

Regulation of Methane Emissions

A Backgrounder for SES, May 2018

We're quite used to thinking about carbon dioxide (CO₂) emissions as the major contributor to the global climate change problem. However, it's estimated that about one fifth of the human caused global warming can be attributed to methane. This is a hydrocarbon gas (CH₄), the major component of natural gas. Methane is produced from decaying vegetation and other organic matter, from ruminant animals digestive tracts, and as an unwanted by-product of oil extraction from underground.

While the CO₂ that we release into the atmosphere persists there for thousands of years, methane lasts for only a few decades before being changed into CO₂. But, according to the Intergovernmental Panel on Climate Change, during those few short decades, methane warms the planet 86 times as much as the same amount of CO₂ would. That means its Global Warming Potential over 20 years (GWP20) is 86. More commonly it's conventional to use a 100 year timeframe, so its GWP100 is 28. This is what makes methane such a big concern.

In Canada, government reports say that 26% of our national greenhouse gas emissions are from the upstream oil and gas industry; for Saskatchewan the figure is 32%. These numbers are based on industry methane release reporting. But recent studies by the David Suzuki Foundation and St. Francis Xavier University suggest that actual emission levels are significantly higher, and that there's an urgent need for improved measurement. At present the usual practice in the oilfield is to either release the unwanted methane directly to the atmosphere (venting), or to burn it to convert it to CO₂ (flaring) – which is still a problem for the climate but less so than methane. With appropriate infrastructure, the methane could be captured and either used as fuel or pumped back underground.

Only a handful of countries, one of them being Canada, have committed to controlling methane emissions. It's encouraging to see that Canada has just introduced regulations that aim to cut methane emissions from the oilfield by 40 to 45% over the next 7 years. These outcome-focused regulations will apply to oil and gas facilities responsible for the extraction, production and processing, and transportation of crude oil and natural gas, including pipelines. The first federal requirements will come into force in 2020, with the rest of the requirements following in 2023.

The federal approach also provides for the establishment of equivalency agreements with provinces and territories, allowing them to develop tailored regional approaches to replace the federal regulations, so long as the provincial or territorial approaches are legally-binding and achieve equivalent methane emission reductions.

The real test now will be whether the federal government remains firm in the face of industry opposition by requiring provincial rules to achieve verifiable reductions consistent with the national emission reduction targets. The federal government must ensure that any provincial rules achieve equal or greater methane reductions.

The government of Saskatchewan has announced that it will develop and pass GHG emissions regulations “specifically suited to our upstream oil and gas industry”. These, we are told, will include reporting requirements and emission reduction targets. Policies will be explored aimed at creating a market demand for methane that is currently flared or vented. These measures, according to the provincial government’s “Prairie Resilience” report, are expected to reduce greenhouse gas emissions from Saskatchewan’s upstream oil and gas industry by 40 to 45% of 2015 levels. We certainly hope that will happen.

References:

Clean Air Task Force, Climate Action Network Canada, David Suzuki Foundation, Environmental Defence, Environmental Defense Fund, Équiterre, and the Pembina Institute, News release April 26, 2018 “Canada leads with regulations to limit methane from oil and gas facilities, but test will be how they address provincial regulations”

Government of Canada, April 2018, Regulations Respecting Reduction in the Release of Methane and Certain Volatile Organic Compounds (Upstream Oil and Gas Sector) (SOR/2018-66)

Inter Governmental Panel on Climate Change, Fifth Assessment Report

Prairie Resilience: A Made-in-Saskatchewan Climate Change Strategy, Government of Saskatchewan, Dec 2017.

Vaughan, Scott and Durwood Zaelke, Project Syndicate April 2018, “Canada Takes the Lead on Methane Emissions”

Vaidyanathan, Gayathri, Scientific American E & E News, Dec. 2015, “How Bad of a Greenhouse Gas is Methane?”

Werring, John, David Suzuki Foundation, January 2018, “Fugitives in our Midst: Investigating Fugitive Emissions from Abandoned, Suspended and Active Oil and Gas Wells in the Montney Basin in north-Eastern British Columbia”.