

UNCONVENTIONAL ENERGY – HOW IT “CHANGES THE GAME”

We have four primary goals in this presentation:

1. Explain what “Unconventional” oil and gas means;
2. Explain how “Unconventional” resources are changing the fossil fuel industry, and hence world-wide energy supply;
3. Discuss environmental concerns and mitigation practices around developing “Unconventional” oil and gas;
4. Guide you in understanding the facts and importance of this industry in Canada.

“Unconventional” oil and gas is exactly the same oil and natural gas we use every day, but is produced from “Unconventional” reservoir rocks. These reservoirs require advanced horizontal drilling and hydraulic fracturing technologies in order to produce in commercial quantities. The total “Unconventional” resource base is huge, so unlocking it dramatically increases global oil and gas supplies, and therefore greatly influences worldwide prices.

Developing “Unconventional” oil and gas opens up many areas to industry activity that have not previously seen drilling activity, and gives rise to potential environmental concerns on water, air, and land resources. Our presentation will focus on these issues.



Water: In Canada, water resource assessments provide baseline information about water availability at surface and in the subsurface. Strict regulations limit the amount of water that industry operators can use, and how they must protect surface water and shallow potable groundwater from potential contamination.

Air: Leakage of methane, a potent greenhouse gas, into the atmosphere is an important environmental issue. Fixing methane leaks is generally not difficult, but finding and quantifying them is – so current advances focus around pinpointing significant methane leakage. One exciting new development is the use of a NASA-developed mini-optical instrument mounted on a drone, which Geoscience BC is launching to measure emissions, initially in northeastern BC (pictured).

Land: Modern drilling technology allows operators to drill up large reservoir areas from centrally-located “pads”, thus greatly reducing the footprint from surface drill sites and supporting roads and pipelines.

Induced seismicity (small earth tremors caused by hydraulic fracturing and water injection) is the subject of much new

Canadian research. Regulations are in place to shut down wellsite operations when they show potential to induce significant seismic events.

“Unconventional” oil and gas technologies are complex, and so are the associated economic, societal, and environmental issues. We must address these using expert knowledge, reasonable assumptions, and appropriate risk analysis.

Well-informed people in a modern society need to seek out expert knowledge, ask questions, think critically, and apply common sense in understanding complex issues. Our goal is to provide accurate scientific information around unconventional oil and gas development, so that everyone can reach reasonable, informed, and balanced opinions.

