



November 20, 2018

Ms. Kirsten Walli
Board Secretary
Ontario Energy Board
P.O. Box 2319, 27th Floor
2300 Yonge Street
Toronto, ON M4P 1E4

Re: Hydro One Sault Ste. Marie LP (formerly Great Lakes Power Transmission LP)
AMPCO Interrogatories
Board File No. EB-2018-0218

Dear Ms. Walli:

Attached please find AMPCO's interrogatories in the above proceeding.

Please do not hesitate to contact me if you have any questions or require further information.

Sincerely yours,

(Original Signed By)

Colin Anderson
President
Association of Major Power Consumers in Ontario

Copy to: Hydro One Sault Ste. Marie LP

**Hydro One Sault Ste. Marie LP (HOSSM)
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A-AMPCO-1

Ref: A-2-2 P4

The evidence states “HOSSM will apply for an Incremental Capital Module (“ICM”) funding in the event HOSSM encounters unplanned capital expenditures prior to any rebasing application to be filed for 2026 rates.

- a) At this point in time, is HOSSM aware of any potential significant capital expenditures that could materialize prior to 2026 that would have a significant impact on the utility.

A-AMPCO-2

Ref: A-3-1 P4

The evidence states “To better understand the asset and system requirements, asset health condition and risk and value to customers, and to ensure HOSSM’s investment plan was developed using sufficient rigour, Hydro One hired METSCO Energy Solutions to perform an in-depth Asset Condition Assessment (“ACA”) on HOSSM’s assets. Data was gathered from numerous sources including two different electronic systems (Sunguard and Elkie), paper copies of inspection reports and test results, inspections, interviews and team meetings that included staff from Hydro One, HOSSM, and METSCO.

- a) Please discuss any known deficiencies with respect to the accuracy, completeness, consistency and quality of the data sources and underlying data.
- b) Please discuss any plans to rectify data issues identified in part(a).

B1-AMPCO-3

Ref: B1-1-1 P5

The evidence states “As the integration between the Hydro One and HOSSM asset management functions continues over the coming years, HOSSM expects that additional investment drivers may emerge, driven by considerations such as equipment standardization, interoperability, or operational efficiency, among others.

- a) Please discuss integration plans for equipment standardization. Is the intent to align with Hydro One’s material and equipment standards?
- b) Please provide examples of key asset categories where material and/or equipment standards are not aligned between HOSSM and Hydro One and discuss the potential cost implications of equipment standardization with Hydro One.

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B1-AMPCO-4

Ref 1: B1-1-1 P9

Ref 2: B1-1-1 P76

The asset populations differ between reference 1 and reference 2 for switches and protection relays. Please reconcile.

B1-AMPCO-5

Ref: B1-1-1 P12 Table 1-4

For each of the four investment categories in Table 1-4, please provide the Plan Total (\$M and %) for the years 2013 to 2017.

B1-AMPCO-6

Ref: B1-1-1 P12 Table 1-4

- a) With respect to the expenditure driver Asset Failure under System Renewal, please provide the amount built into rates for the reactive replacement of assets failed in service.
- b) Please provide the amount budgeted in the capital plan for each of the years 2018 to 2026 for the reactive replacement of assets failed in service.
- c) For each of the years 2013 to 2017, please provide the total quantity of assets replaced reactively by asset type.

B1-AMPCO-7

Ref: B1-1-1 P14

HOSSM states "By virtue of acquisition of HOSSM's predecessor GLPT by Hydro One Inc. and through the ongoing integration with Hydro One's Asset Management function, the investments comprising this plan underwent assessment using a similar asset management and investment planning processes employed by the acquiring utility, modified to reflect the current state of integration of the two entities' information technology systems and the availability of pertinent data.

- a) Please define pertinent data.
- b) Please provide an evaluation of the current state of the availability of pertinent data.
- c) Please discuss the modifications made to the investment planning process to reflect the current state of availability of pertinent data.

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d) Please identify the most significant data gaps and what needs to be done to close the gaps.

B1-AMPCO-8

Ref: B1-1-1 P19

HOSSM plans to dedicate a larger of proportion of the Plan period System Renewal investments to line infrastructure and power transformer replacements as the Asset Condition Assessment (ACA) performed by METSCO (See Appendix B) confirmed that a material proportion of these asset populations are in a “Fair” condition or worse.

- a) Did METSCO make these specific targeted spending recommendations? If yes, please provide references.
- b) Please provide HOSSM’s most recent condition assessment of the power transformer asset population prior to METSCO’s ACA.
- c) Please provide the number of power transformer failures for each of the years 2013 to 2017.

B1-AMPCO-9

Ref: B1-1-1 P20

When compared to the historical period, Plan period System Service expenditures represent a significantly larger portion of total investments (16% versus 6%). Similarly, the average annual expenditures of \$1.8 million over the Plan period are substantially higher than the \$0.4 System Service investments over the last five years. This variance is largely due to the fact that Plan period System Service investments target larger station assets such as power transformers and breakers, whereas the historical period investments that HOSSM classified as System Service were related to smaller-scale projects, such as station P&C upgrades, installation of oil spill protection infrastructure, and other modifications to station civil infrastructure.

- a) Please explain the investment driver behind targeting larger station assets such as power transformers and breakers compared to smaller scale projects done historically.

B1-AMPCO-10

Ref: B1-1-1 P21

Over the Plan period, HOSSM’s capital expenditures in the System Access category amount to \$4.8 million, or about 6% of the Plan total. These expenditures are related to a single project to procure a spare transformer for Echo River TS, where only one transformer is currently located. In the event of an outage to the single Echo River TS transformer, HOSSM’s only available alternative for supplying the station load entails switching the affected load to a distribution-level emanating from Northern Avenue TS, the available capacity on which is insufficient to reliably support additional load during the peak

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consumption period. The solution to contingency issues at Echo River TS was among the three “wires only” alternatives identified in the course of the 2014 Regional Planning exercise.

- a) How many spare transformers does HOSSM have?
- b) Please discuss how Hydro One’s existing spare transformers could be utilized in the event of an outage to the single Echo River TS transformer.

B1-AMPCO-11

Ref: B1-1-1 P30

The majority of System Service and System Renewal work underlying the planned capital work program require planning and coordination of outages on the relevant portions of the HOSSM system.

- a) With respect to HOSSM’s planned transmission system outage scheduling process, does HOSSM forecast and track data on the planned number of scheduled outages and length of planned outages compared to actuals?
- a) Does HOSSM consider this to be a useful performance metric? Please explain.

B1-AMPCO-12

Ref: B1-1-1 P49

HOSSM performs the system operations component of the asset management process through a combination of internal staff and external contractor resources.

With respect to work execution, please discuss if HOSSM’s proposed utilization of internal staff and external contractor resources differs moving forward compared to historically and why.

B1-AMPCO-13

Ref: B1-1-1 P50

HOSSM employs a systematic approach for conducting inspections, testing, and executing preventative maintenance tasks (vegetation management, insulator washing, etc.) on a six-year cyclical basis, with some deviations for specific asset classes where more or less frequent maintenance is deemed necessary, or dictated by applicable statutory and regulatory requirements, such as the TSC or the North American Electric Reliability Corporation (“NERC”).

- a) Please discuss how HOSSM’s inspection, testing and preventative maintenance tasks differ from Hydro One’s.

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- b) Please discuss any plans to align HOSSM's inspection, testing and preventative maintenance tasks with Hydro One's.
- c) Please discuss HOSSM's vegetation management strategy compared to Hydro One's.

B1-AMPCO-14

Ref: B1-1-1 P56

Preamble: HOSSM indicates that system needs are driven by the requirement to meet current and forecasted load demand, including provision of power quality data collection capabilities and pilot cost effective mitigation measures to address specific issues faced by customers.

- a) Please describe the current power quality data collection capabilities of HOSSM and if and how that will change as a result of operational integration with Hydro One Networks Inc. (HONI)
- b) Please discuss the current trend with respect to power quality issues.
- c) What is the proportion of total investments driven by power quality for the years 2013 to 2017 and 2018 to 2026?

B1-AMPCO-15

Ref: B1-1-1 P113

Since the current Plan does not propose any capital or OM&A expenditures in excess of the levels already embedded into HOSSM's last approved Revenue Requirement, a benchmarking study confirming the reasonableness of HOSSM's expenditures would not be instructive. However, in preparing this Plan, HOSSM staff referred to the Total Factor Productivity study prepared by Power System Engineering Inc. ("PSE") for Hydro One Transmission. Moreover, as the integration between HOSSM and Hydro One continues, HOSSM plans to utilize a range of studies prepared by the Electric Power Research Institute ("EPRI") on a number of topics concerning asset management best practices. HOSSM will leverage these insights to continually improve the efficiency and cost effectiveness of its operations.

- a) Please provide a summary of the studies prepared by the ERPI that HOSSM is utilizing or plans to utilize.

B1-AMPCO-16

Ref: B1-1-1 P115-188

With respect to the Investment Summary Documents, AMPCO notes that HOSSM has not provided cost estimates for any alternatives to the recommended alternative. Please explain.

B1-AMPCO-17

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Ref:1-1-1 P120

With respect to the SR-01 Wood Structure Replacement Program:

- a) Please provide the number of wood structures to be replaced with composite structures under this program in each of the years 2018 to 2026.
- b) Please provide the total number of wood structures replaced under this program for the years 2013 to 2017 and the corresponding cost.
- c) Please discuss if Hydro One has historically replaced wooden structures with composite structures. If not, why not?

B1-AMPCO-18

Ref: B1-1-1 P120

With respect to the SR-02 Sault #3 115 KV Line Reconducting:

- a) Please provide the number of wood structures to be replaced with composite structures and the corresponding cost.
- b) Please provide the km of conductor to be replaced and the corresponding cost.

B1-AMPCO-19

Ref: B1-1-1 Appendix B P32

Please add a column to Figure 5.1 to show METSCO's recommended timeframe for replacement corresponding to each Health Index Score.

B1-AMPCO-20

Ref: B1-1-1 Appendix B Page 78 Figure 7.1

- a) Please provide HOSSM's most recent asset condition findings (prior to the METSCO ACA) for the following asset class populations: line conductor, wooden structures, power transformers and protection relays.
- b) Please provide the total km of line conductor and the km in poor condition.

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B2-AMPCO-21

Ref: B2-2-1 P1

Preamble: The evidence states “Throughout the integration process, Hydro One and Hydro One Sault Ste. Marie (“HOSSM”) have committed to investigating areas of opportunity to realize savings through productivity, efficiency and synergies. HOSSM will operationally integrate on October 1, 2018 and will financially integrate at a later time. One of the areas targeted for full review was the Capital Investment Plan.”

Please identify and explain any obstacles or challenges that HOSSM is facing or expects to face regarding integration and discuss how HOSSM is responding.

B2-AMPCO-22

Ref: B2-1-1 Attachment #2

Please provide the in-service additions, forecast compared to actuals, for each of the years 2013 to 2017.

B2-AMPCO-23

Ref: B2-2-1 P13 Table 5

a) Please explain the changes in scope and timing related to Wood Structure Replacements.

B2-AMPCO-24

Ref: B2-2-1 P16 Table 6

a) Please explain why Transmission Line/Station Emergency Work was removed from the Capital Investment Plan.

b) Please explain why Transformer Contingency Plan – Replacements & Spares was removed from the Capital Investment Plan.

B2-AMPCO-25

Ref: B2-2-1 P19 Table 7

a) Please provide the forecast in-service additions for the years 2018 to 2026.

B2-AMPCO-26

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Ref: B2-3-1 P2

- a) Please provide the number of power quality investigations for each of the years 2013 to 2017 and 2018 to date.
- b) Please provide HOSSM's current strategy to track, monitor and respond to power quality issues.
- c) Please discuss HOSSM's future plan to track, monitor and respond to power quality issues following operational integration with Hydro One.

C1-AMPCO-27

Ref: C-1-1 P5 Table 1

Preamble: HOSSM provides a list of some of the KPIs that HOSSM has been tracking.

- a) Please provide a list of all the KPIs that HOSSM is tracking and provide the historical targets and actuals for each KPI for the years 2013 to 2018.
- b) Please identify the KPIs that have been adopted as metrics on the newly proposed corporate scorecard.

C1-AMPCO-28

Ref: C-1-1 P9

Preamble: HOSSM tracks actual OM&A as a percent of budget.

- a) How does HOSSM measure the execution of planned OM&A work?
- b) Please provide any metrics, targets and actuals for the years 2013 to 2017.

C-AMPCO-29

Ref: C-1-1 P13-14 Figure 5

- a) Please explain N/A for each metric.
- b) Did HOSSM retain any consultants in the development of its proposed scorecard?
- c) Please confirm the criterion applied to the System Reliability values (i.e. interruptions included vs. excluded)

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- d) Please provide a table of reliability figures that excludes the reliability impacts of major weather events and planned outages.
- e) Please describe why a target of 4.40% was selected for the Sustainment Capital per Gross Fixed Asset Value.

C-AMPCO-30

Ref: C-1-1 P24

HOSSM tracks capital expenditures as a percent of budget.

- a) How does HOSSM measure the execution of capital work against plan with respect to scope and schedule?
- b) Please provide any metrics, targets and actuals for the years 2013 to 2017.

C1-AMPCO-31

Ref: C-1-1 P35

As the integration between HOSSM and Hydro One progresses, HOSSM will adopt Hydro One's scorecard metrics and methodologies.

- a) Please identify the Hydro One scorecard metrics not included in HOSSM's proposed scorecard (Figure 5).

C2-AMPCO-32

Ref: C-2-1 P8

- a) Please provide the total number of power interruptions per year compared to the number of power interruptions experienced by customers for each of the years 2013 to 2017.
- b) Please provide the total number of power interruption minutes per year compared to the number of power interruption minutes experienced by customers for each of the years 2013 to 2017.
- c) Please provide the total number of customers impacted by a power interruption for each of the years 2013 to 2017.

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D1-AMPCO-33

Ref: D-1-1

Please provide the 2019 revenue requirement impact if a stretch factor of 0.15% or 0.30% is used.