

**Date :** 5/15/2012 9:23:13 AM  
**From :** "Bown, Charles W."  
**To :** "'Paul Wilson'"  
**Subject :** RE: NFL2 Proposal  
**Attachment :** NFL2 Proposal rev 2.docx;  
Paul;  
Please see edits.  
Charles

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**From:** Paul Wilson [mailto:plwilson@mhi.ca]  
**Sent:** Friday, May 11, 2012 5:13 PM  
**To:** Bown, Charles W.  
**Subject:** NFL2 Proposal

Hello Charles, please find enclosed the scope of work, financial proposal, and the revised contract clauses in our proposal for your final review and revision. The contract liability is now 5 times as requested.

Let me know if you have any questions. I leave for Riyadh tomorrow but will be checking my email and carrying my Black Berry.

Talk to you later,

Paul Wilson



**Project:** Manitoba Hydro International's review of the Muskrat Falls and Labrador Island HVdc Link (LIL) and the Isolated Island options for the Government of Newfoundland and Labrador

**Client:** Government of Newfoundland and Labrador - Department of Natural Resources

## PROJECT PROPOSAL

**Proposal Prepared for:**

Charles Bown  
Associate Deputy Minister  
P.O. Box 8700  
50 Elizabeth Avenue  
St. John's, NL A1B 4J6  
Canada

**Proposal Prepared by:**

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Phone: (204) 989-1271

**File:** NFL2

**Date:** May 11, 2012

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## Scope of Services

### 1.0 Introduction

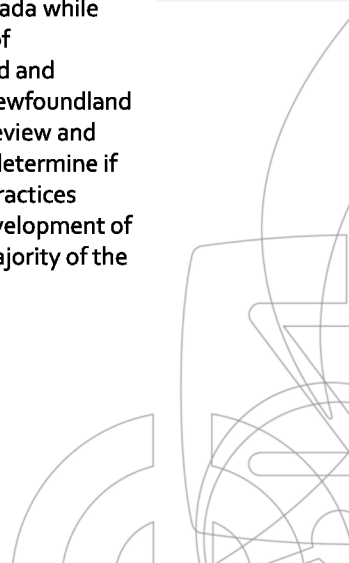
This proposal is in response to an enquiry<sup>ing</sup> from the Government of Newfoundland and Labrador to carry out the goals listed below in the scope of work. Manitoba Hydro International Ltd. (MHI) undertook prior reviews for the Decision Gate 2 process for the Board of Commissioners of Public Utilities. This project carries that review forward with engineering and estimates completed by Nalcor in preparation for Decision Gate 3 subsequent to the previous project.

MHI possesses a roster of well-qualified personnel to draw upon for this assignment. In particular MHI's staff has been engaged in generation planning projects in several countries throughout the world and can count on the support of Manitoba Hydro's 6000 plus employees. Our human resources capabilities are available to cover all disciplines and tasks required for the successful completion of this project. We are proposing various experts to meet the requirements of this important work, all of which have worked extensively in their relevant fields. The staff CVs are available on request.

### 2.0 Objective

MHI (the Consultant) shall review work completed by the Proponent (Nalcor) since Decision Gate 2 (DG2) in preparation for Decision Gate 3 (DG3). The review shall include an assessment of the Cumulative Present Worth (CPW) Analysis of the various components for each of the two Options, including a reasonableness assessment of all inputs into that analysis. The tests of reasonableness for this assessment are generally defined as the work following:

- (a) Good project management and execution practices, and
- (b) Good utility practices of the majority of electrical utilities in Canada while recognizing the unique electrical isolated system on the Island of Newfoundland and common accepted practice in Newfoundland and Labrador regarding the electrical system. Practices unique to Newfoundland and Labrador will be noted in the body of the MHI report. The review and technical assessment in the context of this scope of work, is to determine if Nalcor's work was undertaken in accordance with good utility practices whereby the processes, practices, and standards used in the development of the work follows the practices, standards, and processes of a majority of the 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).

### 3.0 Services

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 for such a 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 work performed by Nalcor related to the Muskrat Falls and Labrador Island HVdc Link (LIL) and the Isolated Island Option subsequent to DG2. The level of review shall be sufficient for the Consultant to report on whether Nalcor has performed work with the degree of skill, care and diligence required by customarily accepted professional practices and procedures completed in the performance of similar work. This work will be undertaken by examination of design reports, technical documentation or memos, in direct meetings with Nalcor, or with other data and information provided by Nalcor during meetings and working sessions.

The review will focus on the reasonableness of existing engineering or financial documents used in the development of the CPW analysis including design documents, design studies, material and equipment specifications, cost estimates and schedules.

~~No new information, data or reports are to be developed by Nalcor for this review to proceed except those already scheduled by Nalcor to meet its prior commitments for Decision Gate 3.~~ MHI's final report will include a summary of which documents were reviewed, a summary of meeting notes with Nalcor, identification of salient points necessary for the CPW analysis, and if the various studies were reasonable, and where applicable, prepared in accordance with good practices. The technical assessment will focus on the following areas that are generally used as inputs into the CPW analysis:

- i. Review of Load Forecast Update including:
  - An assessment of the reasonableness of the 2012 Load Forecasts for the Island Interconnected System. Two load forecasts are being prepared, the first for the Isolated Island Option, and the second for the Interconnected Island Option.

Information ~~required to be made available during meetings with:~~

- Updated 2012 Load Forecasts for each option

~~The information and data will be reviewed during meetings with Nalcor personnel responsible for System Planning.~~

Outcomes:

- A report on the reasonableness of the 2012 load forecast as the basis for the development of the Generation Expansions Plans and the subsequent CPW analysis.
- ii. Review of the AC integration studies completed for the Muskrat Falls and LIL HVdc configuration options to establish the reasonableness of their use as DG<sub>3</sub> cost inputs.

Information required ~~available during the review:~~

- AC integration studies report

~~The information and data will be reviewed during meetings with Nalcor personnel responsible for System Planning.~~

Outcome:

- A report on the reasonableness of the results of the AC integration studies and any inputs required into the CPW analysis.
- iii. Review of the Muskrat Falls GS post DG<sub>2</sub> design changes, cost estimates, and construction schedules to determine their reasonableness as inputs to the CPW analysis.
- iii. Information ~~required to be made available during meetings held with Nalcor:~~
- Muskrat Falls GS current basis of design
  - Muskrat Falls GS updated design data and information including AC switchyards and transmission lines to Churchill Falls
  - Muskrat Falls updated master cost estimate
  - Muskrat Falls updated high level master project schedule

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~~This information and data will be reviewed during meetings with Nalcor personnel responsible for the Muskrat Falls GS design to review work completed subsequent to DG<sub>2</sub>.~~

Outcome:

- A report on the reasonableness of the Muskrat Falls GS capital cost estimate and schedule as inputs to Nalcor's DG<sub>3</sub> CPW analysis.
- iv. Review of the HVdc Converter Stations and associated AC switchyards. This will include a review of the single line diagram, revised cost estimates, construction schedules, and DC project definition to determine their reasonableness as inputs to the CPW analysis.

Information ~~required to be made available during meetings with Nalcor:~~

- Information as listed above

- HVdc updated master cost estimate
- HVdc updated master project schedule
- Shore electrode cost estimates, and construction schedules.

~~Note: This information and data will be made available during meetings with Nalcor personnel responsible for the HVdc Converter Stations design and AC switchyards.~~

Outcome:

- A report on the reasonableness of the transmission capital cost estimates and schedule as inputs to Nalcor's DG3 CPW analysis.

- v. Review of the overhead HVdc transmission line and associated AC collector transmission lines including its reliability design criteria, route details and final metrology review. An engineering review of tower and line designs, review of cost estimates, and construction schedules will be conducted to assess the reasonableness of the transmission line design parameters as inputs to the CPW analysis. MHI will work with Nalcor to obtain a common understanding of the HVdc transmission line design philosophy and its alignment to the design details provided and operating practices. This undertaking will clarify both the business and local issues implicit in the selection of reliability return period.

Information ~~required to be made available during meetings with Nalcor:~~

- Information as listed in the above paragraph
- Transmission line design basis
- Transmission line updates to the master cost estimate
- Transmission line updates to the master project schedule

~~This information and data will be reviewed during meetings with Nalcor personnel responsible for the transmission line design.~~

Outcomes:

- A report on the reasonableness of Nalcor's transmission line design and rationale of design criteria as inputs to Nalcor's DG3 CPW analysis.

- vi. Review of the Strait of Belle Isle (SOBI) marine crossing cost estimates and construction schedule to assess their reasonableness as inputs to the CPW analysis.

Information ~~required to be made available during meetings with Nalcor:~~

- Marine crossing capital cost estimates
- Marine crossing master project schedule

~~This information and data will be reviewed during meetings with Nalcor personnel responsible for Marine Crossing.~~

Outcomes:



- A report on the reasonableness of Nalcor's SOBI cost estimate schedule as input to the DG3 CPW analysis.
- vii. A review of the other changes made by Nalcor to cost inputs from DG2 to DG3 for both the Isolated Island and Interconnected Island alternatives.

Information required to be made available during meetings with:

- Changes in costs between DG2 and DG3
- Supporting information to explain the changes in costs.

Outcome:

- A report on the reasonableness of Nalcor's cost inputs for the other items adjusted since DG2.
- viii. A review of the CPW input changes and results for the DG3 inputs for both the Isolated Island and Interconnected Island alternatives. The CPW analysis review will validate the results for the base case of the two options computed by Nalcor. MHI's review will include an assessment and commentary on the sensitivities on the CPW analysis:
- Revised capex cost variations
  - Fuel price variations
  - Interest Rate variations.

Information required:

- .

Outcome:

- A report on the reasonableness of the inputs and results of Nalcor's CPW Analysis inputs for both the Isolated Island and Interconnected Island alternatives, including its sensitivity analysis.

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- b) Preparation of a final report anticipated to 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 a discussion of the materiality of any observations and recommendations made as well as a discussion of the steps taken to address such matters.
- c) Provision of ongoing support to the Client.

#### Schedule Item Scheduled Completion Date

- Kick off Meeting, April 17<sup>th</sup>, 2012
- First Draft Report, July 6<sup>th</sup>, 2012
- 2nd Draft Report, July 23<sup>rd</sup>, 2012

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- Submission of Final Report, July 31<sup>st</sup>, 2012
- Presentation to the Government, TBD
- Completion of Services, September 30th, 2012.

## 4.0 Financial Proposal

The following is a comprehensive Budget for the review project.

### 4.1. Summary of Costs

Total Project Budget: \$242,000.00

Labour: \$197,000.00

Expenses: \$45,000.00

Summary of Costs	
Item	Costs
	Canadian Dollars (CAD)
Costs of Financial Proposal	\$ 241,989

### 4.2. Breakdown of Staff Remuneration

Break down of remuneration by Consultant and position.



Breakdown of Remuneration				
Name	Position	Staff Rate Per Day (CAD)	Total Days	Total Remuneration
Paul Wilson	Project Director		18	
Allen Snyder	Technical Project Manager		27	
Les Recksiedler	HVDC Interconnection Expert		10	
Mack Kast	Financial Project Manager		15	
Dave Jacobson	System Interconnection Engineer/Wire		7	
Pei Wang	HVDC Performance Engineer		10	
Tom Moffatt	Hydro Generation Expert		10	
Craig Kellas	Load Forecast Expert		10	
Rick Horocholyn	Finance Specialist		10	
Martin Gerrard	Professional Writer		5	
Barbara Hicks	Design Specialist		7	
Eve Dillastone	Proof reader		5	
Gerald Proteau	Transmission Line Expert		22	
<b>TOTAL Remuneration</b>			<b>156</b>	

Billings are calculated on cumulative hours worked. Overtime and differentials for field work will not be applied to this project on any billings.

#### 4.3- Break down by Activity

Breakdown of Labour by Activity											
Activity Number:	1	2	3	4	5	6	7	8	9	10	
Activity Description	Load Forecast 2012 Update	AC Integrations Studies Assessment	Muskat Falls GS DG3 Assessment	HVDC Converter Stations DG3 Assessment	Transmission Line Assessment	Strait of Belle Isle Marine Crossing (SOB) DG3 Assessment	Other Cost Estimate Revisions	CPW DG3 Analysis	Report Preparation	Report Presentation	
Names											Days
Paul Wilson	-	-	-	-	-	-	-	-	13.0	5.0	18.0
Allen Snyder	-	-	-	-	-	5.0	10.0	-	7.0	5.0	27.0
Les Recksiedler	-	-	-	10.0	-	-	-	-	-	-	10.0
Mack Kast	-	-	-	-	-	-	-	10.0	5.0	-	15.0
Dave Jacobson	-	7.0	-	-	-	-	-	-	-	-	7.0
Pei Wang	-	-	-	10.0	-	-	-	-	-	-	10.0
Tom Moffatt	-	-	10.0	-	-	-	-	-	-	-	10.0
Craig Kellas	10.0	-	-	-	-	-	-	-	-	-	10.0
Rick Horocholyn	-	-	-	-	-	-	-	10.0	-	-	10.0
Martin Gerrard	-	-	-	-	-	-	-	-	5.0	-	5.0
Barbara Hicks	-	-	-	-	-	-	-	-	7.0	-	7.0
Eve Dillstone	-	-	-	-	-	-	-	-	5.0	-	5.0
Gerald Proteau	-	-	-	-	22.0	-	-	-	-	-	22.0
<b>GRAND TOTAL</b>	<b>10.0</b>	<b>7.0</b>	<b>10.0</b>	<b>20.0</b>	<b>22.0</b>	<b>5.0</b>	<b>10.0</b>	<b>20.0</b>	<b>42.0</b>	<b>10.0</b>	<b>156.0</b>

#### 4.4- Breakdown of Reimbursable Expenses

Breakdown of Reimbursable Expenses					
N°	Description	Unit	Total Units	Unit Cost (CAD)	Total Cost

The above chart shows the quantity and per unit rates for various expense categories. These expenses will be invoiced monthly as they are incurred.

Per Diems are sourced from the US Department of State site for meals in St. John's. A daily rate will be submitted for each staff member traveling to and from site in lieu of meal receipts.

#### 4.5. Breakdown of Costs and Project Total

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### Breakdown of Costs by Activity

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## 5.0 Contract Terms

This proposal, and the following revisions to contract terms will be included as part of the final contract between the Government of Newfoundland and Labrador, and Manitoba Hydro International Ltd.

Legal documents incorporated into this proposal are

- Consultant Contract (Appendix A)
- Schedule "B" Special Terms and Conditions (Appendix B)
- Schedule "C" and Schedule "D"

### 5.1. Schedule "C" Clause 7.2, Liability

The following wording replaces clause 7.2.

*Notwithstanding any other provision of this Agreement the total liability of the Consultant to the Client with respect to any and all claims arising out of the performance or non-performance of the services provided under this Agreement whether based in contract, warranty, tort, including negligence, equity, strict liability or otherwise, shall be, limited to five times the value of the total fees for the services provided for under this Agreement.*

*Subject to the limitations of liability in this Agreement, Consultant shall be liable for and shall indemnify and save harmless Client, its directors and officers, its employees, agents and subcontractors from and against any and all losses, costs, damages or expenses suffered or incurred by Client or payable to any third party arising from any breach of contract, negligence or willful misconduct of Consultant or its employees in relation to this Agreement, except to the extent that such loss or damage is caused by the breach of contract, negligence or willful misconduct of Client, its employees, agents or subcontractors or any third party.*

*Subject to the limitations of liability in this Agreement, Client shall be liable for and shall indemnify and save harmless Consultant, its directors and officers, its employees, agents and subcontractors from and against any and all losses, costs, damages or expenses suffered or incurred by Consultant or payable to any third party arising from any breach of contract, negligence or willful misconduct of Client or its employees in relation to this Agreement, except to the extent that such loss or damage is caused by the breach of contract, negligence or willful misconduct of Consultant, its employees, agents or subcontractors or any third party.*

*Neither party shall have any liability to the other party or any other person or entity for any indirect, incidental, special or consequential damages whatsoever, including but not limited to loss of revenue or profit, lost or damaged data, or other commercial or economic loss, even if either party has been advised of the possibility of such damages; nor shall either party's directors, officers, employees, agents or subcontractors have any such liability.*

**5.2. Clause 7.3**

The following statements are to be added to Clause 7.3.

*In the event that any liability results from the joint or concurrent negligent or intentional acts or omissions of the parties, each party shall be liable under this indemnification in proportion to its relative degree of fault.*

*Each party shall promptly notify the other party of any liability or proceeding in respect of which it is or may be entitled to indemnification.*

*Such notice shall be given as soon as reasonably practicable after the relevant party becomes aware of the liability or proceeding.*

*Any obligation of an indemnifying party to indemnify an indemnified party shall be reduced by the proceeds of any insurance policies received by the indemnified party with respect to the relevant claim.*

*Legal counsel retained for the defence of a party shall be instructed by the party retaining them to estimate in good faith the proportion of all costs, fees, and expenses of such defence which relate directly to Consultant's claims and Client's claims. All fees of legal counsel shall be allocated between Consultant and Client in proportion to each party's relative degree of fault.*