

SUBMISSION

Renewing Saskatchewan's Methane Equivalency Agreement

Joint comments and recommendations

Submitted to Environment and Climate Change Canada

Regarding: Oil and Gas Methane Regulations — Provincial Equivalency

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Joint comments and recommendations

The following comments were submitted by the David Suzuki Foundation, Environmental Defense Fund and Pembina Institute on September 4, 2024, in response to Environment and Climate Change Canada's (ECCC's) proposed Order Declaring that the Provisions of the Regulations Respecting Reduction in the Release of Methane and Certain Volatile Organic Compounds (Upstream Oil and Gas Sector) Do Not Apply in Saskatchewan, 2025.

Introduction

The David Suzuki Foundation, Environmental Defense Fund and Pembina Institute urge ECCC to strengthen the equivalency agreement (EA) with Saskatchewan as follows:

1. Enhance transparency and opportunities for public engagement in the development of methane regulations for the oil and gas sector and the negotiation and review of EAs.
2. Incorporate the results of site- and source-level direct measurements taken by operators or independent third parties into ECCC's initial and ongoing analysis of the adequacy of the Saskatchewan Oil and Gas Emissions Management Regulations (OGEMR), and Directive PNG036: Venting and Flaring Requirements and Directive PNG17: Measurement Requirements for Oil and Gas Operations (directives) to achieve equivalent methane reductions as the federal rules.
3. Provide greater transparency regarding the inputs into ECCC's modelling and the assumptions ECCC used to compare methane reductions under the OGEMR and directives and ECCC's Regulations Respecting Reduction in the Release of Methane and Certain Volatile Organic Compounds (Upstream Oil and Gas Sector) (federal methane regulations).

Immediate and deep reductions of methane from Canada's oil and gas sector are critically necessary to address the climate crisis¹ and ensure that Canada meets its climate commitments and greenhouse gas (GHG) reduction goals. Canada's federal government committed to

¹ Hiram Levy II et al., eds., *Climate Projections Based on Emissions Scenarios for Long-Lived and Short Lived Radiatively Active Gases and Aerosols*, U.S. Climate Change Science Programs Synthesis and Assessment Product 3.2 (U.S. Global Change Research Program, 2008), 64–65, archived September 26, 2023, at <https://web.archive.org/web/20230926220535/https://www.globalchange.gov/sites/globalchange/files/sap3-2-draft3.pdf>.

reducing methane emissions from the oil and gas sector by 40–45% by 2025² and by 75% by 2030 from a 2012 baseline.³ ECCC’s federal methane regulations play a pivotal role in reaching these targets. Initial modelling by ECCC in 2018 of its current regulations estimated they would result in approximately 282 megatonnes (Mt) of carbon dioxide equivalent (CO₂e) reductions, \$13.4 billion in avoided climate damages and \$1.6 billion in savings from using or selling conserved gas between 2018 and 2035.⁴ More recently, ECCC noted that these regulations “will not be sufficient to meet Canada’s new methane commitment” of reducing 2012 methane emissions by 75% by 2030,⁵ thus signalling the need for ECCC to strengthen its regulations. Provinces wishing to apply their regulations in lieu of the federal regulations through negotiation of an EA will also likely need to strengthen their regulations once ECCC does so.

Under Canadian law, ECCC may rely on provincial methane regulations to ensure that it meets the federal government’s 2025 and 2030 emissions reductions targets. The Canadian Environmental Protection Act (CEPA) allows ECCC to suspend application of its methane reduction regulations based on a determination that application of provincial regulations will achieve equivalent emissions reductions as application of the federal rules.⁶ Additionally, the province must have laws in place that contain provisions similar to sections 17 and 20 of CEPA, providing for the investigation of alleged offences.⁷ On July 6, 2024, ECCC proposed an order declaring that the ECCC methane regulations do not apply in the province of Saskatchewan for 2025–2029 based on a proposed EA. The regulatory impact analysis statement (RIAS) for the proposed EA explains that the order and EA are based on a determination that Saskatchewan has in place laws that contain similar provisions to sections 17 to 20 of CEPA, providing for the right of investigation of alleged offences,⁸ and that the OGEMR and directives will achieve equivalent outcomes in reducing methane emissions compared to the federal regulations.⁹ ECCC

² Government of Canada, *Regulations Respecting Reduction in the Release of Methane and Certain Volatile Organic Compounds for the (Upstream Oil and Gas Sector)*, *Canada Gazette*, Part II, vol. 152, extra no. 1 (2018). (Hereafter referred to as “Federal methane regulations.”)

³ Government of Canada, “Reducing Methane Emissions,” modified July 18, 2024. <https://www.canada.ca/en/services/environment/weather/climatechange/climate-plan/reducing-methane-emissions.html>

⁴ Federal methane regulations.

⁵ Departments of the Environment and Health, “Regulations Amending the Regulations Respecting Reduction in the Release of Methane and Certain Volatile Organic Compounds (Upstream Oil and Gas Sector),” *Canada Gazette*, Part I, vol. 157, no. 50 (2023). (Hereafter referred to as “Amendments to federal methane regulations.”)

⁶ *Canadian Environmental Protection Act*, 1999, s. 10(3).

⁷ *Canadian Environmental Protection Act*.

⁸ Department of the Environment, “Order Declaring that the Provisions of the Regulations Respecting Reduction in the Release of Methane and Certain Volatile Organic Compounds (Upstream Oil and Gas Sector) Do Not Apply in Saskatchewan, 2025,” Regulatory Impact Analysis Statement, *Canada Gazette*, Part I, vol. 158, no. 27 (2024). (Hereafter referred to as “RIAS.”)

⁹ “RIAS.”

estimates application of the OGEMR and directives will result in cumulative methane reductions of 40.8 Mt compared to cumulative reductions of 41.0 Mt from application of the federal regulations.¹⁰

ECCC's reliance on EAs to obtain critically necessary methane reductions from the oil and gas sector underscores the importance of getting such agreements right. ECCC must ensure that application of the provincial regulations will result in equivalent methane reductions as application of its rules. Unfortunately, the well-documented problems of underestimation in methane emissions by operator reporting¹¹ and poor compliance rates with existing regulations¹² pose challenges to this determination and threaten the achievement of Canada's GHG reduction targets. In addition, the EA negotiation and review process occurs primarily behind closed doors, and important data used in ECCC's equivalency modelling is not made publicly available.

We have concerns with the adequacy of past provincial efforts to curb methane emissions from oil and gas facilities, in particular from cold heavy oil production with sand (CHOPS) facilities. Measurement campaigns by independent third parties have identified considerably higher emissions than operator reports indicate. A recent paper synthesizing the results of nearly a decade of measurement campaigns across Canada estimates that Saskatchewan has a 19% loss rate.¹³

We suggest revisions to the EA that will ensure the public has access to important information used by Saskatchewan and ECCC to assess the efficacy of the OGEMR and directives in achieving equivalent outcomes. We also suggest pathways to expand opportunities for public engagement on the development and review of the EA. Lastly, we request greater transparency and more granular information regarding ECCC's equivalency modelling.

Comments on Equivalency Agreement

Section 3.2

First, we urge ECCC to revise section 3.2 to require Saskatchewan make publicly available the information required by this section. Section 3.2 requires the province to share information with

¹⁰ "RIAS."

¹¹ K. MacKay et al., "A Comprehensive Integration and Synthesis of Methane Emissions from Canada's Oil and Gas Value Chain," *Environmental Science & Technology* 58, no. 32 (2024).

¹² Office of the Auditor General of Canada, *Emission Reductions Through Greenhouse Gas Regulations—Environment and Climate Change Canada* (2023), 19. (Hereafter referred to as "Auditor General report.")

¹³ "A Comprehensive Integration and Synthesis of Methane Emissions from Canada's Oil and Gas Value Chain," 14207.

ECCC, but does not require Saskatchewan to publicize this data. The information includes the following:

- a list of facilities and facility-level emissions data used to calculate excess emissions [section 3.2(a)]
- information pertaining to the compliance of business associations with the OGEMR [section 3.2(b) and (c)]
- information pertaining to compliance with the venting, leak detection and repair, and well completion requirements in Directive PNGo36 [section 3.2(d)–(f)]
- information pertaining to compliance verification activities and enforcement measures, including orders concerning contraventions to OGEMR and the relevant directives [section 3.2(g) and (h)]

The information that is subject to this information-sharing provision is of significant public interest as it contains information demonstrating the efficacy of, and compliance with, Saskatchewan’s regulations and directives. ECCC is relying on the provincial regulations to ensure that it meets the federal government’s 2025 and 2030 emissions reduction targets.

Measurement studies throw into question the efficacy of Saskatchewan’s historic regulation of methane emissions from the oil and gas sector. According to a recent synthesis paper of direct measurement campaigns across Canada, Saskatchewan is the second largest emitter of oil and gas methane emissions.¹⁴ MacKay et al. synthesized nearly a decade of studies that included “thousands of multiscale methane measurements along the oil and gas value chain (production to end use) to better constrain estimates of methane emissions in Canada’s energy sector....”¹⁵ The study found that the upstream sector was the largest emitter, accounting for 88% of methane emissions from the oil and gas value chain.¹⁶ The study further found that “provinces with prominent upstream sectors were the highest emitters—Alberta (68%), Saskatchewan (18%), and British Columbia (7%).”¹⁷ This same study estimates that Saskatchewan’s conventional oil and gas industry has the highest methane loss rate in all of Canada with an estimated 19% loss rate.¹⁸ Other studies have similarly found that the province has a relatively higher loss rate. Conrad et al. found that “Saskatchewan’s 0.41+ g/MJ intensity remains among

¹⁴ Scott P. Seymour et al., “Saskatchewan’s oil and gas methane: how have underestimated emissions in Canada impacted progress toward 2025 climate goals?,” *Environmental Research Letters* 18, no. 8. <https://doi.org/10.1088/1748-9326/ace271>

¹⁵ “A Comprehensive Integration and Synthesis of Methane Emissions from Canada’s Oil and Gas Value Chain,” Abstract.

¹⁶ “A Comprehensive Integration and Synthesis of Methane Emissions from Canada’s Oil and Gas Value Chain.”

¹⁷ “A Comprehensive Integration and Synthesis of Methane Emissions from Canada’s Oil and Gas Value Chain,” 14207.

¹⁸ “A Comprehensive Integration and Synthesis of Methane Emissions from Canada’s Oil and Gas Value Chain,” Figure 5, 14210.

the highest in North America.”¹⁹ Information regarding the efficacy of the OGEMR and directives in reducing methane emissions in Saskatchewan is of significant interest to the public given these findings, which indicate the province historically has not done enough to reduce emissions.

Information regarding compliance rates and enforcement actions is also of significant interest to the public. The Auditor General of Canada found poor compliance rates with oil and gas methane regulations.²⁰ Indeed, a review of the fines for business entities that exceed the annual company-wide emissions caps under the OGEMR indicates that Saskatchewan may not levy sufficiently high penalties for violations that would act as any serious deterrent to non-compliance. Under the OGEMR, business entities are subject to a fine of only \$50/tonne of excess emissions above the company-wide limits. Fifty dollars per tonne of excess emissions is lower than ECCC’s price on carbon pollution, which is \$95 per tonne of GHG emissions in 2025, and set to increase by \$15 per tonne annually until it reaches \$170 per tonne in 2030.²¹

Insufficient penalties for violations of regulations or directives may lead to poor compliance rates since adequate penalty amounts and robust enforcement of rules can help drive industry compliance.

We request ECCC require Saskatchewan publish the information pertaining to compliance with the venting, leak detection and repair, and well completion requirements in Directive PNG036 and information pertaining to compliance verification activities and enforcement measures, so that we and other interested members of the public may track how well operators are complying with the OGEMR and directives, and what enforcement actions Saskatchewan is taking, if any, against entities that are not meeting their company-wide emissions limits or otherwise not complying with pollution reduction obligations.

Section 3.3

Section 3.3 requires Saskatchewan to publish information regarding actual and potential emissions for oil facilities in the province on its website. We urge ECCC to require Saskatchewan to also publish measurement data, where available, on its website. Reconciling site- and source-level direct measurements with site- and source-level estimated emissions is essential to

¹⁹ Bradley M. Conrad et al., “The Futility of Relative Methane Reduction Targets in the Absence of Measurement-Based Inventories,” *Environmental Science & Technology* 57, Issue 50 (2023).
<https://pubs.acs.org/doi/10.1021/acs.est.3c07722>

²⁰ Auditor General report, 19.

²¹ ECCC, “Update to the Pan-Canadian Approach to Carbon Pollution, 2023-2030,” modified August 5, 2021.
<https://www.canada.ca/en/environment-climate-change/services/climate-change/pricing-pollution-how-it-will-work/carbon-pollution-pricing-federal-benchmark-information/federal-benchmark-2023-2030.html>

accurately ascertaining actual emissions and thus verifying the efficacy of the OGEMR and directives.

Direct measurement campaigns of oil and gas emissions consistently have identified a discrepancy between operator-reported emissions based on emissions factors and engineering calculations, on the one hand, and measured emissions, on the other.²² Underestimation of emissions from the province's CHOPS facilities is of particular concern. Seymour et al., found that adjustments to the province's upstream oil and gas methane inventory incorporating the results of site-level aerial measurement data of CHOPS facilities demonstrated that the inventory underestimates methane emissions by 30–40%.²³ This study also noted that CHOPS sites “are the largest emitting site type” in the province.²⁴ Discussing Canada's oil and gas reduction targets, MacKay et al., found that “measurement-based inventories that utilize both bottom-up and top-down measurements (i.e., mainly facility-level and regional-level measurements) are required to track progress toward these goals with integrity.”²⁵

An accurate understanding of past, present and projected emissions is critical to tracking progress towards Canada's methane reduction targets, analyzing the efficacy of current regulatory approaches, and modelling the comparative reductions achieved by application of provincial or federal regulations. We urge Saskatchewan to move towards a measurement-informed inventory, and similarly, urge ECCC to ensure that the province publicizes all available measurement data.

Sections 3.4 and 3.6

These sections require the province to notify ECCC of any proposed amendments to emission factors, regulations, the OGEMR, and directives. We urge ECCC to require Saskatchewan provide notice and an opportunity for the public to comment on any proposed amendments to the emission factors adopted by minister's order MRO 135/22; sections 53.65 and 53.66 of the Oil and Gas Conservation Act; the OGEMR; and Directives PNG036 and PNG017.

Commenters have a strong interest in any revisions Saskatchewan makes to the emissions factors that operators use when reporting emissions. As discussed above, numerous direct measurement studies have identified significant under-reporting of emissions by the province's

²² “A Comprehensive Integration and Synthesis of Methane Emissions from Canada's Oil and Gas Value Chain.”

²³ “Saskatchewan's oil and gas methane: how have underestimated emissions in Canada impacted progress toward 2025 climate goals?” Abstract.

²⁴ “Saskatchewan's oil and gas methane: how have underestimated emissions in Canada impacted progress toward 2025 climate goals?” 6.

²⁵ “A Comprehensive Integration and Synthesis of Methane Emissions from Canada's Oil and Gas Value Chain,” 14210.

oil and gas operators and documented high loss rates in the conventional oil and gas sector that do not align with reported emissions. We urge the province to move away from reliance on outdated and inaccurate emissions factors and towards an empirically based inventory and reporting mechanism. Any revisions to the emissions factors should be subject to input from the public so that there is an opportunity for stakeholders with expertise in oil and gas emissions estimation methodologies and measurement methodologies to suggest revisions to emissions factors or direct measurement approaches that can be used in lieu of emissions factors.

In addition, the province must provide the public an opportunity to comment on proposed revisions to the OGEMR and Directives PNG036 and PNG017. There was no public opportunity to comment on the latest revisions to Saskatchewan's regulations. Commenters would have submitted comments on proposed revisions had there been an opportunity to do so. We have a strong interest in regulations aimed at reducing methane emissions from the upstream oil and gas industry given the urgency of the climate crisis, the potential health impacts to workers and communities, and the availability of cost-effective abatement technologies. We also have a strong interest in ensuring that regulations reflect international best practices to reduce methane emissions.

Section 3.9

Section 3.9 provides for annual review of the EA by ECCC and periodic review of the EA at the request of either ECCC or Saskatchewan.

We urge ECCC to make the results of the annual reviews of the agreement publicly available and to consider scientifically sound measurement data, where available, as part of the annual review. Specifically, we request ECCC issue an annual report that demonstrates progress against and compliance to federal regulations that draws on publicly available annual provincial reports. Transparency is a critical element of good policy. The annual review must ensure that application of the province's regulation, enforcement provisions, and compliance rates continue to demonstrate equivalent outcomes. A determination that application of the province's regulations is not achieving intended methane emissions reductions affects the ability of Canada to achieve its methane reduction target and may be the basis for future policy actions at both the provincial and federal levels. Interested stakeholders will want to be involved in the development of such policies at the outset.

Second, in conducting the annual review ECCC should rely on the best available information regarding the efficacy of the provincial regulation and compliance rates. We appreciate that the EA requires the parties to share information regarding methane measurement activities. Specifically, section 3.13(iii) and (iv), respectively, of the EA requires the following:

1. Saskatchewan provide a summary of any relevant oil and gas methane measurement activities associated with studies funded or supported by Saskatchewan, such as but not limited to aerial measurements of oil and gas facility methane emissions.
2. Similarly, Canada provide a summary of any relevant oil and gas methane measurement activities associated with studies funded or supported by Canada.

We ask that the results of these studies, as well as any others undertaken by independent third parties or industry be considered when ECCC reviews the continued application of the EA. During the annual review, ECCC should consider measurement data, such as that provided by satellites and aerial surveys conducted by independent third parties, and compliance verification information to determine if application of the provincial regulations continues to achieve equivalent outcomes. ECCC recently incorporated the results of direct measurements into its national inventory report.²⁶ We greatly appreciate this change to the method ECCC uses when publishing the national inventory. We urge ECCC to continue its efforts to incorporate empirical data into its inventory and also to rely on such data when evaluating the continued efficacy of the OGEMR and directives.

Third, we appreciate that the EA, section 3.13(i)(ii), requires Saskatchewan to provide a summary of compliance verification activities and enforcement measures. This responds to the recommendation by the Office of the Auditor General of Canada that ECCC “should collect all relevant information from provinces, including compliance data” when analyzing the effectiveness of provincial methane regulations.²⁷ We urge ECCC to monitor compliance and enforcement activities closely since the Auditor General’s report found “poor compliance rates during the first few years of the regulations....”²⁸ Equivalency should only be maintained if compliance verification data demonstrates operators are complying with the regulations and the province is taking appropriate steps to enforce the regulations.

Section 3.13

Section 3.13 requires ECCC and Saskatchewan to meet annually “to discuss progress activities related to methane emissions from the oil and gas sector” and lists specific information the parties will share with one another. This information includes a summary of compliance verification activities, a summary of enforcement measures, and a summary of any relevant oil and gas measurement activities associated with studies funded or supported by Saskatchewan or by Canada. We urge ECCC and Saskatchewan to make public the information listed in section

²⁶ ECCC, “National Inventory Report: Greenhouse gas sources and sinks in Canada.”
<https://publications.gc.ca/site/eng/9.506002/publication.html>

²⁷ Auditor General report, 19.

²⁸ Auditor General report, 20.

3.13. Doing so would increase transparency and public trust that application of the OGEMR and directives are reducing methane emissions and achieving equivalent outcomes as application of the federal rules would do.

Section 6.3

This section provides for the negotiation of a new agreement and associated order if ECCC finalizes amendments to the federal methane regulations. We respectfully request greater transparency around, and an opportunity to comment on, the negotiation of a renewed agreement and associated order were ECCC to finalize amendments to its methane regulation. Specifically, we urge ECCC to provide opportunities for stakeholder engagement, including a public comment process, any time that it negotiates a new EA and order with the province. This will ensure an opportunity for interested stakeholders to bring relevant information, including the results of measurement studies, to ECCC's attention that may impact the equivalency determination or the substance of a new agreement or order.

Comments on Regulatory Impact Analysis

Modelling

We urge ECCC to provide more detail and transparency regarding its modelling. Specifically, we urge ECCC to explain if it made any adjustments to the baseline emissions scenario to account for the results of direct measurements of Saskatchewan oil and gas facility emissions and how it groups emissions sources for purposes of scaling its baseline inventory to the national inventory report (NIR), and provide more detail regarding assumptions used to calculate emissions reductions.

First, we ask ECCC to clarify whether the emissions estimates for each source contained in the baseline scenario reflect the updates ECCC made to the 2024 NIR. We understand ECCC's methodology when conducting its equivalency analysis for EAs to be as follows. ECCC builds a baseline inventory using bottom-up engineering emissions estimates. ECCC then scales its inventory to agree with the NIR. The recent updates to the NIR resulted in an adjustment to the NIR emissions estimates based on the results of direct measurement campaigns. This adjustment brought the 2024 NIR estimate of emissions in line with an estimate of 2024 emissions based on the results of over a decade of direct measurements of methane emissions.²⁹ If the modelling used in the equivalency outcome analysis did not incorporate the recent

²⁹ "A Comprehensive Integration and Synthesis of Methane Emissions from Canada's Oil and Gas Value Chain," 14203.

adjustments to the NIR based on direct measurements, we respectfully request ECCC revise the baseline scenario emissions estimates to reflect the recent adjustments to the NIR and re-run the modelling. This will ensure that determinations of equivalency are based on the most accurate and best available emissions modelling. Our recommendation aligns with that of the Office of the Auditor General of Canada who recommended ECCC “allow the use of the most recent measurement-based data to improve the accuracy of its estimates of methane emissions from the oil and gas sector.”³⁰

Second, we request ECCC provide more detail regarding how it scales estimated emissions with the NIR. The RIAS provides emission estimates for five sources of emissions: compressors, fugitives, general venting, pneumatic devices, and surface casing vent flows. In Table 1 of the RIAS, these sources are not grouped according to facility site (production facilities, gas processing plants, etc.). We would like to better understand if ECCC scaled emissions solely by emissions source type (e.g., comparing emissions from all pneumatics at any facility type in the bottom-up inventory to the NIR), or if ECCC scaled emissions by grouping emissions sources by source and facility type, or if ECCC scaled emissions in some other way.

Third, we request ECCC provide a detailed discussion and explanation regarding the assumptions it relies on when calculating emissions reductions from the relevant requirements of the OGEMR and directives. The U.S. Environmental Protection Agency (EPA) provides significantly greater detail regarding its modelling of anticipated reductions from proposed oil and gas methane regulations. For example, when modelling anticipated reductions from application of its leak detection and repair requirements, the EPA takes into account the leak rate at each facility, repair times, and the expected percent reductions in methane emissions for different inspection frequencies.³¹ An annual inspection frequency is assumed to reduce emissions by 46% while a monthly inspection frequency is assumed to reduce emissions by 86%. ECCC merely estimates total reductions for each emission source but provides little explanation for the basis of these reductions. ECCC notes that “emission reductions were estimated in a manner similar to those described in the Regulatory Impact Analysis Statement for the Federal Regulations.”³² ECCC does not provide any additional detail regarding what assumptions go into its estimate of source-level reductions in its federal regulations. Greater detail is required for the public to assess the adequacy of ECCC’s conclusion that application of the Saskatchewan regulations will achieve equivalent outcomes.

³⁰ Auditor General report, 20.

³¹ U.S. Environmental Protection Agency, *Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources and Emissions Guidelines for Existing Sources: Oil and Natural Gas Sector Climate Review — Background Technical Support Document* (2022), Table 5-2a, 5-10.

³² “RIAS,” 6.

Regulatory development section

We suggest that in the future, ECCC open negotiations concerning renewals of EAs to broader stakeholder engagement and provide opportunities for the public to comment on revisions to this EA and to any renewed EA. As noted above, we have several questions and concerns with the modelling that underpins the determination that application of Saskatchewan's regulations will achieve equivalent methane reductions as the federal rules and several suggestions for how to strengthen the EA and the EA review process to allow for more transparency and public input. Additional early input from stakeholders and an opportunity for public comment can ensure a more robust agreement and improve public trust and confidence in the process.

Conclusion

We appreciate the opportunity to comment on the proposed EA for Saskatchewan. We look forward to future discussions with ECCC and the province on ways to increase transparency, enhance opportunities for public involvement and ensure that application of the Saskatchewan OGEMR and directives maintains ongoing equivalent methane reductions from oil and gas facilities as would application of the federal methane rules.

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