such as leaks or tank venting), and site type (such as wellsites, batteries, compressor stations, or gas processing plants).
- ECCC will use these models to evaluate whether regulations proposed by provinces are as effective as the ECCC rules, and thus whether they can be deemed equivalent.
- ECCC made the models available to Clean Air Task Force (CATF) and Environmental Defense Fund (EDF), who used the models to project the level of emissions expected in 2025, under the ECCC rules finalized in 2018, and those expected if the emissions rules proposed in 2018 by the Alberta Energy Regulator (AER) in its Draft Directive 060 are implemented in Alberta instead of the ECCC rules.
- Alberta's rules are weaker than ECCC's rules in two main respects: operators will be allowed to wastefully vent far more gas from their sites under the Alberta rules, and the Alberta leak detection and repair rules won't require operators of most sites to carry out proper inspections on a frequent basis. Additionally, Alberta's rules wouldn't require operators to accurately report the amount of methane pollution they are emitting, so neither the Alberta Energy Regulator nor the public will be able to evaluate the performance of the rules.

Modelling Analysis Methodology and Findings

- The emissions reductions results are presented here in metric tons of carbon dioxide equivalent (CO₂e). To convert the emissions reductions from metric tons of methane to metric tons of CO₂e, CATF and EDF used the value for the 20-year global warming potential for methane from fossil fuel sources recommended in the latest assessment report from the Intergovernmental Panel on Climate Change, 87.
- CATF and EDF first used the models' output of emissions from Alberta in 2025, given industry trends and National Energy Board (NEB) projections of future oil and gas production, if neither the 2018

ECCC rules nor AER's Draft Directive 060 were in place. This is referred to as the "baseline" of emissions.

- CATF and EDF then used the models to calculate emissions in a second scenario: what emissions would be expected from Alberta in 2025 with the ECCC rules in place. By comparing the emissions in this case to the first "baseline" scenario, CATF and EDF calculated the amount of pollution reduction that would result from the ECCC rules.
- CATF and EDF found that the ECCC rules would reduce emissions in Alberta by 34 million metric tons of carbon dioxide equivalent in 2025, relative to the baseline without new (2018) rules from either ECCC or AER in place. Relative to the 2025 baseline, this is a 36% cut in emissions.
- Finally, they used the models to calculate emissions in a third scenario: what emissions would be expected from Alberta in 2025 with just the draft AER rules in place. As in the second case, CATF and EDF then calculated the amount of pollution reduction that would result from the AER rules by comparing the third case to the baseline scenario. Relative to the 2025 baseline as described above, the AER rules would cut emissions by 22 million metric tons of carbon dioxide equivalent in 2025, or 23%.
- In 2014, Alberta pledged to reduce emissions from oil and gas by 45% by 2025. Relative to 2014 levels, if AER's Draft Directive 060 is in place, CATF and EDF's modelling shows that Alberta's methane levels will only be reduced by 36%.
- If ECCC's rule is in place, CATF and EDF's modelling shows that Alberta's methane levels will be reduced by 47%.

A more detailed description of how CATF and EDF used the ECCC models to estimate the reductions in methane pollution from Alberta's oil and gas facilities is available in ["A Comparative Assessment of Alberta's Oil and Gas Methane Emissions Under the ECCC rules and AER'S Draft Directive 060."](#)

Application of Carbon Pricing to Methane

- There are serious shortcomings and uncertainties in how methane reductions would be achieved through carbon pricing including:
 1. A lack of accurate measurement and proper reporting requirements, especially on venting
 2. Vented methane is currently not fully priced based on its full global warming potential under the carbon levy. As a result, the effective carbon price on methane under the carbon levy is currently \$2 per tonne CO₂e instead of \$50.
 3. As a result of this discrepancy, companies will not have incentive to opt-in to Alberta's carbon pricing scheme for large emitters and will not have any incentive to achieve reductions under the carbon levy. This large uncertainty in how many companies will opt in creates a big question mark for achieving reductions through carbon pricing.
- More information on the application of carbon pricing to methane can be found in ["Policy Briefing: Achieving Methane Reductions Through Carbon Pricing in Alberta."](#)