

**Nicole Godbout**

Regulatory Counsel  
Nova Scotia Power Incorporated  
P.O. Box 910  
Halifax NS B3J 2W5

September 19, 2014

Dear Ms. Godbout,

**RE: M05522 – 2014 Integrated Resource Plan  
*Ecology Action Centre Feedback for Incorporation into IRP Action Plan***

Ecology Action Centre welcomes the opportunity to offer these key observations and comments on the Integrated Resource Plan Analysis Results and other information presented in Technical Conference held September 12, 2014.

**5 Year Action Plan**

Integrated Resource Plan (IRP) Terms of Reference:

“To develop a long-term Preferred Resource Plan that establishes the direction for NS Power to meet customer demand and energy requirements, and environmental obligations in a cost-effective, safe and reliable manner across a reasonable range of foreseeable futures; and to develop an Action Plan describing the major tasks required to implement a no regrets strategy that aligns with the Preferred Resource Plan during the first five years of the planning horizon.”

The Ecology Action Centre emphasizes that the IRP process must focus on *long-term* priorities for NSPI, Nova Scotia’s electricity system, and Nova Scotian electricity consumers. A 5 Year Action Plan should describe steps to be taken toward the fulfilment of a long-term plan over the next 5 years. A 5 Year Action Plan should not be used as a means of favouring resource plans that have desirable short-term implications while losing sight of long-term goals.

A 5 Year Action Plan that does the latter - favours resource plans with desirable short-term implications while losing sight of long-term goals - might, for instance, disadvantage demand side management (DSM), which requires upfront investment for long-term benefit. The International Energy Agency recently analyzed the long-term benefits of investments in energy efficiency and found “when the value of multiple benefits is calculated alongside traditional benefits of energy demand and greenhouse gas emissions reductions, investments in energy efficiency measures have delivered returns as high as four US dollars for every one US dollar invested” (*Capturing the Multiple Benefits of Energy Efficiency*, IEA, 2014).

Likewise, pieces of infrastructure deemed critical by NSPI, such as the Maritime Link, have relied heavily on longer planning periods and assessment of end effects to justify the high upfront investments they require.

The Ecology Action Centre believes a 5 Year Action Plan, informed by a resource plan which prioritizes long-term goals, should place more emphasis on the benefits of DSM, the risks due to anticipated emissions regulatory changes and the potential benefits of improved regional collaboration.

### **Integrated Resource Plan Emphasis**

The Ecology Action Centre appreciates that NSPI felt some discomfort over rate hikes during recent public meetings but feels strongly that this is only one of many factors to be considered. For example, meetings today in western Nova Scotia would highlight other concerns such as reliability. Future rate increases will be no less comfortable when the time comes. It is the duty of the utility to undertake long-term planning so that near and long-term effects are understood and balanced actions undertaken. The IRP process is a central tool in the long term planning process and that longer view should remain its primary concern.

We disagree with NSPI's assertion that "There is a range of potential preferred resource plans based on the NPVs and other metrics; however, the company believes that alleviating rate pressure in the near term is in the interest of the customers." Surely Nova Scotians will be in no better position 5 years from now to face incremental DSM costs than they are today.

Likewise, we disagree with the assertion that "Uncertainty in the outer years may make it more beneficial to concentrate on nearer term IRP metrics." Short term cost concerns will always be present and are best left to the rate application process and capital planning process, as guided by the insights from IRPs and 5 year action plans.

The fundamental benefit of the IRP process and Strategist analysis is to examine long term impacts. In a system that is considering extending asset life to 60 years, serious examination of effects 25 years out is critical. If the results are too closely clustered, it is just as likely that the scenarios and sensitivities considered have been overly conservative.

### **Rate Impacts vs. Bill Impacts**

Rates are not bills. While the Ecology Action Centre acknowledges that it is unrealistic to ask NSPI to move away from highlighting rate impacts, we are uncomfortable with the unspoken suggestion that rate impacts are entirely coincident with bill impacts. Electricity rates can rise while electricity bills decrease. We ask that this distinction between rate impacts and bill impacts - impacts to the end costs to customers - be made explicit in the Final Report and Action Plan arising from the IRP.

The modelling undertaken in the IRP assumes many things, load and population effects among many others. If NSPI is truly concerned about customers, it would be helpful to present estimated per customer cost changes in some form. Extrapolating from the partial annual revenue requirement data presented based on current overall revenue requirements and accounting for population/customer growth would seem to be possible. It defies imagination that a per-customer based metric cannot in some way be extracted from this effort. Such a per customer cost metric would be much more productive in assessing the potential reaction to rate impacts in both the near and longer term.

## **Demand Side Management**

The EAC objects to the statement presented in the executive summary that “Environmental compliance and capacity planning is heavily reliant on DSM performing as forecasted.” The same is true for virtually every component of the power system and especially so for plans considering extended life operation of aging assets. We would ask that the statement be dropped or expanded to include other threats to system compliance and capacity. The established processes to negotiate, review, audit and authorize DSM plans in Nova Scotia are thorough. DSM planning is a widespread activity in progressive regulatory bodies across North America and planning reliance on their performance is of less concern than many other factors such as industrial load growth or loss, fuel price volatility and changing regulatory constraints.

In considering DSM levels, it is simply the nature of demand side management that program spending now results in savings later. So CRP’s that show near term costs increasing with benefits accruing in the future are both predictable and unremarkable. What is of interest is how reduced overall load in the future impacts the cost of operating the utility. The preliminary results clearly indicate these benefits:

- CRP5-1 shows a lower annual partial revenue requirement by the end of the planning period
- CRP5-1 shows the most preferable overall NPV over the study period.
- CRP5-1 shows a 50% excess planning margin in every year beyond 2017 and shows twice the required planning margin between 2028 and 2034.

As noted in the technical conference, the excess planning margin indicates that optimization of high DSM scenarios would result in even lower calculated system NPVs. In the context of proposed maximum coal plant retirement, some excess planning margin may well be prudent as public discomfort with modest rate increases would pale when compared with widespread loss of service as was the case with aging plant management in Newfoundland this past winter.

To hold off on DSM program spending today is to plan to defer benefits from 2034 to beyond 2039. The 5 year action plan should be frank with ratepayers and plan for steadily increasing levels of DSM so that the Nova Scotia of 2034 will be more competitive and prosperous than it is today.

Considering the evaluation criteria suggested, high DSM offers:

- > Improved long term rate effects;
- > Reduced risk because of the high certainty associated with DSM measures;
- > Increased flexibility and robustness because the existing assets can be managed to serve an overall lower load;
- > Reduced future regulatory emissions risk due to lower load served by planned and existing renewable assets.

## **Regulatory Environment**

During the technical conference, repeated references were made to more stringent emissions regulations being a significant trend since the last IRP, specifically increased renewable energy requirements, carbon emission caps, and equivalency to federally regulated plant retirements.

This trend is clear. It is reasonable to expect that further limits will be imposed. As such, the EAC welcomes the limited sensitivity results that show emissions regulations present a much lower cost threat than fuel price increases.

Notwithstanding the Scenario C sensitivity examination, the Ecology Action Centre feels that this IRP has failed in not squarely addressing the reasonable potential that the regulatory environment - for stationary thermal generation - may fall to zero GHG emissions.

It is important to view this within the Canadian regulatory context. We are where we are today because the federal government imposed coal plant retirement regulations. Given that the current federal government is likely to be the most generous in permitting continued GHG emissions, it is reasonable to expect future federal governments to take a stronger and more restrictive stance.

Thermal generation is likely to be singled out for zero emission regulations for the following suite of reasons:

- Thermal generators represent the largest single point emissions sources and are the primary point sources amenable to carbon sequestration or replacement.
- Canada's highest emitting provinces, Saskatchewan and Alberta, are the largest thermal power generators. (Alberta = 65 T per capita, Saskatchewan = 70 T per capita, Nova Scotia = 22 T per capita) and it is reasonable to ask them to take this step.
- Canada's highest emitting provinces, due to their resource wealth and infrastructure, are the most able to undertake zero emission projects.
- Canada's continued difficulty meeting stated emission targets will mean that when a government acts, they will be looking for early, easy gains such as zero emissions from thermal fossil power generation.

Simply put, thermal generation emission regulations provide the most regulated GHG reduction bang for the buck. This fact will not go away. As the federal government continues to examine how it can meet GHG targets while minimizing impact on the resource sector, or addressing the far more complex problem of transportation emissions, it is reasonable to expect them to consider a ban on GHG emissions from thermal fossil power generation.

It may be that Nova Scotia will be able to dodge this bullet, but the gun is loaded and on the shelf. It is reasonable to expect that at some time near the end of the study period, a government of the day will decide to pull the trigger.

The tools to consider this scenario lie within Strategist (increased regional transmission, sequestration costs, storage systems and renewable energy) and response to a zero emission regulatory environment should be examined for leading candidate resource plans.

This is especially the case when considering maximum coal plant life. CRP2-1, for example continues to operate thermal plants at 4 locations. It may be that CRP's with plants at fewer locations are less expensive to react to this scenario. The EAC strongly recommends that zero emission Strategist runs for leading plans, 2-1 and 5-1, to name two, be undertaken and their results included in this IRP. This will provide data that will be essential in assessing potential CRP's against all of the presented criteria (NPV, Rate Effects, Risk, Flexibility, Robustness, Future Regulatory Emissions Outlook risk) and, as specified in the terms of reference, for a reasonably foreseeable future.

## **Enhanced Regional Power Sharing/Balancing/Pooling**

Nova Scotia and its neighbours are already facing the limits of what provincial grids can do to integrate intermittent renewable energy. While investing in the research and development of storage and smart grid technologies is an important piece of addressing this problem, we cannot predict what technologies will advance when and how we might be able to make the best use of them in Nova Scotia.

What we do have available to us right now is the capacity to improve regional sharing, balancing, and pooling of power. The Final Report and Action Plan must make clear how absolutely necessary enhanced regionalization is to the strength and long-term viability of Nova Scotia's electricity system under current and emerging regulatory requirements. While we are a long way from determining whether a regional system operator is the right solution for Atlantic Canada, there are many steps along the way from current near-energy island operations to a regional SO.

The Atlantic Energy Gateway Initiative conducted extensive studies on the potential for enhanced regionalization of electricity systems and has shown us that there is much optimization and great cost savings to be gained. It is time for the governments and utilities of the Atlantic provinces to get down to brass tacks on establishing what model would work best for our region. The IRP is a critical opportunity for NSPI to highlight this necessity.

## **Other Observations**

The EAC would ask that the partial revenue requirement information be presented with reference to the annual spending in dollars associated with each plan and not represented as a fraction of one particular plan. This will allow comparison with respect to absolute system costs as they are today rather than a percentage of partial costs of an unknown magnitude for one plan over the other.

The Ecology Action Center asks that the results for Sensitivity Set 2, Emissions Scenario C be extrapolated to all presented CRPs. If the results from another CRP serve as a proxy, simply indicate this or repeat the results. At present it is not clear which other results reflect the sensitivity result for each CRP. Likewise the associated graph should represent the sensitivity to Scenario C on all bars.

We recognize the utility of comparing plans amongst each other with a single plan as the baseline, such as is the case for the presentation of partial revenue requirements (slide 16). It would be useful if other results, in particular the excess planning margin results (slide 34) were presented in a similar fashion. A graph showing fraction of the required planning margin for each CRP over time would help to compare between plans and weigh any potential benefit that might be gained from further optimization.

Sincerely,

**Catherine Abreu**



Energy Coordinator  
Ecology Action Centre