

FEDERAL COURT

BETWEEN:

GRAND RIVERKEEPER, LABRADOR INC.,
SIERRA CLUB OF CANADA, and
NUNATUKAVUT COMMUNITY COUNCIL INC.

APPLICANTS

AND:

ATTORNEY GENERAL OF CANADA,
MINISTER OF FISHERIES AND OCEANS,
MINISTER OF TRANSPORT,
MINISTER OF NATURAL RESOURCES, and
NALCOR ENERGY

RESPONDENTS

AFFIDAVIT OF PHILIP RAPHALS

I, **PHILIP RAPHALS**, Energy Analyst, of 100-326 Saint Joseph Boulevard East, in the City of Montréal, in the Province of Québec, **AFFIRM THAT:**

1. I am the Executive Director and the co-founder of the Helios Centre, an independent non-profit energy policy research group based in Montréal, Québec.
2. I was engaged as an expert by Grand Riverkeeper, Labrador Inc. (“Grand Riverkeeper”) in January 2008. A copy of my *curriculum vitae* is attached to this my Affidavit as **Exhibit A**.
3. I was retained to assist Grand Riverkeeper with its preparation for and participation in the environmental assessment conducted by the Joint Review Panel (“the Panel”) of the proposed Lower Churchill Generation Project. The Panel conducted its assessment jointly under the Canadian Environmental Assessment Act (“CEAA”) and provincial legislation. The Panel’s mandate is confirmed and further articulated in the Joint Panel Agreement and Terms of Reference, which is appended as Appendix 2 of the Panel’s Report.

4. In my Affidavit, I provide evidence on three topics under three separate headings. First, I provide evidence of some key developments that provide the context for understanding the approach ultimately taken by the Panel, in its Report, to the factors of **need, rationale and alternatives**. I provide this background, contextual evidence to help the Court understand how it was that the Panel came to defer the factors of need, rationale and alternatives to other actors or processes extrinsic to the statutory environmental assessment under the CEAA.
5. Second, I provide evidence about **two extrinsic processes**, one that is ongoing and one that has concluded. These extrinsic processes have narrow mandates to look at specific questions related to – but not exhaustive of – the factors of need, rationale and alternatives. The ongoing process is a review by the provincial Public Utilities Board (“PUB”) in Newfoundland and Labrador. The concluded process, which led to a report by Navigant Consultants in September 2011, which was initiated by Nalcor Energy (“the Proponent”), excluded any public involvement. Navigant Consultants was retained by the Proponent to prepare this report.
6. To be clear, I only provide evidence about these extrinsic processes so as to respond to any argument that these extrinsic processes can somehow take the place of the Panel’s assessing and reaching conclusions on need, rationale and alternatives. I would disagree strongly with such an argument. As I describe below, factually speaking, these two processes do not have the same mandate, independence, public participation and/or funding support as the Panel under CEAA. Furthermore, these processes rely on evidence and documents which, with few exceptions, has not been put before the Panel.
7. Finally, I provide evidence about **transmission projects that are closely-related** to the Lower Churchill Generation Project, and indeed that form part of the larger “Lower Churchill Project”, but which were not assessed by the Panel as part of any cumulative effects assessment.

A. Factual Background to the Panel’s Approach to Need/Rationale and to Alternatives

8. I confirm here, at the outset of this section of my Affidavit, that all of the evidence in this section regarding the background to the Panel’s decision to defer assessment of need, rationale and alternatives to other entities is part of the record before the Panel. In particular, Exhibits B, C, D, E-1, E-2, F-1, F-2, G, H and I, described and appended in this section of my Affidavit, are all on the record.
9. Section 4 of the Panel’s Report addresses “Project Need and Alternatives”. Section 4.1 addresses “Need, Purpose and Rationale”, while section 4.2 addresses “Alternatives to the Project.”
10. Section 4.1 on the Report on Need, Purpose and Alternatives concludes at pages 24-25 with the following findings and recommendation:

Whether the Project is considered as a whole or as separate generating facilities, the Panel finds that there are two significant outstanding questions. The first is whether the Project is the best alternative for meeting domestic demand. This is addressed in Section 4.2, Alternatives to the Project. The second has to do with the availability of transmission access to deliver a significant portion of the Project’s energy to export markets, whether markets would be available, which markets, when, and at what price could the power be sold. Nalcor’s proposal for Muskrat Falls includes export capability of part of the output via the planned Maritime Link. However, no certain transmission capability has been identified for the much larger energy output of Gull Island.

The Panel concludes that, in light of the uncertainties associated with transmission for export markets from Gull Island, Nalcor has not demonstrated the justification of the Project as a whole in energy and economic terms.

The Panel further concludes that there are outstanding questions for each of Muskrat Falls and Gull Island regarding their ability to deliver the projected long-term financial benefits to the Province, even if other sanctioning requirements were met.

RECOMMENDATION 4.1 Government confirmation of projected long-term returns

The Panel recommends that, if the Project is approved, before making the sanction decision for each of Muskrat Falls and Gull Island, the Government of Newfoundland and Labrador undertake a separate and formal review of the projected cash flow of the Project component being considered for sanctioning (either Muskrat Falls or Gull Island) to confirm whether that component would in fact provide significant long-term financial returns to Government for the benefit of the people of the Province. Such financial returns must be over and above revenues required to cover operating costs, expenditures for monitoring, mitigation and adaptive management, and financial obligations to Innu Nation. The Panel further

recommends that the Government of Newfoundland and Labrador base these reviews on information on energy sales, costs and market returns that have been updated at the time of sanction decision, and make the results of the reviews public at that time. The financial reviews should also take into account the results of the independent alternatives assessment recommended in Recommendation 4.2. (bolding in the original, underlining added)

11. Section 4.2 of the Report (Alternatives to the Project) concludes at page 34 with the following findings:

Nevertheless, there are many outstanding issues and these remain despite the considerable attention given to this subject through relevant information requests and at the hearing, including the Panel's March 21st letter to Nalcor, Nalcor's response dated April 1st, and the special hearing session on April 13th to address both. In summary, these include: the significance of several different domestic demand projections; widely different views regarding the potential contribution of energy conservation and demand management to reduce overall energy demand; criticism of current efforts in this province compared to other jurisdictions regarding conservation and demand management; potential contributions of alternate on-Island energy sources; the significance, in energy cost comparisons to 2067, of available Churchill Falls power in 2041 and recall power currently available; Nalcor's cost estimates and assumptions with respect to its no Project thermal option; the economics of offshore gas as a potential less costly option than burning oil at Holyrood; cash flow projection assumptions for Muskrat Falls and implications for Provincial ratepayers and regulatory systems.

It is the Panel's view that all of this should be addressed by commissioning an independent analysis of alternatives. Based on what participants said, such an analysis would provide needed credibility and would be beneficial to both Nalcor and the Government of Newfoundland and Labrador. Further, without the independent analysis, matters regarding the Muskrat Falls income stream, implications for ratepayers, and what electricity rates might otherwise be, cannot be determined.

An appropriate question for the analysis to address is "What would be the best way to meet domestic demand under the No Project option, including the possibility of a Labrador-Island interconnection no later than 2041 to access Churchill Falls power at that time, or earlier, based on available recall?" An independent analysis of this question would provide alternatives that could then be compared to Muskrat Falls and Nalcor's primarily thermal option which was based on complete upgrading and replacement of Holyrood.

The 'best way' to meet domestic demand is not just the least cost. Environmental considerations should be taken into account. For example, without the Project, could some of the emissions from Holyrood be partially or completely displaced by on-Island renewable energy sources?

The Panel concludes that Nalcor’s analysis that showed Muskrat Falls to be the best and least cost way to meet domestic demand requirements is inadequate and an independent analysis of economic, energy and broad-based environmental considerations of alternatives is required. (bolding in the original, underlining added)

12. Section 4.2 of the Report, at pages 34-35, makes the following recommendation:

RECOMMENDATION 4.2 Independent analysis of alternatives to meeting domestic demand

The Panel recommends that, before governments make their decision on the Project, the Government of Newfoundland and Labrador and Nalcor commission an independent analysis to address the question “What would be the best way to meet domestic demand under the ‘No Project’ option, including the possibility of a Labrador-Island interconnection no later than 2041 to access Churchill Falls power at that time, or earlier, based on available recall?” The analysis should address the following considerations:

- why Nalcor’s least cost alternative to meet domestic demand to 2067 does not include Churchill Falls power which would be available in large quantities from 2041, or any recall power in excess of Labrador’s needs prior to that date, especially since both would be available at near zero generation cost (recognizing that there would be transmission costs involved);
- the use of Gull Island power when and if it becomes available since it has a lower per unit generation cost than Muskrat Falls;
- the extent to which Nalcor’s analysis looked only at current technology and systems versus factoring in developing technology;
- a review of Nalcor’s assumptions regarding the price of oil till 2067, since the analysis provided was particularly sensitive to this variable;
- a review of Nalcor’s estimates of domestic demand growth (including the various projections to 2027 in the EIS (2007, 2008, 2009 and the 0.8 percent annual growth to 2067 provided at the hearing);
- Nalcor’s assumptions and analysis with respect to demand management programs (compare Nalcor’s conservative targets to targets and objectives of similar programs in other jurisdictions and consider the specific recommendations, including the use of incentives to curtail electric base board heating, from Helios Corporation, among others);
- the suggestion made by the Helios Corporation that an 800 MW wind farm on the Avalon Peninsula would be equivalent to Muskrat Falls in terms of supplying domestic needs, could be constructed with a capital cost of \$2.5 billion, and would have an annual operating cost of \$50 million and a levelized cost of power of 7.5 cents per kilowatt-hour;
- whether natural gas could be a lower cost option for Holyrood than oil; and
- potential for renewable energy sources on the Island (wind, small scale hydro, tidal) to supply a portion of Island demand. (bolding in original, underlining added)

13. Without the benefit of a completed assessment of need and alternatives, the Panel did not provide a conclusion or a recommendation as to whether the proposed Lower Churchill Generation Project is justified and in the public interest, or not. At section 17.9 of its Report, rather than making a final recommendation, the Panel presented the following “concluding thoughts on the final project decision”:

“If the financial review and alternatives assessments recommended by the Panel were to show that there are alternative ways of meeting the electricity demands of the Island over the medium term in a manner that is economically viable and environmentally and socially responsible, **the Project should likely not be permitted to proceed for purposes of meeting Island demand.** This is critical for the Muskrat Falls facility, because meeting Island demand has been put forward as its main justification.

If the Gull Island facility were to be developed first, or a joint sanction decision were to be made, this would be a different situation as the Gull Island facility would produce more power at a lower unit cost and therefore would offer much greater potential for revenue generation from the export of power. If market access for Gull Island were to be resolved, the cost of bringing Gull Island power to market would have to be carefully assessed by government decision makers. With this information and the projected price of power in accessible markets, the potential of the Project to provide lower cost power to Newfoundland and Labrador and generate revenues for the Province could then be assessed (see Recommendation 4.1).” (bolding and underlining added)

14. I agree with the conclusion that, on the limited evidence before the Panel, the Project should “likely” not be permitted to proceed. However, I believe that, had the Panel been able to complete the assessments of financial need and alternatives that it concluded were necessary, it would have been able to reach a firm and unambiguous conclusion. As I describe in the rest of this section of my Affidavit, the Panel’s inability to reach anything more than this “contingent” conclusion and recommendation on whether the Project is justified and should proceed resulted from the Panel’s failure to ensure that the Proponent produced sufficiently complete information on need and alternatives for the public hearings in March and April 2011.

15. On February 28, 2011, on behalf of Grand Riverkeeper, I submitted a written brief to the Panel entitled “Comments on the Justification of the Proposed Lower Churchill Project.” I continue to

hold the opinions, concerns and conclusions expressed in my brief, regarding the Proponent's inappropriate approach to and inadequate information for demonstrating justification generally, and to demonstrating purpose, need and alternatives more specifically. A copy of my February 28, 2011 written brief is attached to this my Affidavit as **Exhibit B**.

16. On March 7, 2011, I testified before the Panel in its public hearings in Happy Valley-Goose Bay. I testified as an expert witness on the issue of justification, in the topic-specific hearing on need, purpose and alternatives. As part of my oral testimony, I presented the written brief at Exhibit B. In this oral presentation, I raised concerns with the inadequate information and data provided by the Proponent on topics related to the Project's justification, including on the issues of need, purpose and alternatives.
17. During my presentation to the Panel, I also relied on a Powerpoint presentation. At pages 9-10, that Powerpoint presentation addressed the issue of alternatives to the proposed Project in somewhat greater detail than did my written brief. A copy of the Powerpoint presentation that I presented to the Panel on March 7, 2011 is attached to this my Affidavit as **Exhibit C**.
18. On March 7, 2011, representatives of the Proponent also testified in the topic-specific hearings on need, purpose and alternatives, and in the course of their presentation they also relied on a Powerpoint presentation. A copy of the Proponent's Powerpoint presentation on need, purpose and alternatives is attached to this my Affidavit as **Exhibit D**.
19. On March 14, 2011, I wrote to the Panel concerning an undertaking I had made at the March 8 hearing, and to make suggestions as to additional information that the Panel might request from the Proponent with respect to the issues raised in these hearings. A copy of my letter of March 14, 2011 is attached to this my Affidavit as **Exhibit E-1**.
20. One week later, the Panel wrote the Proponent to "request additional financial and other information to allow the Panel to better understand the economic justification of the Project and to compare electricity generation options to meet the Island demand with and without power from Labrador." Much of the information requested by the Panel was information that, in my

written materials and oral testimony, I had indicated was necessary but absent from the record. In addition, the Panel concluded its letter by inviting the Proponent to comment on any of the questions raised at the end of my letter of March 14, 2011 (Exhibit E-1). The Panel requested that the Proponent provide the information requested by the end of March 2011, in order to permit its review and discussion at a general hearing session in April. A copy of this letter from the Panel, dated March 21, 2011, is attached to this my Affidavit as **Exhibit E-2**.

21. On April 1, 2011, the Proponent responded to the Panel's Information Request by providing a 37-page document ("April 1, 2011 Written Response"). A copy of the Proponent's April 1, 2011 Written Response is attached to my Affidavit as **Exhibit F-1**.
22. In early April 2011, the Panel added an additional hearing session to address this document (Exhibit F-1), which it scheduled for April 13, 2011. At this hearing, the Proponent's witnesses presented and elaborated on their April 1, 2011 Written Response.
23. Having reviewed the Proponent's April 1, 2011 Written Response and its oral presentation at the April 13, 2011 hearing, it was my opinion that the Proponent's information was largely non-responsive to the Panel's March 21, 2011 Information Request and was inadequate to support an assessment of need/rationale and alternatives. I believed that the Panel should be informed of the weaknesses and inadequacies of the April 1, 2011 Written Response and of the additional information presented orally. I also believed that the Panel should be made aware of additional information that supplemented or contradicted the information submitted by the Proponent, such as on the existence of alternatives to the Lower Churchill Generation Project.
24. While I wished to make a presentation to the Panel, taking into account the new information provided in Exhibit F-1, the Panel did not provide for this in its schedule. I was however permitted to ask questions of the Proponent's witnesses, to make comments and to submit additional documents until 4 pm of the same day. The hearing ended at 1:20 pm. That afternoon, Grand Riverkeeper submitted my comments on the Proponent's new information that purported to respond to the Panel's March 21, 2011 Information Request. A copy of my April 13, 2011 submission is attached to this my Affidavit as **Exhibit F-2**.

25. At pages 1-3 of Exhibit F-2, I summarized the Panel's March 21, 2011 Information Requests, described the Proponent's April 1, 2011 Written Response, and commented on its inadequacy. I continue to hold the same opinions, concerns and conclusions as I provided in Exhibit F-2. However, as I had only a few hours in which to finalize Exhibit F-2 after the Proponent's oral presentation on April 13, 2011, some of my analysis presented therein is necessarily preliminary.

26. The introductory paragraphs of Exhibit F-2 read as follows:

As I emphasized in my Initial Comments (February 28, 2011), timely access to complete information is a prerequisite for any environmental assessment process. In those Comments, I identified serious failings in this regard with respect to the information provided by the Proponent, in particular with respect to the scenario where only the Muskrat Falls project might be built.

Fortunately, the Panel recognized this failing. In its letter of March 21, 2011, it requested significant new information from the Proponent, who responded on April 1. Unfortunately, the Proponent's response failed to provide much of the information requested by the Panel. In this first section, I summarize the Panel's questions, describe the Proponent's written responses and comment on their adequacy.

27. At pages 10-11 of Exhibit F-2, I addressed my concerns with how the Proponent had ignored wind energy altogether in its analysis of alternatives. Continuing on, at pages 11-14, I presented a very preliminary analysis suggesting that a large wind project on the Avalon Peninsula could display many of the benefits of the Muskrat Falls project, at a lower cost. If I had had more time, I would have been able to present a much more thorough analysis.

28. On April 14, 2011, I made some closing remarks to the Panel on behalf of Grand Riverkeeper. My remarks addressed whether there exists adequate justification for the proposed Lower Churchill Generation Project, and the information gaps limiting the answer to that question. A copy of the transcript of my closing remarks is attached to this my Affidavit as **Exhibit G**.

29. Among the issues I addressed in my remarks was my concern that the Proponent's assertion that there are no viable alternatives to the proposed project, in particular with respect to Conservation and Demand Management (CDM) and wind power (Exhibit G, page 12-19), was not credible.

30. I also addressed my concern that the evidentiary record was missing:

- any thorough study of the options for Holyrood, given that this issue was at the heart of the Proponent's position on justification (Exhibit G, p.24),
- any analysis of an alternative scenario based on traditional cost-of-service pricing for the Muskrat Falls power (Exhibit G, p. 29), and
- any information about transmission to from Labrador to the Island (Exhibit G, p. 30).

31. I also sought to explain that the lack of justification-related information showed that the Project's clearly demonstrated burdens could not be "outweighed" by its undemonstrated benefits:

The project has substantial economic costs, environmental and social externalities, and these environmental and social externalities should be incurred only if either the project meets a need that cannot be met at lower economic, environment and social costs or if it produces benefits that are so great as to outweigh these externalities, including the equity issues where the people who receive the benefits are different from those who bear the costs.

From what I've seen, neither of these is the case. There is no reliable evidence that the needs to be met by the project, that is to say, serving island electric needs and reducing or eliminating the use of Holyrood, cannot be met at lower economic and environmental costs by alternate solutions involving wind efficiency and probably a peaking plant or a transmission line, or in the worst case, the occasional use of Holyrood.

The financial benefits are strictly the result of using the monopoly situation to extract funds from ratepayers in excess of the actual cost of the project, and I think economically that's not a benefit, it's a really awash [sic], and for these reasons, in my view, the project should not be authorized. (Transcript, pages 33-34)

32. Just to be clear, and to ensure that the evidence before this Court is correct, I did not say "awash" but rather I said "a wash".

33. On April 15, 2011, an e-mail was sent on behalf of the Panel advising that the public hearing had ended that day and that “[t]herefore the record has closed and no additional information will be considered by the Panel.” A copy of this e-mail is attached to this my Affidavit as **Exhibit H**.
34. The Panel’s position disallowing any additional information was consistent with the Public Hearing Procedures which the Panel had earlier adopted. Paragraph 1.7.6 of the Panel’s Public Hearing Procedures provides that “[a]t the end of the public hearings, the Panel will close the record of the review process and no additional new information will be considered.” A copy of the Panel’s Public Hearing Procedures is attached to this my Affidavit as **Exhibit I**.
35. Thus the Panel adopted a process that precluded me from submitting more fulsome comments responding to the Proponent’s new information presented on April 13, 2011. Had the Panel not so clearly foreclosed the use of its powers to accept additional information after the end of the public hearings, I would have been able to submit a thorough response to the new information. At Appendix 2 of the Report, the Joint Panel Agreement and Terms at Reference grants the Panel all the powers in sections 64 and 65 of the Environmental Protection Act (“EPA”) and applicable regulations.
36. If given more time, I would have submitted further analysis and evidence on need and alternatives in order to assist the Panel in making its own assessment and conclusions on need and alternatives, rather than deferring the assessment of these factors to others.
37. In addition, the Panel’s decision to defer the issues of need and alternatives to other entities undermined the Panel’s ability to comply with its own Justification Framework. After consulting with participants including the Proponent on draft hearing guidelines in 2010, the Panel finalized guidelines entitled *Framework for Determining Whether Significant Adverse Environmental Effects are Justified and Whether the Project Should be Approved* (“Justification Framework”). The Panel’s Justification Framework states that at “the heart of the decision-making framework is the concept that ... the Project should result in net environmental, social and economic benefits.” The Panel’s Justification Framework is located at Appendix 8 of the Panel’s Report.

38. Despite creating this explicit Justification Framework, the Panel did not reach a conclusion or recommendation on whether the Lower Churchill Generation Project and its significant adverse environmental effects are justified. As made clear from the Report's "concluding thoughts" excerpted above at paragraph 13 of my Affidavit, the Panel could not conclude or recommend whether the Project was justified or should be approved due to the absence of information allowing an assessment of need and alternatives.

39. Based on my years of experience participating in environmental and regulatory reviews of proposed energy projects, it is my opinion that any appropriate, effective environmental assessment requires the production of relevant information *before* that information is scheduled to be tested, whether in hearings or otherwise. In my experience in environmental assessments of proposed energy projects, I have never before seen a Panel permit a Proponent to so blatantly "run out the clock".

B. Assessments "extrinsic" to the Panel – the Public Utilities Board review and the Navigant Report

1. The Public Utilities Board review

40. In anticipation that the Proponent may raise the existence of the PUB Review of Muskrat Falls as a reason not to require the Panel to complete its assessment under CEAA, below I briefly describe what I know of the PUB process and what I know of the PUB's experience to date in attempting to perform its mandate, based largely on my review of the PUB website.

41. Before the Panel had completed its Report, the Province of Newfoundland and Labrador announced on June 17, 2011 that it had mandated the provincial Public Utilities Board ("PUB") to conduct a review of the Muskrat Falls component of the Lower Churchill Generation Project and the Labrador-Island Link transmission line ("PUB Review of Muskrat Falls"). I located the Province's June 17, 2011 press release and backgrounder at <http://www.releases.gov.nl.ca/releases/2011/nr/0617n04.htm>. A copy of this June 17, 2011 press release and backgrounder is attached to this my Affidavit as **Exhibit J**.

42. Exhibit J also contains within it the “Terms of Reference and Reference Question”. The Reference Question that the Province referred to the PUB is that “[t]he Board shall review and report to Government on whether the Projects represent the least-cost option for the supply of power to Island Interconnected Customers over the period of 2011-2067, as compared to the Isolated Island Option”. This Isolated Island Option is not defined in Exhibit J. However, it is defined in a Schedule B of the full Terms of Reference and Reference Question, found on the PUB website at <http://www.pub.nf.ca/applications/MuskratFalls2011/files/corresp/TermsOfReference.pdf>. A copy of this document is attached to this my Affidavit as **Exhibit K**.
43. Thus the stated Reference Question for the PUB Review of Muskrat Falls is different from and narrower than the questions and factors which the Panel concluded were necessary to assess alternatives under CEAA (as excerpted in my Affidavit above at paragraphs 11 and 12.) The PUB Review of Muskrat Falls looks at only one alternative scenario, the so-called Isolated Island Scenario. Most notably, the mandate of the PUB Review of Muskrat Falls clearly does not include comparison with other economically viable and more environmentally sustainable alternatives, such as Conservation and Demand Management (“CDM”) and wind power, beyond the modest levels retained by the Proponent in its Isolated Island Scenario.
44. Because of the narrow nature of the mandate given to the PUB by the Province of Newfoundland and Labrador, it is unlikely that the PUB’s ultimate report, if and when it is released, will contain sufficient information to respond to the questions and concerns raised by the Panel regarding alternatives.
45. In addition, even if the PUB’s future report does contain some information responsive to the Panel’s recommended alternatives assessment, there is currently no process for putting the PUB’s report back before the Panel. From my experience in environmental assessment and regulatory review of proposed energy projects, it makes no sense to “parse out” from the Panel’s overall assessment such a fundamental factor as alternatives. Alternatives is a key factor in any

justification analysis of proposed energy projects. Normally, alternatives would be weighed as part of the overall mix of “benefits and burdens” caused by a proposed energy project.

46. From my review of the PUB website, it is apparent that not all of the information considered by the PUB is available to the public. Some exhibits have been redacted before being made public. Furthermore, some of the Proponent’s responses to requests for information have not been made public, even in redacted form. This contrasts with the Joint Panel Review’s process where, to the best of my knowledge, all of the information submitted to the Panel was available to all participants and to the public, through the CEA Registry.

47. From my review of the PUB website and from conversations with Grand Riverkeeper, I have been able to find no indication, to date, that any participant funding will be made available to allow concerned parties to participate fully and effectively in the PUB process. This contrasts with the Joint Review Panel’s process which featured a Participant Funding Program.

48. On January 27, 2012, I printed from the PUB website a list of the publically available exhibits in the PUB Review of Muskrat Falls, as well as a list of the exhibits submitted in the PUB Review of Muskrat Falls which have been abridged and/or redacted to protect confidential information. I located these lists on the PUB website at <http://www.pub.nf.ca/applications/MuskratFalls2011/nalcordocs.htm> and at <http://www.pub.nf.ca/applications/MuskratFalls2011/abridge.htm>. To the best of my knowledge, based on my participation in the Panel’s assessment and my review of the CEA Registry website listing all documents submitted to the Panel during its assessment, only a few of the hundreds of documents on this list were ever provided by the Proponent to the Panel in support of the Proponent’s analysis comparing its preferred Muskrat Falls scenario with its alternative Isolated Island scenario. A copy of this list is attached to this my Affidavit as **Exhibit L**.

49. Based on these facts, not only am I concerned about the artificially narrow mandate given to the PUB, in contrast to that of the Joint Review Panel, but I am concerned that the PUB procedural rights are less than those to which Grand Riverkeeper and other participants were entitled in the

Panel's public hearings. Unlike the Panel, some documents considered by the PUB are kept confidential and it does not appear that there is a participant funding program.

50. I am also concerned that the Proponent has tendered evidence before the PUB that it did not make available to the Panel. I believe that the evidence and documentation provided by the Proponent to the PUB, and the PUB's ultimate report, would contribute to the Panel being able to conclude its assessment of need and alternatives.
51. In addition, as I describe below, the PUB Review of Muskrat Falls has been deprived by the Province of the time that the PUB says it requires to conduct public consultations.
52. On September 22, 2011, the PUB wrote to the Province to advise that it would require an extension of its reporting deadline, fixed in Exhibit K at December 30, 2011. I located this letter on the PUB website at <http://www.pub.nf.ca/applications/MuskratFalls2011/files/corresp/PUB-Letter-Minister-Sept22-11.pdf>. In the letter, the PUB points out that the initial timeframe was ambitious, and that it was already clear that it would not be able to complete the review by year end. It did not at that time request a formal extension, stating that it was unable to provide a realistic alternate date until it had a better idea when Nalcor would provide the information that had been requested. A copy of the PUB's letter of September 22, 2011 is attached to this my Affidavit as **Exhibit M**.
53. In a letter sent on December 12, 2011, the Province responded that it was "imperative that we receive the report by March 31, 2012". I located this letter on the PUB website at <http://www.pub.nf.ca/applications/MuskratFalls2011/files/corresp/Minister-Letter-Dec12-11.pdf>. Rather than give the PUB the time it said it needed, the Province only granted an extension to March 31, 2012. A copy of the Province's letter of December 12, 2011 is attached to this my Affidavit as **Exhibit N**.
54. On December 16, 2011, the PUB again wrote to the Province and made a formal request to extend its reporting deadline to June 30, 2012. I located a copy of this letter on the PUB website

at <http://www.pub.nf.ca/applications/MuskratFalls2011/files/corresp/PUB-Letter-Minister-Dec16-11.pdf>. The PUB sets out a more detailed tentative schedule, which contemplates the filing of Manitoba Hydro International's report by January 27, a Notice of Public Consultation by January 30, 2012, and Public Consultations from April 2-13, 2012. A copy of the PUB's letter of December 16, 2011 is attached to this my Affidavit as **Exhibit O**.

55. Today, on January 31, 2012, I checked the PUB website. There was no indication that Manitoba Hydro International has filed its report, and no Notice of Public Consultation has been posted, as had previously been anticipated by the PUB on December 16, 2011.

56. The PUB's letter of December 16, 2011, at Exhibit O, states in part that:

The reason this extension is necessary is Nalcor's failure to provide the required information in a timely fashion. This review began in June but as of late November Nalcor was still filing significant new information. Between November 10 and November 24, 2011 Nalcor filed its submission as required by the Terms of Reference, a detailed study in relation to reliability, responses to 115 requests for information and 12 additional exhibits.

Given Government's desire to have this review completed in March we have reconsidered the work that remains to be done to see if there are opportunities to make up for the time lost as a result of the late filings by Nalcor. Unfortunately, I must advise that it is not possible for this review to be completed any earlier than the end of June 2012, The full and fair participation of the Consumer Advocate as well as the public hearing required by section 5 of the *Electrical Power Control Act, 1994*, SNL 1994, c. E-5.1 will dictate the schedule until late spring and it is only then that the Board can begin to write its report. (emphasis added)

57. On December 23, 2011, the Province wrote a letter denying the PUB's request. The Province's letter stated that "given that the Terms of Reference are confined to a review of whether Nalcor's proposal represents the least-cost option for the supply of power to island connected customers. Government queries whether all the processes contemplated" by the PUB are necessary. I located a copy of this letter on the PUB website at <http://www.pub.nf.ca/applications/MuskratFalls2011/files/corresp/Minister-Letter-Dec23-11.pdf>. A copy of this letter of December 23, 2011 is attached to this my Affidavit as **Exhibit P**.

58. On January 6, 2012, the PUB wrote a reply letter. The PUB advised that while it would “work towards” the March 30 [sic], 2012 deadline, it has had to revise its planned activities to abridge the process. In particular, the PUB advises that public hearings would now be limited to St. John’s, Newfoundland, and that they may be time-limited. I located this letter on the PUB website at <http://www.pub.nf.ca/applications/MuskratFalls2011/files/corresp/PUB-Letter-Minister-Jan6-12.pdf>. A copy of the PUB’s letter of January 6, 2012 is attached to this my Affidavit as **Exhibit Q**.

2. The Navigant Report

59. In addition to the PUB Review of Muskrat Falls, another “independent” assessment that may be relied on to excuse the Panel’s failure to assess need or alternatives is the Navigant report.

60. On September 15, 2011, the Proponent made public a report by Navigant Consultants. The report reviewed the Proponent’s process and choice in selecting the Muskrat Falls project with the Labrador-Island Link as its preferred option for energy supply to Newfoundland. A copy of the Proponent’s September 15, 2011 Press Release entitled *Nalcor Energy releases independent review of Muskrat Falls development* is attached to this my Affidavit as **Exhibit R**. A copy of the report by Navigant Consultants entitled *Independent Supply Decision Review* is attached to this my Affidavit as **Exhibit S**.

61. This report is identified in Exhibit R, at page 1, as part of the Proponent’s “quality assurance” with respect to Nalcor’s recent decision to pass the project through its “Decision Gate #2”.

62. As indicated in Exhibit S, at page 2, the Proponent retained Navigant to “review the reasonableness of: 1) the long-term island supply options considered by Nalcor; 2) Nalcor’s assumptions associated with island supply options; and 3) the process followed to screen and evaluate the supply options. Navigant was then to provide an opinion on: 1) whether the Interconnected Island alternative represents the least-cost option that also fulfills the additional

criteria requirements of security of supply and reliability, environmental responsibility, and risk and uncertainty; and 2) the accuracy of rate projections.”

63. While Nalcor and Navigant describe this effort as an “independent review,” it is not independent in the same sense as a Panel review is independent. It was conducted a consultant selected by Nalcor and was based on “assumptions, inputs and analysis undertaken by Nalcor” (Exhibit S, page 2).
64. The mandate for the Navigant review does not respond to the Panel’s findings and recommendations at Section 4.2 of its Report, replicated at paragraphs 11-12 of my Affidavit. This mandate, which as noted in paragraph 61 above was limited to reviewing the reasonableness of the long-term island supply options considered by Nalcor, as well as Nalcor’s assumptions associated with island supply options and the process it followed to screen and evaluate these options, is much narrower than the alternatives assessment which the Panel concluded was necessary.
65. In carrying out this mandate, the Navigant report does not respond to most of the questions on alternatives that the Panel identified but did not answer (as I have set out above in paragraph 12 of my Affidavit).
66. Furthermore, it does not incorporate environmental or social externalities and considerations into the analysis (other than greenhouse gas pricing, in a sensitivity analysis, Exhibit S at page 59-60). Specific limitations of the Navigant report include 1) its reliance on a 2004 Nalcor study which found that additional wind power might lead to spilling to eliminate scenarios with higher levels of wind penetration, without evaluating the overall economic implications of such scenarios (pages 23-27); 2) its reliance on an outdated study to limit conservation and demand management (“CDM”), despite the fact that avoided costs have increased greatly (pages 34-37); and 3) its inappropriate exclusion of certain combinations in its sensitivity analyses, such as the combination of greater CDM and additional wind power (pages 62-63).

67. There was no opportunity for me, or for Grand Riverkeeper, other participants or the Panel itself, to identify, consider, challenge or test flawed assumptions in the Navigant report. No process allowed for that. Unlike the Panel's environmental assessment, the Navigant report was created by the Proponent's consultants through an internal process closed to outside participation or comment.
68. No draft of the Navigant report was ever provided to the Panel. The stated inputs for Navigant's review included "all necessary financial and engineering models, reports, and discussions with management and personnel" (Exhibit S, page 15). To the best of my knowledge, no financial or engineering models were shared with or provided to the Panel or its participants.
69. Since the Navigant report was released, university economists have questioned the need for the proposed Lower Churchill Generation Project. For example, the C.D. Howe Institute published a study by Memorial University of Newfoundland economics professor James Feehan concluding that it would be premature to authorize the Muskrat Falls facility without reforms to the Province's electricity pricing regime. A copy of Prof. Feehan's paper entitled *Newfoundland's Electricity Options: Making the Right Choice Requires an Efficient Pricing Regime* is attached to this my Affidavit as **Exhibit T**.
70. In the event that the Panel were reconstituted and directed or requested to assess, provide rationales and make recommendations on the need/rationale for the Project or on alternatives to the Project, Grand Riverkeeper has asked me and I have agreed to provide expert analysis to the Panel, through written and oral testimony. I would also review and, where appropriate, critique the Proponent's information and analysis.

C. The Proponent's closely-related projects were not subject to cumulative effects assessment

71. In addition to its proposed Lower Churchill Generation Project, the Proponent is also proposing what it sometimes refers to as the Lower Churchill Transmission Project (or alternatively, the Labrador-Island Transmission Link Project). The proposed Labrador-Island Transmission Link would link the power generated from the Generation Project in Labrador to the Island of

Newfoundland. Its transmission lines are proposed to traverse Southern Labrador, cross the ocean by subsea cable, and continue through Newfoundland until they connect with the grid.

72. However, the Lower Churchill Transmission Project was not part of the environmental assessment by the Panel. Notably, the Panel did not assess any cumulative environmental effects of the proposed Generation Project in combination with the proposed Transmission Project. Section 16 of the Panel's Report, regarding cumulative effects, is completely silent on any closely-related transmission projects like the Labrador-Island Transmission Link.
73. Thus, the Proponent, Nalcor Energy, is also a proponent of closely-related transmission projects, including the Labrador-Island Transmission Link Project. I have reviewed the portion of the Proponent's website addressing the "Lower Churchill Project." The "home page" for the Lower Churchill Project is <http://www.nalcorenergy.com/lower-churchill-project.asp>. From there, one can link either to a webpage on the Lower Churchill Generation Project, found at <http://nalcorenergy.com/generation-project.asp>, or a webpage on the Lower Churchill Transmission Project, found at <http://nalcorenergy.com/transmission-project.asp>. A copy of the Proponent's "home page" for the Lower Churchill Project, and copies of its webpages for the Generation and Transmission Projects, are together attached to this my Affidavit as **Exhibit U**.
74. As Exhibit U states, the Lower Churchill Project "consists of two sub-projects: Generation and Transmission". The Lower Churchill Generation Project and the Lower Churchill Transmission Project (which the site also refers to as the Labrador-Island Transmission Link Project) are two components of one larger development project known as the Lower Churchill Project.
75. That the Generation Project and transmission projects are closely related is also reflected in the Proponent's Annual Report for 2010. Page 36 of Nalcor's Annual 2010 Report gives a visual representation mapping the Generation Project with all the related transmission projects. A copy of excerpts of Nalcor's Annual 2010 Report is attached to my Affidavit as **Exhibit V**.

76. During the same time that the proposed Lower Churchill Generation Project was going through its assessment, two federal departments responsible for its assessment were also aware of and responsible for the proposed Labrador-Island Transmission Link Project. On November 26, 2009, the original “Notice of Commencement” for a separate screening-level assessment of the proposed Labrador-Island Transmission Link Project was published on the CEA Registry. I located it online at <http://ceaa.gc.ca/050/details-eng.cfm?evaluation=51746&ForceNOC=Y>. Fisheries and Oceans Canada, Transport Canada and Environment Canada are listed as responsible authorities. A copy of the original November 26, 2009 Notice of Commencement for the Labrador-Island Transmission Link Project is attached to this my Affidavit as **Exhibit W**.
77. Exhibit W had to be amended on April 28, 2010, in response to the Supreme Court of Canada’s decision in *MiningWatch v. Canada (Minister of Fisheries and Oceans et al)*. From that date, while the proposed Labrador-Island Transmission Link Project continued to be assessed separately from the related Generation Project, it is now subject to a comprehensive study assessment and not just a screening assessment. I located the amended Notice of Commencement for the Labrador-Island Transmission Link Project published on the CEA Registry at <http://ceaa.gc.ca/050/details-eng.cfm?evaluation=54751&ForceNOC=Y>. A copy of the amended April 28, 2010 Notice of Commencement is attached to this my Affidavit as **Exhibit X**.
78. Natural Resources Canada also acknowledges that the Lower Churchill Generation Project is not a “stand-alone” project. A backgrounder published by Natural Resources Canada on its website, entitled *Lower Churchill Clean Energy Projects*, characterizes the Generation Project as part of the “lower Churchill River projects”. The backgrounder states that “[i]n November 2010, Nalcor Energy, Newfoundland and Labrador’s Crown-owned energy company, and Emera Incorporated of Nova Scotia announced plans to develop the lower Churchill River projects, which consist of a new hydroelectric generating station at Muskrat Falls and three transmission lines.” The three transmission lines stated to form part of the lower Churchill River projects are the Labrador Transmission Interconnection Project, the Labrador-Island Transmission Link Project, and the Maritime Subsea Link Project. This backgrounder is published at <http://www.nrcan.gc.ca/media-room/news-release/2011/77a/1813> and a copy of it is attached to my Affidavit as **Exhibit Y**.

79. Finally, the Province of Newfoundland and Labrador also acknowledges, in information published on its website, that the Muskrat Falls dam and the Labrador-Island Link projects are related. For example, the Province’s announcement on June 17, 2011, at Exhibit J, indicates that the PUB will review the Muskrat Falls dam and the Labrador-Island Link transmission line together and assess them against the “Isolated Island” development option.

80. In addition to the need to assess the proposed Labrador-Island Transmission Link and other related transmission projects in a cumulative environmental effects assessment, the alleged economic benefits of and need for the proposed Lower Churchill Generation Project cannot, in my view, be meaningfully or fairly assessed without including the economic cost of power transmission. By excluding the proposed transmission projects from the assessment of the generation project, the economic costs of the generation project can appear to be much less than what they are reasonably anticipated to be. This concern has been echoed by the media in Newfoundland, such as in an article published in the Telegram on January 19, 2012 entitled “Questions Linger around Muskrat”. I found an on-line copy of this article on the Telegram’s website, at <http://www.thetelegram.com/News/Local/2012-01-19/article-2868171/Questions-linger-around-Muskrat/1>. A copy of this January 19, 2012 Telegram article is attached to this my Affidavit as **Exhibit Z**.

81. I provide this Affidavit in support of Grand Riverkeeper’s application for judicial review and for no other or improper purpose.

SOLEMNLY AFFIRMED BEFORE)
ME at the City of Montréal, in the)
Province of Québec, on this 31st)
day of January, 2012)
)

Philip Raphals
