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Mr. Rene Gallant
Regulatory Council
Nova Scotia Power Inc.
PO Box 910
Halifax, Nova Scotia

Dear Mr. Gallant,

The following is in response to your letter of 4 July 2007 requesting a review of and comments on NSPI's draft IRP report.

The subsequent points summarize a series of electronic discussions held by members of the Energy Research Group:

- The recommended five percent DSM program appears to be very expensive. For example, in the residential sector the consumer cost is pegged at \$141 million with an energy savings of 1,551 GWh (see Table, page 15) or about 9.1 cents per kWh. This seems excessive, considering that residential electricity now costs about 10 cents per kWh. It is unclear whether this is the annual cost or the projected cost in 2029. The cost of the DSM program is less than the original proposed by Summit Blue; however, it is not made clear which parts of Summit Blue's DSM program are to be kept.
- NSPI is focusing on CO₂ intensity rather than actual reductions. This is obvious from their energy graph showing an astonishing growth in DSM while coal and petcoke remain stable over the period (see Figure, page 21). The CO₂ per MWh intensity obviously declines in such a scenario. This model is in keeping with the federal government's short-term intensity targets as outlined in their Regulatory Framework for Air Emissions, but overlooks the fact that intensity targets will soon be outdated as real emissions reduction targets are required.

Relying on carbon credits is an expensive and highly questionable way of meeting emissions targets. Given this year's IPCC reports on the state of the planet's climate, the IRP models should have considered other, non-carbon based fuel sources, such as the Lower Churchill or nuclear (other than the assertion that "imports" really meant energy from the Lower Churchill or nuclear).

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- New generation includes technologies that “are not commercially available today” (page 31). Should an IRP be based on such assumptions? (It is worth noting that in the past, NSPI has been adamant in its refusal to consider technologies that are not proven.) For example, the IRP refers to sequestering CO₂ from 700MW of coal-fired plant (page 31); where this CO₂ will be sequestered is unclear, given that in previous discussions, NSPI has all but dismissed sequestration in Nova Scotia because of geological issues.
- The simulation tools used for the IRP process suggest that up to 20 percent of the system peak could be met by renewables (page 36). By 2013 they state “there could be many hours in the year where 40 percent of the load is being served by a variable source. This has significant technical, reliability and cost implications” (page 36). Yet, despite this reservation, NSPI puts its faith in an increasing reliance on intermittent renewables, with the proviso that everything could change after the wind integration study is completed. This is not the way to develop a 20 year IRP.
- In light of the concerns discussed in the previous bullet, we believe that NSPI should stop trying to accommodate wind as if it is a traditional, dispatchable form of generation, rather efforts should be made to match its intermittency with an end-use that can accept intermittent supplies. For example, our research into wind-heating shows that intermittent wind can be used with centrally-controlled electric thermal storage (ETS) units. This use of wind can help reduce the problem of intermittency while assisting the province in improving its energy security.
- Perhaps our greatest concern is the fact that coal and petcoke will continue to be used for generating about 70 percent of Nova Scotia’s electricity, not only because this practice will continue to contribute to Nova Scotia’s unacceptably high CO₂ emissions, but because it does nothing to improve Nova Scotia’s energy security.

According to several NSPI and Emera officials, energy security is not an issue because:

- The Port Tupper marine terminal gives NSPI greater access to world coal supplies, and
- NSPI can purchase coal at any price.

These views are particularly disturbing in a time of rising world energy prices and the reemergence of energy nationalism because they run counter to the generally accepted definition of energy security; that is, the availability of a regular (i.e., uninterrupted) supply of energy at an affordable price.

The IEA’s July 2007 Medium-term Oil Market Report expects tightness in the oil markets for at least the next five years, which will lead to a growing demand for natural gas and coal for generating electricity and a move towards coal-to-liquids technologies. According to the EIA’s 2006 International Energy Outlook, the demand for coal is expected to nearly double between 2003 and 2030. All of these factors are expected to put upward pressure on the price of both oil and coal.

If demand for oil, natural gas, and coal increases as these reports suggest and supplies tighten for both above- and below-ground reasons, the price of energy will continue to rise. If Nova Scotians are unable to purchase home heating fuel because of supply shortfalls or high prices, will NSPI be able to generate sufficient electricity at an affordable price to satisfy the demand of people turning to baseboard heaters for meeting their space heating requirements?

In conclusion, we believe that the IRP fails to adequately address the twin issues of climate change and energy security. Rather than returning to the IRP in two years time as has been suggested by some NSPI officials, we recommend that NSPI continue the IRP process with the intention of achieving substantial and meaningful CO₂ reductions and helping to improve Nova Scotia's energy security.

If you have any questions or comments regarding this letter, please feel free to contact me.

Yours sincerely,

Larry Hughes, PhD
Professor