

**Thunder Bay Hydro Electricity Distribution Inc. (TBHEDI)
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2-AMPCO-1

Ref: Appendix 2-B DSP

- a) Please provide TBHEDI's asset replacement rate for the years 2012 to 2016 and forecast for the years 2017 to 2021 and show the calculation.
- b) Please provide TBHEDI's assumptions in the capital budget regarding project contingencies.
- c) Please provide the percentage of capital work undertaken by external contractors for the years 2012 to 2016 and forecast for 2017 to 2021.
- d) Please provide the ratio of unplanned work to planned work for the years 2012 to 2016.

2-AMPCO-2

Ref: Appendix 2-B DSP Page 8 to 9, Table 5.1.1-1 Summary of Investment Drivers

- a) Under System Renewal, please define "end of service life".
- b) Please confirm how TBHEDI determines end of service life of its assets in this application compared to historically.

2-AMPCO-3

Ref: Appendix 2-B DSP

- a) Please explain how the DSP and expenditures in 2017 to 2021 respond to the needs and requirements of Large Customers.
- b) Please discuss how TBHEDI monitors and responds to power quality issues that impact Large customers.

2-AMPCO-4

Ref: Appendix 2-B DSP Page 40

Preamble: The evidence states "When identified, a record of power quality concerns is kept in a customer file. While this is not a form of a tracked metric in the same manner as other metrics

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considered and discussed this DSP, Thunder Bay Hydro does retain this information should future concerns arise”.

- a) Please provide the annual number of power quality incidents raised by customers for each of the years 2012 to 2016.

2-AMPCO-5

Ref: Appendix 2-B DSP Page 42 and 43

- a) Figure 5.2.3-2 Historical SAIDI Performance: Please provide SAIDI Performance for the years 2009 to 2016 excluding all of the following: Loss of Supply, Scheduled Outages and Major Event Days.
- b) Figure 5.2.3-3 Historical SAIFI Performance: Please provide SAIFI Performance for the years 2009 to 2016 excluding all of the following: Loss of Supply, Scheduled Outages and Major Event Days.
- c) Please provide the total customer interruption hours for each of the years 2009 to 2016.
- d) Please provide the total number of customer interruptions for each of the years 2009 to 2016.
- e) Please confirm equipment outages, failures and customer interruptions have the same meaning.
- f) Does TBHEDI track the number of Momentary outages (MAIFI)? If yes, please provide MAIFI performance for the years 2009 to 2016.

2-AMPCO-6

Ref: Appendix 2-B DSP Page 44

- a) Figure 5.2.3-5 Outage Causes by Duration: Please provide Figure 5.2.3-5 separately for each of the following years: 2012, 2013, 2014, 2015.
- b) Please provide a Figure that shows the Outage Causes by Duration for 2016.

2-AMPCO-7

Ref: Appendix 2-B DSP Page 44

Preamble: Defective equipment accounts for approximately one quarter of Outage Causes by duration.

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- a) Please provide a breakdown of the causes of defective equipment and the corresponding contribution to customer interruption hours for each equipment cause for each of the years 2012 to 2016.

2-AMPCO-8

Ref: Appendix 2-B DSP Page 45 and 46

- a) Figure 5.2.3-6 Total Cost per Customer: Please provide the data for 2015 and 2016.
- b) Figure 5.2.3-8 Total Cost per km of Line: Please provide the data for 2015 and 2016.

2-AMPCO-9

Ref: Appendix 2-B DSP Page 60

- a) Please provide the annual number of customer interruptions for each major asset category for the years 2012 to 2016.
- b) Please provide the annual customer interruption hours for each major asset category for the years 2012 to 2016.

2-AMPCO-10

Ref: Appendix 2-B DSP Page 60 Table 5.3.1-2 Thunder Bay Hydro Asset Inspection Frequency

- a) Please summarize any changes in the Asset Inspection Frequency for each asset group since TBHEDI's last Cost of Service application.

2-AMPCO-11

Ref: Appendix 2-B DSP Page 121 Appendix 2-AB Table 2 - Capital Expenditure Summary

- a) Please recast the table to include TBHEDI's internal approved capital budget for the years 2012 to 2016.

2-AMPCO-12

Ref: Appendix 2-B DSP Page 126

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Preamble: In 2015, Thunder Bay Hydro experienced an increase in System Renewal capital expenditures of \$1,419,018. The main driver of the increase was due to the poles identified for replacement as part of Small Pole Replacements project.

- a) Please provide the number of poles replaced under this project for the each of the years 2012 to 2016 and confirm the number of replaced poles in very poor and poor condition by year.
- b) Please explain further the basis for the increase in poles identified for replacement in 2015.

2-AMPCO-13

Ref: Appendix 2-B DSP Page 126

Preamble: In 2015, another driver of expenditures was the increased investment in underground infrastructure (\$491,205) for; the 10M8 overhead project, which needed to be routed underground due to public opinion; and the Industrial park project which renewed infrastructure to several industrial customers.

- a) Please provide the cost of the 10M8 overhead project and the Industrial park project.
- b) Please explain how public opinion was received and how it informed the 2015 spending level related to the 10M8 project.

2-AMPCO-14

Ref: Appendix 2-B DSP Page 129 Table 5.4.4-14 System Renewal Expenditure Variances 2016 Projection to 2017 Forecast

- a) Please provide the number of assets replaced in 2016 and 2017 by asset category under each applicable project.

2-AMPCO-15

Ref: Appendix 2-B DSP, Appendix C: Kinetrics Asset Condition Assessment, Page 14 Table III-1 Health Index Results Summary

- a) Please recast Table III to provide the numerical number of assets for each asset category that are in very poor, poor, fair, good and very good condition.

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- b) Please provide the asset quantities planned for replacement by asset category in each of the years 2017 to 2021 under all programs.
- c) Please provide the asset quantities replaced by asset category in each of the years 2012 to 2016 under all programs.
- d) Please provide the number of assets in each asset category planned for replacement in 2017 that were identified by Kinetrics as being in very poor or poor condition.

2-AMPCO-16

Ref: Appendix 2-B DSP, Appendix C Page 23 Conclusions and Recommendations

Preamble: Recommendation #9 states "Because only limited failure statistics was available at this time, an exponentially increasing failure rate and corresponding probability of failure model were assumed in this study. It is recommended that TBH begin collecting failure information so failure models can be developed and used in future assessments."

- a) Please discuss the failure statistic data available for each asset category and why it is limited.
- b) Please discuss TBHEDI's plans to collect additional failure information and the asset categories impacted.

2-AMPCO-17

Ref: Appendix 2-B DSP, Appendix C Page 23 Conclusions and Recommendations

Preamble: Recommendation #10 states "It is important to note that the replacement plan presented in this study is based solely on asset condition and that there are numerous other considerations that may influence TBH's Asset Management Plan."

- a) Please confirm the primary asset considerations that impact TBHEDI's 2017 asset renewal strategy.

2-AMPCO-18

Ref: Appendix E: Fleet Plan Page 5

- a) Please provide a list of each vehicle in TBHEDI's fleet and include vehicle type, year, age, service life, planned replacement year and utilization rate.

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4-AMPCO-19

Ref: Ex 4 Page 22

Preamble: Thunder Bay Hydro is currently experiencing a higher failure rate from these materials (insulators, glass cutouts, and arrestors) and is planning a proactive scheduled approach to replace and repair its overhead and underground materials particularly from glass cut out to polymer.

- a) Please provide the total number of assets by asset type to be replaced in 2017.
- b) Please provide the failure rates for each material for each of the years 2012 to 2016.

4-AMPCO-20

Ref: Ex 4 Page 23

- a) Please provide a breakdown of the budgeted and actual costs for the key work activities under Tree Trimming for the years 2012 to 2016 and forecast for 2017.
- b) Please provide the work cycles for each of the key work activities in part (a) and indicate any changes since TBHEDI's last cost of service application.
- c) Please provide the planned and actual unit accomplishments for each of the work activities in part (a) for each of the years 2012 to 2016 and planned for 2017.
- d) Please provide TBHEDI's budgeted compared to actual storm budget for the years 2012 to 2016 and forecast for 2017, and indicate where in the budget these amounts are included.
- e) Please provide a copy of the relevant clauses of the new City bylaw to make tree trimming a key focus area.
- f) Thunder Bay Hydro uses a forestry contractor for these services. This contract is awarded through the tendering process to ensure competitive pricing. Please provide the name of the contractor and the budget compared to actual amount spent for the years 2012 to 2016.

4-AMPCO-21

Ref: Ex 4 Page 47

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- a) Please provide Table 4-22 showing the data for 2016, forecast for 2017 and the total amounts by year.

4-AMPCO-22

Ref: Ex 4 Page 27

- a) Please provide the wage increases for 2016 and the assumptions for 2017.

4-AMPCO-23

Ref: Ex 4 Page 32 Table 4-12

- a) Please recast the table to show executive, union and non-union FTEs as well as overtime and incentives paid, as separate line items in the Table.
- b) Please provide the budgeted and actual overtime hours and costs for the years 2012 to 2016 and forecast for 2017.
- c) Please provide the percentage of overtime paid as double time in 2015 and 2016.
- d) Please provide the number of co-op students by year and associated costs.
- e) Please provide the % of costs in Table 4-12 reflected in the capital versus OM&A budget for each year.
- f) Please provide the number of FTEs derived from overtime hours and show the calculation.
- g) The Table includes footnotes 1 and 2 with no explanation. Please provide.

4-AMPCO-24

Ref: Ex 4 Appendix 2-BB Service Life Comparison Table F-1 from Kinetrics Report, Table F-2 from Kinetrics Report

- a) Please advise of any changes in Useful Life since TBHEDI's last cost of service application.
- b) Please provide an explanation of the footnotes in Tables F-1 and F-2.

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8-AMPCO-25

Ref: Ex 8 Page 8

- a) Please provide the number of customers with a monthly demand greater than 3,000 kW.
- b) Please provide the number of customers with a monthly demand greater than 5,000 kW.

8-AMPCO-26

Ref: Ex 8 Page 9

- a) Please provide the rate design, fixed/variable split and distribution and total bill impacts using the current fixed charge of \$2,922.18 as the 2017 Fixed Charge for the GS >1,000 and Large Use customer.
- b) Please provide the rate design, fixed/variable split and distribution and total bill impacts using the Minimum System with PLCC Adjustment (Ceiling Fixed Charge from Cost Allocation Model of \$369.51 as the proposed 2017 Monthly Service Charge for the GS>1,000 kW customer.
- c) Please provide the rate design, fixed/variable split and distribution and total bill impacts using the Minimum System with PLCC Adjustment (Ceiling Fixed Charge from Cost Allocation Model of \$513.30 as the proposed 2017 Monthly service Charge for the Large Use customer.