Competing Methane Regulations: Alberta and Canada Release Methane Regulations in the Same Week

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One of the pillars of the Alberta Climate Leadership Plan (ACLP) is the introduction of a methane emission reduction plan. The Alberta Climate Leadership Panel set the goal of reducing methane emissions from oil and gas operations by 45% by 2025. On April 24, the Alberta government released its proposed regulatory approach to reducing methane emissions from the oil and gas industry. Later that week, on April 26, the federal government passed its regulations for oil and gas methane emissions. (See our 2017 report ***Methane Reduction under the Climate Change Leadership Plan*** which provides an overview of existing provincial methane regulations, as well as, regulatory approaches taken in the US and the UK. The report also provides a review of the federal regulations in their draft form.)

Draft Alberta Regulatory Approach

In Alberta, requirements relating to emissions from oil and gas activities are set out in a variety of directives and informational letters issued by the Alberta Energy Regulator (AER). These include technical requirements for measuring and reporting emissions associated with wells, pipelines and facilities. The most relevant is *Directive 60: Upstream Petroleum Industry Flaring, Incinerating, and Venting* (*Directive 60*) which currently does not impose prescriptive requirements for emissions reductions and does not include specific methane standards.

The AER has been working on its Climate Policy Assurance Program to develop a regulatory framework to reduce methane emissions from oil and gas operations. The AER has proposed its regulatory approach to address the measurement, monitoring, and reporting of methane emissions with the introduction of draft revisions to *Directive 17: Measurement Requirements for Oil and Gas Operations* (*Directive 17*) and to *Directive 60*.

The proposed changes do not amount to a significant shift from the current approach to the measurement, monitoring, and reporting of emissions in Alberta. Even with the revisions to *Directive 60*, the AER maintains a performance-based approach to emissions reductions. The AER states it expectation that “the upstream petroleum industry will pursue continuous improvement in reducing solution gas flaring, incineration, and venting” (page 11). Venting is not considered an acceptable alternative to flaring and, to the extent it occurs, must meet the

requirements set in Part 8 of *Directive 60* which sets vent gas limits and fugitive emissions management requirements (but lack the prescriptive nature of the new federal methane regulations).

Under the proposed amendments to *Directive 60*, there will be an overall vent gas limit for routine (i.e. part of normal operations) and non-routine venting. It should be noted that the AER recommends, but does not require, the elimination of all routine venting. The overall vent gas limit at a site is to be set at 15.0 103 m^3 of vent gas per month or 9.0 103 kg of methane per month (this is the total of all routine and non-routine vent gas).

Vent gas from pneumatic devices, compressor seals, and glycol dehydrators are excluded from this limit until January 1, 2023. Further, in Part 8.6 of *Directive 60,* there are some equipment-specific vent gas limits for pneumatic devices, compressor seals, and glycol dehydrators proposed:

1. Pneumatic Devices: For pneumatic devices installed after January 1, 2022, vent gas must be controlled. Any pneumatic devices installed before January 1, 2022 must be retrofitted with a low vent alternative.
2. Compressor Seals: Compressor seals must be tested annually. Effective January 1, 2023, there is an average vent rate requirement for reciprocating compressor seals (^{3}/hr/throw). With respect to centrifugal compressor seals installed after January 1, 2022 must limit vent gas rate to ^{3}/hr/throw. Those installed before January 1, 2022 must limit vent gas to ^{3} /hr/throw.
3. Glycol Dehydrators: Glycol dehydrators installed after January 1, 2022 must emit less than 68kg methane/day with a fleet average methane emissions rate from glycol dehydrators operating before January 1, 2022 being 136 kg methane/day/glycol dehydrator.

Aside from these equipment-specific limits, the overall vent gas limit on a site basis is what is applicable to methane emissions. While the AER will require preparation of a Methane Reduction Retrofit Compliance Plan (MRRCP), there are no prescriptive requirements to adopt certain technology designed to reduce and prevent leaks of methane. In addition to developing a MRRCP, operators must document a Fugitive Emissions Management Program (FEMP) designed to reduce fugitive emissions.

Under the proposed amendments to *Directive* 60 there will be some monitoring and reporting requirements. Depending on the facility or equipment type, an operator must conduct fugitive emissions surveys either once or 3 times a year. A survey must look at equipment components; tank-top equipment; surface casing vents and the area around the wellbore; equipment used to destroy vent gas; and equipment used to conserve vent gas (using the methodologies specified in *Directive 60*).

Where fugitive emissions surveys are not required, an annual fugitive emissions screening must be conducted by the operator at all well-sites. A screening can be done via:

- audio, visual, or olfactory (AVO) methods;
- soap solution;
- other methods or equipment that is capable of detecting fugitive emissions, such as unmanned aerial vehicles or truck mounted sensors; or
- fugitive emission survey methods and equipment.

If a survey or screening detects is required to repair leaks within 30 days (24 hours if are causing off-lease odours, result from a failed pilot or ignitor on a flare stack, or have the potential to cause safety issues).

In addition to operator surveys and screenings, the AER may conduct an emissions survey or screening. There is no indication in *Directive 60* as to the frequency of AER conducted emissions surveys or screenings. There are no additional enforcement mechanisms specific to methane emissions provided in *Directive 60* (so presumably typical AER enforcement mechanisms, such as warning and administrative sanctions will apply).

Quantification of methane emissions may be done via continuous metering, periodic testing, or estimates*Directive 17* sets out when continuous metering or periodic testing is required, along with acceptable methodologies. The approach to estimating methane emissions is to be set out in a forthcoming AER manual. An annual methane emissions report must be submitted to the AER by oil and gas operators.

New Federal Regulations

Similarly to the Alberta government, the federal government has committed to reduce methane emissions in the oil and gas sector by 40-45% below 2012 levels by 2025. This is being done via two sets of regulations under the *Canadian Environmental Protection Act* that address methane emissions from the upstream oil and gas industry, and from the petroleum and petrochemical sector.

The *Regulations Respecting Reduction in the Release of Methane and Certain Volatile Organic Compounds (Upstream Oil and Gas Sector)* were made law on April 26, 2018 and will come into force on January 1, 2020 (with some provisions coming into force on January 1, 2023). The *Regulations Respecting Reduction in the Release of Volatile Organic Compounds (Petroleum Sector)* which will apply to the petroleum and petrochemical sector are still in draft form. Both regulations set requirements for leak detection and repair (LDAR) programs, preventative equipment, and record-keeping and reporting activities.

The federal methane regulations tend to be more prescriptive than Alberta's performance-based regulatory approach. All oil and gas facilities subject to the regulations must ensure that, effective

January 1, 2020, both centrifugal and reciprocating compressors must either conserve or destroy methane, or meet applicable vent limits. Vent limits vary depending on installation date, the type of compressor, and its rated brake power.

For oil and gas facilities handling significant volumes (at least 60,000 m^3/year), additional requirements apply. Starting in 2020, upstream oil and gas facilities must implement a LDAR program with three comprehensive inspections per year followed by necessary corrective actions. In addition, facilities must limit their vented volumes of methane to 15,000 m^3 annually. With respect to pneumatic devices at these oil and gas facilities, as of January 1, 2023:

- facilities using natural-gas-powered pneumatic controllers must ensure that on-going emissions remain below 0.17m^3 per hour; and
- pneumatic pumps are prohibited from emitting methane where the volume of liquid being pumped exceeds 20 litres per day.

The federal methane regulations also set out comprehensive requirements for record-keeping and reporting. With implementation of these regulatory requirements, oil and gas operators will be required to inspect, repair, and retrofit (as necessary) much of their equipment to ensure methane emissions are below legislated limits.

Federal-Provincial Equivalency

Because the federal government has created regulatory requirements under its *Canadian Environmental Protection Act*, the question of federal-provincial equivalency arises. Under section 10 of that Act, an equivalency agreement with a province is allowed where that province has equivalent regulations meaning that the federal regulations are inoperative in that province.

In other words, Alberta must be able to demonstrate that its methane regulations set out in the AER's directives are equivalent to the federal methane regulations. If equivalency is not demonstrated, then the federal methane regulations will apply in Alberta. So an obvious question is: are Alberta regulations equivalent to the federal methane regulations?

There are some clear differences:

- While Alberta would require some surveys and screenings, this approach is much less comprehensive than the LDAR requirements set out in the federal methane regulations. The ELC would like to see comprehensive, legislated LDAR requirements in Alberta's regulations.
- The Alberta regulations take a much less prescriptive approach to various sources of methane emissions than the federal regulations. From the point of view of enforcement,

prescriptive requirements are more effectively monitored for compliance. That is, it is easier to check that a particular piece of equipment meets a prescribed flow rate than checking to see if a site-specific limit is being achieved (recognizing that *Directive 60* does set some equipment-specific vent limits).

Ultimately, regardless of whether or not Alberta's methane regulations are judged to be lacking equivalency, focus on the end goal should not be lost. Methane is a powerful greenhouse gas which needs to be properly monitored and its emission significantly reduced. The key is that effective methane regulations be in place to achieve that goal.

While *Directive 60* addresses emissions from active facilities, another key factor in reducing methane emissions from oil and gas activities is regulation of leaks from suspended, abandoned and orphan facilities (a.k.a. legacy sites). These terms refer to facilities that are inactive but have not yet been reclaimed as required by the *Environmental Protection and Enhancement Act*. While there are established requirements for the suspension and abandonment, current requirements for leak monitoring are very limited.

ABOUT THE ENVIRONMENTAL LAW CENTRE:

The Environmental Law Centre (ELC) has been seeking strong and effective environmental laws since it was founded in 1982. The ELC is dedicated to providing credible, comprehensive and objective legal information regarding natural resources, energy and environmental law, policy and regulation in Alberta. The ELC's mission is to educate and champion for strong laws and rights so all Albertans can enjoy clean water, clean air and a healthy environment. Our vision is a society where laws secure an environment that sustains current and future generations.