

Green Scene: The Cleanest LNG Facilities in the World?

by Elaine Golds

(published by the *TriCity News* – November 29, 2013)



Premier Christy Clark attends a reception for participants in a 2-week trade mission to Asia promoting liquefied natural gas from BC. *BC Government photo.*

With plans seemingly underway for Canada to greatly increase its exports of fossil fuels, it might be reassuring to some people that our Premier wants BC to have the cleanest liquefied natural gas facilities in the world. But, is this possible? To me, this seems more like an oxymoron as it is hard to understand how natural gas obtained by hydraulic fracturing (i.e., fracking) could be considered to be “clean” in any sense of the word.

It’s certainly true that natural gas derived from conventional gas wells is the cleanest burning of all the fossil fuels. In fact, it produces only half as much carbon dioxide per unit of energy derived than does coal and typically contains smaller quantities of other pollutants such as sulphur. It’s been suggested that if the world collectively stopped burning coal and switched entirely to conventional natural gas, our carbon dioxide emissions would fall to tolerable levels. Unfortunately, supplies of conventional gas are dropping and the natural gas obtained by

fracking, i.e., shale gas, is the result of a considerably more energy-intensive and polluting processes. Some people have called fracked gas as dirty as coal.

Fracking requires injecting large volumes of a toxic mixture of water, sand, and undisclosed organic chemicals beneath the ground under high pressure into porous rock. This shatters the rock and results in the release of the natural gas, i.e., methane, and other chemicals. Fracking is a very controversial process which requires energy and vast quantities of water. The water becomes so polluted that it cannot be released back into the natural ecosystem. As a consequence, it is often injected back into the ground into saline aquifers where, it is assumed, it will remain forever and never pollute fresh ground water. Sometimes, fracked water is released into streams with typically toxic consequences. Often, it is simply stored on site for long periods of time with no plans for proper disposal. Occasionally, some of this water escapes from cracked casings during drilling and pollutes potable ground water. Stories abound in Alberta and the American west of farmers who have had their drinking water wells poisoned as a result of nearby fracking operations.

When industry extracts natural resources, people often assume the government can be relied upon to develop appropriate regulations which will protect current residents and future generations from inadvertent impacts and derive, through taxes, reasonable revenues to provide public services. In BC, an *Oil and Gas Commission* (OGC) was set up in 1998 to regulate the industry. The power of the OGC was strengthened in 2003 when it was given the right to approve all facets of the industry including the need to log, build roads and extract water. Water use by this industry has been particularly controversial. One company was given permission to withdraw ten thousand cubic meters of water daily from the Williston Reservoir – water that would otherwise flow through turbines and generate electricity for BC Hydro. Many people have complained the actions of the OGC lack public accountability and their weak regulations have been ineffective in providing long term environmental protection.

Once recovered from the ground, shale gas requires processing, i.e., cleaning, and then it must be moved through pipelines. Right now, much of the shale gas in BC is shipped to Alberta where it is used to heat oil out of the tar sands. The provincial government has plans for private industry to build liquefied natural gas facilities along our coast to which shale gas could be piped and then cooled to minus 162 degrees C at which point it becomes a liquid ready for shipment overseas. This cooling process is extremely energy-intensive and eliminates any energy advantage of using methane compared to coal.

A recent study produced by Clean Energy Canada (available at cleanenergycanada.org) outlines what the provincial government would have to do to provide the cleanest LNG facilities in the world. First, they would have to use only shale gas which has naturally low carbon dioxide content or require technologies to capture and store carbon dioxide by some undefined process. Then, the government would have to develop a strong regulatory regime that would ensure no methane would escape through leaks, inefficient valves or poor maintenance because methane is also a potent greenhouse gas. Finally, they would have to require the energy source needed to liquefy the natural gas would come from hydropower. It has been estimated this could require the equivalent construction of another 2-3 Site C dams to provide sufficient electricity. I would

guess most people in BC would not support more dam building. Regardless, the gas industry would be unable to pay the high cost of such electricity.

Given the apparent abundance of shale gas in many parts of the world (and consequent low prices for natural gas), the potentially high costs of a “clean” LNG industry in BC as well as untold risks to the environment, I fail to see any advantage in pursuing the development of a LNG industry in BC. Nor am I optimistic that we will develop an effective regulatory regime to assure future generations that we will not compromise their ability to enjoy a world as unpolluted and prosperous as that one that we currently inhabit. As for the promise of a clean LNG industry in BC, I remain definitely unconvinced.