Intelligence MEMOS

From: Wes Funk, Stephen Lougheed, Tracey McCrimmon and Gerard Protti

To: Environment Minister Steven Guilbeault and Natural Resources Minister Jonathan Wilkinson

Date: November 1, 2021

Re: MEASUREMENT AND REGULATION OF METHANE EMISSIONS

As you represent Canada at COP 26 in Glasgow over the next two weeks, there is a significant opportunity to reinforce Canada's support for the Global Methane Pledge. The initiative, to be launched at the conference, aims to reduce global methane emissions by 30 percent below 2020 levels by 2030.

Canada has an ambitious goal: reduce oil and gas methane emissions by at least 75 percent below 2012 levels by 2030.

Beyond the scale of that ambition, methane measurement and regulation is difficult.

Current practices involve facility-specific and even component-specific analysis. This typically involves the use of optical gas imaging (OGI) cameras to identify leak sources, which is time-consuming and expensive for operators and regulators.

Federal and provincial methane regulations require producers and pipeline operators to identify separate component, equipment and facility sources that need monitoring via leak detection and repair or measurements alone. Actions to reduce emissions are documented and submitted to regulators. And that data is gradually refining estimates and "rules of thumb" that government and industry analysts have used to measure methane emissions.

New technologies can help, and the detection and measurement landscape is changing rapidly.

An Alberta pilot project is testing ground and air-based measurements and the results are encouraging both technically and economically.

The project is funded by the Government of Alberta and includes dozens of producers under the auspices of the Sundre Petroleum Operators Group (SPOG) and Carbon Management Canada (CMC). It involves truck and airplane mounted analysis of methane emissions over a 2,200 square kilometre region of central Alberta southwest of Red Deer. About 500 oil and gas facilities have been surveyed on a regular basis and the significant methane emission sources are cross-checked using the traditional optical gas imaging cameras. Results indicate strong, positive correlations with OGI findings with the potential to yield greater time and resource efficiencies.

What does this mean?

These new approaches offer the ability to enhance the understanding of methane sources – origin, scale and fate – while reducing emissions and the costs associated with their identification and management. The Sundre collaborative model between producers, landowners and regulators leverages economies of scale to manage emissions on a regional basis as opposed to site specific approaches. While the SPOG project is exclusively focused on oil and gas emissions, overflights are identifying and measuring methane emissions from other sources such as feedlots.

This project has attracted attention.

"New technologies are being developed very quickly that promise reduced costs and much more rapid surveys, such as airplane-based detection technologies. . . we can look to Alberta as an example of a regulatory process that is open to innovation and trials of advanced technologies," says Adam Brandt, an emissions expert and professor at Stanford University.

Alberta is expanding the tests to other producing areas in the province. Each producing area is unique and the robustness of the approach and the technologies will only be proved by empirical field data. The $17.6 million Alberta Methane Emissions Program, promises to provide new leak detection technologies with risk free capital and, more importantly, the opportunity to be deployed and tested in the field.

Many methane reductions in the oil and gas sector can be achieved at low or negative cost as fugitive and vented emissions are captured and sold into the market. The potential in this space is for Canada to take a further leadership role in the development and testing of these new technologies.

Canada needs to highlight its leadership in these areas in Glasgow. Further, we recommend that you issue a call to action and funding in concert with other provinces to test these technologies in not only Canadian oil and gas operations but also in other methane producing sectors in industry and agriculture including municipal landfills across the country. Only then will federal and provincial governments have the data required to develop informed policy and regulatory approaches that are efficient and transparent for all Canadians.

Wes Funk is Founder of DXD Consulting, Stephen Lougheed is CEO of CMC, Tracey McCrimmon is Executive Director of SPOG and Gerard Protti is a Fellow of the C.D. Howe Institute.

To send a comment or leave feedback, email us at blog@cdhowe.org.