

# Air Policy Issues and Knowledge Gaps

Public Policy Issue	Knowledge Gap(s)
<p><b>Methane Emissions</b></p> <p>Federal and provincial regulations require the oil and gas sector to reduce methane emissions by 45% by 2025 and the new proposed federal policy is to continue that reduction to 75% by 2030. Industry is focused on meeting the reductions targets and timing in the most cost-effective way possible.</p> <p>Advancements in methane detection, quantification, and controls technologies, to allow the sector to implement solutions in a timely manner.</p>	<ul style="list-style-type: none"> <li>• <b>Optimized methane monitoring and verification:</b> There have been significant advancements in technologies to detect and quantify methane releases, including new OGI cameras, fixed and mobile ground sensors, crewed and uncrewed aerial sensors, and satellite sensors. The gap to close is determining a suite of technologies will provide a high probability of detecting a methane flux in real-world conditions cost-effectively.</li> <li>• <b>Improvements to the Methane Emissions Inventory, accuracy and precision:</b> Having an accurate inventory of methane emissions by source will ensure industry and regulators are focused on the areas with the greatest reduction potential. Projects could target ongoing disagreements with top-down vs bottom-up measurements and test whether poorly understood sources, such as emissions from inactive facilities, meaningfully contribute to the emissions inventory.             <ul style="list-style-type: none"> <li>- Improved Engineering estimates for baseline accuracy. Standardized equipment emissions profiles for major pieces of equipment.</li> <li>- Reconciliation of top-down and bottom-up data and analytical frameworks</li> </ul> </li> <li>• <b>Understanding Routine and non-Routine Venting from Tanks:</b> Efforts to establish an accurate methane emission inventory has identified tank venting as a contributor to methane emissions at oil production and processing facilities. In addition, anecdotal information suggests that large, abnormal, episodic events can be a significant contributor to a facility's emissions, but because of their nature, are difficult to detect and quantify.</li> <li>• <b>Evaluating Methane Control and Measurement Technologies:</b> It is important to evaluate near commercial technologies with different operators, in different operating conditions and different facility types, and document the capabilities and limitations of each technology in a transparent manner, so that all operators can determine the applicability of each technology in their unique asset mix.</li> <li>• <b>Incomplete Combustion of Methane – Methane Slip:</b> Industry is observing methane slippage various technologies. How can methane slip be minimized using technology or process solutions while still meeting other regulatory emission requirements?             <ul style="list-style-type: none"> <li>- Reciprocating Engines                 <ul style="list-style-type: none"> <li>- Boilers</li> <li>- Heaters</li> </ul> </li> <li>- Flares (lit and unlit)                 <ul style="list-style-type: none"> <li>- VRUs</li> </ul> </li> </ul> </li> <li>• <b>Virtual Elimination of emissions:</b> Are there options to consider for the virtual elimination of methane emissions on oil and gas sites? What is the role of planning frameworks such as the Peace River Directive to be applied to other areas? What sort of infrastructure solutions would be needed to enable this aspirational goal? What barriers and opportunities exist to deliver on this aspirational goal.</li> </ul>

<p><b>Air Quality Indicators</b></p> <p>Ambient air quality objectives are continuously being reviewed and updated, and industry is being required to meet more stringent targets. To determine the impact of such policy changes, it is important for industry to understand the contribution that upstream oil and gas facilities have to the substances being reviewed.</p>	<ul style="list-style-type: none"> <li>• An accurate understanding of the potential release of substances subject to new or revised air quality objectives from the UOG industry is required. Additionally, if the substance is being released in quantities that may be subject to regulatory requirements, reasonable and cost-effective emission control options would need to be developed.</li> </ul>
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<p><b>Air Emission Inventories</b></p> <p>Air emissions inventories are becoming an increasingly important method of monitoring and reporting on industry emissions, for the public, governments, and individual companies. Further, governments are using these emissions inventories to negotiate international treaties, establish air emissions policy measures and targets, and develop emission forecasts.</p> <p>As such, it is important that upstream oil and gas operators report facility emissions using standardized methodologies and realistic emission factors with low uncertainty, and also have access to a wide variety of effective emissions monitoring technologies.</p> <p>Inaccurate and/or overly conservative emissions factors can result in an inaccurate portrayal of the emissions profile of the oil and gas industry. This in turn can lead to unnecessary or ineffective regulatory requirements, and additional public scrutiny.</p>	<ul style="list-style-type: none"> <li>• The development of technically defensible and effective emission management policies and regulations is reliant upon good quality emissions data in order to both identify potential opportunities for emission reductions and to determine industry performance and emissions reductions in future years. There are opportunities to address this knowledge gap by investigating potential improvements to the certainty of quantification (emission factors and measurement technologies and methodologies), monitoring, data management, and reporting of emissions from the upstream oil and gas sector.</li> <li>• Collaboration and coordination as we develop a tool to better understand the Alberta NO<sub>x</sub> inventory/baseline (using recently collected MSAPR test data), and development of a model which will reveal practical, strategic, and cost-effective options for our sector to achieve AAQOs/CAAQS objectives. Identify other emerging issues among other air contaminants. <ul style="list-style-type: none"> <li>• CO<sub>2</sub> sensors. Standards and accuracy</li> <li>• VOC inventories and mitigation</li> </ul> </li> <li>• Tools needed for ambient testing on a permanent basis</li> </ul>
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<p><b>Data Analysis</b></p> <p>There is an ever-growing amount of data generated by oil and gas companies and various repositories collecting data. It would be useful to analyze the data into meaningful insights that will help industry address ongoing challenges.</p>	<ul style="list-style-type: none"><li>• Data analysis aimed at informing and helping industry to make better, smarter, cost-effective decisions.</li></ul>
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