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Comments from the Saskatchewan Environmental Society on the Proposed Regulation Respecting Reduction in the Release of Methane and Certain Volatile Organic Compounds (Upstream Oil and Gas Sector)

Attention: Helen Ryan

Thank you for the chance to provide feedback on the proposed regulations Respecting Reduction in the Release of Methane and Certain Volatile Organic Compounds (Upstream Oil and Gas Sector), published in the Canada Gazette Volume 151 on May 27th.

We are writing to express strong support for the regulation of methane emissions from the oil and gas industry.

As noted in the regulations, methane is an important contributor to global climate change because of its ability to trap more heat than carbon dioxide. Officially, Canada uses the global warming potential (GWP) multiplier of 25 for methane, as reported in the 4th Assessment Report for the Intergovernmental Panel on Climate Change (IPCC). However, the 5th Assessment Report by the IPCC increases this estimate, noting that methane has a global warming potential 28 times greater than carbon dioxide on a 100-year basis, and even greater in a shorter time span.

Research suggests that methane is responsible for 25% of current global warming, and thus policy designed to control the release of methane is critical to limit rising average global temperatures.¹ Methane emissions can also contribute to a host of other issues, such as respiratory problems, air quality, and acidity of surface water and soil.

¹ Shoemaker J.K., Schrag D.P., Molina M.J. and Ramanathan, V. 2013. "What Role for Short-Lived Climate Pollutants in Mitigation Policy?" *Science* 342 (6164): 1323-1324. Available online at <http://ramanathan.ucsd.edu/files/pr200.pdf>



In Saskatchewan, methane emissions generally arise from the agricultural sector (5.1 Mt CO₂e), waste disposal (1 Mt CO₂e) and energy production (11.7 Mt CO₂e). In total, the Government of Canada estimates that Saskatchewan's methane emissions are 700 kt or 18 Mt CO₂e.²

Emissions from venting, flaring and equipment leaks in the oil and gas sector are, by a large margin, the largest single source of methane emissions in Saskatchewan, accounting for approximately 17% (13 Mt CO₂e) of our total provincial emissions. 11 Mt (CO₂e) of these emissions are methane, and about 2 Mt are carbon dioxide.

These numbers in official inventories rely on industry reporting. Recent research^{3, 4} however, indicates inventories consistently *underestimate* actual methane emissions. Therefore, methane emissions from the Saskatchewan oil and gas sector could be larger than reported.

Saskatchewan has regulations aimed at controlling methane emissions published under *The Oil and Gas Conservation Act*. These regulations - Directive S-10: Saskatchewan Upstream Petroleum Industry Associated Gas Conservation Directive and Directive S-20: Saskatchewan Upstream Flaring and Incineration Requirements – describe **essentially a voluntary approach to emission reductions**. Under Directive S-10, firms are required to examine the potential to eliminate or reduce emissions. If these cannot be achieved, industries are required to meet performance standards which require them to flare, incinerate or vent at a volume less than 900 m³/day.⁵ Directive S-20 also lists performance standards and provides specification for equipment spacing and setback distances for oil and gas flaring and incineration, applicable to licensed wells and facilities.⁶

Critically however, Directive S-10 and S-20 does not apply to fugitive emissions, which are estimated to be 3.3 Mt in Saskatchewan. To partially fill this gap, industries are encouraged to follow voluntary standards by the Canadian Standards Association – specifically CSA Z620 released in 2016 – and best management practices from the Canadian Association of Petroleum Producers (CAPP).

² Environment and Climate Change Canada. 2015. "National Inventory Report 1990-2015: Greenhouse Gas Sources and Sinks in Canada." Pt. 3. Available online at <https://www.ec.gc.ca/ges-ghg/default.asp?lang=En&n=83A34A7A-1>

³ Brandt A.R., Heath G.A., Kort E.A., et al. 2014. "Methane Leaks from North American Natural Gas Systems." *Science* 343 (6172): 733-735. Available online at https://nature.berkeley.edu/er100/readings/Brandt_2014.pdf

⁴ Greenpath Energy Ltd. 2016. "Greenpath 2016 Alberta Fugitive and Vented Emissions Inventory Study." Available online at http://www.greenpathenergy.com/wp-content/uploads/2017/03/GreenPath-AER-Field-Survey-Results_March8_Final_JG.pdf

⁵ Government of Saskatchewan. 2015. "Directive S-10 Saskatchewan Upstream Petroleum Industry Associated Gas Conservation Directive." Available online at www.publications.gov.sk.ca

⁶ Government of Saskatchewan. 2015. "Directive S-20: Saskatchewan Upstream Flaring and Incineration Requirements." Available online at www.publications.gov.sk.ca



The SES strongly supports efforts to reduce methane emissions associated with oil and gas operations across Canada. Below we make several comments and recommendations related to the specific proposed regulations:

- **The Advantage of Federal Oversight:** We consider regulations at the level of the federal government advantageous, as they encourage consistency across regions - thereby reducing costs - and keep regional action in line with national climate objectives.
- **Delayed Implementation Leaves a 55 Mt Gap:** SES is concerned about the Federal plan to delay implementation of regulations to 2020 and 2023, whereby the original plan was to implement regulations between 2018 and 2020. Delayed implementation, which changes the pathway to achieve the Government of Canada's 45% by 2025 reduction target, leaves 55 Mt (CO₂e) of methane that could have been captured through regulations unaccounted for. SES urges the Government of Canada to accelerate regulation implementation by reducing the delayed timeline. Another option is to strengthen regulations on a delayed implementation, for example through requiring quarterly inspections, establishing low flaring thresholds and banning venting. Methane regulations do not have to come at the expense of international competitiveness. Methane emission reductions are one of the most cost-effective ways to achieve our emissions reduction goals, and some of our largest competitors from the United States, such as North Dakota and California, already have much stricter methane regulations in place.
- **Increase the Frequency of Leak Detection and Repair (LDAR) Inspections:** In terms of controlling fugitive emissions, proposed regulations indicate that regular inspections will be required three times per year. Experience in the United States has shown that the success of leak detection and repair is strongly associated with the frequency of inspections. SES recommends that quarterly inspections be implemented, especially in the case where regulations are delayed until 2020.
- **Maintain reliable data records:** Robust, reliable data is key to monitoring and meeting targets. Currently, data records rely on industry reporting. As methane emissions have been shown to be consistently underestimated in official inventories, the SES recommends Environment and Climate Change Canada put in place measures to ensure operators keep detailed and up-to-date data on methane emissions, and maintain quality control through audits.
- **Equivalency Agreements:** SES emphasizes that any provincial-federal equivalency agreements resulting from the planned methane regulations should not weaken the ultimate target of achieving a 45% reduction in methane emissions by 2025. By our estimates, industry expenditures to eliminate venting and reduce flaring are 0.2% to 0.6% of the expenditures the



oil, gas and mining sector in Canada could theoretically make between 2017 and 2025.⁷ Again, we emphasize that some of our largest international competitors have maintained a profitable industry with much stricter methane regulations in place.

- **Provide incentives to reduce flaring and increase conservation:** The SES would prefer to see incentives in place to encourage the conservation of gas, rather than continuing the practice of flaring. North Dakota, one of Saskatchewan's largest international competitors, has regulations in place that ban venting, and require proponents to pay tax and royalties on flared gas. Another option for creating a financial incentive to conserve gas is to use the federal carbon pricing backstop to price emissions that are flared.
- **Clarification regarding the application of carbon pricing:** The recently released technical paper on the proposed federal carbon pricing backstop suggests that carbon pricing will potentially be applied to venting, flaring and fugitive emissions (p.18).⁸ The SES is seeking clarification on how this policy will work with the proposed methane regulations. In our response to the technical paper we have recommended the Government of Canada subject all emissions from venting, flaring and equipment leaks to a carbon price. Research has shown that most mitigation strategies to reduce these emissions generally cost less than \$10 per tonne of CO₂e reduced, which means even an initial carbon price of \$10 per tonne will provide ample incentive for firms to invest in a variety of these mitigation strategies.⁹
- **Supporting pipeline infrastructure:** As stated earlier, North Dakota, one of our largest competitors in the United States, has methane regulations that ban venting and require operators to meet declining annual targets for flared gas. Producers also pay taxes and royalties on flared gas. These measures are reducing emissions; since flaring targets were implemented in 2014, emissions from flaring have fallen from 35% to less than 15% of total natural gas production.¹⁰ North Dakota's economic performance also remains strong – oil production has risen from less than 400,000 barrels per day in 2010 to more than 1 million barrels per day in 2016.¹¹

⁷ Various organizations, including the Canadian Association of Petroleum Producers, the Government of Canada and the Environmental Defence Fund have provided estimates of the costs associated with methane regulation compliance, ranging from \$1.3 billion to \$4.1 billion. Average annual expenditures from the oil, gas and mining sector between 2010 and 2014 was approximately \$81 billion. The estimates above are expressed as a percentage of \$81 billion spent every year for 8 years, or \$648 billion. Data is from Statistics Canada. 2014. "Capital expenditures by sector, by province and territory." Catalogue no. 61-205-XIB. CANSIM table 029-0005. Available online at <http://www.statcan.gc.ca/tables-tableaux/sum-som/l01/cst01/busi03a-eng.htm>.

⁸ Environment and Climate Change Canada. 2017. "Technical Paper on the Federal Carbon Pricing Backstop". Available online at <https://www.canada.ca/content/dam/eccc/documents/pdf/20170518-2-en.pdf>

⁹ ICF International. 2015. "Economic Analysis of Methane Emission Reduction Opportunities in the Canadian Oil and Natural Gas Industries." Prepared for the Environmental Defense Fund and the Pembina Institute. p.1-3. Available online at <https://www.pembina.org/reports/edf-icf-methane-opportunities.pdf>

¹⁰ U.S. Energy Information Administration. 2016. "Natural gas flaring in North Dakota has declined sharply since 2014." Available online at <https://www.eia.gov/todayinenergy/detail.php?id=26632>



Through correspondence with officials in North Dakota, SES has learned that these practices remains economical because producers have access – or are required to demonstrate access – to a gas-gathering pipeline system that allows them to ship natural gas and associated gases to central processing plants. Saskatchewan may benefit if governments and industries partnered to assist producers in assembling the infrastructure to capture associated gas in a similar fashion.

In summary, methane regulations are particularly critical in Saskatchewan. On a regional basis, our province is one of the largest producers of methane emissions from the oil and gas industry in Canada. In Saskatchewan, a 45% reduction by 2025 could lead to a reduction of approximately 5.5 Mt CO_{2e}. This is approximately 20% of the emission reductions Saskatchewan must achieve to meet our fair share of Canada's obligations under the Paris Climate Agreement.¹²

Thank you for considering our submission. We would be grateful if you could confirm receipt of our submission and provide us with an update when a final decision is made.

Yours sincerely,

A handwritten signature in blue ink that reads 'Hayley Carlson'.

Hayley Carlson, Policy Coordinator
On behalf of the Saskatchewan Environmental Society

The Saskatchewan Environmental Society (SES) is a non-profit, registered charity that is committed to supporting sustainable living and sustainable resource use in Saskatchewan. We work with, and on behalf of, communities, organizations, businesses and policy makers to encourage informed decision-making that moves us towards sustainability. SES's current action areas include sustainable energy and climate solutions, water protection, resource conservation, biodiversity preservation, and reduction of toxic substances.

¹¹ Government of North Dakota. 2017. "ND Monthly Oil Production Statistics." Available online at <https://www.dmr.nd.gov/oilgas/stats/historicaloilprodstats.pdf>

¹² SES estimates Saskatchewan's obligation under the Paris Climate Agreement to be a reduction of 26 Mt per year by 2030. This is 30% below 2005 levels of 69.5 Mt.