



## Joint Comments on Alberta Energy Regulator's Draft Requirements for Reducing Methane Emissions - AER Draft Directives 060 and 017

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Clean Air Task Force, Environmental Defence Canada, Environmental Defense Fund, David Suzuki Foundation and the Pembina Institute are jointly submitting comments on Alberta's draft oil and gas methane directives 060 and 017 (draft directives).

**Overall, our analysis reveals that the draft directives are not credible.** Our comments below provide more detail how the draft directives lack credibility.

If these weak draft directives move forward without improvements, our analysis shows that:

1. Alberta will not meet its 45% oil and gas methane reduction target, which was a key part of its Climate Leadership Plan.
2. Real reductions of methane could be closer to 20% than the 45% goal, once peer-reviewed measurements are taken into account. Alberta's draft regulations are not even half as strong as they should be.
3. The lack of robust measurement, monitoring, and reporting allows industry to take credit for actions that regulators cannot confirm, undermining the credibility of the rules.
4. Key provisions, especially the leak detection and repair provisions and the venting limits, are much weaker in the draft directive than in the Environment and Climate Change Canada (ECCC) rule. Alberta's approach does not meet the equivalent environmental outcome standard under the *Canadian Environmental Protection Act*.
5. If the federal government allows these weak draft directives to move forward, the federal methane reduction goal will not be met.

Methane is a powerful greenhouse gas that is 84 times more potent than carbon dioxide over the first twenty years that it is released into the atmosphere. Scientists agree that reducing emissions of both methane and carbon dioxide is necessary to protect the climate. The oil and gas sector is

Alberta's largest methane source, accounting for 70% of provincial methane emissions. Nearly half (48%) of these reported emissions come from venting while another 46% comes from leaks. Oil and gas activities are also significant emitters of volatile organic compounds (VOCs).

Multiple [peer-reviewed studies](#) show that oil and gas methane emissions are significantly higher in Alberta than what industry is reporting. Higher emissions from oil and gas do not just impact the climate; they also affect air quality. VOCs from oil and gas operations combine with oxides of nitrogen in the presence of sunshine to form ground-level ozone. Exposure to ozone is linked to a suite of harmful health impacts, including a greater risk for developing asthma, inflammation of the lungs, and premature mortality. Children, those who recreate or work outside, and the elderly are most at risk.

Because of the significant climate and air quality impact from oil and gas methane, regulatory action is critical. Yet, not only do Alberta's weak draft directives fail to adequately protect public health and the environment, the Government of Alberta is providing hundreds of millions of dollars to industry to implement these directives.

Alberta can and must do more.

## **Recommendations**

We suggest five improvements to the draft directives and necessary provisions to allow Alberta to demonstrate equivalency with federal rules.

1. Stop giving industry a pass to continue venting emissions.
2. Require industry to regularly inspect for and fix their leaks and include pneumatic controllers in fugitive emissions surveys.
3. Remove the exemption from venting restrictions for new pneumatic controllers and require reductions from existing pneumatic pumps.
4. Add provisions to Directive 060 and to the Alberta Oil and Gas Conservation Act necessary for Alberta to be eligible to make an equivalency demonstration under the Canadian Environmental Protection Act.
5. Improve the reporting so that the public can tell if a site really is in compliance or not.

The analysis and specifics of these recommendations are outlined below.

### **1. Stop giving industry a pass to continue venting emissions**

The vent gas limits for facilities proposed by AER are far weaker and less protective than the venting limits in the ECCC rule. This is despite the fact that Alberta's vent gas limits would apply to sources not covered by ECCC's rule (i.e., pneumatic devices and facilities that produce and receive gas under ECCC's potential to emit (PTE) threshold).

Draft Directive 060 has far less effective protective limits than the ECCC rule. The overall site limit set by Section 8.3 is 15,000 m<sup>3</sup> per month, **twelve times higher than the ECCC standard**. This would be the only applicable venting limit for almost 140,000 existing wells in Alberta –

which for many years will be the vast majority of well production facilities in Alberta subject to Directive 060. The significantly weaker vent limit in AER's rules overwhelms any potential benefits from the nominally more expansive scope of AER's venting provisions. This approach is inconsistent with how all other jurisdictions regulate oil and gas methane venting.

Not only is Alberta's limit weaker, but our analysis and measurements show that venting in Alberta is significantly higher than what is reported, especially from CHOPS wells. The weak draft directives are not designed to capture these higher emissions because the limit is so high, and the reporting provisions are too weak (see below). In fact, analysis shows that the fleet average limit of 3,000 m<sup>3</sup> per month proposed by Alberta for crude bitumen venting would actually allow emissions from CHOPS wells (far and away Alberta's largest source of methane emissions) to grow, *because the proposed fleet average venting limit is higher than the current (unregulated) level of venting per CHOPS facility*. The venting limit with a fleet average is not just business-as-usual; it is almost 30% dirtier than business-as-usual.

Industry maintains that reported venting emissions have gone down in Alberta. The multiple peer reviewed studies show that actual emissions are significantly higher than what is reported, by as much as 25-50%. Analysis of reported venting reductions show that while reported venting has gone down, reported increases of "fuel use" have gone up by an even larger amount. More than 80% of Alberta's reported venting reduction is from CHOPS wells, and the majority of that reduction is from one company. These reported reductions comprise almost half (47%) of Alberta's reported venting reductions. Overall, while reported venting is down at oil and heavy oil sites in Alberta, the reported increase in fuel use at these same sites is much larger. If many of these emissions are still vented (but not reported as vented), it would largely explain the discrepancy between reported and measured emissions.

For non-CHOPS sites, the 15,000 m<sup>3</sup> per month venting limit would allow existing sites to continue venting vast amounts of gas from tanks and other equipment with little constraint. In addition to allowing operators to vent twelve times more than the ECCC rule, the Draft Directive would allow dozens of times more emissions from tanks than allowed in many jurisdictions.

An approach to venting that allows those emissions to increase and is more lax than most other jurisdictions is simply not credible.

## **2. Require industry to regularly look for and fix their leaks**

As data from Alberta as well as numerous studies have demonstrated, leaks are a large source of harmful methane emissions at oil and gas facilities. The scientific consensus, based on numerous studies involving direct measurement of oil and gas leaks, describes the heterogeneous, unpredictable, and ever-shifting nature of equipment leaks. This strongly demonstrates the need for frequent inspections to identify and repair leaking components and equipment.

This scientific data has been the basis upon which most jurisdictions require industry to find and fix their leaks on a regular basis. Alberta's leak detection and repair rules are far less regular than what other jurisdictions require.

AER's draft Directive fails to achieve equivalent reductions in leaks to ECCC's rules. We compared reductions anticipated from application of ECCC's rules to fugitive emissions in Alberta with those expected from application of AER's draft Directive. Our analysis indicates that ECCC's rules will reduce leaks by 61% whereas application of AER's draft measures will result in a mere 36% reduction.

In reality, this discrepancy is likely to be much bigger because studies show the existence of super-emitters in Alberta. Currently, the best way to reduce emissions from super-emitters is to regularly look for them with OGI cameras and fix them. Under the draft directives many sites in Alberta will not require that at all, instead relying on audio-visual-olfactory checks to find leaks of an invisible gas, even though the science shows these sites are potentially large sources.

A major flaw in AER's inspection requirement is that it only requires annual inspections of most batteries, as well as certain compressor stations and gas processing plants. This is far less frequent than necessary to achieve meaningful reductions in leaks, and far weaker than requirements adopted elsewhere. Increasing the inspection frequency to match ECCC's (triannually) would fix this flaw. We estimate that a triannual inspection requirement for all sources covered by AER's fugitive emissions survey requirement (i.e., compressor stations, gas processing plants, controlled tanks, custom treating facilities and injection/disposal facilities) would result in a 57% reduction in leaks, which would nudge AER closer to the 61% reduction we estimate will be achieved by application of ECCC' LDAR rules.

The second flaw in AER's FES requirement is that it wholly exempts well sites, which peer-reviewed [studies](#) show are a major source of fugitive emissions in Alberta. Instead, AER proposes that operators conduct annual screenings. Operators may conduct annual screenings with a wide range of approaches, including sensory-based audio-visual-olfactory inspections and the use of soapy water. Fugitive Emissions Surveys, by contrast, must be conducted using gas detection instruments, specifically organic vapour analyzers that comply with EPA's Method 21 or gas imaging infrared cameras, or other methods or equipment that are equally capable of detecting fugitive emissions, if approved by AER. By allowing operators to conduct production site inspections only once per year, AER is issuing regulations that aren't credible; allowing operators to conduct this screening with unreliable methods such as AVO weakens this already watered-down provision even more.

Infrared cameras and M21 are the most reliable forms of leak detection. Infrared cameras and M21 have been proven to be effective in detecting leaks. The same cannot be said for sensory-based methods such as AVO. We urge AER to require at least triannual instrument-based inspections for well sites.

It is critical that LDAR inspections include not just components like valves and connectors that are designed to be sealed, and therefore never emit, but also equipment that is designed to emit gas under certain circumstances. Since the latter type of equipment can emit excessively when not operated properly or due to equipment failure, it must be regularly inspected and excess emissions addressed. It is unclear whether Directive 060 requires pneumatic controllers to be

included in LDAR inspections. AER should clarify the proposed regulation to ensure that operators inspect all equipment that can vent unintentionally due to improper operation, design, maintenance or equipment failure. This is critical since AER estimates that almost 50% of methane emissions in Alberta are from pneumatic devices. Excluding pneumatics from LDAR would mean that there would be no way to verify emissions reductions for half of all the methane emissions in Alberta.

Pneumatic controllers often emit far more than they are designed to emit. Operators should inspect all snap-acting controllers during each inspection to ensure that they are not venting significantly between inspections. Emissions from non-actuating controllers should also be measured on a regular basis. Finally, operators should ensure that there are no emissions (i.e., leaks) from other points on pneumatic equipment, aside from the vent port.

### **3. Remove the exemption from venting restrictions for new pneumatic controllers and require reductions from existing pneumatic pumps**

AER's rules should be strengthened to achieve additional reductions in two key ways.

The first is to remove the exemption that allows 10% of new controllers installed in a calendar year to vent uncontrolled. Alberta's rules would achieve equivalent reductions to ECCC's if Alberta were to remove the exception for new devices. We modeled reductions from AER's draft Directive, assuming that all new devices were controlled. The model results show that this scenario, AER's current draft would achieve a 67% reduction in pneumatics emissions in 2025. This is the same percent reduction we estimate ECCC's rules will achieve.

Secondly, control requirements should be extended to existing pneumatic pumps. AER's suggested controls for pneumatic pumps fail to achieve equivalent reductions to ECCC's. AER proposes no controls for existing pumps. This is in contrast to ECCC's rule which requires controls for new and existing pumps.

### **4. Add provisions to Directive 060 and to the Alberta Oil and Gas Conservation Act necessary for Alberta to be eligible to make an equivalency demonstration under the Canadian Environmental Protection Act**

Alberta's Oil and Gas Conservation Act fails to contain provisions required by CEPA in order to demonstrate equivalency. Specifically, the penalties for non-compliance under the Alberta Oil and Gas Conservation Act are significantly lower than those under the federal Canadian Environmental Protection Act, and unlike the federal Act, the Oil and Gas Conservation Act does not contain any minimum penalties. Therefore, the provincial penalty regime must be adjusted in order to be comparable to the federal regulation.

In order to find equivalency, s. 10(3) of the Canadian Environmental Protection Act requires that the provincial regulatory regime contain provisions similar to sections 17 – 20 of the Canadian Environmental Protection Act with respect to the right of any person to request the investigation

of an offence. The Draft Directives do not contain any similar provision. This must be addressed in the final Directives, regulations or the Oil and Gas Conservation Act.

## **5. Improve reporting so that the public can tell if a site really is in compliance or not.**

The AER's outcome-based approach to regulating methane is unique in comparison to how other jurisdictions in the world manage methane emission. This regulatory approach could be world leading if the AER establishes an equally world-leading measurement, monitoring, and reporting (MMR) system — one with higher standards than anywhere else. Establishing this higher standard of MMR is critical to ensure an outcomes-based approach and to know that reductions are actually occurring as mandated. The AER must therefore establish a quantitative and verifiable MMR system with the following key characteristics:

- consistent with taxation level reporting and accuracy
- assessed on its accuracy, simplicity in reporting and assurance of compliance
- includes public reporting of results that is transparent, easily accessible and at no cost
- involves continuous improvement to keep the MMR system world leading and at forefront of MMR systems globally.

The draft MMR requirements in Directives 17 and 60 require considerable work to meet these desired characteristics. We therefore recommend the following major improvements to the MMR system proposed by AER:

- ensure that pneumatics are specifically included in LDAR surveys
- fix the gas-to-oil ratio test standards to improve accuracy, quality, and eliminate the possibility of test manipulation by operators
- improve the reporting structure by adding more detailed source categories for venting emissions, and requiring records of the function and bleed rate of pneumatic devices
- commit to developing technology to quantify methane
- adjust the economic calculations for vent gas conservation at heavy oil facilities to eliminate the delay period that reduces the economics of conservation