

October 5, 2017

Ms. Patricia J. Ramage  
Legal Counsel  
Manitoba Hydro  
22<sup>nd</sup> Floor, 360 Portage Avenue  
Winnipeg, MB R3C 0G8

-and-

Approved Interveners  
(per attached list)

**Re: Manitoba Hydro 2017/18 & 2018/19 General Rate Application – Independent Expert Consultants Report Deadlines and Revised MGF Scope of Work**

The Public Utilities Board (“**Board**”) has retained Independent Expert Consultants to provide independent expert evidence with respect to identified key issues in the 2017/18 & 2018/19 General Rate Application (“**GRA**”). Specifically, the Board has retained:

- Daymark Energy Advisors to review and provide an expert opinion on Manitoba Hydro’s export price and revenue forecasts and electricity load forecasts;
- Dr. Adonis Yatchew to examine the economic impacts of the proposed electricity rate increases;
- MGF Project Services Inc. (“**MGF**”) to review Manitoba Hydro's capital expenditures and provide an expert opinion on Manitoba Hydro's updated costs for its major generation and transmission projects currently under development or construction (“**Capital Projects**”); and
- Amplitude Consultants Pty Ltd and Klohn Crippen Berger to review and provide expert opinions on the Capital Projects and provide content for the Final Report that MGF will prepare. Klohn Crippen Berger has retained Stanley Consultants as sub-consultants to assist in the completion of the Scope of Work.

By this letter, the Board adjudicates requests respecting the Scope of Work for MGF. This letter also identifies the report deadlines for the Independent Expert Consultants and provides the Board's proposed timing for the discovery processes on the reports.

### MGF Scope of Work

At the hearing held on July 18 and 19, 2017 on Manitoba Hydro's request for an interim rate, parties were advised that the Board had retained MGF as an Independent Expert Consultant. Parties were advised in the Chair's opening comments at the hearing that the Board's Scope of Work for MGF was publicly available on the Board's website and if any party wished to alter or expand the Scope of Work, counsel was to make a written request, supported with reasons, to the Board for adjudication by August 11, 2017.

By letter dated August 9, 2017, the Manitoba Industrial Power Users Group requested that specific items respecting contingency budgets for the Capital Projects be included in MGF's Scope of Work. MGF has confirmed through its counsel that the items requested by the Manitoba Industrial Power Users Group are included in MGF's review and will be addressed as part of the existing Scope of Work. As a result, the Board is not directing any revisions to the MGF Scope of Work to address the request from the Manitoba Industrial Power Users Group.

By letter of September 18, 2017, Manitoba Hydro provided comments on the Scopes of Work for the Independent Expert Consultants retained by the Board for the GRA. Specifically, Manitoba Hydro suggested revisions to the Scope of Work for MGF as a means of narrowing the work to be performed by MGF.

By letters of September 21, 2017 and September 22, 2017, respectively, the Manitoba Industrial Power Users Group and Consumers Coalition provided comments on Manitoba Hydro's suggested revisions to the MGF Scope of Work. The Manitoba Industrial Power Users Group is supportive of changes to the Scope of Work to establish a forward-looking focus on whether the current updated capital budgets are realistic and how to best control the remaining costs and schedule risks. The Consumers Coalition submits that the MGF Scope of Work is comprehensive and, while it suggests means of placing more concentration on an assessment of contract and construction project management, the Consumers Coalition does not agree with Manitoba Hydro's proposal to restrict the Scope of Work.

By letter of October 2, 2017, Manitoba Hydro responded to the comments of the Manitoba Industrial Power Users Group and Consumers Coalition.

The Board has considered the comments received from Manitoba Hydro, the Manitoba Industrial Power Users Group and the Consumers Coalition and has revised the MGF Scope of Work. The revised MGF Scope of Work, along with related revisions to the Klohn Crippen Berger and Amplitude Consultants Pty Ltd Scopes of Work, are attached and publicly available on the Board's website at [www.pubmanitoba.ca](http://www.pubmanitoba.ca).

### Filing of Independent Expert Consultant Reports

The Board notes the comments of Manitoba Hydro and the Manitoba Industrial Power Users Group regarding the desirability of the Independent Expert Consultant Reports being filed in time to allow for review and discovery prior to the oral hearing. However, as submitted by the Consumers Coalition, an alternative schedule can be crafted in order to allow the evidence of the Independent Expert Consultants to be properly developed.

Due to administrative issues associated with the completion of Non-Disclosure Agreements and Personal Risk Assessments as required by Manitoba Hydro prior to the Utility sharing documents and information that it alleges is commercially sensitive, there have been delays in the work being conducted by the Independent Expert Consultants. While the MGF Scope of Work has been revised, the Board has not accepted the full extent of Manitoba Hydro's suggested revisions. There remains a concern that time beyond that allotted to Intervener experts is required to ensure quality Independent Expert Consultant Reports.

The Board also notes that, as a courtesy to Manitoba Hydro and a means to protect confidential and commercially sensitive information, the schedule should incorporate initial filings of the MGF and Daymark Energy Advisor Reports with Manitoba Hydro to identify any necessary redactions. This initial filing can then be followed by filing the unredacted Reports with the Board and, in redacted form for the public record.

The Board has set the timeline for the filing of the Independent Expert Consultant Reports as follows:

Item	Date
<b>Dr. Adonis Yatchew Report – Filed on the Public Record</b>	November 15, 2017
<b>Daymark Energy Advisors Report – Filed with Manitoba Hydro</b>	November 15, 2017
<b>Daymark Energy Advisors Report – Filed with the Board and on the Public Record</b>	November 17, 2017
<b>MGF Report – Filed with Manitoba Hydro</b>	November 30, 2017
<b>MGF Report– Filed with the Board and on the Public Record</b>	December 8, 2017

In view of the above schedule for the filing of the Reports, the following is the expected calendar for discovery:

Item	Date
<b>Information Requests on Dr. Adonis Yatchew and Daymark Energy Advisors Reports</b>	November 24, 2017
<b>Dr. Adonis Yatchew and Daymark Energy Advisors Responses to Information Requests – Filed with Manitoba Hydro</b>	December 1, 2017
<b>Dr. Adonis Yatchew and Daymark Energy Advisors Responses to Information Requests – Filed with the Board and on the Public Record</b>	December 6, 2017
<b>Manitoba Hydro Rebuttal Evidence - Dr. Adonis Yatchew and Daymark Energy Reports</b>	December 15, 2017
<b>Information Requests on MGF Report</b>	December 19, 2017
<b>MGF Responses to Information Requests – Filed with Manitoba Hydro</b>	January 3, 2017
<b>MGF Responses to Information Requests – Filed with the Board and on the Public Record</b>	January 8, 2017
<b>Manitoba Hydro Rebuttal Evidence – MGF Report</b>	January 15, 2017

Pursuant to Appendix “B” of Order 70/17, the oral hearing will be held from December 4, 2017 until February 9, 2018. All Parties are requested to advise Board Counsel as to their expected time required for direct examination or cross examination (as applicable) of Manitoba Hydro witnesses based on the Board’s current assumption that Manitoba Hydro will seat both a Revenue Requirement panel and a Cost of Service/Rate Design/Bill Affordability panel. Manitoba Hydro is requested to confirm or correct the Board’s assumption as to the number of panels it intends to introduce and to identify the intended witnesses.

Should any party have questions of clarification, please contact our office.

Board decisions may be appealed in accordance with the provisions of Section 58 of The Public Utilities Board Act, or reviewed in accordance with Section 36 of the Board's Rules of Practice and Procedure ("**Rules**"). The Board's Rules may be viewed on the Board's website at [www.pubmanitoba.ca](http://www.pubmanitoba.ca).

Yours truly,

*"Original Signed By:"*

Kurt Simonsen  
Associate Secretary

Encl.

cc: Board Counsel  
Counsel to the Independent Expert Consultants

## Schedule 2 – Revised October 4, 2017

### Scope of Work for MGF Project Services Inc.

#### **For the Keeyask project:**

1. Review, assess, and determine the reasons for project cost overruns from the \$6.5 billion final pre-construction budget with respect to:

- i. Design or project scope changes;
- ii. Deviations from estimated quantities;
- iii. Labour productivity;
- iv. Labour costs;
- v. Labour hiring constraints with respect to:
  - Competition with other large civil projects in Canada;
  - Remote location; and
  - Northern and First Nations jobs.

Inputs into the \$6.5 billion budget should be reviewed and assessed as required.

2. Determine whether the current state of design work, engineering work, and geotechnical analysis supports the \$8.7 billion cost estimate. If not, identify what changes in the contingencies, reserves, or forecast at completion cost are required.

3. Review and assess Manitoba Hydro's cost estimating methodologies, identifying best practices and short-comings, beginning with the development of the \$6.5 billion final pre-construction budget and with specific attention to the changes that have resulted in the \$8.7 billion forecast at completion budget. Identify whether sufficient contingency amounts are included in the \$8.7 billion forecast at completion budget.

4. Review and assess Manitoba Hydro's scheduling methodologies, identifying best practices and short-comings.

5. Review and assess Manitoba Hydro's tender, contract management, and cost control methodologies, and determine whether these methodologies support the \$8.7 billion forecast at completion cost. If not, identify what changes in the contingencies, reserves, or forecast at completion cost are required.

6. Review and assess Manitoba Hydro's and the Keeyask Cree Nations' project governance structure and processes comparing to best practices and shortcomings. Provide an opinion how the governance has affected – both positively and negatively – project management, contractor management, and scheduling.

7. Assess Manitoba Hydro's updated Keeyask cost estimate for reasonableness, including whether appropriate contingencies and reserves have been provisioned.

8. Identify aspects of the updated cost estimate and schedule that are at heightened levels of risk and recommend risk mitigation strategies that Manitoba Hydro should use.
9. Identify changes to project governance or project management that would beneficially improve the execution of the remaining work and minimize risks.

**For the HVDC Converter Stations:**

10. Review and assess Manitoba Hydro's cost estimating methodologies with respect to the final pre-construction budget of \$2.68 billion and forecast at completion budget of \$2.78 billion, identifying best practices and short-comings.
11. Review and assess the tendering and contracting methodologies for the converter stations, identifying best practices and short-comings.
12. Review and assess the reasons for the capital cost increases from the 2014 control budget of \$2.68 billion to the current forecast at completion amount of \$2.78 billion.
13. Assess Manitoba Hydro's updated converter station cost estimate for reasonableness, including whether appropriate contingencies and reserves have been provisioned in relation to outstanding uncertainties.

**For the Bipole III Transmission Line:**

14. Determine whether the current state of design and engineering work supports the \$1.96 billion cost estimate. If not, identify what changes in the contingencies, reserves, or forecast at completion cost are required.
15. Review and assess Manitoba Hydro's cost estimating methodologies, identifying best practices and short-comings.
16. Review and assess Manitoba Hydro's tendering and contracting methodologies, including choices of contract types for the major contracts, identifying best practices and short-comings.
17. Review and assess Manitoba Hydro's contract management and cost control methodologies, and determine whether these methodologies support the \$1.96 billion forecast at completion cost. If not, identify what changes in the contingencies, reserves, or forecast at completion cost are required.
18. Review, assess, and determine the reasons for project cost overruns since the final pre-construction control budget of \$1.66 billion.
19. Assess Manitoba Hydro's updated forecast at completion capital cost, including whether appropriate contingencies and reserves have been provisioned, and schedule estimates for reasonableness.

20. Identify aspects of the updated cost estimate and schedule that are at heightened levels of risk and recommend risk mitigation strategies that Manitoba Hydro should use.

**For the Manitoba-Minnesota Transmission Project:**

21. Determine whether the current state of design and engineering work supports the \$453 million cost estimate. If not, identify what changes in the contingencies, reserves, or forecast at completion cost are required.

22. Review and assess Manitoba Hydro's cost estimating methodologies that support the \$453 million cost estimate, identifying best practices and short-comings.

23. Review and assess Manitoba Hydro's proposed tendering and contracting methodologies, including choices of contract types for the major contracts.

24. Review and assess Manitoba Hydro's proposed construction management, contractor management, construction risk management, and scheduling methodologies.

25. Assess Manitoba Hydro's updated capital cost estimate of \$453 million for reasonableness, including whether appropriate contingencies and reserves have been provisioned.

**For the Great Northern Transmission Line:**

26. Compare the current GNTL estimated capital costs with estimates for similar projects and assess whether the estimated cost is reasonable.

27. Review and assess the Construction Management Agreement between Minnesota Power and Manitoba Hydro's subsidiary for reasonableness, identifying whether the agreements follow best practices or have short-comings and whether Manitoba Hydro's interests are protected.

28. Assess the current forecast at completion capital cost for reasonableness, including whether appropriate contingencies and reserves have been provisioned.

29. Assess Minnesota Power's approach to establishing the contingency for GNTL and whether appropriate risk areas and magnitudes of uncertainty are recognized.



Schedule 2 – Revised October 4, 2017

Scope of Work for Amplitude Consultants

For Manitoba Hydro's Major New Transmission Capital Projects, specifically the Keewatinohk and Riel high voltage direct current converter stations:

1. As directed by MGF, assist MGF with the assessment for reasonableness of the current forecast at completion capital costs, including whether appropriate contingencies and reserves have been provisioned.
2. Assist in the review of the project execution, construction management, estimating, and tendering and contracting methodology.
3. Provide content for the Final Report that MGF will prepare.
4. Attend the associated Public Hearing, and any *in camera* Hearing, provide direct evidence, and be available for cross-examination, if required.

## Schedule 2 – Revised October 4, 2017

### Scope of Work for Klohn Crippen Berger

For Manitoba Hydro's Major New Generation Capital Projects, specifically the Keeyask Generating Station, Klohn Crippen Berger will:

1. As directed by MGF, assist MGF with the assessment for reasonableness of the current forecast at completion capital costs, including whether appropriate contingencies and reserves have been provisioned.
2. Determine whether the current state of design work, engineering work, and geotechnical analysis supports the \$8.7 billion cost estimate. If not, identify what changes in the contingencies, reserves, or forecast at completion cost are required.
3. Assist in the review of the project execution, construction management, estimating, tendering and contracting methodology, scheduling and design, and project scope changes, as directed by MGF. The review of the bids for the Keeyask General Civil Contract are outside the scope of services.
4. Provide content for the Final Report that MGF will prepare.
5. Attend the associated Public Hearing, and any *in camera* hearing, provide direct evidence, and be available for cross-examination, if required.

### Scope of Work for Stanley Consultants

For Manitoba Hydro's Major New Transmission Capital Projects, specifically the Bipole III transmission and collector lines, Manitoba Minnesota Transmission Project, and Great Northern Transmission Line, Stanley Consultants will:

1. As directed by MGF, assist MGF with the assessment for reasonableness of the current forecast at completion capital costs, including whether appropriate contingencies and reserves have been provisioned.
2. Determine whether the current state of design and engineering work supports the current cost estimates. If not, identify what changes in the contingencies, reserves, or forecast at completion cost are required.
3. Assist in the review of the project execution, construction management, estimating, tendering and contracting methodology, scheduling and design, and project scope changes, as directed by MGF.

4. Provide content for the Final Report that MGF will prepare.
5. Attend the associated Public Hearing, and any *in camera* hearing, provide direct evidence, and be available for cross-examination, if required.