

THE “CLIMATE” FOR UNCONVENTIONAL OIL AND GAS DEVELOPMENT ACROSS CANADA – WHERE ARE WE, AND WHY?

Unconventional hydrocarbon development – extracting oil and gas from low-permeability reservoirs – generally requires horizontal drilling and hydraulic fracturing. In the early days of unconventional gas, “fracking” became a hot topic because of concerns over environmental issues – particularly where operations were taking place in areas unfamiliar with oil and gas production, like the Marcellus fairway of the northeastern U.S.

These concerns spawned considerable public attention, epitomized by features such as *Gasland* (2010) in the U.S., and *Shattered Ground* (2013) (aired as an episode of *The Nature of Things*) in Canada.

More recently, hydraulic fracturing has attracted less media attention, as anti-industry advocates have turned their focus to hindering pipeline construction, supplemented in Canada by reviving the “dirty oil” characterization of bitumen production. But there is still a wellspring of anti-fracking sentiment out there, and it will likely re-emerge in the public eye when prompted by current events – such as the approval of an LNG export facility in B.C., or perhaps when consumers in Ontario, Quebec and the Maritimes start to question the merits of buying natural gas from hydraulically-fractured reservoirs in the United States.

So what is the current “climate” for unconventional development and hydraulic fracturing in Canada? Where is hydraulic fracturing happening, and where could it happen in the future?

In jurisdictions with a long-standing oil and gas industry, operations are proceeding pretty smoothly. In Alberta, which sees a complete range of fracturing from small stimulations in vertical wellbores to large slickwater fracks in Duvernay Shale horizontals, the Alberta Energy Regulator has created a comprehensive regulatory framework, continually optimized to meet new situations. In Saskatchewan and Manitoba, modest frac jobs in tight formations are similarly well managed by the Saskatchewan Ministry of Energy and Resources and the Petroleum Branch of Manitoba Mineral Resources.

In British Columbia, the Oil & Gas Commission (OGC) also regulates a wide range of frac operations, although currently focused almost completely on the Montney. The Scientific Hydraulic Fracturing Review Panel is hearing presentations from experts to “review the practice of Hydraulic Fracturing in B.C. in the context of ensuring that gas is produced safely and the environment is protected”. Given this mandate, the expertise of the panelists, and the presentations they are hearing, it is expected that the Panel will return findings that will optimize regulation of hydraulic fracturing in B.C. without unduly hindering industry activity.

But it's a different story elsewhere in Canada. Where people have not seen the oil and gas industry in their backyard, anti-development groups leverage uncertainties to create environmental disaster scenarios, and governments generally judge it safer to side with the "environmental protection" story instead of promoting oil and gas development.

The Council of Canadian Academies set the stage for this mindset with their 2014 report *Environmental Impacts of Shale Gas Extraction in Canada*. Their recommendations boil down to: "there are many issues around hydraulic fracturing, but not a lot of peer-reviewed science addressing these issues, so we really don't know very much". While this viewpoint is not inaccurate from an academic point of view, it does not reflect how industry and enterprise generally proceed in our society. One can't generate peer-reviewed science without experimentation, and nobody can afford to undertake hydraulic fracturing experimentation without the prospect of actually producing hydrocarbons to make an economic return.

At about the same time, the Nova Scotia government banned hydraulic fracturing, but engaged a 10-person expert panel addressing a variety of issues, including resource assessment, economic and market analysis, wellbore integrity, water resources, and social, legal and First Nation concerns. They reported that unconventional development could proceed in Nova Scotia, after work was done to educate the community and promote acceptance. Unfortunately, the government chose to ignore the report and extended the moratorium indefinitely. Interestingly, the Nova Scotia Department of Energy is pushing forward with assessment of onshore petroleum resources, although there is little hope of exploration activity without fracking.

Also in 2014, Newfoundland and Labrador convened a five-person expert panel that concluded that a number of gaps and deficiencies should be addressed before allowing hydraulic fracturing to proceed. Essentially nothing has happened since then, and the "pause" in accepting applications to frac continues.

In 2015, New Brunswick appointed a hydraulic fracturing commission to determine whether a list of five conditions could be met to allow fracking – despite the fact that industry had already safely developed the McCully tight gas field with horizontal multi-frac wells. The three (non-technical) Commissioners made no recommendations, and a moratorium was confirmed. It continues today, as the government has made no discernable progress toward satisfying the conditions it set for itself.

In Yukon, a committee of six MLA's could not reach a consensus in 2014 around allowing or even addressing hydraulic fracturing. The government subsequently banned fracking across the territory in 2016, and now faces litigation from Northern Cross Energy, which cannot develop its properties without the ability to frac.

Proposed regulations in Quebec have been interpreted as an effective ban on hydraulic fracturing. Ontario has largely ignored the issue because there has been little effective pressure applied to address unconventional development, although the new Conservative government may eventually take a different stance. In Northwest Territories, some First Nations seek out shale exploration, while others have rejected fracking – and the Federal government has taken a non-supportive position.

All of these jurisdictions have sedimentary basins with unconventional petroleum potential. Ontario and Quebec are major natural gas consumers, and rely increasingly on U.S. supply (primarily from the Marcellus Shale). The Maritime provinces and Newfoundland burn coal and fuel oil, and could replace these with a secure, economic gas supply – particularly as Deep Panuke has been abandoned and Scotian Shelf gas production is rapidly declining. Yukon and Northwest Territories rely heavily on fuels shipped from the south and would be much better served with local gas supplies.

Unfortunately, governments continue to avoid addressing unconventional hydrocarbon development. They will not confront anti-development groups that equate a lack of peer-reviewed “proof” of the safety of hydraulic fracturing to imminent environmental disaster. So to answer the question – the climate for unconventional development in Canada outside of the western provinces is very poor, and unlikely to improve until governments are forced to reasonably address the economic and scientific issues.