Methane is an air-quality problem, so treat it like one
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With smoke-filled skies blanketing communities from coast to coast, air quality is top of mind for many Canadians. The oil and gas industry's role in creating wildfire conditions looms large. It's important to recognize that oil and gas activity affects air quality and human health in more ways than one.

Methane — a powerful greenhouse gas that "hits the climate hard and fast" by warming the atmosphere 84 times as much as carbon dioxide on a 20-year timescale — is starting to be widely recognized as both a serious contributor to climate change and a 'low-hanging' opportunity to reduce greenhouse gas emissions economically.

But methane is more than a climate problem. It is an air quality and health problem, too. While methane does not directly compromise air quality or harm health, it's closely associated with toxic pollutants that do. Some are co-emitted with methane, some result from its mitigation, and some are produced by its presence in the atmosphere.

Action on methane therefore has several dimensions of urgency. It is needed not only to help prevent the worst potential impacts of climate change but also to prevent associated contamination of the breathable atmosphere and harm to health.

A draft of the federal government's new methane regulations is expected soon. Federal regulations — while critical — should be just one part of a multi-pronged approach to a cross-cutting problem. We should complement federal, climate-oriented methane regulations with community-driven action that approaches methane as an air quality and health issue.

Methane, air quality, and health

When methane is vented or leaked during oil and gas production, transportation, and storage, volatile organic compounds (VOCs) and hydrogen sulphide come along for the ride. When methane is flared or combusted, black carbon (a key component of fine particulate matter), nitrogen oxides, and more VOCs result. Methane's presence in the atmosphere also leads to the formation of ozone (one of the main constituents of smog). And its warming effect causes more frequent wildfires, which means more particulate matter in the air.

Each ingredient in that toxic cocktail — VOCs, hydrogen sulphide, black carbon and fine particulate matter, nitrogen oxides, and ground-level ozone — is associated with severe health problems, such as preterm birth, birth defects, cancer, cardiovascular disease, nervous disorders, severe respiratory problems, diminished mental health, and

increased mortality. Ground-level ozone alone causes one million premature deaths per year, and methane is responsible for half of those.

Plenty of international studies have shown that communities situated near oil and gas infrastructure have worse air quality and worse health outcomes (not to mention billions of dollars in resulting annual health care costs). Research in the Canadian context is scarcer, but more is on the way. Researchers at St. Francis Xavier University (StFX) are conducting a project that examines air quality and health outcomes in communities close to active wells in Western Canada.

Preliminary results indicate that some municipalities in regions such as Red Deer, Grande Prairie, and Lloydminster, AB (among others) may have more exposure to harmful pollutants than other Albertan communities. This suggests that members of those communities could suffer comparatively high rates of disease. An examination of health data will soon reveal whether that's true.

More action needed on methane

While the federal government has set significant emissions reductions targets and is about to release strengthened methane regulations following a much-improved proposed regulatory framework, we can't be complacent.

Canada's track record when it comes to meeting its climate commitments leaves a lot to be desired. No funds were earmarked in the 2023 federal budget for a promised Centre for Excellence on methane detection and elimination that could help improve Canada's national emissions inventory, which consistently underrepresents actual emissions. At the same time, inadequate industry compliance and ineffectual energy regulators undermine regulatory efficacy.

Existing and proposed federal policy may be strong in principle but too often falls short in practice. More methane action and awareness is needed to protect Canadians from harmful associated air pollutants.

Improving air quality

Canada doesn't have strong air quality protections. Unlike the United States, Europe, and Australia, it has no legally binding ambient air quality standards. Rather, Canada's Ambient Air Quality Standards are considered objectives.

The provinces and territories set their own additional objectives and standards, and since they have jurisdiction over resource management and emissions from fixed sources, it falls to them to address the environmental impacts of industry. However, when it comes to protecting local environments and human health from harmful industrial activity, the track record of the provinces is disheartening.

Some change has resulted from action taken at the community level, where the environmental and health impacts associated with methane are felt. While the burden shouldn't fall on communities to advocate for their own wellbeing, community action on air quality can work, and there's proof in Alberta.

Starting in 2008, increased heavy oil and bitumen operations in the Peace River area of Alberta drove up emissions of methane and, correspondingly, hydrogen sulphide — also known as sour gas. Sour gas smells strongly of rotten eggs. Residents of the area reported experiencing a host of health problems, including trouble breathing. When enough people complained to the Alberta Energy Regulator, it enacted regulation designed to curb the noxious emissions. Sour gas and methane emissions fell dramatically.

Community concerns — especially those of Indigenous and other racialized communities — are too often ignored. But the story of Peace River shows that, at least sometimes, if communities press hard enough on air quality, energy regulators just might act.

What communities can do

Community action to address methane and associated air pollutants can take several forms:

1. **Ask** municipal officials about local policies and measures to control methane and associated pollutants from any source.
2. **Gather** relevant data about the air quality in your community. Consult the National Air Pollution Surveillance Program (NAPS) and regional air zone reports, request local air quality monitoring, partner with academic researchers and Indigenous communities, which continue to experience severe and disproportionate harms from extractive industry.
3. **Join** the local airshed association and take advantage of the opportunity to share information, convene stakeholders, and organize community action.
4. **Advocate**, loudly and persistently. Armed with the knowledge of how oil and gas activities affect air quality and health, citizens can direct concerns and complaints to provincial energy regulators. Concerned citizens should also comment on the federal government's draft regulatory framework when it is published in the Canada Gazette. It is essential to preserve its proposed stringency in the face of intense industry lobbying and weak provincial equivalency agreements.

Communities can be powerful advocates for change. Community-centred action that approaches methane as an air quality and health issue can spur provincial and federal governments, as well as energy regulators, to follow through on methane emissions, ensure climate targets are met, and help us all to breathe a bit easier.