



March 23, 2015

PowerStream Inc.
161 Cityview Boulevard
Vaughan, Ontario L4H 0A9

Re: PowerStream Inc. Custom IR Application 2016 to 2020
AMPCO Interrogatories
Board File No. EB-2015-0003

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,

A handwritten signature in blue ink, appearing to read "Adam White".

Adam White
President
Association of Major Power Consumers in Ontario

RECEIVED

MAR 25 2015

ONTARIO ENERGY BOARD

Association of Major Power Consumers in Ontario

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B-AMPCO-1

Exhibit B-Tab 1, Page 1 Table 1

- a) Please add the revenue requirement information for 2013 to Table 1.

C-AMPCO-2

Exhibit C

- a) Page 1: PowerStream indicates a 10 year capital plan is developed early in the year. Please provide a copy of PowerStream's latest 10 year capital plan.

F-AMPCO-3

Exhibit F-Tab 2,

- a) Benchmarking, Page 2, Table 1 Predicted vs. Actual and Forecasted Costs: For the years 2010 to 2014, please provide Predicted OM&A and Predicted Capital.
- b) Page 6: PowerStream's goal is to have rates that are in the lowest quartile. By when?

G-AMPCO-4

Exhibit G-Tab 2-5.0 Introduction Page 3 Table 1

- a) Please provide a table that shows the Annual Dollar Spending and Annual Percentage Spending by OEB Category and Grand Total for the years 2009 to 2014.

G-AMPCO-5

Exhibit G-Tab 2-5.2.1 Distribution System Plan Overview, Page 5, Third Party Reviews

- a) By category and consultant, please indicate:
- the Title and date of each consultant report and whether or not copies of each report have been included in PowerStream's filing
 - Whether an RFP was issued or the work was sole-sourced
 - The value of each consultant's work
- b) Please provide copies of all reports not included in the application.

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Exhibit G-Tab 2-5.2.3 Performance Measurement for Continuous Improvement

- a) Figure 1, Performance Metrics: Please discuss how the performance metrics were selected.
- b) Figure 1, Performance Metrics: Please provide performance metrics that were considered and not selected and why.
- c) Figure 1, Performance Metrics: Please provide the annual targets for each metric.
- d) Figure 1, Performance Metrics: Please discuss how these metrics relate to incentive pay for each employee group.
- e) Please provide PowerStream's views on the following statement - Reliability Indices provide a better indication of distribution system performance when loss of supply, major event days and scheduled outages are excluded from the calculation.
- f) DS Spending Progress Report Metric: Please explain how the success for this metric is measured.
- g) DS Spending Progress Report Metric: Please provide PowerStream's historical capital spending compared to the approved capital budget for the years 2009 to 2014.
- h) Work Order Closing Variances Metric: Please explain the how the success for this metric is measured.
- i) Work Order Closing Variances Metric: Please discuss typical reasons for reviews issued that require and do not require management approval.
- j) Cable Failure Rates Metric: Please explain why cable remediation is the only program where failure rate analysis can be readily measured.
- k) Page 10 – 2013 and 2014 Extreme Weather Events: Please provide a copy of PowerStream's Internal Report that outlines lessons learned, key findings and 37 action items to enhance emergency restoration and communication efforts.
- l) Pages 13-14, Figures 3 to 5: Please complete the following Table separately for Historical SAIFI, Historical SAIDI and Historical CAIDI in order to provide the indicated data values.

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	2007	2008	2009	2011	2012	2013	2014
Total							
Excluding Loss of Supply (LOS)							
Excluding LOS and Major Event Days (MED)							
Excluding LOS, MED and Scheduled Outages (SO)							

- m) Pages 15-16, Figures 6 to 8: Please provide a list of the CEA utilities used to determine the CEA averages for SAIDI, SAIFI and CAIDI.
- n) Pages 15-16, Figures 6 to 8: Please provide a table of the data values for each figure.
- o) Page 16: The CEA numbers are all inclusive. On what basis are the PowerStream numbers provided?
- p) Pages 15-16, Figures 6 to 8: Please reproduce Figures 6 to 8 to exclude Loss of Supply and Major Event Days and provide the data points.
- q) Page 18: Please discuss PowerStream's approach in its 5 year plan to address SAIFI and the specific work programs that address SAIFI.
- r) Page 18: Please discuss PowerStream's approach in its 5 year plan to address MAIFI and the specific work programs that address MAIFI.
- s) Please complete the following Table to provide a breakdown of Controllable SAIDI related to defective equipment by year:

	2007	2008	2009	2010	2011	2012	2013	2014
Defective								

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Equipment								
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- t) Please reproduce the Table in part (u) to provide a breakdown of the causes of defective equipment.
- u) Please identify the specific assets that are the leading cause of Customer Minutes of Interruption (CMI).
- v) Please identify the specific assets that are the leading cause of Customer Interruptions.

G-AMPCO-7

Exhibit G-Tab 2-5.3.1 Asset Management Process Overview

- a) Pages 5 to 10: PowerStream describes its primary asset registers. Please discuss any existing significant issues and challenges related to the coordination and integration of the information provided by the key asset registers.
- b) Please discuss if PowerStream foresees any significant issues or challenges using its key asset registers to track, coordinate and integrate the asset and project information related to its proposed project investments in the execution of its 5 year plan.
- c) Page 21, Construction and Material Standards: PowerStream indicates that its construction standards have been approved by a provincially licensed professional engineer. Please discuss if this approval is done internally or externally. Please comment on how PowerStream's Construction and Material Standards compare to Industry Standards.
- d) Page 22, Reliability Performance: PowerStream indicates it has committed to improve system reliability as part of the corporate "Strategic Direction – Five Year Critical Success Factors". Please confirm the Five Year Critical Success Factors and provide a reference.
- e) Page 22: Reliability Performance: PowerStream indicates it will strive towards meeting the reliability target set for 2020. Please confirm the 2020 target.
- f) Page 24, lines 26-30: Please confirm the capital budget threshold and how it is applied.

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Ref 1: Exhibit G-Tab 2-5.3.2 Overview of Assets Managed, Page 25

Ref 2: Exhibit G-Tab 2-5.3.3 Asset Lifecycle Optimization Policies and Procedures, Page 29

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- a) The 2014 asset counts provided in Reference 1 differ from the 2014 asset counts provided at reference 2. Please reconcile.

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Exhibit G-Tab 2-5.3.2 Overview of Assets Managed

- a) Please complete the following table:

Asset	Population	End of Life (years)	Population equal to or beyond End of Life at December 31, 2014	% population equal to or beyond End of Life at December 31, 2014
Power Transformers				
Substation Power Transformers				
Circuit Breakers				
Transformer Station 230 kV Disconnect Switches				
Substation Primary Disconnect Switches				
Transformer Station Capacitor Banks				
Station Reactors				
Station Service Transformers (TS Stations)				
Primary Metering Units (Transformer Stations)				
Protection and Control Relays				
Underground Cable				

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Distribution Transformers				
Switchgear				
Mini-Rupter Switches				
Automated Switches				
Wood Poles				

G-AMPCO-10

Exhibit G-Tab 2-5.3.2 Overview of Assets Managed

- a) Pages 26 to 51: For each of the asset groups where PowerStream provided Health Indices, please provide the % of the population tested for each asset group.

G-AMPCO-11

Exhibit G-Tab 2-5.3.3 Asset Lifecycle Optimization Policies and Procedures

- a) Page 10: Mini-Rupter Switch Replacement: Please provide a table that sets out the actual number of replacements per year and the spending for the years 2009 to 2014, and the planned number of replacements per year and the budget for the years 2015 to 2020.
- b) Page 10: Automated Switch Replacement: Please provide a table that sets out the actual number of replacements per year and the spending for the years 2009 to 2014, and the planned number of replacements per year and the budget for the years 2015 to 2020.
- c) Page 12: Fault Indicator Replacement: Please provide a table that sets out the actual number of replacements per year and the spending for the years 2009 to 2014, and the planned number of replacements per year and the budget for the years 2015 to 2020.
- d) Page 12:-44 kV Porcelain Insulator Replacement: PowerStream is proposing to replace all of the remaining legacy 44 kV porcelain insulators with polymer type insulators over the next four years. Please provide the number of insulators to be replaced by year and the cost by year.
- e) Page 19: Please provide PowerStream's Key Performance Indicator (KPI) Results (projected vs. actuals) for the years 2009 to 2014.

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- f) Page 26: Table 2 Annual O&M Spending: For each of the O&M costs listed in Table 2, please provide the frequency cycle that the activity is undertaken – for example annually, bi-annually, every 2 years etc.
- g) Page 26: Table 2 Annual O&M Spending: For each of the O&M costs please provide the historical spending for the years 2009 to 2014.
- h) Page 28, Vegetation Management: Please provide the analysis that underpins PowerStream's determination that the five year trimming cycle was not adequate to keep up with tree growth across the service territory and as such the tree trimming cycle has been adjusted to a three year cycle across the territory.
- i) Page 28, Vegetation Management: Please provide a description of the work programs undertaken under vegetation management.
- j) Page 28, Vegetation Management: Please discuss the size of the program and the km or number of trees to be addressed each year for the years 2015 to 2020 compared to the historical years 2009 to 2014.
- k) Page 30: Please discuss further the trade off between capital investments and O&M costs and the premise that a renewed asset base should result in a decrease in O&M costs.

G-AMPCO-12

Exhibit G-Tab 2-5.4.1 Capital Expenditures Plan Summary

- a) Page 2 Table 1, Capital Expenditures by Investment Category: Please provide the historical Board Approved amounts by category and in total for the years prior to 2015.
- b) Page 2 Table 1, Capital Expenditures by Investment Category: Please provide the historical budgeted amounts for the years 2009 to 2014 by category and in total.

G-AMPCO-13

Exhibit G-Tab 2-5.4.2 Capital Expenditure Planning Process Overview

- a) Page 3, lines 11 to 12: The evidence indicates that early results show that 79% of customers are very or somewhat satisfied with their interaction with PowerStream. Please provide the percentage split between very and somewhat.

- G-AMPCO-14

- a) Please provide the inflation assumptions by year for the years 2015 to 2020.
- b) Please provide the external cost assumptions by year for the years 2015 to 2020 and explain the nature of these cost increases.

[illegible]

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Replacement												
Pole Replacement												
Pole Reinforcement												

G-AMPCO-16

Exhibit G-Tab 2-Appendix A: Project Investment Summaries

Cable Injection Program; Cable Replacement Program

- a) Please confirm when the Cable Injection Program and Cable Replacement Program commenced.
- b) PowerStream indicates there were 103, 123, 133 and 113 cable and splice failures in 2011, 2012, 2013 and 2014 respectively. Please provide the cable and splice failures for the years 2006 to 2010.
- c) Please confirm PowerStream's end of life of primary cable.
- d) For the failures identified in part (b), please provide the number of failures by year on cables that were at or beyond end of life.
- e) Please provide the historical expenditures for the Cable Injection Program and Cable Replacement Program for the years 2009 and 2010.
- f) PowerStream indicates the Cable Replacement Program will stay stable for 22 years and then increase to higher levels from year 23 onward. Please discuss the increase in km and cost anticipated in year 23 and onward.

G-AMPCO-17

Exhibit G-Tab 2-Appendix A: Project Investment Summaries

Emerging Cable Replacement Program

- a) Please provide the historical expenditures for the years 2009 and 2010.
- b) Please discuss why the majority of emerging cable faults occurs in industrial parks.
- c) Please provide the failures by year for the years 2009 to 2014.

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Exhibit G-Tab 2-Appendix A: Project Investment Summaries

Submersible Transformer Replacement

- a) Please confirm the total population of submersible transformers.
- b) Please confirm the year the Submersible Transformer Replacement Project commenced.
- c) Please provide the historical expenditures prior to 2011.
- d) Please provide the historical failure rates for submersible transformers for the years 2009 to 2014.

G-AMPCO-19

Exhibit G-Tab 2-Appendix A: Project Investment Summaries

Switchgear Replacement Program

- a) Please provide a breakdown of the total population of switchgears by type of switchgear.
- b) Please confirm the year the Switchgear Replacement Program commenced.
- c) Please provide the historical spending for the years 2009 and 2010.
- d) Page 1 – The evidence indicates an abstract of the ACA Technical Report on Distribution Switchgear at PowerStream is attached. Please provide the attachment and/or the reference.
- e) There were 30, 24 and 28 switchgear failures in 2011, 2012 and 2013 respectively. Please provide the switchgear failures by year for the years 2006 to 2010, and for 2014.
- f) Please confirm PowerStream's end of life for in-service switchgears by type of switchgear.

G-AMPCO-20

Exhibit G-Tab 2-Appendix A: Project Investment Summaries

Storm Damage – Replacement of Distribution Equipment Due to Storm - South

- a) Please provide the storm damage costs for 2009 and 2010.

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- b) Please provide the storm damage budget included in base rates.
- c) Please provide the major asset quantities replaced by year for the years 2009 to 2014 and the corresponding costs associated with each asset group.
- d) Please provide the rationale for the proposed spending levels for the years 2015 to 2020.

G-AMPCO-21

Exhibit G-Tab 2-Appendix A: Project Investment Summaries

Storm Damage – Replacement of Distribution Equipment Due to Storm - North

- a) Please provide the actual storm damage costs for 2009 and 2010.
- b) Please provide the storm damage budget included in base rates.
- c) Please provide the major asset quantities replaced by year for the years 2009 to 2014 and the corresponding costs associated with each asset group.
- d) Please provide the rationale for the proposed spending levels for the years 2015 to 2020.

G-AMPCO-22

Exhibit G-Tab 2-Appendix A: Project Investment Summaries

Switchgears – Unscheduled Replacement of Failed Distribution Equipment - South

- a) Please provide the number of failed switchgears replaced by year for the years 2009 to 2014.
- b) Please indicate the number of failed switchgear replaced by year that was not at or beyond end of life.

G-AMPCO-23

Exhibit G-Tab 2-Appendix A: Project Investment Summaries

Switchgears – Unscheduled Replacement of Failed Distribution Equipment - North

- a) Please provide the number of failed switchgears replaced by year for the years 2009 to 2014.

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- b) Please indicate the number of failed switchgears replaced by year in part (a) that were not at or beyond end of life.
- c) Please discuss the rational for the proposed spending levels for the years 2015 to 2020.

G-AMPCO-24

Exhibit G-Tab 2-Appendix A: Project Investment Summaries

Unscheduled Replacement of Failed Equipment – Poles South

- a) Please provide the historical spending for the years 2009 and 2010.
- b) Please provide the quantities of failed equipment by asset for the years 2009 to 2014.

G-AMPCO-25

Exhibit G-Tab 2-Appendix A: Project Investment Summaries

Unscheduled Replacement of Failed Equipment – Poles North

- a) Please provide the historical spending for the years 2009 and 2010.
- b) Please provide the quantities of failed equipment by asset for the years 2009 to 2014.

G-AMPCO-26

Exhibit G-Tab 2-Appendix A: Project Investment Summaries

Pole Replacement Program

- a) Please provide the in-service population of wood poles that are at end of life as at December 31, 2014 and confirm the end of life used by PowerStream for wood poles.
- b) Please provide the historical spending for the years 2009 and 2010.
- c) Please provide the annual failure rate for poles for the years 2009 to 2014.
- d) Please provide the number of failed poles by year in part (e) that are not at or beyond end of life.
- e) Please provide the number of concrete poles.

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Exhibit G-Tab 2-Appendix A: Project Investment Summaries

Unforeseen Projects Initiated by PowerStream – North and South

- a) Please provide the historical expenditures for the years 2009 and 2010.
- b) Please explain the increase in spending in 2013.

G-AMPCO-28

Exhibit G-Tab 2-Appendix A: Project Investment Summaries

Storm Hardening and Rear Lot Supply – North and South

- a) Please provide the number of rear lot locations.
- b) Please provide a breakdown of the proposed 2015 to 2020 budget between the three work programs: conversion of rear lot overhead, 4-circuit pole storm guying and in-line guying and relocation of flood sensitive equipment by year.
- c) Please provide the number of rear lot conversions planned for each year for the period 2015 to 2020.
- d) Please discuss when the conversion of rear lot project is expected to end.

J-AMPCO-29

Exhibit J-Tab 2

- a) Page 1: Please provide the assumptions in this application for the annual inflation adjustment under the PWU Collective Agreement for the years 2016 to 2020.
- b) Page 2, Appendix 2-K: Please reproduce the table to breakout executive from management, overtime and incentive pay from salary and wages, and temporary staff from permanent. Please add rows to indicate the percentage capitalized and expensed.
- c) Please discuss PowerStream's contracting out strategy.

M-AMPCO-30

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Exhibit M-Tab 1

- a) Pages 1-2: For the GS>50 kW and Large User customer classes, please provide the monthly fixed charge and variable rate for 2016 to 2010 if the fixed/ variable split is maintained at the 2013 Board-Approved Fixed/Variable Split for each customer class.

AMPCO-31

Ref: General, Data Analytics

Preamble: AMPCO seeks to understand the data that PowerStream collects and the information that is available to better understand the patterns and trends in service quality to customers specifically related to power quality, voltage sags, power blips, harmonics, etc.

- a) Please provide an overview of PowerStream's current grid control structure.
- b) Please provide any schematics, technical drawings, technical manuals or other documents related to the grid control centre and how it functions.
- c) Please provide an overview of what PowerStream monitors that is within PowerStream's control related to power quality and system performance.
- d) Please discuss the data vectors and the telemetry that is available.
- e) Please explain the totality of the data that is collected and how it is used.
- f) Please discuss how customers are notified of potential power quality issues.