

October 30, 2015

Dr. Ray Gosine
Chair, Hydraulic Fracturing Review Panel
Bruneau Centre for Research and Innovation,
Memorial University of Newfoundland,
St. John's, NL, A1C 5S7

Dear Dr. Gosine,

Thank you for your letter of October 19, 2015 on the climate change impacts of a shale oil industry in western Newfoundland. I am happy to respond on behalf of the Office of Climate Change and Energy Efficiency.

“*Charting Our Course: Climate Change Action Plan 2011*” sets out the Provincial Government’s strategic approach to climate change, alongside 75 commitments of action across the economy. In the plan, the Provincial Government committed to reduce the province’s greenhouse gas (GHG) emissions by 10 percent below 1990 levels by 2020 and by 75 to 85 percent below 2001 levels by 2050. More recently, the province, in partnership with the other jurisdictions that are members of the Conference of New England States and Eastern Canadian Premiers, has also adopted a regional target to reduce GHG emissions by between 35 to 45 percent below 1990 levels by 2030.

The *Climate Change Action Plan* recognizes that all parts of society need to do their part to reduce GHG emissions and, as large industry accounts for over 50 per cent of provincial GHG emissions, it has a role to play. As such, Government committed to establishing a detailed framework for reducing GHG emissions from large industrial sectors in the province, including oil and gas, mining, and pulp and paper. The *Plan* provides eleven guiding principles to guide this work including the need to provide greater certainty for industry and to proceed in a manner that is both environmentally sustainable and economically prudent. The eleven principles are set out below.

1. Contribute to provincial GHG reduction targets;
2. Encourage economic development;
3. Take account of trade-exposed nature of the large industrial (i.e., energy-intensive) sector;
4. Provide greater long-term certainty for industry;
5. Prepare the large industrial sector for a carbon-constrained future;
6. Support the Lower Churchill Hydroelectric project;
7. Accommodate the unique circumstances of the offshore oil and mining sectors;
8. Acceptable fiscal impacts on government;
9. Encourage new investment in the province;

10. Stimulate green technology development and deployment and job growth; and
11. Pursue administrative efficiency and low transaction costs.

Consultations with large industry have taken place and government has commissioned studies to examine the GHG abatement opportunities in the offshore petroleum, iron ore mining, and oil refining industries. The Provincial Government has been engaging with other provinces and territories to understand good practice elsewhere and identify any lessons for Newfoundland and Labrador. It has also engaged with the federal government which has been developing regulations since 2011 for a range of industrial sectors, including oil and gas.

To date, CCEE has not undertaken any work or analysis specific to onshore petroleum development in the province, including shale oil and hydraulic fracturing. This is because there has been insufficient information made available by local proponents that would allow for detailed analysis to occur within the local context. For example, it is unclear whether electricity will be purchased from the electrical utilities or generated on-site, and potential production levels per facility have not been described.

Notwithstanding this, I would like to outline the following points for your consideration:

- Within an oil and gas facility, including shale oil and hydraulic fracturing, GHG emissions will be generated from stationary combustion and from venting, fugitive and flaring activities. With respect to stationary combustion, GHG emissions will be generated if natural gas, gasoline, diesel or heavy fuel oils are used on-site to generate heat or electricity (any GHG emissions associated with imported off-site electricity from the grid are accounted for at the point of electricity generation). The extent of these GHG emissions will depend on the scale and scope of the facility, production, and whether or not renewable electricity is imported from off-site generation sources or generated on site.
- Venting, fugitive and flaring activities will also generate GHG emissions. Similar to stationary combustion, the extent of these emissions will depend on the scale and scope of the facility as well as production levels. By way of comparison, it is worth noting that, in the offshore petroleum sector, stationary combustion using natural gas as a fuel source accounts for about 80 percent of a facility's emissions, and venting, fugitive and flaring emissions account for the remaining 20 percent.
- The capital infrastructure (i.e., machinery and equipment) used at a facility will also have an impact on GHG emissions at the facility. More specifically, a range of machinery and equipment, each with differing levels of technical efficiency and capacity, are available to facility owners. As set out in the *Climate Change Action Plan*, the provincial government has also made a policy commitment that will require industrial facility owners, through future regulation, to invest in "best available control technology" (BACT) during the construction phase of new facilities. This will have the effect of ensuring that the most advanced machinery and equipment is utilized and that GHG emissions are minimized over the life of the facility. This BACT commitment is consistent with existing BACT regulatory requirements with respect to criteria air contaminants.
- Experience to date from other provinces suggests that GHG emissions from hydraulic fracturing will, on average, be less than 50,000 tonnes per facility and may be relatively lower on an intensity basis (that is, GHG emissions per unit of production) than other forms of oil and gas sector

extraction. However, there is likely to be considerable variability from jurisdiction-to-jurisdiction and facility-to-facility. Any facilities that emit more than 50,000 of GHGs are required to report their emissions to the federal government each year. From a GHG perspective, a facility is often defined as a site or set of contiguous sites that operate and function in an integrated manner, including all buildings, equipment, machinery and vehicles within the facility.

If you have any questions on this submission or require any additional information, please do not hesitate to contact me at 729-7971.

Sincerely,



Jackie Janes
Assistant Deputy Minister
Office of Climate Change and Energy Efficiency