

NATURAL GAS BETTER THAN LABRADOR HYDRO FOR ISLAND ENERGY REQUIREMENTS

DR STEPHEN BRUNEAU

THE TWENTY-EIGHTH IN A SERIES OF ARTICLES DEVELOPED FROM REGULAR PUBLIC FORUMS SPONSORED BY THE LESLIE HARRIS CENTRE OF REGIONAL POLICY AND DEVELOPMENT. MEMORIAL PRESENTS FEATURES SPEAKERS FROM MEMORIAL UNIVERSITY WHO ADDRESS ISSUES OF PUBLIC CONCERN IN THE PROVINCE.

The Government of Newfoundland and Labrador is proposing to meet the expected future demand for electricity on the Island of Newfoundland by constructing a new hydroelectric dam at Muskrat Falls in Labrador and transmission facilities to the Avalon, at a cost currently estimated at \$6.2 billion. But what if there was a much less expensive alternative to provide this energy? This article questions why the government of Newfoundland and Labrador is not exploring the potential of utilizing natural gas from the Grand Banks to provide electrical power to the Island of Newfoundland.

In a public presentation given by this author in March 2012,¹ the following points were made:

- The main challenges facing the province's electrical system are the replacement of the Holyrood thermal generating station and the need to keep pace with the Island's slow demand growth.
- There are sufficient gas supplies offshore to generate all the electricity we need on the Island of Newfoundland. There are many reasons why it would be beneficial to the offshore operators over the next decade to have a natural gas marketplace: improved oil recovery, longer development life, additional revenue streams, etc. In fact, expectations are that there will be so much natural gas that the operators will have difficulty pumping it back into storage reservoirs.
- The technology to land gas onshore is commonplace around the world and the natural environment of the Grand Banks (such as icebergs) is not a deterrent to landing gas onshore here.
- The technology for transforming natural gas into electricity is both widely used and scalable – that is, generating stations can easily grow to meet increasing demands for electricity.

- The Crown has all the authority it needs to negotiate (and, if need be, compel) the petroleum producers to land natural gas onshore.
- The better use for Muskrat Falls is to replace oil-fired and coal-fired generating stations in the North American marketplace when and if that marketplace can bear the actual development costs.

In Nova Scotia, the private energy company Encana has just built an offshore natural gas platform, drilled and completed all production wells, constructed a 175-km, 22-inch subsea pipeline, and has begun selling its natural gas to a Liquid Natural Gas facility in New Brunswick – all for a grand total of \$700 million.² This Scotian shelf project was privately funded, has a gas carrying capacity many times greater than what we would need in Newfoundland if it were being built to satisfy our local electrical needs, and the entire development is based on a gas field that is much smaller than what is available at Hibernia and about one-quarter the size of what lies idle at White Rose.

The Government of Newfoundland and Labrador has stated that using offshore natural gas for domestic power requirements is uneconomical and can't be justified on the basis of our modest electricity requirements, so it is a waste of time to speculate on the timing of Grand Banks natural gas commercialization. And, by extension, that it is best to assume that our offshore oil operators will for decades to come do nothing commercial with the natural gas under their platforms, even as the oil play matures and associated gas volumes become excessive and problematic. Another view is that oil producers in Newfoundland simply do not "want" to commercially develop natural gas resources, thus Newfoundland officials would have to try and force them to do so at our peril, as it might jeopardize future oil exploration and development plans. Is it possible that using Grand Banks gas for Island energy needs will indefinitely be too complex, expensive, and potentially damaging or risky to oil production operations, profits, and planning?

It is more likely that the only danger in having a frank discussion with operators about Island domestic gas use is that it threatens to undermine the delicate financial assumptions and vulnerable market claims supporting the current Muskrat Falls power proposal. This is why offshore oil operators have been given zero-to-negative incentive by the Government of Newfoundland and Labrador to reveal any details on possible gas delivery strategies.

The argument advanced to date by the Government of Newfoundland and Labrador against developing the offshore natural gas resource has been that it is not yet commercially attractive for the operators to connect to the national marketplace for natural gas sales. However, this argument is disingenuous in that it does not address the issue at hand, which is whether it is economical for the Province to negotiate a purchase of, or access to, natural gas to power the Island of Newfoundland. Sadly, the argument that there is no *national* market has served as an excuse for the Crown to avoid the discussions and negotiations necessary for a mutually beneficial trade involving natural gas use on the Island. And this virtual armistice has cleared the way for the “Labrador-hydro-and-wires-around-Quebec” plan to take hold as the only viable alternative for the Island’s energy needs.

Originally, Government’s Energy Plan (2007) made it clear that the Lower Churchill project was to be the priority because it provides many wide-ranging social, environmental, and industrial benefits to the citizens of Labrador and, to a lesser extent, the people on the Island of Newfoundland. Thus it is a “nation building” policy, insensitive to market realities, that actually created the now-evolved Muskrat project in the first place. More recently, however, the project has been hailed not only as the lowest cost option for Island electricity needs, but as the only viable means which satisfy Holyrood thermal power replacement and future demand growth. It is doubtful that this new project justification can be maintained, but to our great loss it appears that those in charge are so far entrenched in this Labrador-hydro-for-the-Island plan that even if certain financial hardship were now revealed, some alternate justifications would emerge to, once again, make it the only viable choice for patriotic Newfoundlanders.

Here’s what we stand to lose by opting out of natural gas:

- The public services and wise investments possible with the billions in savings realized by opting for a less expensive electricity generation method.
- Long term, reliable, inexpensive, scalable, and dispatchable³ thermal power for the Island.

- In its native form, a new low-cost fuel source for industrial activities and possibly for domestic use.

- The potential to grow into a gas exporter via pipeline interconnection or Liquid Natural Gas production. These in turn would usher in a new era in offshore exploration and development.

- Extended life and productivity of oil developments, which would come about as a result of an additional revenue stream and extra gas handling options.⁴

- The Province’s opportunity to have much greater stake in the longer-lived natural gas play than that of oil.

- An avenue through which Labrador shelf hydrocarbons may become monetized.

- A miniscule environmental impact, including a tiny ecological footprint and low risks compared to most other energy sources and megaprojects.

- And an opportunity to develop and manage the Churchill River hydro resources to its full extent and capacity in an economically optimal manner, at a time when markets want it and will pay for it.

What we get by opting out of natural gas is a remote source of seasonal power for the Island, a huge debt beyond all proportion to the domestic utility service that it renders, a very expensive interconnection with Labrador that does not improve system reliability for either Labrador or Newfoundland, and a follow-on interconnect with Nova Scotia which apparently allows us to give them free power and compete with Quebec’s cheaper surplus power elsewhere.

Recently it was suggested by a Crown official that the case made for Grand Banks gas utilization at the previously mentioned Harris Centre Forum in March 2012 was appreciated, but flawed for a few reasons:

- *No costs for well-drilling, platform modifications, or ongoing operations were taken into consideration in the assessment.* I raised this point myself during the presentation, stating that it was beyond the abilities of any one person to perform all the analyses required to come up with these costs. For instance, the White Rose/North Amethyst oil developments require new wells and development plan amendments for meeting gas storage challenges. Whether the gas is sold to the Island or not, wells have been drilled and will need to be drilled to handle the surplus gas. Determining

how the costs should be divided is a complex task best performed by operators, Nalcor, and specialized consultants as part of negotiations and due diligence in proposing the “best” method of providing electricity to the Island of Newfoundland.

- *The White Rose FPSO would be too costly to operate, keep and/or replace in order to provide natural gas to the Island beyond 2026.* However, the Canada-Newfoundland and Labrador Offshore Petroleum Board, in November 2001, stated: “The Proponent describes the cost to modify the FPSO for gas export. These costs range from \$75 million to \$180 million...” Further, the White Rose Benefits Plan actually goes out of its way to explain the routine technology, methods, and costs for converting the Sea Rose FPSO to a gas exporter whilst oil production continues.

- *The gas was freely taken and not paid for, no value was assigned to it, and the operators were paid nothing.* This point can be charitably called a misinterpretation because the assessment given during the presentation made the clear and simple assumption that offshore producers would be paid the North American (Henry hub) market price⁵ for produced gas while still stranded at a production facility on the Grand Banks. Actual price would depend greatly on the negotiated division of the capital and operating costs, royalties, and general value trading that would naturally arise between the crown and a supplier. For example, the cost of arranging for a seasonal sale of gas would have to take into consideration the optional and complimentary seasonal reinjection costs, the blending of normal gas handling operations with gas export operations, inter- and intra-field gas movements that may result, new equipment costs, etc. Clearly, the situation does not lend itself well to being over-simplified. It would be a bad idea to speculate from afar as to just what the best arrangement would be and with which operator(s) the best arrangements may be made – but it is quite clear that such arrangements can and could be made to great mutual benefit some time in the next decade.

- On the last claim by the Crown that they have no authority with which to encourage or enforce oil operators to do fair business selling gas for isolated domestic use, recall this from the CNLOPB (Nov. 2001): “... Concern was also expressed during the Public Hearing that White Rose gas might not be made available for export if gas transportation infrastructure was put in place. The Board, on its part, would expect in such circumstances that access to White Rose gas, subject to conservation considerations, would be realized through normal commercial negotiations. As discussed later, the Legislation does, however, provide the Board with authority to issue a Development Order should such a course of action be required.”

It could be argued that it is an abdication of responsibility for the Government of Newfoundland and Labrador and its Crown energy company not to insert themselves into natural gas negotiations with Grand Banks operators – as they did into North Amethyst Oil, Hibernia South Oil, and Hebron Oil developments. The timing for such an intervention is perfect as a new Gravity-Based Structure is under consideration for White Rose, the shared costs for which would be of huge mutual benefit as it would provide the ideal location and structural configuration for a future export pipeline. Market prices for oil (being high) and gas (being low) are not in favor of the debt-heavy, long-term hydro-power pact, but are perfectly in step for maximizing local benefit from natural gas utilization. 

Dr Stephen Bruneau is a member of the Faculty of Engineering and Applied Science at Memorial University.

Reference

Canada-Newfoundland and Labrador Offshore Petroleum Board (CNLOPB), 2011, (www.cnlopb.nl.ca/news/decisions.shtml).

1 During a Harris Centre-sponsored public forum held on the St John's Campus of Memorial University. Watch the video at www.mun.ca/harriscentre/policy/memorialpresents/2012b/2012b.php.

2 *The Chronicle Herald*, “Encana keeps Deep Panuke, at least for now”, Feb 17, 2012.

3 That is, available when it is needed, for example during periods of heavy use, like during the winter.

4 The CNLOPB, the White Rose Partners, and Hibernia Management are all on record saying that eventually gas exploitation and sales would extend the economic life of oil production by permitting additional oil to be recovered. (CNLOPB decision reports, 2001 ... 2011).

5 The Henry hub is a distribution hub on the natural gas pipeline system in Erath, Louisiana. Due to its importance, it lends its name to the pricing point for natural gas futures contracts traded on the New York Mercantile Exchange.