



Purdy's Wharf Tower One, 900 – 1959 Upper Water Street, P.O. Box 997
Halifax NS B3J 2X2 Canada tel: 902.420.3200 fax: 902.420.1417 stewartmckelvey.com

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Nicole Godbout
Regulatory Counsel
Nova Scotia Power Inc.
1223 Lower Water Street
PO Box 910
Halifax NS B3J 2W5

Nancy G. Rubin, QC
Direct Dial: 902.420-3337
Direct Fax: 902.420.1417
nrubin@stewartmckelvey.com

Dear Ms. Godbout:

Re: 2014 Integrated Resource Plan (IRP) – M05522

The Large Industrial Group welcomes this opportunity to participate in the 2014 Integrated Resource Plan (“IRP”) process. As we have stated in earlier submissions on the IRP Analysis Plan and Terms of Reference and in the first Technical Conference, we are interested in meaningful and informed participation that results in an IRP that accurately reflects the input of stakeholders. We expect that Nova Scotia Power Inc. (“NSPI”) will take this opportunity to carefully consider the submissions from all IRP participants and to revise and update the IRP assumptions where it is appropriate to do so.

IRP ANALYSIS PLAN

NSPI circulated a short memorandum on March 14, 2014 to outline the objectives and components of the IRP Analysis Plan. The Industrial Group is concerned that the Analysis Plan does not provide sufficient information as to how NSPI intends to accomplish the final objective of the IRP Analysis Plan: “*select the Preferred Resource Plan.*”

The first Deliverable under the Terms of Reference is “*Criterion for evaluation of various plans and selection of Preferred Resource Plan.*” Within this Deliverable, the primary criterion is monetary: cumulative present “worth” of the annual revenue requirements of the resource plan over the planning horizon. Other criteria are also listed, including reliability requirements, robustness, flexibility, end effects and regulatory emissions outlook. It is apparent that the IRP is intended to reflect multiple, possibly competing, objectives. It is unclear from whose perspective “worth” is evaluated – is this customer cost? the value to NSPI in growing its rate base? Further, NSPI has not proposed definitions of these secondary criteria, the metrics by which they will be assessed nor the weight that they will be given in studying and selecting the Preferred Plan. The Industrial Group requests that NSPI provide a clearer articulation of the basis for evaluation and selection of the Preferred Plan and a means for resolving competing objectives.

The third Deliverable of the Terms of Reference, “*Evaluation of potential resource plans*” does not provide guidance on this issue, as it states only that plans will be ranked by the cumulative net present worth of the revenue requirement that “*ultimately the test of soundness of the Preferred Resource Plan is its ability to enable NS Power to provide reliable service at reasonable cost/rates impact across a range of worlds/scenarios and assumption values.*”

A discussion on the overall objectives of the IRP and how these will be factored into the analysis and selection of the Preferred Resource Plan has been largely absent from the stakeholder process. It appears from the submissions of the SBA that these concerns regarding development of the proposed IRP Analysis Plan are shared and we endorse the comments of the SBA in this regard.

If NSPI intends to report to the Utility and Review Board on the criteria for evaluation of various plans, as required by the fourth Deliverable in the Terms of Reference, it is appropriate to articulate and advance the specific evaluation criteria for stakeholder review and commentary prior to embarking on the first step of the IRP Analysis – developing candidate resource plans and high-level screening of resource options.

The Industrial Group requests that NSPI circulate the proposed evaluation criteria for the high-level screening (Analysis Plan Step #1) and to select the Preferred Resource Plan (Analysis Plan Step #5) with commentary on how the other IRP objectives identified in the Terms of Reference have been defined, measured and weighted in establishing the criteria.

IRP ASSUMPTIONS

The Industrial Group's comments on the IRP Assumptions will follow the organization of the materials circulated by NSPI. Specific slides are referenced in brackets.

Environmental and Emissions Constraints

1. The Industrial Group agrees that there is some utility in modelling both Scenario A and B for the CO₂ and Greenhouse Gas (GHG) emissions (6) and Air Pollutants (SO₂, NO_x and Hg) (9) as this will provide an analysis of the cost of further increasing emissions controls after current regulations end. A sensitivity of both more and less stringent emission reduction strategies than are provided in Scenario A for the GHG and various Air Pollutants assumptions in order to fully assess the impact of policy changes in the Federal and Provincial governments should be carried out.
2. In the IRP process, when emissions targets are graphed, it would be helpful to show the current, actual emissions levels in order to understand whether operations are above, below or on target.

Supply Side Options

Generation Options

1. The Supply Side Options (19) list several options for coal-fired plants; these are presented as if each are equally established and viable options. The Industrial Group questions whether NSPI has evaluated the technical risk and associated costs that are linked to these generation options. An evaluation of the costs and risks should be part of the modeling exercise.
2. It is noted that fluidized bed combustion (FBC) units (like Point Aconi) have not been included in the supply side options for coal-fired plants. These units are known to be effective at removing high levels of sulphur and mercury and can handle lower grades of coal, such as domestic coal and high sulphur imports, and petcoke, which is a by-product of oil sands processing and which is being used as generation fuel source in the

US Gulf Coast and Midwest. An FBC plant equipped to burn petcoke may be an economically attractive generation option and should be evaluated.

3. The input assumptions for intermittent integration costs are not stated (p.20). P.26 states that a study is being discussed among NSPI, Board staff and consultants. The Industrial Group states that IRP participants should be afforded equal opportunity to participate in the process.
4. Apart from pumped storage, there are no other storage technologies considered in the Supply Side Options (20). Has NSPI considered whether other forms of electricity storage, such as compressed air, flywheels and battery storage, will be viable in the planning horizon? The Industrial Group urges NSPI to explore storage options more closely, particularly given the need to integrate significant amounts of intermittent renewable into the system.
5. The capacity value of wind, NRIS and ERIS, was an issue for determination in the IRP as agreed to by participants in the COSS Hearing. P.25 states that studies are currently being discussed among NSPI, Board staff and consultants. Again, IRP participants must meaningfully participate in the process and not simply be advised regarding studies "once finalized".
6. The Industrial Group queries the underlying assumptions for sustaining capital projects for existing hydro systems (28). Is this an economic option given the generation capacity of existing hydro systems?

Import Assumptions

7. Import Assumptions (31) do not provide much consideration of the implications of non-firm imports (such as Maritime Link surplus energy) vs. firm imports from New Brunswick. What are the risks, costs, and benefits of the firm and non-firm options proposed?
8. Can NSPI confirm that the Mass Hub Forecast that will be used to price import power (31) is consistent with the natural gas assumptions (54)? As Mass Hub prices tend to move with the gas, it is expected that the import power and natural gas prices used in the IRP model are aligned.

Financial Assumptions

9. With respect to the Financial Assumptions (44-45), can NSPI confirm whether the revenue requirement profiles are appropriate for the IRP? Has NSPI considered levelized cost profiles? Have risk adjusted discount rates been considered?
10. It is suggested that the Canadian vs. US currency values track closely to global oil prices. As global oil prices (and hence other commodity prices) increase in a sustained way, the value of the Canadian dollar rises. A high oil price case would be aligned with a strong Canadian dollar, while a low oil price case would see a weaker Canadian dollar. Does the exchange rate in the IRP reflect this trend and if not, why not?

Fuel Price Forecast Assumptions

11. In order to better understand the impact of different fuel forecast assumptions, it would be helpful if NSPI would provide a graph comparing historic and forecast fuel costs over the planning horizon (in \$/mmbtu) on a single graph. Where there are relative price differentials that diverge from historic differentials, it would be appropriate for NSPI to comment on the market (or other) assumptions that influence the change.
12. NSPI should consider using other fuel forecasts (49).
 - a. In the 2014 US Energy Information Administration (EIA) forecast, the low oil price case projects flat oil prices to 2040 (flat in real terms – adjusted for inflation).
 - b. Has NSPI considered a low coal forecast that holds coal prices flat, apart from inflation adjustment, for a significant portion of the IRP period? What coal market trends has NSPI observed recently that support the coal forecasts included in the IRM assumptions?
13. The Industrial Group previously requested additional information about the industry assumptions that underlie the PIRA Forecasts; we intend to make further submissions on this area when we have had the opportunity to review these assumptions.
14. Has NSPI considered the IRP impact if the assumptions regarding the installation of new natural gas pipelines are not met? What are the costs and risks associated with delay? (54).
15. For the Solid Fuel Price Assumptions (66), can NSPI provide prices in real and nominal terms?

Demand-side Assumptions

Load Assumptions

16. In relation to this, it would be helpful to have more insight from NSPI on the basis of the forecast load increases for the small and medium industrial classes. Further, given that “other industrial” (large industrial) is projected to be flat for the IRP period, can NSPI explain how the total industrial forecast is so closely aligned to the medium and small industrial forecast? Wouldn't the flat large industrial forecast impact the overall industrial load projections? (87-88)
17. Can NSPI speak to what changes had occurred in the past year such that the Maritime Link base load case is included in the IRP assumptions as the High Scenario? (79)
18. Will NSPI provide a scenario in which PHP is not on the Load Retention Tariff for the duration of the IRP period?

We look forward to receiving the additional information requested in our March 21, 2014 correspondence and to providing supplementary submissions on the IRP Assumptions.

Nicole Godbout
March 26, 2014
Page 5

Regards,

Nancy G. Rubiin

MAS/ NGR

c. IRP Participants