

The Oil and Gas Emissions Management Regulations Annual Report for 2022

Ministry of Energy and
Resources

Letters of Transmittal



Office of the Lieutenant Governor of Saskatchewan

I respectfully submit the Annual Emissions Report for *The Oil and Gas Emissions Management Regulations*, pursuant to section 53.63 of *The Oil and Gas Conservation Act*, for the calendar year ending December 31, 2022.

A handwritten signature in blue ink, appearing to read 'Jim Reiter'.

The Honourable Jim Reiter
Minister of Energy and Resources

The Honourable Jim Reiter
Minister of Energy and
Resources



The Honourable Jim Reiter
Minister of Energy and Resources

Dear Minister:

I respectfully submit to you the Annual Emissions Report for *The Oil and Gas Emissions Management Regulations*, for the calendar year ending December 31, 2022.

A handwritten signature in blue ink, appearing to read 'Susanna Laaksonen-Craig'.

Susanna Laaksonen-Craig
Deputy Minister of Energy and Resources

Susanna Laaksonen-Craig
Deputy Minister of Energy
and Resources

Ministry's Responsibility

The Oil and Gas Emissions Management Regulations ([OGEMR](#)) Annual Report is the responsibility of the Ministry of Energy and Resources. This report provides background on Saskatchewan's upstream oil and gas emissions reduction program, fulfills legislated reporting requirements and highlights emissions reduction progress for the 2022 calendar year.

The Ministry upholds and enforces OGEMR to ensure that emissions reduction commitments outlined in *Prairie Resilience: A Made in Saskatchewan Climate Change Strategy* are met.

This report satisfies reporting requirements outlined in section 20(1) of OGEMR. OGEMR was created pursuant to section 53.61 of *The Oil and Gas Conservation Act*. The Minister of Energy and Resources is required, through section 53.63(3) of the Act, to submit any report prepared in accordance with this section to the Legislative Assembly of Saskatchewan.

Introduction

OGEMR came into effect in January 2019 to reduce greenhouse gas (GHG) emissions from the upstream oil and gas sector by 4.5 million (M) tonnes (t) of carbon dioxide equivalent (CO₂e) from 2015 levels by 2025.

OGEMR is a part of several crucial initiatives:

- An equivalency agreement on methane emissions with the federal government of Canada. OGEMR provides flexible, results-based regulations that allow industry to achieve greater emissions reduction at a significantly lower cost than the federal equivalent.
- The Ministry of Energy and Resource's *Methane Action Plan* ([MAP](#)); and,
- The Government of Saskatchewan's *Prairie Resilience: A Made-in-Saskatchewan Climate Change Strategy* ([the Strategy](#)).

The 2022 calendar year is the third year of required emissions reductions under [OGEMR](#) and the third year of associated annual emissions reporting.

OGEMR Purpose

OGEMR was specifically designed to achieve a 40 to 45 per cent reduction in annual GHG emissions from venting and flaring activities in the upstream oil and gas industry from 2015 levels by 2025. To achieve this goal, a reduction of 4.5 Mt of CO₂e was targeted.

In late 2020 Saskatchewan and Canada established an equivalency agreement regarding the reduction of methane emissions from the oil and gas sector. Therefore, it was determined by Environment and Climate Change Canada (ECCC) that Saskatchewan would achieve equivalent outcomes to federal methane regulation and consequently the federal requirements would not apply in Saskatchewan. This agreement was established for a five year timeframe and will expire December 31, 2024.

OGEMR Scope

OGEMR was designed to focus on the biggest emissions reduction opportunities. In the case of the Saskatchewan oil and gas sector, this was deemed to be gas that is produced in association with oil production, also known as associated gas. There is more natural gas produced in Saskatchewan from oil wells than from dedicated gas wells. In Saskatchewan, because the natural gas industry is so localized within the province, there are limited gas collection and processing opportunities resulting in some of the produced associated gas being vented and flared. Venting gas results in methane being released to atmosphere and flaring gas results in carbon dioxide, both are considered GHGs and contribute to the data supplied in this report. To allow the consideration of both GHGs, the data is rolled up into units of CO₂e.

To calculate emissions, OGEMR applies emissions factors to industry reported volumes of vented and flared gas. Saskatchewan-specific emissions factors were developed using average associated gas compositions for different production types and geographic areas in Saskatchewan which consist of varying levels of methane and other hydrocarbon constituents. OGEMR calls these different areas "Production Classes." Emissions factors are summarized in *Table 1: Production Class Emissions Factors*.

OGEMR was designed to regulate the companies that produce most of the associated gas in Saskatchewan. The more associated gas a company produces the greater potential they have to contribute emissions through venting and flaring activities. To determine if a company is subject to the regulations, OGEMR uses associated gas production to calculate each company's potential emissions. Companies with potential emissions greater than 50,000 t CO₂e on an annual basis are subject to requirements in OGEMR.

Annually, OGEMR typically regulates 30 to 40 companies who contribute the vast majority of annual emissions from venting and flaring. A company's potential emissions determine the maximum emissions they could have if all their produced gas were vented to the atmosphere, however OGEMR allows only a portion of each company's produced gas to be vented and flared by setting company level annual emissions limits. These limits decrease over time to ensure Saskatchewan's 2025 reduction targets are met. Most of the associated gas produced in Saskatchewan is conserved, if collection infrastructure is available, or used for a beneficial purpose on site as a type of fuel source as summarized in *Table 2: Saskatchewan Annual Associated Gas Utilization*.

Different areas in Saskatchewan present different challenges for emissions reduction such as low gas rates and limited access to gas collection infrastructure. Taking these challenges into account, OGEMR was designed to allow regulated companies the flexibility to determine where to implement emissions reduction projects to comply with their annual emissions limits. To reduce emissions, companies can convert vented gas to flare gas, tie-in vented and flared gas to conservation infrastructure or use vented and flared gas for a beneficial purpose on site such as generating electricity. This flexibility also translates to giving companies recognition for emissions reduction efforts that they have already undertaken.

Progress on OGEMR Activities

Provincial Emissions

Overall, in 2022 provincial emissions from venting and flaring at upstream oil facilities were 3.9 Mt CO₂e, which is a 7.0 Mt or 64 per cent reduction from 2015 levels and a 0.5 Mt or 12 per cent reduction from 2021 levels. The 2022 provincial emissions data is summarized in *Table 3: 2022 Production Class Emissions from Flaring and Venting at Upstream Oil Facilities* and in *Table 4: Annual Provincial Emissions from Flaring and Venting at Upstream Oil Facilities*.

Multiple activities contributed to provincial emissions reduction in 2022. Primarily, reductions came from installing combustion equipment at oil wells and facilities that were routinely venting gas as well as using vented gas on site as fuel for a beneficial purpose. Projects were also implemented in 2022 that expanded Saskatchewan's gas collection infrastructure, enabling more flared and vented gas to be conserved. In 2022 provincial emissions from venting and flaring activities reduced by 13 per cent and 10 per cent respectively, from 2021 levels. Declines in associated gas production also contributed to emissions reduction.

In Saskatchewan the combined potential emissions¹ from gas produced in association with oil in 2022 were 36,041,641 (36.0 Mt) t CO₂e. OGEMR set emissions limits on regulated companies, restricting GHG emissions to a maximum of 7,625,930 (7.6 Mt) t CO₂e. The combined emissions² from venting and flaring at upstream oil facilities in 2022 was 3,861,148 (3.9 Mt) t CO₂e.

Company Level Emissions

In 2022 a total of 34 oil and gas companies had potential emissions greater than 50,000 t CO₂e and were therefore required to meet their 2022 company level emissions limit. All 34 companies had previously submitted an Emissions Reduction Plan for approval by the Ministry of Energy and Resources, which detailed their path to achieve emissions reduction targets out to 2025. The 34 companies that were subject to OGEMR represented 94 per cent of venting and flaring emissions from upstream oil facilities in 2022.

The company-level combined potential emissions, and combined emissions, for the 34 companies OGEMR applied to in 2022 can be seen in *Table 5: 2022 Company Level Annual Emissions*.

¹ Combined potential emissions means the maximum emissions that could occur if all the associated gas produced in Saskatchewan were vented to atmosphere.

² Combined emissions means what was actually emitted to atmosphere from venting and flaring activities.

Conclusion

Overall, Saskatchewan producers have taken early action to implement emissions reduction measures that exceed the current requirements of OGEMR. Although venting and flaring emissions in 2022 were below the 2025 target outlined in the Strategy, the Ministry of Energy and Resources and the oil and gas industry will need to continue to take steps to decrease the industry's carbon footprint as development continues. The 2022 results continue to demonstrate Saskatchewan's regulatory leadership and the innovation of the upstream oil and gas sector. Emission reductions have been achieved and will likely be exceeded in 2025.

Appendix A - Calculation Overview

Table 1: Production Class Emissions Factors

Production Class	Flared Gas Emissions Factor	Vented Gas Emissions Factor	*Combusted Gas Emissions Factor
	EF _f (tonnes CO ₂ e/10 ³ m ³)	EF _v (tonnes CO ₂ e/10 ³ m ³)	EF _f (tonnes CO ₂ e/10 ³ m ³)
Lloydminster Heavy and Non-Heavy	2.53	15.94	1.83
Kindersley Heavy	2.68	15.65	2.00
Kindersley Non-Heavy	2.91	14.45	2.30
Swift Current Heavy and Non-Heavy	2.71	14.21	2.11
Estevan Heavy and Non-Heavy	3.23	9.84	2.88

*Combusted Gas Emissions Factors are applied to volumes of gas that are combusted in an enclosed combustor or incinerator to recognize the increased combustion efficiency

Appendix B - 2022 Emissions Data

Table 2: Saskatchewan Annual Associated Gas Utilization

Year	Produced Associated Gas (10 ³ m ³)	Flared (%)	Vented (%)	Conserved/Fuel Use (%)
2015	3,649,873	21.0	16.2	62.8
2016	3,446,650	18.3	13.8	67.9
2017	3,631,742	17.0	14.7	68.3
2018	3,697,443	15.6	13.8	70.6
2019	3,659,504	14.7	12.7	72.6
2020	3,231,679	16.7	7.8	75.5
2021	2,923,658	19.3	6.5	74.2
2022	2,853,264	18.0	5.8	76.2

Table 3: 2022 Production Class Emissions from Flaring and Venting at Upstream Oil Facilities

Production Class	Flared Emissions (tonnes CO ₂ e)	Vented Emissions (tonnes CO ₂ e)	Total Emissions (tonnes CO ₂ e)
Lloydminster Heavy and Non-Heavy	234,612	949,710	1,184,322
Kindersley Heavy	59,796	65,013	124,809
Kindersley Non-Heavy	288,862	995,881	1,284,743
Swift Current Heavy and Non-Heavy	132,075	80,316	212,392
Estevan Heavy and Non-Heavy	776,083	278,799	1,054,882
Total	1,491,428	2,369,719	3,861,148

*Production class and provincial emissions totals include all flaring and venting emissions including companies not regulated by OGEMR

Table 4: Annual Provincial Emissions from Flaring and Venting at Upstream Oil Facilities

Year	Flared Emissions (tonnes CO ₂ e)	Vented Emissions (tonnes CO ₂ e)	Total Emissions (tonnes CO ₂ e)
2015	2,351,414	8,521,717	10,873,131
2016	1,908,692	6,781,460	8,690,151
2017	1,858,593	7,538,394	9,396,986
2018	1,763,475	7,330,210	9,093,685
2019	1,637,222	6,697,650	8,334,872
2020	1,602,603	3,641,254	5,243,858
2021	1,665,998	2,738,447	4,404,444
2022	1,491,428	2,369,719	3,861,148

*Annual emissions totals include all flaring and venting emissions including companies not regulated by OGEMR

Table 5: 2022 Company Level Annual Emissions

Regulated Company	Combined Emissions (tonnes CO ₂ e)	Potential Emissions (tonnes CO ₂ e)
2094495 Alberta Corp.	91	82,786
Aldon Oils Ltd.	31,656	122,469
Baytex Energy Ltd.	402,226	2,804,605
Burgess Creek Exploration Inc.	15,094	81,240
Canadian Natural Resources Limited	263,934	1,392,659
Cardinal Energy Ltd.	10,849	143,751
Cenovus Energy Inc.	537,171	4,396,877
Chronos Resources Ltd.	48,659	178,488
Crescent Point Energy Corp.	253,513	6,165,519
Fallon Energy Inc.	17,711	94,559
Gear Energy Ltd.	60,428	281,449
Griffon Partners Operation Corp.	3,055	601,007
Harvard Resources Inc.	22,570	69,708
Intrepid Petroleum Ltd.	12,134	58,108
IPC Canada Ltd.	49,732	275,716
ISH Energy Ltd.	37,830	963,891
Longhorn Oil & Gas Ltd.	1,237	119,213
Midale Petroleums Ltd.	21,673	240,503
Novus Energy Inc.	86,114	479,151
Prairie Thunder Resources Ltd.	23,902	132,257
Prospera Energy Inc.	3,887	137,451
Revitalize Energy Inc.	6,843	62,203
Ridgeback Resources Inc.	48,896	578,123
Rife Resources Ltd.	38,312	245,943
ROK Resources Inc.	29,004	141,097
Saturn Oil & Gas Inc.	270,302	996,919
Strathcona Resources Ltd.	48,531	1,116,923
Surge Energy Inc.	76,710	844,187
Teine Energy Ltd.	375,442	3,687,691
Triland Energy Inc.	12,138	56,885
Tundra Oil & Gas Limited	59,893	989,991
Vermilion Energy Inc.	147,282	2,163,530
West Lake Energy Corp.	26,321	187,161
Whitecap Resources Inc.	602,130	5,399,436