



Comparing Alberta and Federal Oil and Gas Methane Emissions Regulations

A FACT SHEET FOR POLICY-MAKERS

“Alberta’s rules will fail to meet the province’s 45% oil and gas methane reduction target.”

This fact sheet presents the results of a comprehensive review comparing Alberta’s methane regulations to those of the federal government. Alberta’s methane regulations were finalized in late 2018 in Directive 060 and Directive 017 by the Alberta Energy Regulator. Analysis from the Clean Air Task Force shows that Alberta’s rules will fail to meet the province’s 45% oil and gas methane reduction target¹. Alberta’s rules also fall short of the federal standard, achieving only a 32% reduction from 2012 baseline emissions compared to the federal rules which achieve a 43% reduction. Alberta’s rules are weaker than the federal rules in several key areas:

1. inadequate leak detection and repair (LDAR) requirements and venting limits that are higher than the federal limits;
2. no controls on existing pneumatic pumps;
3. inaccurate and outdated measurement and reporting requirements, especially for solution gas venting, which has shown to be significantly underestimated.

Alberta is also relying on achieving reductions through its carbon pricing system. However this system is not designed for methane and does not have the strong measurement and reporting requirements for methane emissions which are necessary to succeed.

Using five key areas of methane oil and gas regulation best practices, we compared Alberta’s rules to best practices. This comparison identifies improvement opportunities that could be implemented to align with such practices in order for Alberta to achieve the same or better emissions reductions as the federal regulation.

¹ CATF, 2018. A Comparative Assessment of Alberta’s Oil and Gas Methane Emissions Under the ECCC rules and AER’S Draft Directive 060. Available online at: <https://www.catf.us/resource/albertas-oil-gas-methane-emissions-eccc-aers/> Consulted March 22nd, 2019.

| Key Aspects | Best Practices | Federal Regulation | Provincial Regulation | How it Compares | Improvement Opportunity |
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| 1. Achieves ambitious methane emission reductions across multiple segments of the oil and gas sector and from all significant emission sources, new and existing. | 1.1. Mandatory, performance-based standards. | Federal regulation establishes mandatory performance-based standards. | Regulation establishes mandatory performance-based standards and relies on reductions from carbon pricing. | Needs minor improvement | Carbon pricing system not designed to adequately address methane. Performance based regulations are best practice until better measurement and reporting systems are in place. |
| | 1.2. Effectively targets largest emissions sources. | Federal regulation effectively targets largest emission sources. | Regulation fails to effectively reduce venting or leaks. | Needs major improvement | Rules and limits on pneumatics, venting, and LDAR are weaker than federal requirements. |
| | 1.3. Limited, and clearly circumscribed, exceptions. | Federal regulation establishes limited and clearly circumscribed exceptions maintaining strict limits for the largest emissions sources. | Regulations have two critical exceptions: a) 10% of pneumatic devices installed in a year can emit gas(Section 8.6.1) and b) the use of fleet averaged vent gas rate for the crude bitumen fleet (Section 8.4.2). | Needs minor improvement | Pneumatic exception should be issued on a case by case basis. The fleet averaged vent limit must be reduced significantly to be effective. |

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| 2. Reduce designed and intentional venting from pneumatics and compressors. | 2.1. Engineer and design new pneumatic devices and pumps to be zero or near zero emitting (e.g. use electricity or instrument air in lieu of natural gas as power source). | Federal regulation sets venting limits for new devices. (Section 37.1) No emissions are allowed from new pneumatic pumps (Section 39.1) with exceptions for infrequently used pumps. | Regulation requires 90% of new pneumatic devices to be non-emitting and sets limit for existing devices. No emissions are allowed for new pumps. | Needs minor improvement | Remove the 10% exception for pneumatic devices and require controls for existing pumps. |
| | 2.2. Retrofit existing pneumatic devices and pumps to be zero or near zero emitting (e.g. replace high-bleed pneumatic devices with low or zero-bleeds). | Federal regulation sets a venting limit for existing pneumatic devices (Section 37.1) and requires no emissions from existing pneumatic pumps with exceptions for infrequently used pumps (Section 39.1). | Regulation sets a venting limit for existing pneumatic devices but does not have any rules for existing pumps. | Needs minor improvement | Require existing pneumatic pumps to be low or non-emitting. |
| | 2.3. Reduce intentional venting from compressors. | Federal regulation establishes a venting limit for compressors that is ambitious and aims to reduce intentional venting (Section 18 and Section 50). | Regulation sets limits for venting from compressors (Section 8.6.2). | Follows best practices | |
| 3. Reduce venting and flaring from storage tanks and oil well-heads. | 3.1. Reduces venting of gas from tanks. | Federal regulation sets an annual venting limit for facility that is ambitious and aims to reduce venting of gas from major sources including tanks. | Section 8.5 establishes several venting limits for different facilities but those limits are not ambitious in comparison with best practices. | Needs major improvement | Establish a venting limit matching best practices such as in the federal rule. |
| | 3.2 Reduce venting of gas from oil wellheads. | Federal regulation sets an annual venting limit for facility that is ambitious and aims to reduce venting of gas from major sources including solution gas venting. | Regulation sets a fleet average venting limit for crude bitumen, which is the major source of solution gas venting, but it is not ambitious in comparison with best practices. | Needs major improvement | Set a venting limit for crude bitumen batteries that aligns with best practices such as in the the federal rule. Fleet averaging can provide operator with flexibility, but the limit must then be lower as a result. |
| | 3.3. Limit flaring of gas; only allow where capture is infeasible. | Federal regulation doesn't establish a requirement limiting flaring of gas. | Flaring is allowed. Section 1.3 includes a consideration to eliminate or reduce flaring when possible. Section 5.2. establishes a limit for disposed gas at gas processing plants. If an annual provincial limit is exceeded (Section 2.1) a stricter limit can apply. | Needs minor improvement | Establish an explicit requirement to limit flaring of gas; only allow where capture is infeasible. |
| | 3.4. Require use of high efficiency flares and combusters. | Federal regulation doesn't establish a requirement to use high efficiency flares but advises following provincial rules (Section 9). Such rules don't require the use of high efficiency flares. | Section 7 establishes performance requirements for flaring, but it doesn't establish a minimum for flare efficiency. | Needs major improvement | Require a 98% destruction removal efficiency for flares and combustion. |
| 4. Regular leak detection and repair (LDAR). | 4.1. Quarterly inspections of well sites, gas processing plants, compressor stations, tank batteries. | Federal regulation requires inspections three times per year for all but single well heads (Sections 30 (3); 52). | Regulation requires 3 times/ year inspections at some gas plants, compressor stations and controlled tanks once per year at other sites, and no inspections at wells. | Needs major improvement | Increasing the inspection frequency at all facilities except for single well-head sites to three times per year. |
| | 4.2. Comprehensive inspections that apply to all sources with the potential to leak, unintentionally vent or abnormally operate. | Federal regulation requires LDAR inspections on all sources including thief hatches and pneumatic devices. | Regulation requires LDAR inspections on all sources including thief hatches and pneumatic devices. | Follows best practices | |
| | 4.3. Include robust alternative compliance pathway that allows for the use of emerging technologies that are as effective in reducing emissions as allowable instruments and subject to public input and regulatory review. | Federal regulation establishes robust alternative compliance pathway (Sections; 29; 35; 50). | Regulation includes an Alternative Fugitive Emissions Management (Section 8.10.6). | Follows best practices | |
| 5. Record keeping, reporting and measurement. | 5.1 Include robust, detailed, site-specific record keeping provisions, demonstrating compliance with each of the mandatory methane reduction measures. | Federal regulation requires comprehensive site level record keeping by source type (Sections 6; 7; 10; 12; 19; 25; 27; 36; 38; 45; 48; 51; 53; 56). | Regulation requires site level records and calculations by source type but doesn't require records from individual venting sources. | Needs minor improvement | Require records from venting by detailed source category. |
| | 5.2. Require annual public reporting demonstrating compliance. | Federal regulation doesn't require annual public reporting demonstrating compliance. | Regulation requires reporting for venting and fugitives, but no comprehensive report and no commitment to making reports public. | Needs major improvement | Include comprehensive reporting and a requirement to make reports public. |
| | 5.3. Reliable measurement requirements. | Federal regulation establishes reliable measurement requirements (Section 15, 16 and 17). | Regulations set measurement requirements but have not addressed known flaws in estimation of solution gas venting. | Needs major improvement | Improve protocols for measurement of solution gas venting. |