

Date : 4/3/2012 12:40:32 AM

From : "Paul Wilson"

To : "Bown, Charles W."

Cc : "Allen Snyder (amsnyder@[REDACTED])" , "Mack Kast (mkast@[REDACTED])"

Subject : RE: Timing

Attachment : SCOPE OF SERVICES - Government of Newfoundland - Muskrat Falls DG3 review rev1.docx;

Charles, thanks for the update and we can talk tomorrow. I have a 9:00 am conference call tomorrow on another matter but I am available the rest of the day.

I saw the printed news release tonight and it was as we discussed.

Attached is a draft SOW to get our discussions started and I have begun to identify what information we are going to request under each areas of review.

The two gentlemen included were the senior members of my team so they can see the draft Scope of Work. I need to line up my subject matter experts tomorrow to ensure the right skills are available for this work.

Paul

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**From:** Bown, Charles W. [mailto:cbown@gov.nl.ca]

**Sent:** April-02-12 6:50 PM

**To:** Paul Wilson

**Subject:** Timing

Paul

A face to face on wed I likely not feasible. We can discuss our kick off meeting after I receive your "needs" listing. I have a lot of open time tomorrow for a conversation. I want Nalcor ready for to receive you and have data/timelines react. I don't want to waste your time.

Charles

Sent Via BlackBerry

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# Scope of Services (Draft)

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Date: April 2, 2012

## 1. Government of Newfoundland and Labrador's Objective

MHI (the Consultant) shall review all work completed by the Proponent (Nalcor) for Decision Gate 3. The review shall include an assessment of the Cumulative Present Worth Analysis of the Projects including a reasonableness assessment of all inputs into that analysis. The test of reasonableness for this assessment is generally defined as following Good Utility Practices of the majority of electrical utilities in Canada.

The Consultant will also provide such advice and other services as may be required from time to time by the Government of Newfoundland and Labrador (Client).

## 2. Services

The Consultant is an independent contractor and not an agent or employee of the Client.

The Consultant acknowledges that the Client is relying on the skill and knowledge of the Consultant in performing the Services. The Consultant shall exercise the degree of skill, care and diligence required by customarily accepted practices and procedures normally provided in performance of services similar to the Services required under the Contract.

The Consultant shall only use key personnel to perform the Services who have been named by the Consultant in the Proposal and who have been accepted by the Client. The Consultant may only substitute or replace the accepted key personnel with the prior written agreement of the Client.

The Services which the Consultant shall perform or cause to be performed with diligence, skill and care include the following:

- a) A review of all work performed by Nalcor and their consultants and others related to the Muskrat Falls and Labrador Island HVdc Link (LIL) and the Isolated Island Option which are necessary for the Consultant to perform the Services. The level of review shall be sufficient for the Consultant to report on whether the work was performed with the degree of skill, care and diligence required by customarily accepted professional practices and procedures normally completed in the performance of similar work.

The Technical Assessment used as inputs into the CPW and Financial Analysis models will included:

- i. Load Forecast Update review including

- a. Review of Load Forecast Accuracy
- b. Assessment of risk associated with Large Industrial Loads

Information required:

- Updated 2012 Load Forecast
- Large Industrial Load Assessments, Corner Brook, Rio Tinto in Labrador, Vale
- load requirements, any other new loads.

- ii. Review of Reliability Assessment of both options (Relative Probabilistic Assessment) if available. Assessment of the reliability impact of the import supply options of the Emera link.

Information required:

- Relative Probabilistic Reliability study
- Emera Link Reliability Study for the Island Power System

- iii. Review of AC Integration Studies completed for the Muskrat Falls and LIL HVdc configuration options.

Information required: AC integration study report

- iv. Review the Muskrat Falls GS post DG2 design reports, cost estimates, and construction schedules. Identify any technical weaknesses; review DG3 cost estimate inputs, and application of any EIS requirements for environmental compliance.

Information required:

- Muskrat Falls GS design definition
- Muskrat Falls updated design reports including AC switchyards, and transmission lines to Churchill Falls
- Muskrat Falls updated master cost estimate
- Muskrat Falls updated master project schedule

- v. Review the HVdc Converter Stations and Associated ac switchyards. This will include review of the DG3 engineering to date, design specifications, revised cost estimates, construction schedules, construction contractor requirements, DC project definition, Single Line Diagrams, specified performance data, DC computer models and performance benchmarks.

Information required:

- Information is listed above
- HVdc updated master cost estimate
- HVdc updated master project schedule
- HVdc risk analysis report

- vi. Review of the HVdc transmission line including reliability design criteria, route selection and final metrology review, engineering review of tower and line designs, review of cost estimates, cost estimate sensitivity to various reliability design criteria, and construction schedules.

Information required:

- Information is listed above
- Transmission Line updates to master cost estimate
- Transmission Line updates to master project schedule
- Transmission Line risk analysis report

- vii. Strait of Belle Isle (SOBI) marine crossing review will include a review of the technical and economic offers in order to assess their reasonableness to meet the design specification proposed in RFP No. LC-SB-003, Strait of Belle Isle Submarine Cable Design, Supply, and Install. The cost estimates and construction schedule will be reviewed. Results of the Horizontal Directional Drilling test program will be reviewed. The SOBI risk analysis project update will be reviewed.

Information required:

- Information is listed above
- SOBI updates to master cost estimate
- SOBI updates to master project schedule
- SOBI risk analysis report

- viii. Any new material related to Small Hydro plants will be reviewed.

Information required:

- Small hydro updates to master cost estimate (if available)

- ix. Any new material related to wind farms will be reviewed. Nalcor's reassessment of maximum wind penetration study will be reviewed if available.

Information required:

- Wind farm updates to master cost estimate
- NLH wind farm maximum penetration study

- x. The Holyrood Thermal Generating Station plans, cost estimates, and schedules will be reviewed if there are any evident departures from the original DG2 plan.

- xi. Risk Analysis review. Review Nalcor most recent risk analysis assessment for gaps, suitability to task, and appropriateness of reserve margins for costs estimate contingency.

Information required:

- Strategic Risk Assessment Updated Report, and Westney update if available

- xii. The Cumulative Present Worth study will be reassessed with DG3 inputs in both capex and opex, fuel price, and escalation, for the two options as originally presented in DG2. Departures from these plans will be identified and the impact on CPW assessed. Sensitivities performed in the DG2 review will also be reassessed with DG3 inputs.

Information required:

- Disclosure of all input capex and opex input costs
- Disclosure of all escalators used
- Disclosure of Input fuel prices used, and 2012 PIRA fuel price forecasts

- xiii. (Optional). In order to assess the necessity of both the Emera export deal and the Federal Loan Guarantee prior the DG3 project sanction decision, a review of the Integrated Financial Forecast (10 and 20 year periods) for Nalcor is recommended. This would be a full revenue/expense model and process review, together with a minimum rate base study. A sensitivity analysis would also be carried out to gauge the impacts of capital cost overruns, fuel price variability, fiscal performance with and without the Emera export revenues and supply, and impact of the Federal Loan Guarantee. Note: this may be very labour intensive review and may not be possible within the time frame available.

Information required:

- Under discussion internally

- b) Preparation of a final report which will include, as a minimum the following:

- an executive summary;
- a description of the Consultant's review team;
- a description of the methodology used to complete the Services;
- a summary of the results of the review, including significant data gaps and issues, if any.

- c) Provision of ongoing support to the Client.

<b>Schedule</b>	<b>Scheduled Completion Date</b>
Kick off Meeting:	April 11 <sup>th</sup> , 2012
First Draft Report	May 15 <sup>th</sup> , 2012
2 <sup>nd</sup> Draft Report	May 29 <sup>th</sup> , 2012
Submission of final report	June 5 <sup>th</sup> , 2012
Presentation to the Government	TBD
Completion of Services	June 30 <sup>th</sup> , 2012

Note: This is a very aggressive schedule and completion on these milestones is dependent on the availability of information from Nalcor, and availability of the expert resources from MHI.