JANUARY 2020

CAPE
Canadian Association of Physicians for the Environment
Association Canadienne des Médecins pour l'Environnement
ACME

SUMMARY

This is a summary of CAPE's new report, *Fractures in the Bridge: Unconventional (Fracked) Natural Gas, Climate Change and Human Health*, which can be found at **cape.ca/resources**

Fractures in the Bridge

UNCONVENTIONAL (FRACKED) NATURAL GAS, CLIMATE CHANGE AND HUMAN HEALTH

Hydraulic fracturing (FRACKING) is a dangerous, toxic, and environmentally damaging process used to extract natural gas from reserves which are difficult to access by conventional means.

It involves the use of long, deep wells combined with horizontal drilling and the injection of water, sand, and often toxic chemicals under high pressure; this shatters the rock to release the natural gas.

Canada is the world's fourth largest producer of natural gas. In 2018, more than two thirds of that natural gas was "fracked gas" and most of it came from Northeastern BC.

WATER AND AIR QUALITY CONCERNS

Over 1,000 different chemicals have been used in fracking fluids. These chemicals vary in toxicity with many lacking basic information about their toxic effects. Some of these chemicals are known or suspected to cause cancer, negatively affect reproduction or the development of children, or disrupt hormones.

Air pollutants can be emitted from several sources at a fracking well site: from gas leaks at different points in the process; and from fracking fluids, the flaring of natural gas, and diesel equipment used at these sites. Natural gas operations emit air pollutants that give rise to smog, and can emit toxics such as radon, benzene, polyaromatic hydrocarbons (PAHs), and heavy metals.

There have been instances in which contamination of surface and ground water could clearly be linked to hydraulic fracturing activity.

Fracking is also a water-intensive process that can put incredible pressure on local water supplies. Since 2010, water use for fracking in the US has increased three-fold to an average of 12 million US gallons per well in 2018. Local water supplies can also become contaminated during the construction of wells or from a failure in well equipment, particularly when wells have been abandoned.

EARTHQUAKES AND SAFETY

There have been many instances of earthquakes caused by fracking in Canada. While many have been too weak to be felt, stronger events have occurred. For example, an event of 4.6 on the Richter scale in 2015 in North Montney, BC, was attributed to fracking.

Work in the oil and gas industry can be dangerous. In the United States, the risk of death in this sector is seven times the average risk for industry as a whole. Health and safety risks include vehicle collisions, explosions, fires, falls, and exposure to a wide range of chemicals.

REPRODUCTIVE EFFECTS

Studies of populations living near fracking operations for oil and natural gas in the US have identified more than 30 different negative health outcomes.

A 2019 review of health studies directed at fracking for natural gas found the strongest evidence for: adverse impacts on pregnancy; birth outcomes such as high-risk pregnancy, preterm births and possibly low birth weight; and asthma exacerbations.

A 2016 review concluded that there is moderate evidence for an increased risk of preterm birth, miscarriage, birth defects, decreased semen quality, and prostate cancer from occupational or community exposure to oil and gas activities.

A 2016 review of health studies for all oil and gas development concluded that there is "moderate evidence" for an increased risk of preterm births, miscarriages, birth defects, decreased semen quality, and increased incidence of prostate cancer from occupational or community exposures.

CHILDHOOD CANCER

A handful of studies have looked at the impacts of fracking on cancer incidence. While the results are mixed, there is evidence that fracking may increase the risk of acute lymphocytic leukemia (ALL) among children whose mothers live near oil and gas wells during pregnancy.

One study found that children diagnosed with ALL were three to four times more likely to live in areas with active oil and gas wells than children with non-blood cancers. This finding is supported by the link between leukemia and exposure to benzene in occupational studies and exposure to petroleum products in studies of mothers and their children. It is also supported by a biomonitoring study conducted on pregnant women in northeastern BC.

While the results are mixed, there is evidence which suggests that fracking may increase the risk of acute lymphocytic leukemia (ALL) among children when their mothers live in close proximity to wells during pregnancy.

OTHER COMMUNITY IMPACTS

Communities near oil and gas development can experience a "boom town" effect. The rapid changes from an influx of people, industrial-type activity, and changes to the local landscape, water and wildlife, can be a traumatic experience for people who live in the community. These changes can be particularly difficult for Indigenous people who rely upon the land for their food, health, and well-being.

Indigenous people in Canada, who often have poorer health status than other populations in Canada, are among the people most frequently and deeply affected by unconventional oil and natural gas development.

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Smoking beaver over a wood fire in northern Ontario *Photo by Dan Tobias*

CLIMATE IMPACTS

Natural gas, which is mostly methane, used to be viewed as a bridge fuel to a lower carbon future. However, that was before evidence demonstrated that significant quantities of methane can be released as leaks or intentional emissions during the extraction of natural gas. These emissions are far more harmful to the climate than carbon dioxide (CO_2) because methane's global warming potential is 86 times that of CO_2 over a 20-year timeframe.

The number of jurisdictions around the world that have adopted a ban or moratorium on unconventional oil and natural gas (UOG) keeps growing.

Since 2007, global methane emissions have been rising, which will make it even more challenging to meet the goals of the Paris Agreement on climate change. Evidence indicates that fracking for oil and gas in North America is contributing to this increase.

ACTION NEEDED

We must urgently:

1. Declare a moratorium on the development of new fracked natural gas wells in each province and territory across Canada;
2. Develop plans to phase out existing fracking wells to meet our commitments under the Paris Agreement;
3. Conduct Health and Equity Impact Assessments to prioritize wells for early closure; and
4. Develop Just Transition plans to help workers and their communities prepare for the new low-carbon economy.

For more information, check out CAPE's report at ***cape.ca/resources****.*

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