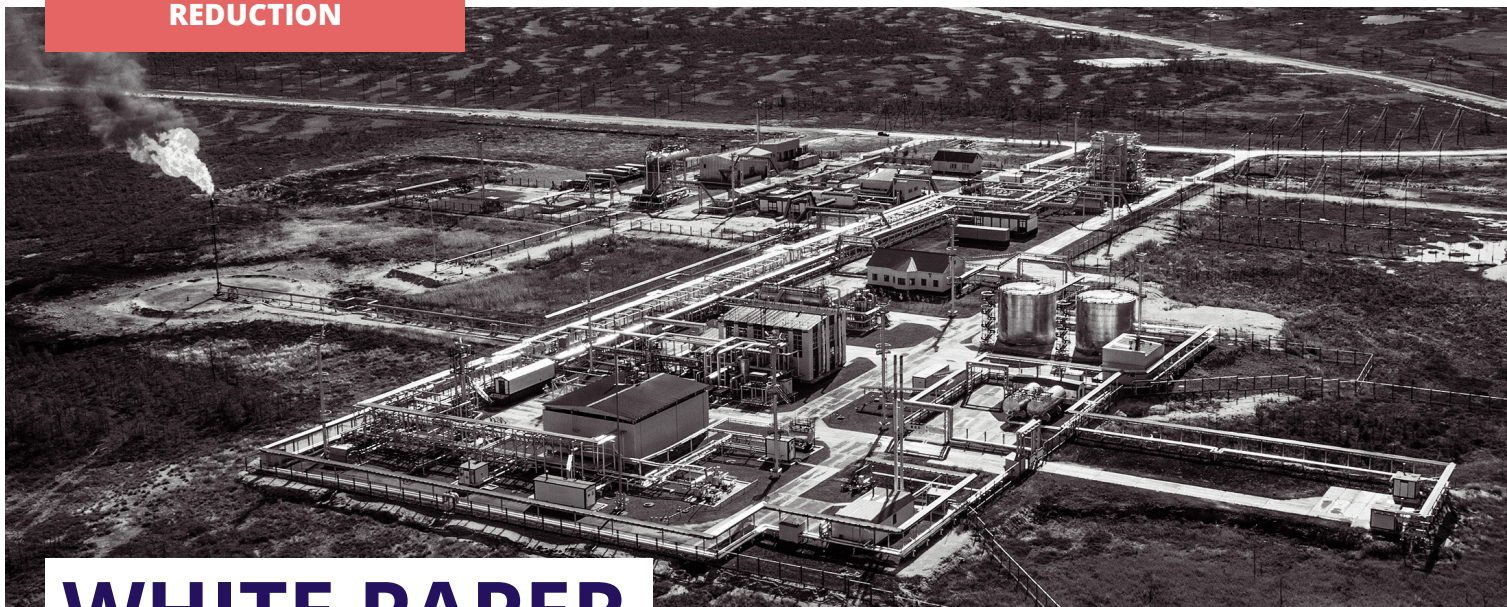


**EMISSIONS
REDUCTION**



WHITE PAPER

CANADIAN METHANE EMISSIONS:

UNDERSTANDING METHANE REGULATIONS IN ENERGY PRODUCTION



CANUSAEPCCOM

SUMMARY

Canada's commitment to environmental stewardship is reflected in its methane emission regulations, aimed at significantly reducing emissions from the oil and gas sector. The latest amendments to the regulations set a bold target to cut methane emissions by at least 75% from 2012 levels by 2030.

Provincial efforts complement the federal regulations through equivalency agreements that must align with or exceed federal standards. These agreements allow provinces to implement tailored strategies that address specific regional challenges associated with methane emissions.

This guide is crafted with the intention to bring clarity to the regulations that impact your operations, providing a clear and concise overview that aids understanding and compliance.

HIGHLIGHTS

- Overview of current state of methane regulations
- Federal regulation overview for Canada
- Key provincial regulations for Western Canadian operators

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Introduction

In a world focused on reducing greenhouse gas (GHG) emissions, Methane has taken front and center stage for reduction focus. At COP28's Global Methane Pledge (GMP) Ministerial, Ministers welcomed national actions and catalytic grant funding announced at COP28 to deliver on the goal to cut methane by at least 30 percent by 2030 ⁽¹⁾. Not only is methane 28 times more potent compared to CO₂ in trapping heat in the atmosphere, but it is also an immensely valuable product.

Canada leads the world with commitments on methane reductions, focusing on federal regulations to reduce the emissions from oil and gas operations. Considering Canada's advanced industry for developing clean energy, they are leading on many metrics related to methane intensity and still have some of the most ambitious goals.

Currently, the IEA estimates that global emissions of methane are roughly 580 Mt per year. Of that, the energy sector was responsible for nearly 130 Mt of methane emissions in 2023 – more than one third of the total amount of human related emissions⁽²⁾.

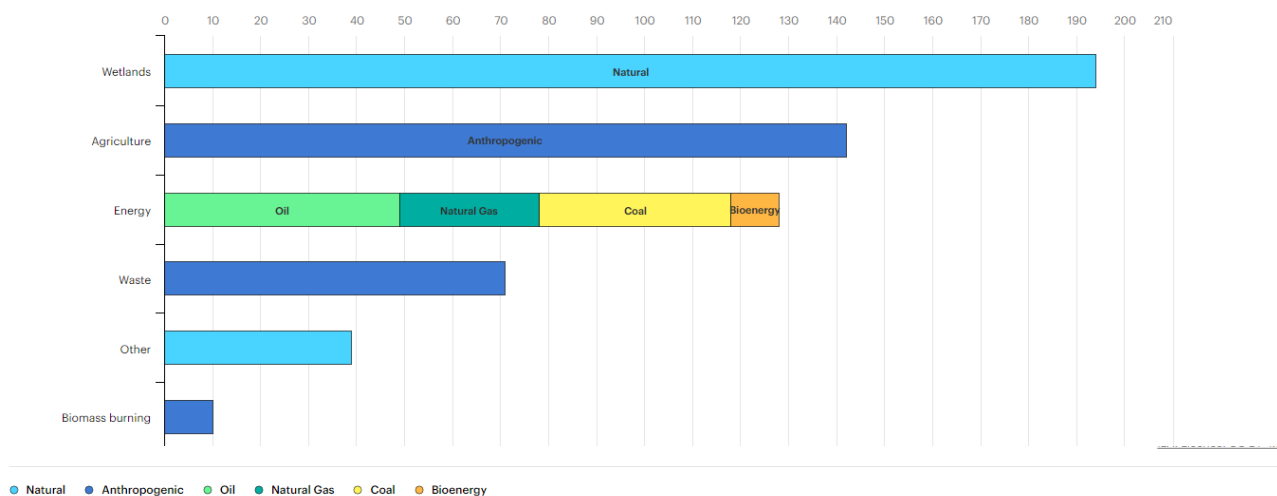
SOURCE: ⁽¹⁾ <https://www.wri.org/news/statement-cop28-countries-announce-new-efforts-reduce-methane-pollution>

⁽²⁾ <https://www.iea.org/reports/global-methane-tracker-2024/understanding-methane-emissions#abstract>

Global Data

Individual countries are approaching methane emissions reporting and reduction targets in ways that align with their current market and regulatory bodies. The fact that energy, in the form of oil and LNG, is a global product, overall methane emissions will need to be coupled with methane intensity to allow trading markets to fairly value the products. Current data shows that methane emissions don't correlate to methane intensity, means that each country will have different degrees of return on efforts to reduce methane emissions from energy sources.

Sources of Methane Emissions, 2023



SOURCE: 2023 data

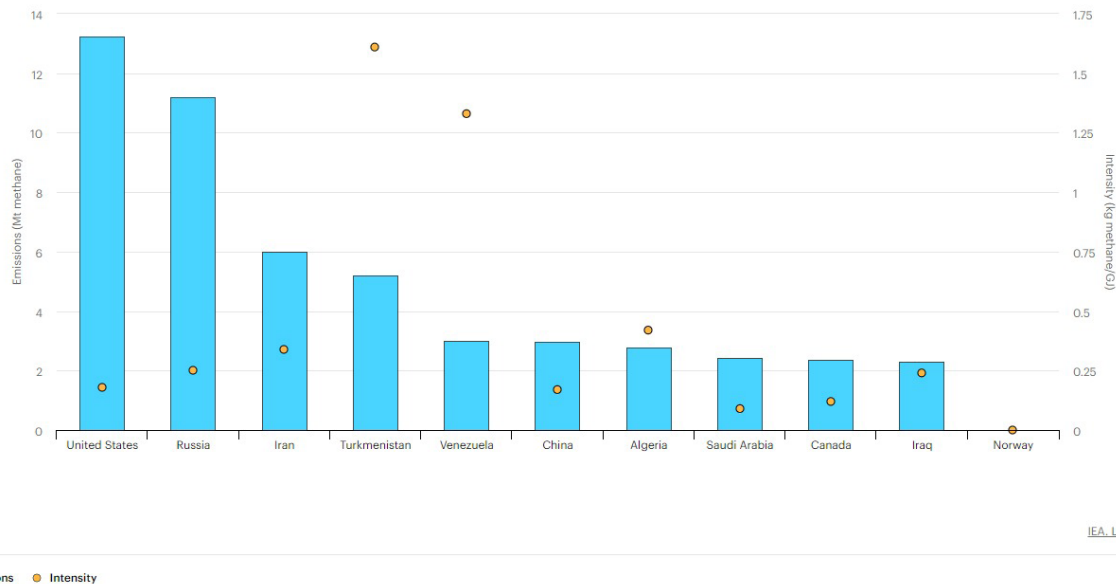
<https://www.iea.org/reports/global-methane-tracker-2024/understanding-methane-emissions#abstract>

Methane emissions from oil and gas production and methane intensity for selected producers

Looking at the current methane emissions based on fugitive, vented, or flared will also give indication of where regulations look to focus on the short term and long term efforts of reducing methane waste.

Methane emissions from oil and gas production and methane intensity for selected producers, 2023

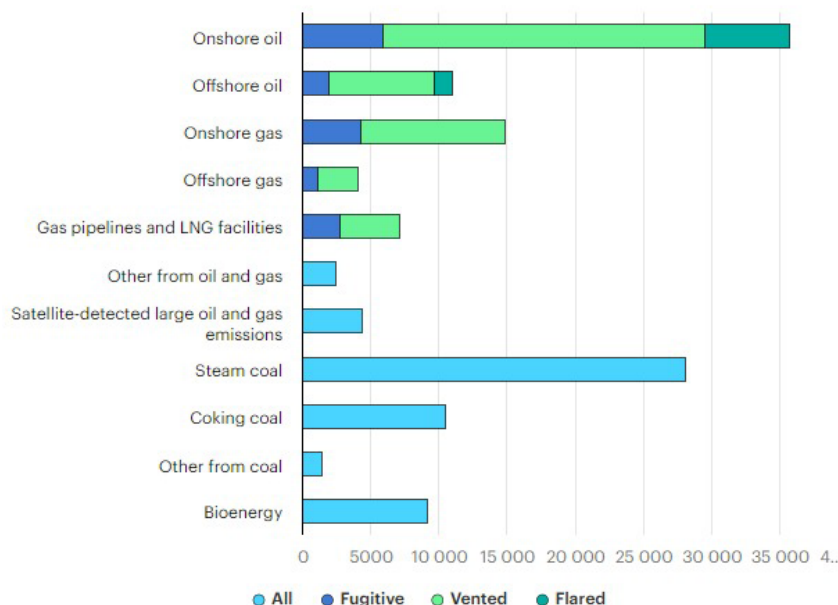
Open 



SOURCE: 2023 data

<https://www.iea.org/reports/global-methane-tracker-2024/key-findings>

World methane emissions from energy sources

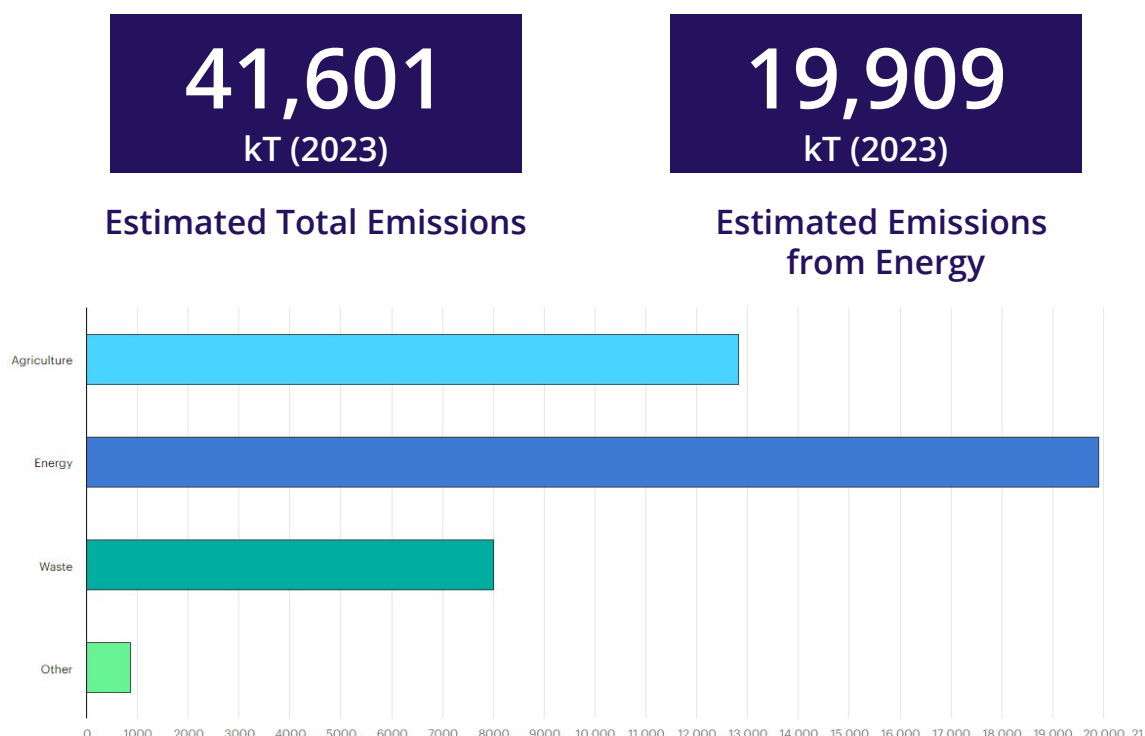


SOURCE: Methane Tracker Updated March 2024

<https://www.iea.org/data-and-statistics/data-tools/methane-tracker>

North American Focus

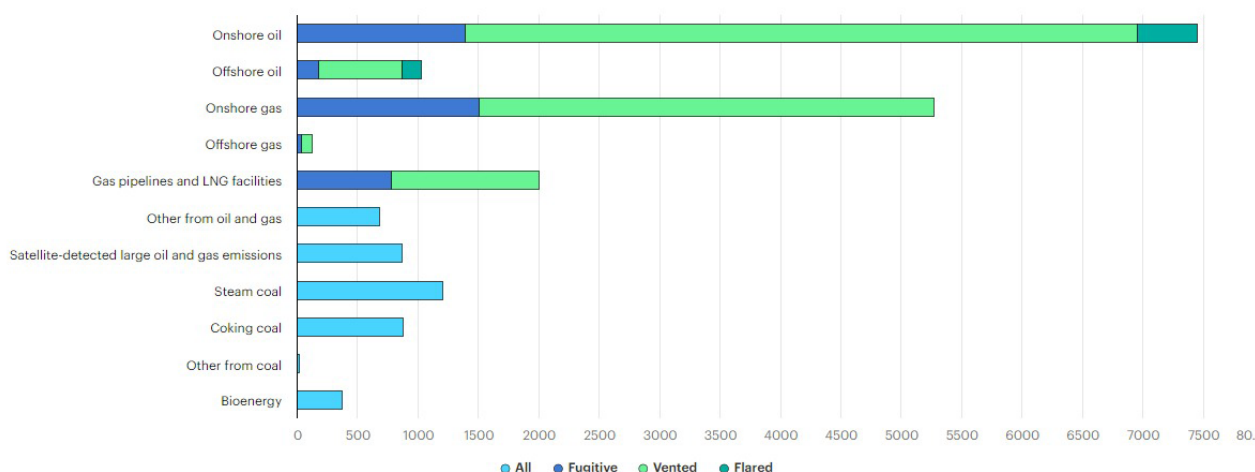
North American Methane emissions from ALL sources



SOURCE:

<https://www.iea.org/data-and-statistics/data-tools/methane-tracker>

North American Methane emissions from ENERGY sources



SOURCE:

<https://www.iea.org/data-and-statistics/data-tools/methane-tracker>

Canadian Focus

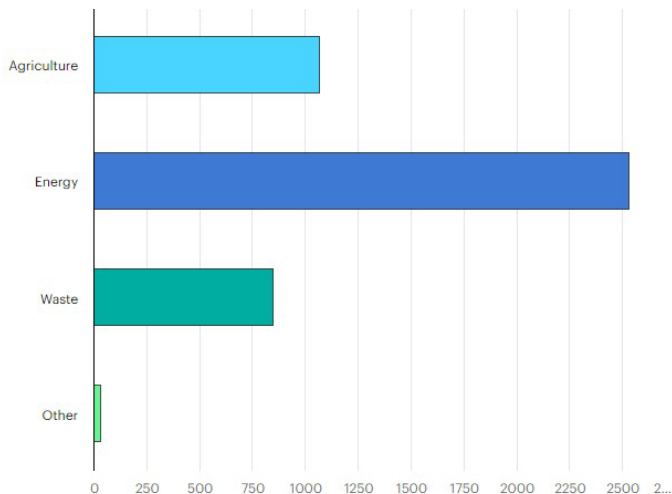
Canada Methane emissions from ALL sources

4,468
kT (2023)

Estimated Total Emissions

2,528
kT (2023)

Estimated Emissions
from Energy



SOURCE:

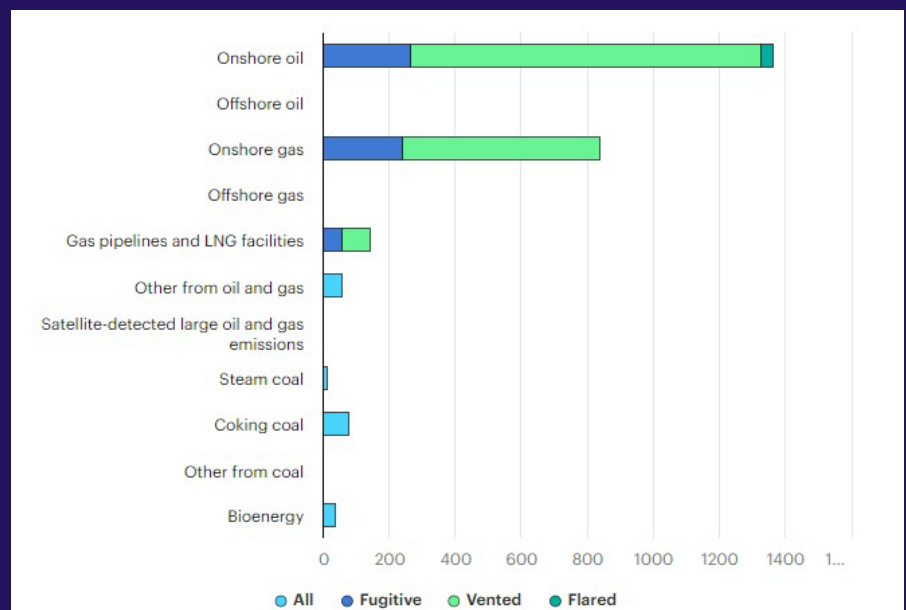
<https://www.iea.org/data-and-statistics/data-tools/methane-tracker>

Canada
ranks 12th in
global emissions
& 14th in
energy-related
emissions

Canadian Methane emissions from ENERGY sources

SOURCE:

<https://www.iea.org/data-and-statistics/data-tools/methane-tracker>



Regulation Patchwork for Methane Emission Regulations

Depending on the location of oil and gas operations, various regulations govern the permitting and reporting requirements for the facility and possibly the overall area of operations.

CANUSA EPC supports clients across various North American energy basins. We have organized these regulations by area of activity for our operating clients. Our list below is constantly being updated and reflects the current emissions requirements for Methane Emissions based on client locations.

This list has been updated as of **March 31, 2024.**

CANADIAN OPERATORS

Federal Regulations



Government
of Canada

Gouvernement
du Canada

The Regulations Respecting Reduction in the Release of Methane and Certain Volatile Organic Compounds (Upstream Oil and Gas Sector) (the Federal Regulations) aim to reduce methane emissions as well as the amount of VOCs released into the air.

These regulations apply to upstream oil and gas facilities that extract, process and transport hydrocarbon gas. More specifically, they apply to facilities that:

- produce and/or receive (potential to emit) more than 60 000 m³ of hydrocarbon gas per year
- compress natural gas
- undertake hydraulic fracturing during well completions outside of B.C. and Alberta with gas-to-oil ratios of at least 53:1

They address key emission sources like fugitive leaks, production venting, and venting from pneumatic devices, among others.

FACTSHEET: <https://www.canada.ca/en/environment-climate-change/services/canadian-environmental-protection-act-registry/factsheet-technical-information-regulations-reduction-methane.html>

SOURCE: <https://www.canada.ca/en/environment-climate-change/services/canadian-environmental-protection-act-registry/review-methane-regulations-upstream-oil-gas-sector.html>

Canadian Environmental Protection Act (CEPA)

The Canadian Environmental Protection Act (CEPA) is a key piece of Canadian federal legislation aimed at contributing to sustainable development through pollution prevention and protecting the environment, human life, and health from the risks associated with toxic substances. CEPA provides the legal framework under which the federal methane regulations are developed and enforced, targeting the reduction of methane emissions from the oil and gas sector as part of Canada's environmental protection efforts. Proposed changes can be found here from the Canada Gazette.

<https://www.canadagazette.gc.ca/rp-pr/p1/2023/2023-12-16/pdf/g1-15750.pdf#page=56>

<https://pollution-waste.canada.ca/environmental-protection-registry/regulations/view?id=2188>



Environment and Climate Change Canada (ECCC)

ECCC is the federal agency responsible for administering and enforcing the regulations under CEPA, including those related to environmental protection, pollution prevention, and the control of toxic substances. ECCC's role involves implementing and managing the environmental policies and programs that are established by CEPA. ECCC continues to work with provincial partners, civil society, and industry to ensure methane reduction targets are met. Pivotal in regulating methane emissions from new and existing oil and gas sources, the ECCC is responsible for the regulations titled "Regulations Respecting Reduction in the Release of Methane and Certain Volatile Organic Compounds (Upstream Oil and Gas Sector)".

Provincial Equivalency Agreements

Section 10 of CEPA authorizes the Minister of the Environment to enter into an equivalency agreement with a province, territory or aboriginal government if the Minister and the government of the other jurisdiction agree, in writing, that they are in force under the laws applicable in that jurisdiction:

- provisions that are equivalent to a regulation made under CEPA
- provisions similar to sections 17 to 20 of CEPA allowing for citizens to request investigation of alleged offences

The intent of equivalency agreements is to minimize the duplication of environmental regulations. The Minister is responsible for reporting annually to Parliament on the administration of equivalency agreements.

The provinces of British Columbia, Alberta and Saskatchewan have each established provincial methane regulations for the oil and gas sector, which are summarized within this guide.

Key Elements Include:

The regulations are part of Canada's commitment to reduce methane emissions by 40% to 45% below 2012 levels by 2025. The proposed amendments set a more ambitious target of reducing methane emissions in the oil and gas sector by at least 75% below 2012 levels by 2030.

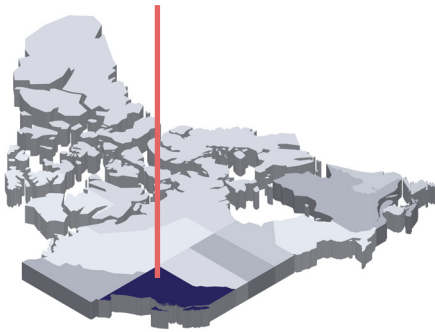
SOURCE: <https://www.canada.ca/en/services/environment/weather/climatechange/climate-plan/reducing-methane-emissions/proposed-regulatory-framework-2030-target.html>

Provincial Equivalency Agreements

British Columbia

Primary Regulatory Agency:

BC Energy Regulator (BCER)



The BCER works with industry, government, and environmental organizations to manage and reduce methane emissions from oil and gas operations. BCER has established an equivalency agreement; as such, BC's regulations stand in place of the federal regulations within the province.

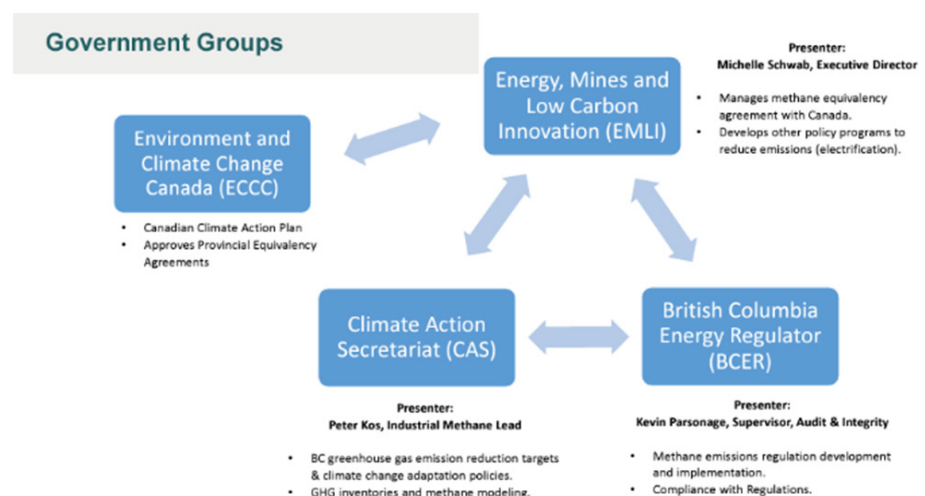
Key aspects of BC's regulatory approach to methane emissions include: reducing methane emissions by 10.9 megatonnes of CO₂ equivalent over a decade, contributing significantly to climate change mitigation efforts in the province.

SOURCE: <https://www.bc-er.ca/how-we-regulate/safeguard-the-environment/methane-reduction/>

The provincial regulations address the primary sources of methane emissions from B.C.'s upstream oil and gas industry, which are:

- Pneumatic devices, pumps, and compressor starters
- Equipment leaks
- Compressor seals
- Glycol dehydrators
- Storage tanks
- Surface casing vent flows

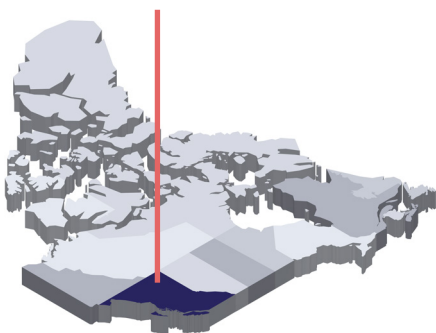
SOURCES: <https://www.canada.ca/en/environment-climate-change/services/canadian-environmental-protection-act-registry/review-methane-regulations-upstream-oil-gas-sector.html>
<https://www.gazette.gc.ca/rp-pr/p2/2020/2020-04-15/html/sor-dors60-eng.html>



British Columbia

Primary Regulatory Agency:

BC Energy Regulator (BCER)



Refer to the linked presentation for the proposed regulatory policy and provides an overview of the provincial context for reducing emissions in the oil and gas sector, initial insights from 2022 annual reporting and preliminary methane emissions modelling for B.C.'s oil and gas sector.

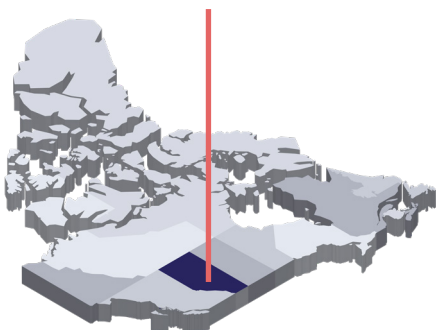
https://www.bc-er.ca/files/articles/Merged-files_2023-06-13-Methane-Regulatory-Development-Engagement-2030-Methane-Emissions-target-final.pdf

The BC Oil & Gas Methane Emissions Research Collaborative (MERC) is comprised of the Ministry of Environment and Climate Change Strategy; the Ministry of Energy, Mines and Petroleum Resources; the BC Energy Regulator; the Canadian Association of Petroleum Producers; Explorers and Producers Association of Canada, Geoscience BC, and; the Pembina Institute.

Alberta

Primary Regulatory Agency:

Alberta Energy Regulator (AER)



In Alberta, the primary regulatory agency responsible for methane emissions in the oil and gas sector is the Alberta Energy Regulator (AER). The AER collaborates with the Government of Alberta to reduce methane emissions from upstream oil and gas operations, aiming to achieve a 45% reduction relative to 2014 levels by 2025.

The requirements address the primary sources of methane emissions from Alberta's upstream oil and gas industry: fugitive emissions and venting, which includes emissions from compressors, pneumatic devices, and glycol dehydrators. The requirements also focus on improved measurement, monitoring, and reporting of methane emissions. Overall plan can be found here:

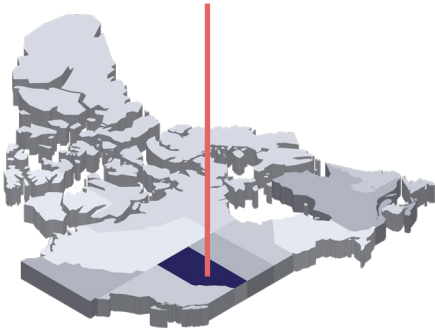
<https://open.alberta.ca/dataset/7483e660-cd1a-4ded-a09d-82112c2fc6e7/resource/75eec73f-8ba9-40cc-b7f4-cdf335a1bd30/download/epa-emissions-reduction-and-energy-development-plan.pdf>

Directive 060: Upstream Petroleum Industry Flaring, Incinerating, and Venting

This directive sets out requirements for flaring, incinerating, and venting in Alberta at all upstream petroleum industry wells and facilities. These requirements also apply to pipeline installations that convey gas.

Alberta

Primary Regulatory Agency:
Alberta Energy Regulator (AER)



Directive 017: Measurement Requirements for Oil and Gas Operations

This directive consolidates, clarifies, and updates AER requirements for measurement points used for AER accounting and reporting purposes, as well as those measurement points required for upstream petroleum facilities and some downstream pipeline operations under existing regulations.

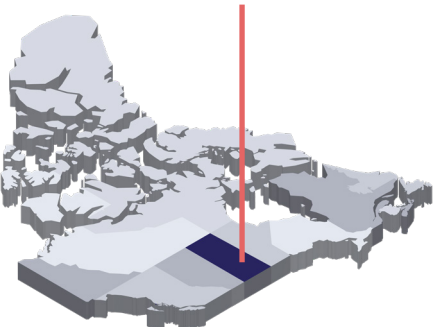
This directive specifies:

- what and how volumes must be measured;
- what, where, and how volumes may be estimated;
- if accounting procedures must be performed on the determined volumes and what they are;
- what data must be kept for audit purposes; and
- what resultant volumes must be reported to the AER.

SOURCE: <https://www.aer.ca/regulating-development/rules-and-directives/directives/directive-017>

Saskatchewan

Primary Regulatory Agency:
Government of Saskatchewan
Methane Action Plan (MAP)



The Methane Action Plan (MAP) is the Government of Saskatchewan's comprehensive approach to reducing greenhouse gas (GHG) emissions from venting and flaring activities in the upstream oil and gas industry.

MAP will reduce methane* emissions by 4.5 million tonnes of carbon dioxide equivalent (CO₂e) annually by 2025. Total MAP emissions reductions between 2020-2030 will be at least 38.2 million tonnes CO₂e.

SOURCE <https://www.saskatchewan.ca/business/environmental-protection-and-sustainability/a-made-in-saskatchewan-climate-change-strategy/methane-action-plan>

Oil and Gas Emission Management Regulations

The following links and documents contain information related to The Oil and Gas Emissions Management Regulations.

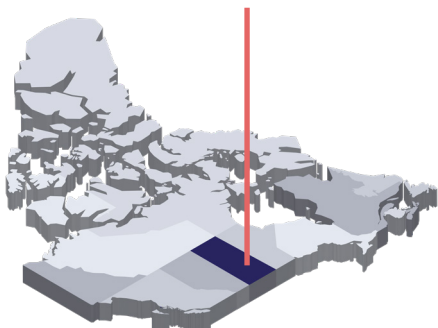
The Oil and Gas Emissions Management Regulations

The Oil and Gas Emissions Management Regulations came into effect January 1, 2019.

Saskatchewan

Primary Regulatory Agency:

Government of Saskatchewan
Methane Action Plan (MAP)



Emissions Factors

MRO 135-22 specifies the emissions factors that The Oil and Gas Emissions Management Regulations reference.

Directive PNG036: Venting and Flaring Requirements

This directive addresses venting and flaring requirements from oil and gas wells and facilities in the province of Saskatchewan.

Guideline PNG037: Emissions Reduction Plan

Section 11 of The Oil and Gas Emissions Management Regulations specify that an Emission Reduction Plan must be submitted by all licensees bound by the regulations. This document will provide guidance for licensees submitting a plan.

Guideline PNG041: Leak Detection and Repair Annual Reporting

Section 7 of Directive PNG036 requires annual reporting of LDAR results. This guideline will assist with submission.

Guideline PNG041 – Annual Reporting Template

This template should be completed to submit the LDAR annual reporting spreadsheet.

Emissions Calculator

This calculator may be used for estimating and planning purposes. Official emissions and emissions limits must be obtained from IRIS.

Greenhouse Gas Emissions IRIS Training Module

This training module will assist with requirements of The Oil and Gas Emissions Management Regulations as well as the functionality of the IRIS Emissions Management module.

Oil and Gas Emissions Management Regulations Annual Emissions Report

This report contains actual and potential emissions for oil facilities in Saskatchewan.

SOURCE: <https://www.saskatchewan.ca/business/agriculture-natural-resources-and-industry/oil-and-gas/environmental-protection/oil-and-gas-emissions-management>

Emissions Reduction & Methane Abatement Partners

In an effort to share solutions and execution strategies for methane emissions reduction, various organizations have formed bringing together operators, technology developers, and service providers to educate and advocate for responsible approaches to methane reduction.



The Methane Emission Leadership Alliance is Canada's most complete source of data, technologies and solution providers that monitor, measure, and reduce methane emissions. Our members consist of businesses that develop, manufacture, or deploy commercial technologies that help reduce methane emissions.

Visit: <https://www.methanealliance.com/>



The Methane Emissions Reduction program supports technologies that detect, monitor, and mitigate methane emissions reductions from Alberta's oil and gas industry.

Visit: <https://albertainnovates.ca/funding/methane-emissions-reduction-program/>



Petroleum Technology Alliance Canada (PTAC) is a neutral, not-for-profit association dedicated to managing and facilitating innovation, cooperative research, technology advancement, demonstration, and implementation for a responsible Canadian hydrocarbon energy industry.

Visit: <https://ptac.org/about-ptac/>

Do you consider your organization to be a leading emissions reduction partner in Western Canada? Connect with CANUSA EPC for an opportunity to be featured in upcoming revisions of our methane emissions guide.





Connect with us to discuss your project and how methane regulations may impact your operation.

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