Request IR-1:

Reference: (M-2) Page 14:

CITATION:

> **In summary, the Maritime Link Project will give Nova Scotia access to reliable, renewable energy at a predictable price from Phase 1 of Nalcor's Lower Churchill hydroelectric development in Labrador (Lower Churchill Project Phase 1 or LCP Phase 1), will allow Nova Scotia to meet new Federal regulatory requirements focused on greenhouse gas (GHG) emission reductions and will assist in meeting Nova Scotia's Renewable Electricity Standards.**

Question:

What is that predictable price?

Response IR-1:

The predictable price is $1.52 B with a variance of up to $60 million for 35 years. This is based on the 20 For 20 Principle (Please refer to Liberal IR-11). This price is predictable for 35 years since it does not vary with fuel prices for the entire period. Also, the Maritime Link provides direct access to Surplus Energy, which requires no additional capital investment to access for 50 years.

Request IR-2:

Reference: The NS Power 10 Year System Outlook, table 1 on page 6:

Preamble 1: The table shows historical and forecast net annual energy requirements. That table indicates a decrease of 11.7% between 2012 and 2022, and specifically between 2014 and 2020, a 1% decrease in load, equalling a decrease in load of 106.24 GWh.
Reference: M-2(vi) page 41

Preamble 2: The table shows the Peak Forecast (Base Load) between 2014 and 2020 as relatively stable at 1890 MW, with only an average of 1 MW variance in load. It does not indicate a decrease in load.

Question :

Is NSPML stating that peak demand will remain stable while energy requirements will decrease?

Response IR-2:

No. The apparent difference described in the question is due to a comparison of energy trend in one forecast and the peak demand trend in a different forecast. The NSPML low load forecast indicates a declining demand with declining load and the NSPML base forecast indicates an increasing demand with increasing load. Annual figures for these forecasts can be found in the table labeled *Long-term Load Forecast Values,* Appendix 6.03,of the Application, page 6 of 19.

NON-CONFIDENTIAL

Request IR-3:

Reference: M-2(vi), page 110:

CITATION:

> **The Muskrat Falls purchase in combination with the Maritime Link provides for a firm purchase of 165 MW of qualifying renewable energy plus access to 335 MW of supplemental energy. The existing transmission interconnections from Quebec through New Brunswick to Nova Scotia are not capable of delivering a similar supply arrangement from Hydro Quebec.**

Preamble:

> **It may be more cost effective at this time to upgrade the transmission interconnections from Quebec through New Brunswick to Nova Scotia to allow for the purchase of energy from Hydro Quebec. These interconnections will be upgraded as a part of the Muskrat Falls Project anyway. By upgrading the interconnections first the Maritime Link could be developed over a longer period of time, after a detailed, independent investigation ensures that it is a viable long term cost option.**

(a) To what extent would the upgrades required to import additional power via New Brunswick be the same as the upgrades required to export surplus Nalcor Energy under the Maritime Link proposal?

(b) What are the costs of these upgrades?

(c) Has a scenario been considered whereby these upgrades are made first, deferring the Maritime Link until a detailed, independent investigation has ensured that it is a viable long term cost option?

Response IR-3:

(a) The upgrades to support export of surplus energy from Nalcor are described in the application in Figure 8.1, currently estimated to be $31.5 million whereas the low end of the capital cost to resolve the Other Import constraints is in excess of $600 M and would require additional transmission tariffs for the energy to be transmitted plus the cost of the renewable energy and capacity. They are not the same and accomplish two different outcomes.

(b) Please refer to (a).

(c) No. The upgrades referred to in the question are the upgrades outlined in the "other import" alternative and, as per the application, that alternative is not the lowest cost long-term option for Nova Scotia. The UARB process will decide if the Maritime Link is the lowest cost long-term option for Nova Scotia.

NON-CONFIDENTIAL

Request IR-4:

Reference: M-2(vi) item 9, page 110:

CITATION:

> **NS Power would not just have access to the 335 MW of surplus potential from Nalcor but it will continue to have access to surplus energy via the 300 MW of non-firm transmission at the NB interconnection. This increased competition and access choice provides greater flexibility for NS Power. There is increased opportunity for surplus economy energy transactions which would not exist with a Hydro Quebec supply alternative.**

(a) In terms of dollars, how does this surplus benefit the Nova Scotia Power ratepayer?

(b) In terms of dollars, how does this surplus benefit the Nova Scotia Taxpayer?

(c) In terms of dollars, what is the benefit to Emera shareholders, Nova Scotia Power and Nova Scotia Power Maritime Link?

(d) If NSP ratepayers will not benefit, why should they be expected to pay for it?

Response IR-4:

(a) As this surplus energy will be purchased in place of the energy generated from imported coal or other fuels, the economic benefit to customers will be achieved by the avoided cost to purchase the fuel. The difference between the two reduces the cost to produce electricity for customers, with 100 percent of that benefit going direct to the Nova Scotia customer.

(b) There is no effect for taxpayers. All of the benefit derived from the opportunity to purchase surplus ecomony energy would be to NS Power customers through the reduction in fuel costs in the FAM.

(c) Not applicable. Please refer to (a).

(d) Not applicable. Please refer to (a).

Request IR-5:

Reference M-2, page 33:

CITATION 1:

> **The NS Block, estimated to be 895 gigawatt hours per year, will be delivered to Nova Scotia. This amount of energy is equal to 8 to 10 percent of NS Power's current electricity sales to customers. The NS Block is dispatchable, which means the utility can schedule and optimize when the energy is to be delivered to Nova Scotia within the terms of the Energy and Capacity Agreement. The electricity will be delivered during times of peak electricity use, when it is most valuable.**

Reference: M-2(ii), page 228:

CITATION 2: "Winter Period" means the period from and including November 1 of a year to and including March 31 of the immediately following year.

Reference: M-2, page 33:

CITATION 3: Energy	Net Delivered Capacity to NS	Deliveries by week	Seasonality	On Peak/ Off Peak
NS Block	153 MW	16 hours per day x 7 days per week	All year	On Peak
5-Year Supplemental Energy	Approx. 200MW	8 hours per day x 7 days per week	Winter only	Off Peak

Preamble:

The Nalcor model assumes that it will be able to use Upper Churchill storage and generation to deliver winter MWs over and above any amount that that Muskrat Falls cannot deliver.

Question:

(a) **If Nalcor's winter generation plan does not work, I.E.; if Hydro Quebec refuses to allow winter generation from Upper Churchill to be diverted to serve NL/NS, what are the implications for Emera, NSPML, NSP and the NSP ratepayers?**

(b) **Have studies been completed to show what the winter flow at Muskrat Falls is? If it has been completed, produce the results. If it has not been completed, why not?**

Response IR-5:

Please refer to Liberal IR-28.

Request IR-6:

Reference:

http://www.bbc.co.uk/news/uk-scotland-highlands-islands-20800718
http://www.heraldscotland.com/news/environment/sub-sea-cable-cost-hits-green-project.19318828

Preamble 1: On November 5, 2012, it was announced that the Western Isles Link, consisting of a 150kV 450MW HVDC link (80km subsea, 76km u/g); a single 132kV 180MVA AC connection (20km subsea, 6km o/h) (Lewis Infrastructure); and the extension of Stornoway substation, had increased in cost by 75%. Originally projected to cost £490m ($764m) in 2010, over a 2 year period the cost is now expected to be at least £700m ($1,091b).

Preamble 2: The Western Isles Link is scheduled to complete in 2015. It is roughly ¼ the size of the Maritime Link and it will cost about $1.1 billion.

Please provide the initial cost estimates, current cost estimates and final costs of finished projects for this and other similar projects.

Response IR-6:

Cost estimates for the Maritime Link Project are provided in the Application, 80 percent of which will not vary with the Sanction Agreement completed by Nalcor and NSPML. Final cost of the finished project will be filed with the UARB after the project has been completed as part of a future Application. NSPML does not possess the requested cost information in respect of other similar projects.

NON-CONFIDENTIAL

Request IR-7:

Reference: M-2, page 23

CITATION:

> **NS Power will have contractually guaranteed annual access to 170 MW of on-peak renewable electricity (plus a supplemental amount of electricity in the first five years of operation – as described in Section 2), and the opportunity to purchase additional amounts of economically priced electricity.**

What is the actual price, in cents per kWh, of the "economically priced electricity"?

Response IR-7:

Please refer to NSUARB IR-37.

NON-CONFIDENTIAL

Request IR-8:

Reference: M-2, page 33 and 34

CITATION:

> **The expected service life of the Maritime Link facilities is 50 years. NSPML will own the Maritime Link facilities for the first 35 years and the terms of the agreement with Nalcor provide that Nalcor will provide NSPML with an additional block of electrical energy in the first 5 years of operation of the Maritime Link facilities. This additional electrical energy is known as Supplemental Energy. The Supplemental Energy is calculated based upon the position that Nova Scotia customers should be in the same present value cost position as they would have been had the Maritime Link facilities been owned and depreciated for 50 years. More details on this calculation are contained in Section 4. In other words, Nova Scotia will receive more energy up front to make up for the energy it won't receive in the last 15 years of the Maritime Link facilities' expected service life. At the same time, Nalcor will be responsible for the maintenance costs of the Maritime Link facilities after NSPML conveys it to Nalcor at the end of the 35 years of operation.**

This supplemental energy will be provided in the first 5 years of the agreement, roughly 2017 to 2021, when NSP load forecasts show an expected decrease in load during that period.

(a) If there is no NSP ratepayer user, what purpose will this supplemental energy be put to?

(b) If it is to be sold, who is the purchaser?

(c) If sold outside of Nova Scotia, will the NSP ratepayer see a corresponding decrease in their rates for the first 5 years of the agreement?

Response IR-8:

(a-c) Once the Maritime Link is built, the Supplemental Energy comes at no additional cost per MWH. The electricity will displace NS Power's highest cost fuel generation and the emissions associated with that source, which will provide a direct benefit and savings to Nova Scotia customers.

NON-CONFIDENTIAL

Request IR-9:

Reference: M-2, page 7, 20 for 20 Principle:

CITATION 1:

> **In exchange for 20 percent of the electricity from Muskrat Falls over the agreed-upon term, NSPML is responsible for 20 percent of the LCP Phase 1 and Maritime Link facilities costs.**

Reference: M-2, page 8:

Preamble:

> **The reference defines the 3 projects under Lower Churchill Projects Phase One (LCP Phase 1) and Maritime Link (or Maritime Link facilities)**

(a) What is the estimated cost, in 2010 dollars, of LCP Phase 1 and the Maritime Link Facilities?

(b) What is the estimated cost, in 2013 dollars, of LCP Phase 1 and the Maritime Link Facilities?

(c) If LCP Phase 1 and the Maritime Link Facilities go over budget from the 2010 dollar cost, is NSPML responsible for 20% of the over budget amount?

Response IR-9:

(a-b) The capital cost estimates provided in the Application represent the estimated capital expenditure profile in "as spent" nominal dollars. The capital costs reflect the amount of expenditure which will be incurred in the period the cost is anticipated to take place. The estimates are not determined in 2010 or 2013 dollars.

(c) A 2010 dollar cost benchmark is not part of the commercial agreement between NSPML and Nalcor. Please refer to NSUARB IR-76.

NON-CONFIDENTIAL

Request IR-10:

Reference: M-2(iii), page 58:

CITATION 1:

> **Market value of electric energy $64/MHh in 2017; Escalation of value 3% per year; Cost of capital 9.5% per year. (sic)**

Reference:

http://www.nrcan.gc.ca/media-room/news-release/2012/31c/6138#toc319473583, Natural Resources Canada Economic Analysis Lower Churchill Hydroelectric Generation Project:

CITATION 2:

> **This rate of return assumes an average delivered price to Nova Scotia of about 2010$ 68/MWh, which incorporates a portion of firm sales priced at the same price paid by Island consumers and the remainder at a price consistent with average Quebec export prices in recent years (held constant real).**

(a) Does NSP follow NRCan's approach of estimating market price based on Quebec export prices?

(b) If not, why not?

(c) Does $64/MWh represent the amount that the NSP ratepayer will pay for energy from Muskrat Falls? In the affirmative, please explain your reasoning. In the negative, please indicate the NSP ratepayer price, and explain how it was derived.

Response IR-10:

(a) No.

(b) That is not the way the arrangement with Nalcor has been negotiated. Please refer to Liberal IR-11 and NSUARB IR-37 (e).

(c) No. Please refer to NSUARB IR-37 Attachment 1.

Request IR-11:

Reference M-2(viii) page 100:

CITATION:

> **"Nalcor Energy ("Nalcor") and Emera Inc. ("Emera") entered into agreements relating to transmission services and delivery of power and energy from the Province of Newfoundland and Labrador to the Province of Nova Scotia, other Canadian provinces and New England. These agreements include: (i) the New Brunswick Transmission Utilization Agreement that provides for the transmission of Energy and Capacity, on behalf of Nalcor, through the Province of New Brunswick; and (ii) the MEPCO Transmission Rights Agreement, that provides for certain transmission rights to be made available to Nalcor in the State of Maine."**

(a) How much will Nalcor pay to Emera in a for transmission tariff for the right to transmit energy through Nova Scotia?

(b) Will the NSP ratepayer benefit with a reduced rate due directly to the extra income generated to Emera/NSPML/NSP from the transmission tariff paid by Nalcor, and if so, how much will that reduced rate be?

Response IR-11:

(a) The actual amount paid will depend upon the amount of energy scheduled and shipped. A formula for calculating this amount is set out in detail in the Nova Scotia Transmission Utilization Agreement, Appendix 2.06, Section 2.3(b)(vii)

(b) The impact of the revenue received from Nalcor as Applicable Tariff Charges under the NSTUA will depend on a number of factors, the first being whether NS Power purchases the Surplus Energy due to its preferential position in the new market created by the

Maritime Link. Otherwise, factors include the level of usage by Nalcor, the general demand on the NS transmission system and other factors set out in the OATT cost of service, as approved by the UARB from time to time. It is expected that if NS Power does not purchase the Surplus Energy, the revenue from the Nalcor Surplus Energy flowing through Nova Scotia will offset the costs of capital, maintenance and redispatch of the Nova Scotia system associated with the Nalcor Surplus Energy.

Request IR-12:

REFERENCE: M-2 (APPLICATION), page 47 AND 49

CITATION (P. 49):

> As a rule, the grounding sites will carry very little current, based only on minor unbalance between the positive and negative poles. Only a sustained outage of a pole conductor will require sustained use of the earth return path. As rare as these events may be, the ground sites must be designed to carry full rated system current for an extended period of time without incident.

Has NSPML carried out studies to examine the implications for marine life and human users near the shore grounding sites during monopole operation? Please provide the studies and summarize their results.

Response IR-12:

While environmental assessment is not part of this proceeding, NSPML can confirm that it carried out studies to examine the implications for marine life and human users near the shore grounding sites during monopole operation. Please refer to Sections 2.4, 2.5, 2.6, 2.7, 7.1, 7.2, and 7.3 of the EA report.

The Environmental Assessment Report for the Maritime Link, including all appendices, can be downloaded from:
http://www.emeranl.com/en/home/environment/environmentalreviewprocess.aspx

Request IR-13:

REFERENCE: M-2 (APPLICATION), P. 64

CITATION:

> The grounding lines themselves will consist of distribution-class power lines from the AC/DC converter sites at Bottom Brook and Woodbine to their respective shore grounding sites near St George's and Big Lorraine. These lines will operate at a low voltage and high current. At the shore grounding sites, voltage will be effectively zero compared to ground, rising to a maximum of a few thousand volts at the converter sites, due to the voltage drop over the conductors of the grounding lines. The ground lines will

What will the voltage be at the grounding site during monopolar operation?

Response IR-13:

The ground potential rise (GPR) voltage at the grounding site is a function of monopolar current and impedance of the grounding site to the remote earth. The maximum monopolar current is 1250 A and the maximum impedance to the remote earth of the grounding site is expected to be of the order of 0.2-0.3 ohms. The highest grounding site GPR voltage is expected to be less than 400 V, which will occur only during brief periods when single-pole outages occur while the system is operating at full 500 MW capacity.

NON-CONFIDENTIAL or CONFIDENTIAL or PARTIALLY CONFIDENTIAL or CONFIDENTIAL (Attachment Only)

Request IR-14:

REFERENCE: M-2 (APPLICATION), P. 75

CITATION: "As such, given the 20 for 20 Principle and the current total of LCP Phase 1 and Maritime Link facilities' capital cost estimate of $7.6 billion, the Maritime Link Project capital costs are $1.52 billion, and this is the first element of the rate base that NSPML is asking the Board to establish in this proceeding. When its Decision Gate 3 capital cost estimate for the Maritime Link facilities is finalized, NSPML will update this Project capital cost estimate."

PREAMBLE: Section 1.10 of the M-2 (APPLICATION), Request for Approval, does not mention a rate base. However, it requests an Order « ii) approving the Project Costs of $1.52 billion …, and iv) Approving a variance of $60 million with respect to the approved costs of the Project ... pursuant to Section 6 of the Regulations ».

(a) For NSPML and for NSPI, do these Project Costs constitute a Rate Base, in the sense of s. 42 of the Public Utilities Act?

(b) In the affirmative, please explain in detail why this request was not explicitly stated in section 1.10.

(c) Again in the affirmative, please explain in detail how this rate base will be administered.

(d) In the negative, please explain in detail the differences, in the view of NSPML and NSPI, between the status of these Project Costs and a rate base in the sense of s. 42 of the Public Utilities Act.

(e) As the DG3 estimates will not be finalized before the Board issues its Order in the present proceeding, will the Board have the opportunity to review or amend that Order, in the event that the DG3 costs are substantially greater than the costs described in this proceeding?

(f) In the event that actual construction costs are greater than the DG3 cost estimates, will the amount in the rate base be limited to the DG3 costs?

Response IR-14:

(a-d) The Maritime Link Project (20 percent of the LCP Phase 1 and ML assets) cost of $1.52 billion, plus a variance of up to $60 million, will be included in the rate base of NSPML. These costs will not be included in the rate base of NS Power. The Application requests UARB approval of the Maritime Link Project including, *inter alia*, approval of the Maritime Link Project Cost and variance amount, and direction that NSPML may recover those costs from NS Power in accordance with the Maritime Link Project Cost Recovery Regulations. As a public utility, NSPML's rate base costs will be recovered from NS Power in future by way of applications from time to time to the UARB pursuant to section 64 of the Public Utilities Act.

(e) Section 7.5 of the Application describes the UARB regulatory processes anticipated by NSPML. Please refer to NSPML GRK IR-6.

(f) In the absence of additional costs that have been prudently incurred on behalf of customers, the amount to be recovered by NSPML will not exceed the DG3 amount. If the actual costs are less than the DG3 amount, only actual costs will be recovered by NSPML.

Request IR-15:

REFERENCE: M-2 (APPLICATION), P. 90-91

CITATION:

> **4.12 Recovering the Costs of the Maritime Link Project from Nova Scotia Power**
>
> The Regulations clearly direct that once the Board has approved the Project and upon first commercial power, NSPML will be entitled to recover all Project Costs from NS Power[26]. That process involves NSPML setting an assessment against NS Power for the recovery of such costs, and making a further application to the Board for approval of that assessment under the *Public Utilities Act*. In turn, NS Power will then be entitled to

[26] Regulations, Subsection 4(2).

What discretion, if any, will the Board have with respect to NSP's future requests to recover that approved assessment from time to time in respect of the Maritime Link Project through its rates? Please justify your response making reference to applicable laws, regulations and past UARB decisions, as applicable.

Response IR-15:

Only the UARB can approve costs for recovery from the customers of a public utility. In doing so, the UARB retains discretion as to the amount of costs to be approved for recovery. This is in accordance with the Board's jurisdiction under the Public Utilities Act. Section 8(2) of the Maritime Link Cost Recovery Process Regulations states:

8(2) Nova Scotia Power Incorporated is entitled to recover through its rates any assessment approved by the Review Board in respect of the Maritime Link Project.

NSPML anticipates that the UARB will allow NS Power to recover the full amount of the NSPML assessment from NS Power's customers.

NON-CONFIDENTIAL

Request IR-16:

REFERENCE: M-2 (APPLICATION), PAGE 140

CITATION 1: "The Nalcor Transactions require NSPML to make a DG3 capital cost determination for the Maritime Link Project no later than October 1, 2013. This will allow NSPML and Nalcor to apply the 20 for 20 Principle and thereby establish the Project Cost for the rate base of the Maritime Link Project."

CITATION 2 (Maritime Link Cost Recovery Process Regulations, s. 2): "« Project costs » means all costs incurred by an applicant in connection with the Maritime Link Project."
PREAMBLE: Citation 1 states that the DG3 capital cost determination will allow NSPML and Nalcor to apply the 20 for 20 Principle and thereby « establish the Project Cost for the rate base of the Maritime Link Project ». Citation 2 stipulates that « project costs » refers to all costs incurred by an applicant in connection with the Maritime Link Project.

(a) If the actual costs incurred by NSPML in constructing the Maritime Link exceed those included in the DG3 capital cost determination, will the additional costs be excluded from the rate base of the Maritime Link Project?

(b) If the actual costs incurred by NSPML in constructing the Maritime Link exceed those included in the DG3 capital cost determination, will the additional costs be recovered from NSP consumers? If so, please explain in detail the mechanism by which these additional costs will be recovered.

Response IR-16:

(a-b) Please refer to NSPML LPRA IR-14 (f).

NON-CONFIDENTIAL

Request IR-17:

Reference: M-2 p. p.11 and p.27

CITATION:

> **The applicant states that the value of the federal subsidy in present value is $100 million.**

Present the assumptions upon which this estimate is calculated.

Response IR-17:

Please refer to NSUARB IR-87.

Request IR-18:

Ref M-2 p. p.11 and p.27

CITATION: "The expected service life of the Maritime Link facilities is 50 years. Please provide the life expectancy of comparable submarine cables in OECD countries."

Please provide the life expectancies for the major high voltage submarine cables in service now in Canada.

Response IR-18:

Our design will require 50 year service life, which will consider all technical elements of design, installation, operation and inspection.

The expected life of any submarine cable will be affected by it specific location. Each location can have various characteristics which create potential to impact the life expectancy of a cable. Marine traffic can be a material variable in a cable's exposure to damage and thus useful life. The other major factor in the life expectancy is the cable system design, which includes materials and cable specification as well as the installation requirements. It is not possible to provide an expected life of cables in OECD countries without specific details about their location and design requirements. If the cable was designed to a similar specification with similar conditions, we would speculate a similar life expectancy.

Current high voltage cables installed in Canada have mainly been installed in British Columbia with a couple of cables serving Prince Edward Island. They have been in service from 20 to 44 years. The BC cables have been in service since 1964-1968 and our cable consultant, Allen McPhail, is a former BC hydro cable engineer. The PEI cables are an older design of oil filled

cables, and do not have the same life expectancy as present cable designs. Although we do not have the details on each cable, a life expectancy in the 50-year range would be possible.

Request IR-19:

Ref M-2 p. 98:

CITATION:

> **NSPML reviewed hydrology data and the basis for LCP Phase 1's design assumptions, as well as estimates of the electrical energy output of a hydroelectric development at MF under various conditions substantiating the 4.93 TWh annual energy level.**

(a) Please confirm that Nalcor is planning to use to use Upper Churchill to deliver firm energy to Newfoundland and Nova Scotia in winter above and beyond Nalcor's current recall rights.

(b) Explain in detail how this use of UC complies with Hydro Quebec's rights with respect to Upper Churchill.

(c) Produce the evidence the applicant relies upon that Nalcor's winter generation plan for Muskrat Fall and Upper Churchill will work.

(d) If Hydro Quebec is able to enforce a refusal to allow winter generation from Upper Churchill beyond Nalcor's recall rights to be diverted to serve Newfoundland and Nova Scotia, what are the implications for the applicant and NS ratepayers?

Response IR-19:

(a) NSPML understands that the LTA will provide direct access for Churchill Falls electricity to be transmitted to Newfoundland and Nova Scotia which could include energy above and beyond the recall rights.

(b) Please refer to Liberal IR-28.

(c) Please refer to Liberal IR-28. NSPML's share of Muskrat Falls is 170 of 824 MW based on the contractual provisions for the supply of electricity which is Nalcor's responsibility.

(d) Please refer to CanWEA IR-26.

Request IR-20:

Ref M-2 p. 99

CITATION:

> **As a recognized industry expert, MHI's assessment provides a solid basis for confidence in the LCP Phase 1 schedule and costs, which aligns with industry standard practices as recommended by the AACE and also with the Maritime Link Project approach and methodology as described further in Section 7.**

Please explain whether the applicant considers Manitoba Hydro's recent experience with cost over-runs and project delays at the Wuskwatim hydro-electric project in North Manitoba as a factor relevant to Manitoba Hydro International's review of the Muskrat Falls project. Please explain in detail how the costing and scheduling approach used for Wuskwatim differs from the approach the applicant is using for Maritime Link.

Response IR-20:

NSPML's understanding of the Wuskwatim hydro project is that the cost overrun references are related to the equivalent of a DG1 or DG2 (conceptual stage design) not to the DG3 (construction approval estimate). The DG3 estimate has a higher degree of project definition and, in the case of Nalcor and NSPML, the DG3 estimates will be based upon supplier proposals for the major elements of the project.

Please refer to NSDOE IR-8 regarding project risk management to avoid cost overruns.

The main difference between the Wuskwatim project partnership with Manitoba Hydro (not MHI) is the contractual obligations of NSPML and Nalcor for their respective projects. With the Sanction Agreement, Nalcor has passed their DG3 estimate which has the effect of locking in 80 percent of the total cost of which 20 percent will be attributed to NSPML. For 80 percent of

the total cost, insofar as Nova Scotia Customers are concerned there can be no cost overrun. It should also be noted that NSPML is at a DG2 estimate for its 20 percent of the costs for the Maritime Link Project and has included a $60M variance in this application to cover any possible change in the costs of these estimates as they move to DG3.

NON-CONFIDENTIAL

Request IR-21:

Reference: M2, page 107, table 6.1:

CITATION: At the confluence of the "Natural Gas" heading and the "Lowest Long Term Cost" heading, the word "no" populates that field, indicating that natural gas does not meet the lowest cost long-term alternative for meeting the energy needs of NS.

Can you provide all evidence as to how that conclusion was reached? Include price forecasts for natural gas. Include any capital upgrades to pipelines or other infrastructure that would have been in that analysis.

Response IR-21:

Natural gas is not a renewable resource and is not a stand-alone option to meet the Renewable Electricity Regulations. An option that is not compliant with Regulations cannot be considered in the lowest cost long-term alternatives for meeting the energy needs of Nova Scotia. Please refer to Appendix 6.04, page 3 of the Application for natural gas price forecasts. No capital upgrades to pipelines or other infrastructure which would be expected to be necessary were estimated in the analysis. Please refer to Liberal IR-39.