Greater Sudbury Hydro Inc.

Interrogatory Submission

March 10, 2020

Vulnerable Energy Consumers Coalition

EB-2019-0037

empowering communities
le pouvoir aux communautés

A GSU company

Table Of Contents

Table Of Contents

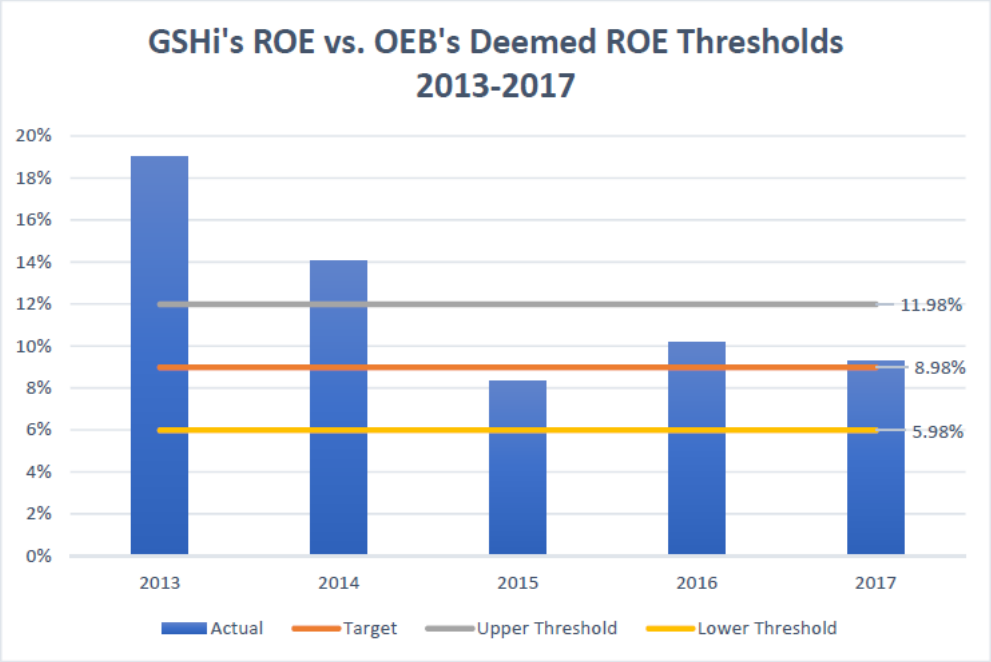
Table Of Contents

1-VECC-1

Question:

Reference: Exhibit A, Section 4.4, page 33

Figure 6 – GSHi's ROE Trends



a) Did GSHI apply for earning sharing in 2013 and 2014?

Response:

a) GSHi did not apply for earning sharing in 2013 and 2014. Attachment 1 to this response is the letter GSHi sent to the OEB on February 26, 2016 requesting a deferral for its 2017 Cost of Service Rate Application. In this letter, GSHi speaks to its ROE performance in 2013 and 2014 and normalizes for one-time, non-recurring items and inconsistencies in the ROE methodology that affected its 2013 and 2014 ROE calculations.

Attachment 1 (of 1):

1-VECC-1 Attachment 1: 2017 Cost of Service Deferral Request Letter

Greater Sudbury Hydro Inc
Hydro du Grand Sudbury Inc
empowering communities
le pouvoir aux communautés
A GSU company

500 Regent Street | 500, rue Regent
Sudbury ON P3E 3Y2

t 705.675.7536
f 705.671.1413
w sudburyhydro.com

February 26, 2016

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

Re: Greater Sudbury Hydro Inc - 2017 Cost of Service Rate Application

Dear Ms. Walli:

Greater Sudbury Hydro Inc ("GSHi" or "the Utility") last filed a Cost of Service rate application to the Ontario Energy Board ("the Board") for rates effective May 1, 2013, and is therefore scheduled to rebase for rates effective May 1, 2017. GSHi is requesting to defer rebasing for a period of 8 months, for rates effective January 1, 2018.

This deferral request is based on a number of items for consideration:

Align Rate & Fiscal Years

GSHi reports on a calendar fiscal year-end and desires to align its rate period with its fiscal period. The Utility anticipates that the alignment will result in a reduced administrative burden, improved budget planning and improved financial information by aligning rates charged with costs incurred.

Business Planning

GSHi is currently engaged with Siemens' Business Transformation Unit and is in the process of developing a detailed plan that will guide the Utility's business objectives for the next decade. The planning process is a value-oriented approach that holistically considers all the business capabilities that GSHi will need to meet and exceed stakeholder expectations for the electricity industry of the future.

The effort involves four distinct phases; Orientation, Destination, Routing and Navigation. The first three phases represent an extensive planning process. To date the planning phases have identified 12 programs that include over 100 specific projects to be implemented over the 10 year planning horizon. The final planning phase, Routing, will be complete by Q3 of 2016 and will produce the detailed costing information

that GSHi will need to file a comprehensive rate application. The fourth and final phase, Navigation, describes the implementation of specific projects organized within a series of programs over a 5 year period with certain programs generally planned for a second 5 year horizon. These programs will include capital programs, which will therefore impact the Utility's Distribution System Plan. Therefore, the completion of this plan is aligned with the objectives of the Renewed Regulatory Framework and is necessary to provide the level of detailed and reliable information required in the Utility's Cost of Service or Custom IR filing. Additionally, the detailed project plan from the Routing phase will inform GSHi's choice of filing methodology (either a Cost of Service Application or a Custom IR Application).

Return-on-Equity

GSHi has considered its return on equity ("ROE") performance over the past 2 years, and presents the following information for the Board's consideration:

	2013	**2014**
ROE per Scorecard	19.00%	14.04%
Adjustment for taxes (DVA)	(2.19%)	(1.11%)
Re-statement as a result of IFRS conversion for Substation Assets	(1.02%)	(1.33%)
One-time impact of reduced maintenance expenses due to additional recoverable capital work performed in 2013	(1.78%)	-
One-time impact of smart meter disposition & rate rider	(1.88%)	(0.40%)
ROE – Re-calculated	**12.13%**	**11.20%**
ROE – Approved in 2013 COS	8.98%	8.98%
Difference	3.15%	2.22%

Adjustment for taxes – The Board has previously acknowledged and approved an adjustment as a result of the timing difference between the collection and payment of costs that flow through deferral and variance accounts.

Re-statement as a result of IFRS conversion for Substation Assets – GSHi's 2013 Cost of Service ("COS") was based on best efforts to componentize sub-station assets, replicate the annual amortization as compared to current GAAP and then translate to IFRS based on the new useful lives. In the Utility's originally reported 2013 & 2014 amortization, GSHi staff did amend the useful lives of the assets, however the full implementation of IAS 16 was not completed for Substation Assets. The IFRS conversion has been completed and will be reflected in GSHi's restated audited financial statements for the years ended December 31, 2013 and 2014. The above noted adjustment reflects what would have been recorded if the IFRS conversion was completed as filed in the Utility's 2013 COS rates.

In re-stating its previous year financial statements, GSHi has also disposed of certain substations which had been decommissioned in previous years. The net impact of these disposals were considered immaterial to

the Utility at the time, however do have an impact on the calculation of ROE and that impact is captured in this adjustment.

Other one-time impacts - The Utility's anomalous financial performance in 2013 was largely the result of one-time, non-recurring items and revenues. Among the factors contributing to the year's overearnings were the income statement impact from the disposition of smart meters, a one-year rate rider for disposition of residual historical smart meter costs and unexpected capital work performed which was recoverable from external parties and therefore reduced operating expenses. These items improved GSHi's ROE in 2013, however are not representative of the Utility's ongoing financial performance.

GSHi believes the above matters should be considered in order to more accurately reflect the Utility's financial performance in recent years, and should be weighed when deliberating the granting of this deferral request.

Reliability Standards

The 2014 scorecard for GSHi provides detail pertaining to reliability standards. GSHi provides the following information for the Board's consideration:

	OEB Target	2013	2014	2015 (Preliminary)
SAIDI – Reported in RRR	0.67 - 1.60	1.35	1.21	1.11
SAIDI – Excluding Planned Outages		**0.77**	**0.87**	**0.75**
SAIFI – Reported in RRR	0.84 - 1.16	1.16	1.83	1.25
SAIFI – Excluding Planned Outages		**1.00**	**1.69**	**1.14**

The above adjustments help to bring perspective to the Utility's reliability standards.

SAIDI is drastically impacted by planned outages in each year. However, with or without this adjustment the Utility is still well within the OEB target for this indicator. GSHi considers its higher 2014 SAIFI an anomaly, which is illustrated by the lower SAIFI numbers in both 2013 and 2015.

Through the previously mentioned business planning process, GSHi intends to quantify at the program level a targeted reduction in SAIFI and SAIDI. The Utility considers completion of this process key in improving the long-term trend of these metrics, and therefore GSHi would like to emphasize the importance of thorough completion of the business planning process.

Staffing

GSHi had retirements in 2015 for the positions of VP – Distribution Electrical Systems and VP – Corporate Services, the Utility's two executive roles that oversee all GSHi management and staff. These roles have historically been significantly involved in the Utility's rate applications. The VP – Distribution Electrical Systems position was filled internally in July 2015, while the new VP – Corporate Services was hired in November 2015 and is new to the electricity industry.

The Utility's apprehension towards the timing of the scheduled rate application is compounded by the current extended maternity leave of a key author of its rate filing. GSHi intends for this individual to be project lead on the filing and will provide continuity and significant experience from the Utility's previous rate application.

The Board, in granting this deferral request, will allow the executive time to become better versed in the intricacies of a rate application as well as allow its key person the time to return from extended leave by September 2016.

Conclusion

GSHi has only preliminary numbers for its 2015 financial year, however it is anticipating that its 2015 ROE will be at or below the approved ROE. The Utility is anticipating that its average financial performance over the period since its last rate application will be close to or within its allowable return on equity.

GSHi applied for a zero percent increase of its distribution rates in its 4th Generation IRM rate application for rates effective May 1, 2016. The Utility is confident that it can manage its financial needs in the interim period between May 1, 2017 and January 1, 2018 and intends to maintain its current, approved distribution rates during the proposed eight month deferral period.

For these reasons, GSHi is requesting to defer its scheduled rebasing of rates for a period of 8 months, from rates effective May 1, 2017 to rates effective January 1, 2018.

Should you have any questions or require further information, please do not hesitate to contact the undersigned.

Yours Truly,

Frank Kallonen
President and CEO
Greater Sudbury Hydro Inc
Phone: 705-675-0520

1-VECC-2

Question:

Reference: Exhibit 1, Appendix A- Customer Satisfaction Survey, page 12

a) With respect to question 19 of the customer survey - bill delivery and payment options: what are the actual percentages of bill delivery and payment methods for residential customers in 2019 (year-end)?
b) Why did the survey not inquire about the method of paper bill payment through the post? Specifically, what is the percentage residential customers who make payment by post?

Response:

a) In the table below please find the actual 2019 percentages of bill delivery and payment methods for residential customers.

Payment Type	Percentage of Total Residential Payments	Bill Delivery Method	Percentage
Cash	1%	Paper	81%
Cheque	5%	E-bill	17%
Debit	2%	E-post	2%
Telepay	57%		
PAP	35%		

b) GSHi cannot determine how many customers specifically pay by mailing in a cheque because cheques may also come in with walk in customers. As noted above, GSHi can confirm that approximately 5% of residential payment received were via cheque.

1-VECC-3

Question:

Reference: Exhibit 1, Appendix A- Customer Satisfaction Survey

a) A number of the customer survey questions breakdown responses into age groups: 18-34/35-44/45-54/55-64/65+. What is the actual breakdown of GSHI's residential customers by these groupings?

Response:

a) This information is not available.

1-VECC-4

Question:

Reference: Exhibit 1, Tab3, Schedule 13

a) When does GSHI expect to complete its Conditions of Service review? If the review has been completed please provide a track change version of the new Conditions.

Response:

b) The review process for GSHi's Conditions of Service is currently ongoing and is expected to be completed by December 1, 2020.

1-VECC-5

Question:

Reference: Exhibit 1, Tab 3, Schedule 14

a) What company (i.e. GSU or GSHI) does the organization structure chart in Figure 1.3.15-2 refer to? What significance (if any) is there to the “blue” and “green” boxes in this chart?

Response:

a) As stated in Exhibit 1, Tab 3, Schedule 14 (lines 29-30), Figure 1.3.15-2 is a high-level **GSHi** organizational chart. The green boxes in the chart identify departments that provide shared services.

1-VECC-6

Question:

Reference: Exhibit 1, Tab 6, Schedule 1, Attachment 4, page 34

In their summary presentation Decision Partners states:

> All Customers said at least once during the interview that they did not have enough information to confidently comment on some elements of the DSP, because they were not familiar with the state of the infrastructure and the costs associated with replacing vs. repairing or maintaining existing equipment, or simply because the complexity of the issues confused them.

a) Given this conclusion does GSHI believe that its customers have been sufficiently aware of the details of the proposed distribution system plan to be able to provide an informed opinion?
b) What specific capital project options were presented to participating surveyed customers?
c) How does GSHI know that customers participating in the engagement exercises had an understanding of the details of the plan and support any particular capital expenditure in the plan?

d) What was the cost of the Decision Partner contract for this rate application? What was the cost of the entire customer engagement exercise undertaken in support of this application?

Response:

a) The initial DSP consultation from which the above quote was taken was concluded in 2016. GSHi acknowledges that customer feedback gathered at that time did indeed indicate that there were gaps in the level of understanding among customers that impacted their ability to provide informed feedback on the levels of investment proposed in the draft DSP. As stated in the Customer Engagement summary prepared for the 2020 Cost of Service application (Exhibit 1, Tab 6, Schedule 1, Page 18, Lines 26-30 and Page 19, Lines 2-12), GSHi staff took the feedback gathered in the initial DSP consultation in 2016 and utilized the insights gleaned and

recommendations made by Decisions Partners to enhance its customer engagement process leading up to the preparation of the 2020 Cost of Service Application. This included a concerted effort to provide customers with additional information needed to ensure they were able to offer more informed feedback on the appropriateness of the levels of proposed DSP expenditures over a five-year period.
The details of this enhanced consultation process and its outcomes can be found in Exhibit 1, Tab 6, Schedule 1, Pages 19-36.

b) As stated in the Customer Engagement portion of GSHi's 2020 Cost of Service application in a section titled *Capital Investments and Customer Engagement* (Exhibit 1, Tab 6, Schedule 1, Page 22-27), GSHi provided an update on its substation renewal project timeline in a primer included within its annual report to its shareholder. This report was made available to the public in print form and on GSHi's website.
The substation projects were listed in the primer with their projected date of completion, as well as their current age (Exhibit 1, Tab 6, Schedule 1, Page 26, Figure 1.6.1 -14). The substation renewal projects listed were:

- 2020 – Gemmell Substation (52 years old)
- 2021 – Cressey Substation (68 years old)
- 2022 – Moonlight Substation (57 years old)
- 2023 – Marttila Substation (57 years old)
- 2024 – Paris Substation (52 years old)

This project primer provided important context in advance of the launch of a survey focused on DSP investments planned for 2020-2024. This survey was conducted by Decision Partners in 2019 during Phase II of GSHi's DSP consultation.
Phase II of the DSP consultation was the culmination of an enhanced engagement process that began in 2016, and so the Phase II customer survey was structured in such a way as to address specific concerns and needs expressed during this three-year period. Specifically, the survey was designed to provide a more complete picture of GSHi's operations and the investments to be made in the DSP's four cost centers: *System Renewal, System Access, System Service and General Plant.*
The Phase II consultation survey explored each of the cost centers in detail. The significance of each area of investment to GSHi's operations was explained, with examples of associated activities in each investment category

given to provide further clarification. Proposed investment amounts in each area, the percentage of the overall DSP budget they represent, and a statement on how current investments compare to those made in previous years were also provided. This information was meant to offer greater insight into the planning process, show consistency (or variance) in historical practice, and explain the rationale driving fund allocation. At the conclusion of each section, customers were asked to provide ratings on the criticality of investments in each specific cost center, as well as the appropriateness of investments being proposed by GSHi.

The following text within the survey provided context to customers as to why S*ystem Renewal* activities accounted for the most significant portion of the DSP's planned expenditures:

> "A key component of our *System Renewal* plan is replacing parts of substations that are at the end of their service life. This includes power transformers, which are among the most critical assets we manage. If these transformers fail, the results can include extended outages and lack of electricity service to essential institutions such as hospitals, along with high costs for replacement. GSH also has several substations that were built right after World War II, and they are reaching their end of life. We are very conscious that these important parts of the system need attention in a timely manner. Making these investments a bit at a time enables us to effectively manage the costs. For these reasons, they are our highest priority for investments in the DSP."

c) Toward the end of the Phase II DSP customer consultation survey conducted by Decisions Partners in 2019, customers were given the opportunity to think through the total increase in investments to be made over the next 5 years and provide an overall rating of their level of appropriateness. Respondents were asked to select one of the following four responses:

- Very Appropriate
- Somewhat Appropriate
- Not Very Appropriate
- Can't Rate

Nearly all customers said the levels of investment were “Very” (55%) or “Somewhat” (35%) Appropriate. (Exhibit 1, Tab 6, Schedule 1, Attachment 6, Page 5)

GSHi is confident in saying that its engagement activities have enhanced its customers’ ability to recognize the value of these planned expenditures with respect to their impact on the integrity of the distribution system. The results obtained throughout the two-phase DSP consultation process have also led GSHi to believe that its customers are confident that GSHi’s expert staff are in the best position to make decisions needed to ensure the distribution system is able to meet their energy needs—now and into the future. In its summary of the Phase I DSP customer consultation survey conducted in 2016, Decision Partners stated that “Customers mostly expressed confidence and ‘trust’ in GSHi to establish the right priorities and level of investment.” (Exhibit 1, Tab 6, Schedule 1, Attachment 4, page 34)

Customer comments that validated this assertion were presented verbatim in the consultation summary. For example:

“I get it that the GSU people know what they’re doing and if they’re telling us that’s what they need to spend, then that’s what they need to spend.” (Quote from a residential customer)

“They have the expertise on that so I can’t really second guess anything they’re doing. So far they’ve been very good let them do whatever they think is necessary.” (Quote from a small commercial customer)

GSHi recognizes that ongoing engagement is needed to ensure that its customers are aware of how and why GSHi prioritizes specific *System Renewal* projects. With further education, customers will be better prepared to offer informed opinions on the appropriateness of future capital investment plans. This is a continuous process that GSHI is committed to enhancing moving forward.

d) The total costs payable by Sudbury Hydro to Decision Partners for services related to the rate application were $82,215. The cost of the entire customer engagement exercise undertaken in support of the application was $92,567. These costs were incremental and do not include internal GSHi costs as part of the total.

2-VECC-7

Question:

Reference: Exhibit 2

a) Please update Appendix 2-AB and 2-AA to show 2019 actuals.

Response:

a) GSHi has updated Appendix 2-AB and 2-AA to show 2019 actuals (unaudited). Please see the Chapter 2 Appendices Live Models attached with this submission. Also, please see – Attachment 1 to this response for the updated Appendix 2-AA and Attachment 2 for the updated Appendix 2-AB.

Attachment 1 (of 2):

2-VECC-7 Attachment 1: Appendix 2-AA

File Number: EB-2019-0037
Exhibit:
Tab:
Schedule:
Page:

Date:

Appendix 2-AA
Capital Projects Table

Projects	2013	2014	2015	2016	2017	2018	2019 Bridge Year	2020 Test Year
Reporting Basis	**CGAAP**	**CGAAP**	**MIFRS**	**MIFRS**	**MIFRS**	**MIFRS**	**MIFRS**	**MIFRS**
System Access								
Meter Installations		117,775	152,796	176,067		120,024	147,711	174,862
Overhead Services		138,646	129,537	170,919	133,409	140,168	181,239	150,500
System Betterment	150,948	50,577	252,251	177,299	326,146	158,156	207,517	114,911
Underground Services		119,099		146,179	117,965		115,584	122,400
City Roadwork	484,101	360,002		153,024	159,247	172,058	311,204	275,000
Coppercliff Gardens Rebuild	135,832							
Sub-Total	770,881	786,099	534,584	823,488	736,767	590,406	963,255	837,673
System Renewal								
Failed Transformers	207,884	173,492	552,325	438,522	230,949	533,204	180,301	350,000
System Betterment	150,948	177,018	252,251	177,299	326,146	158,156	207,517	402,189
Major Substation Repairs	332,236	639,556	302,638	760,379				180,000
Emergency Plant Maintenance		279,054		234,114	509,595	577,726		326,547
Vanier Lane Road	458,280							
Algonquin Rebuild	150,050							
Sunnyside	402,031							
West Nip 4 to 12 Conversion	178,745							
Pole Replacements	136,291							
Pine St- 4kV Rebuild	173,085							
Beatty	354,547							
Copper Cliff Rebuild/ Evans Road Rebuild	167,471							
3F7		126,563						
3F10		121,589						
Lo-Ellen Park Rebuild		116,006						
Vanier Lane Rebuild - Phase 2		296,055						
Woodbine / Agincourt		546,967						
Harju/ Pennala		151,066						
West Nip 4 to 12 Conversion		476,226						
Raft LK		140,241						
Chapman/Stafford Rebuild			133,235					
Beverly Drive Rebuild			172,245					
Griffith St.			117,526					
Crescent Park/ Gordon Ac Rebuild			178,425					
Brebeuf Front Lot			368,773					
Mcdonell/Rix Falconbridge			155,288					
Voltage Conversion/Tear Down in West Nip			352,628					
West Nipissing (MS37)				162,576				
Fourth Ave Minnow Lake				154,003				
Bloor St				221,473				
Ester (Long Lake Rd to Treeview)				130,208				
Lavoie St.				245,047				
Mountview Cres				139,340				
Struthers St.				166,651				
Hay St. (Cache Bay)				116,572				
Rear Line Marymount to St. Anne's Rd				199,934				
Mildred St.				176,166				
Madeleine St				118,304				
Martin Ave				115,207				
Somers St.				187,907				
Cressey Station Voltage Conversion				138,066				
Coniston Edward Station					293,715			
Hudson St. 11F5					122,682			
Lansing Ave.					354,270			
Croatia Road 20F5					174,998			
Jarvi/Lammi's/Hannah Lake Rd 20F3					366,949			
West Nipissing Voltage Conversion					140,045			
Lasalle Park Manor Underground					395,943			
Holland Road - 2017					204,197			
Lincoln Road Rebuild					134,537			
Tedman					175,290			
9M4 Transfer Conductors (Martindale Pioneer Rd.)						470,104		
Kathleen Voltage Conversion						515,434		
Clearwater Lake Road						295,360		
Copper Cliff 25F4						925,622		
Fourth Avenue Coniston 31F1						234,909		
Kathleen Station MS2						3,324,676		
West Nipissing4-12kvconver						119,795	140,855	
Ferguson Avenue							333,295	
Capreol Rebuild							1,542,314	
Regent Voltage Conversion							435,561	
Notre Dame Composite Pole Replacements							346,118	
MS30/MS31 Grounding Improvements/ Switching							157,570	
Hawthorne (Vine to Beatrice)							268,238	
Copper Cliff Feeder Rebuild							128,294	
Capital Site Restoration							133,846	
Tedman Voltage Conversion							511,675	
Gemmell MS11 (T1)								2,333,837
Cressey MS3 Rebuild/Voltage Conversion								1,305,701
Battery Bank Replacements								120,000
Pole Rebuilds								494,292
Cable Testing/Rejuvenation								100,462
Sub-Total	2,711,566	3,243,835	2,585,335	3,881,766	3,429,316	7,154,986	4,385,584	5,613,028
System Service								
System Betterment	150,948	25,288	252,251	177,299	326,146	158,156	207,517	57,456
Southlane Road	332,002							
44KV Motorized Switches	508,535							
Cambrian Heights Dr-UG Extension to College Boreal		166,094						
44KV Motorized Switches/VBM		330,212						
West Nipissing (MS37)			188,460					
Bancroft 44kv Extension			450,886					
Lasalle MS7 Relay Upgrades					155,748			
11F7 - Falconbridge Rd to Moonlight Ave; New Ckt					138,081			

Lorne @ Martindale Ave; Complete 12kV and 44kV Feeder Ties					130,189			
Melvin to Kathleen MS; New 44kV Ckt/Rebuild					563,481			
2017 44KV To Coniston (Allan/Edward)					1,051,713			
Sunnyside Rebuild						526,833		
Dash MS19 T1/T2 Relay Upgrades;Purchase Equipment							419,590	
Continue 44kV build down Government Rd to Hwy 17 - Coniston 31F2							802,525	
Science North							553,972	
West Nipissing Voltage Conversion								89,177
Cressey MS3 Rebuild/Voltage Conversion								191,285
Gemmell MS 11								532,440
9M2 Extension								464,138
Sunnyside 12 kV Feeder Relocation								346,811
Sub-Total	991,485	521,594	891,596	177,299	2,365,359	684,989	1,983,604	1,681,307
General Plant								
Vehicles	533,800	225,667	756,834	202,408	743,656	212,220	144,362	450,000
Building	176,906	1,364,323	1,312,438	1,342,565			242,329	300,000
Control Room Electronic Mapping	367,399							
Tools and Equipment				116,135				
Enterprise Bus								
Outage Management System (OMS)								400,000
Sub-Total	1,078,105	1,589,990	2,069,273	1,661,109	743,656	212,220	386,691	1,150,000
Miscellaneous	673,596	1,250,069	1,554,539	1,199,430	1,439,848	1,007,375	784,135	133,000
Total	**6,225,633**	**7,391,586**	**7,635,327**	**7,743,091**	**8,714,946**	**9,649,976**	**8,503,268**	**9,415,007**
Less Renewable Generation Facility Assets and Other Non-Rate-Regulated Utility Assets ***(input as negative)***								
Total	**6,225,633**	**7,391,586**	**7,635,327**	**7,743,091**	**8,714,946**	**9,649,976**	**8,503,268**	**9,415,007**

Notes:

1 Please provide a breakdown of the major components of each capital project undertaken in each year. Please ensure that all projects below the materiality threshold are included in the miscellaneous line. Add more projects as required.

2 The applicant should group projects appropriately and avoid presentations that result in classification of significant components of the capital budget in the miscellaneous category.

Attachment 2 (of 2):

2-VECC-7 Attachment 2: Appendix 2-AB

TO BE UPDATED AT THE DRAFT RATE ORDER STAGE

File Number: EB-2019-0037
Exhibit:
Tab:
Schedule:
Page:
Date:

Appendix 2-AB

Table 2 - Capital Expenditure Summary from Chapter 5 Consolidated Distribution System Plan Filing Requirements

First year of Forecast Period:
2020

CATEGORY	Historical Period (previous plan[1] & actual)																					Forecast Period (planned)				
	2013			2014			2015			2016			2017			2018			2019			2020	2021	2022	2023	2024
	Plan	Actual	Var	Plan	Actual	Var	Plan	Actual	Var	Plan	Actual	Var	Plan	Actual	Var	Plan	Actual	Var	Plan	Actual[2]	Var					
	$ '000		%	$ '000		%	$ '000		%	$ '000		%	$ '000		%	$ '000		%	$ '000		%	$ '000				
System Access	1,594	2,122	33.1%	1,979	1,724	-12.9%	1,757	2,028	15.4%	1,503	1,907	26.9%	1,544	1,643	6.4%	1,644	2,000	21.6%	1,883	2,071	10.0%	1,920	1,951	1,983	2,015	2,049
System Renewal	5,846	3,044	-47.9%	3,961	4,197	6.0%	3,678	3,541	-3.7%	5,277	4,588	-13.1%	5,054	4,247	-16.0%	7,780	7,538	-3.1%	6,772	5,158	-23.8%	5,702	9,009	6,871	7,449	8,164
System Service	2,088	1,051	-49.7%	1,149	595	-48.2%	897	1,077	20.0%	371	364	-1.9%	1,799	2,587	43.8%	1,025	934	-8.8%	843	2,498	196.4%	1,610	874	657	738	80
General Plant	2,428	1,256	-48.3%	2,317	1,753	-24.3%	3,171	2,246	-29.2%	1,932	1,767	-8.5%	1,727	995	-42.4%	999	415	-58.5%	1,155	475	-58.9%	1,265	907	1,384	902	1,020
TOTAL EXPENDITURE	11,956	7,473	-37.5%	9,406	8,270	-12.1%	9,504	8,892	-6.4%	9,083	8,626	-5.0%	10,124	9,472	-6.4%	11,448	10,886	-4.9%	10,653	10,201	-4.2%	10,497	12,742	10,895	11,104	11,313
Capital Contributions	(704)	(1,247)	77.2%	(851)	(878)	3.2%	(744)	(1,256)	68.9%	(711)	(883)	24.1%	(706)	(757)	7.3%	(965)	(1,236)	28.1%	(1,095)	(1,698)	55.1%	(1,082)	(1,102)	(1,123)	(1,143)	(1,165)
Net Capital Expenditures	11,253	6,226	-44.7%	8,555	7,392	-13.6%	8,760	7,635	-12.8%	8,372	7,743	-7.5%	9,418	8,715	-7.5%	10,483	9,650	-7.9%	9,558	8,503	-11.0%	9,415	11,639	9,773	9,961	10,149
System O&M	$ 7,988	$ 7,350	-8.0%	$ 8,118	$ 6,672	-17.8%	$ 8,544	$ 7,499	-12.2%	$ 8,989	$ 7,543	-16.1%	$ 8,382	$ 7,667	-8.5%	$ 8,786	$ 7,579	-13.7%	$ 7,890	$ 8,002	1.4%	$ 9,141	$ 9,324	$ 9,510	$ 9,701	$ 9,895

Notes to the Table:
1. Historical "previous plan" data is not required unless a plan has previously been filed. However, use the last OEB-approved, at least on a Total (Capital) Expenditure basis for the last cost of service rebasing year, and the applicant should include their planned budget in each subsequent historical year up to and including the Bridge Year.

2. Indicate the number of months of 'actual' data included in the last year of the Historical Period (normally a 'bridge' year):

Explanatory Notes on Variances (complete only if applicable)

Notes on shifts in forecast vs. historical budgets by category
Refer to Exhibit 2, Tab 2, Schedule 2 for variance analysis.

Notes on year over year Plan vs. Actual variances for Total Expenditures
Refer to Exhibit 2, Tab 2, Schedule 2 for variance analysis.

Notes on Plan vs. Actual variance trends for individual expenditure categories
Refer to Exhibit 2, Tab 2, Schedule 2 for variance analysis.

2-VECC-8

Question:

Reference: Exhibit 2, Tab 1, Schedule 2, page 6

a) With respect to the variances from Board approved capital investments in 2013 GSHI explains it had not forecasted $471,960 in capital contributions attributable to various projects.
   i. What City of Sudbury project received the unforecasted $223,009 capital contribution? Was this project included in the Board approved 2013 budget? If not please explain why not.
   ii. What were the original 2013 forecasted capital contributions for the subdivision related work ($92,148) and the commercial related work ($146,803)? Please explain why these amounts were not forecasted in the 2013 Board approved capital budget.

Response:

a) i) GSHi receive a capital contribution from the City of Sudbury for the City Road Widening project at the Lassalle and Notre Dame crossing. The project was not included in the 2013 Board approved budget because GSHi was not aware of this road widening project at the time the 2013 Board approved budget was submitted.

ii) The original 2013 forecasted capital contributions for Subdivisions was $169,761 and commercial related work was $354,029. The contributions were forecasted in the 2013 Board approved capital budget of $703,790.

2-VECC-9

Question:

Reference: Exhibit 2, Tab 1, Schedule 2 & Tab 2, Schedule 1, Attachment 1, DSP, pages 81- Figure 35

a) Please confirm that the planned amounts for capital expenditures shown in Appendix 2-AB for the years 2013 through 2019 are those provided to the Board as part of EB-2012-0126. If this is not confirmed please explain how the "planned" amounts shown in Figure 35 of the DSP were determined.

Response:

a) The "Plan" amounts for capital expenditures shown in Appendix 2-AB for the years **2014** through **2019** were not provided to the Board as part of EB-2012-0126. Rather, the 'Plan' number showing in each of those years is from GSHi's Capital Budget for a particular year within that period. For the 'Plan' number showing in **2013**, this number was provided to the Board as part of EB-2012-0126.

2-VECC-10

Question:

Reference: Exhibit 2, Tab 1, Schedule 2, page 22

a) Please update Table 10 (2019 vs. 2018 Gross Assets by Account) to reflect actual 2019 additions.

Response:

a) Please see updated Table 10 (2019 vs. 2018 Gross Assets by Account) below.

Table 10 – 2019 Bridge Year Projected vs. 2018 Actual Gross Assets by Account

OEB Account	Description		2018	2019	Variance
Intangible Plant					
1611	Computer Software		3,218,379	3,218,379	-
1611	Contra Asset		- 129,739	- 129,739	- 0
1612	Land Rights		58,790	65,314	6,524
Subtotal - Intangible Plant			**3,147,430**	**3,153,953**	**6,523**
Distribution Plant					
1805	Land		940,079	940,079	-
1808	Buildings		2,954,574	2,987,642	33,068
1820	Distribution Station Equipment <50 kV		20,781,600	22,414,635	1,633,035
1825	Storage Battery Equipment		-	881,028	881,028
1830	Poles, Towers & Fixtures		27,215,982	28,956,335	1,740,353
1835	Overhead Conductors & Devices		40,769,583	40,860,073	90,490
1840	Underground Conduit		24,457,772	24,878,646	420,874
1845	Underground Conductors & Devices		16,711,712	17,295,444	583,732
1850	Line Transformers		30,251,814	31,170,543	918,729
1855	Services (Overhead & Underground)		16,347,433	16,649,096	301,663
1860	Meters		9,026,088	9,174,233	148,145
Subtotal - Distribution Plant			**189,456,637**	**196,207,754**	**6,751,117**
General Plant					
1908	Buildings & Fixtures		11,731,379	11,973,707	242,329
1915	Office Furniture & Equipment (10 years)		90,616	90,616	-
1920	Computer Equipment - Hardware		762,482	762,482	-
1930	Transportation Equipment		6,649,937	6,613,283	- 36,654
1940	Tools, Shop & Garage Equipment		2,535,629	2,617,104	81,475
1955	Communications Equipment		2,407,599	2,407,599	-
1980	System Supervisory Equipment		2,305,222	2,599,457	294,235
1985	Miscellaneous Fixed Assets		45,835	47,668	1,833
Subtotal - General Plant			**26,528,700**	**27,111,917**	**583,217**
Contributions					
1995	Contributions & Grants		-	-	-
2440	Deferred Revenue[5]		- 5,062,611	- 6,761,089	- 1,698,479
Subtotal - Contributions			**- 5,062,611**	**- 6,761,089**	**- 1,698,479**
Total Gross Assets			**214,070,156**	**219,712,534**	**5,642,379**

2-VECC-11

Question:

Reference: Exhibit 2, Tab 2, Schedule 1, Attachment 1, DSP

a) Please update Appendix 5-A to show 2019 as current year and the five-year average for 2015-2019.
b) Please provide the metrics (except SAIFI and SAIDI) using the proposed 2020 amounts in this application.

Response:

a)
Please see below an updated Appendix 5-A showing 2019 as the current year and the five-year average for 2015-2019. Please note that the value(s) for "O.Reg 22/04 Total Audit Findings" could not be updated for 2019 as GSHi has not yet had its 2019 Audit with the Electrical Safety Authority.

File Number:
Exhibit:
Tab:
Schedule:
Page:
Date:

Appendix 5-A
Metrics

Metric Category	Metric	Measures	
		1 Year	5 Year Average
Cost	Total Cost per Customer[1]	283.86	278.11
	Total Cost per km of Line[2]	16256.4	16001.66
	Total Cost per MW[3]	92356.91	91932.66
CAPEX	Total CAPEX per Customer	146.24	145.9
	Total CAPEX per km of Line	8375.29	8394.77
O&M	Total O&M per Customer	137.62	132.2
	Total O&M per km of Line	7881.11	7606.89
Customer	SAIDI_Cause 5 (SAIDI5 ≤ 15%).	39.48	18.48
	SAIFI_Cause 5 (SAIFI5 ≤ 20%).	41.88	27.36
Asset Performance	O.Reg 22/04 Total Audit Findings	4	3
Asset Performance	Health Index (GSHI-owned Wood Poles)	16	17
Asset Performance	Line Losses	4.33	4.65

Notes to the Table:

1 The Total Cost per Customer is the sum of a distributor's capital and O&M costs divided by the total number of customers that the distributor
2 The Total Cost per km of Line is the sum of a distributor's capital and O&M costs divided by the total number of kilometers of line that the
3 The Total Cost per MW is the sum of the distributor's capital and O&M costs divided by the total peak MW that the distributor serves.

Explanatory Notes on Adverse Deviations (complete only if applicable)
Metric Name:
Metric Name:
Metric Name:

b)

Please see table below showing the metrics (except SAIFI and SAIDI) using the proposed 2020 amounts in this application:

1

Metric	2020
Total Cost per Customer	318.50
Total Cost per km of Line	18,276.30
Total Cost of MW	105,751.02
Total CAPEX per Customer	161.60
Total CAPEX per km of Line	9,273.31
Total O&M per Customer	156.89
Total O&M per km of Line	9,002.99
O.Reg 22/04 Total Audit Findings	0
Health Index (GSHi-owned Wood Poles)	15
Line Losses	4.65

2

2-VECC-12

Question:

Reference: Exhibit 2, Tab 2, Schedule 1, Attachment 1, DSP, pages 65-

a) Does GSHI breakdown its SAID/SAIFI metrics for defective equipment by equipment type? If so, please provide the breakdown for the period 2013- 2019.

Response:

No, GSHI does not breakdown its SAIDI/SAIFI metrics for defective equipment by equipment type.

Cause 5 “Defective Equipment” outages ($SAIDI_5$ and $SAIFI_5$.) are themselves broken out as a special subset of their respective parent metric (SAIDI/SAIFI) but are not broken down further into discrete types of equipment.

2-VECC-13

Question:

Reference: Exhibit 2, Tab 2, Schedule 1, Attachment 1, DSP, pages 74-

a) Please update Table 12 (Number of Interruptions by Cause) to include 2019 results.

b) Does GSHI have a forecasted projection or DSP objective metric for the number of interruptions due to scheduled outages and defective equipment.? If yes please provide the 2020 through 2024 goal metrics/projections. If not please explain what quantitative metric is being used to measure the outcomes efficacy of the proposed DSP.

Response:

a) An updated Table 12 is shown below:

# of Interruptions by Cause	2014	2015	2016	2017	2018	2019
Unknown/Other	48	46	23	36	36	9
Scheduled Outage	222	198	198	136	154	154
Loss of Supply	46	29	4	30	3	11
Tree Contacts	10	8	3	4	1	8
Lightning	10	7	10	15	2	5
Defective Equipment	89	73	61	57	88	71
Adverse Weather	17	32	18	16	41	42
Human Element	6	6	12	4	2	7
Foreign Interference	59	40	50	34	48	74
Adverse Environment	9	4	8	2	21	3
Major Event	0	0	0	0	25	0

Table 1 **(Updated)** 2014 -2019 Number of Interruptions by Cause

b) GSHi's "Performance Measures and Targets" Table 1, pg 53 of the *Distribution System Plan* includes Defective Equipment (Cause 5)-related metrics and related targets. Located under the "Customer Oriented Performance" performance outcome, the metrics are $SAIDI_5$ and $SAIFI_5$. Equipment performance, as a critical controllable parameter, is of particular interest to GSHi. The $SAIDI_5$ and $SAIFI_5$ performance metrics are themselves a special subset of their respective parent metric (i.e. SAIDI/SAIFI) and relate directly to **Cause 5** outage events. The 2020 through 2024 target for each metric is shown in the table below:

Metric	GSHI Target
$SAIDI_5$	≤ 15%
$SAIFI_5$	≤ 20%

2-VECC-14

Question:

Reference: Exhibit 2, Tab 2, Schedule 1, Attachment 1, DSP, pg. 117, Figure 45

a) For each of the asset categories listed in Figure 1 please provide a table describing:
   i. The type of asset data used in the health index (e.g. whether the asset is subject to periodic testing and the nature of that testing (for example transformer dissolved gas testing and how often).
   ii. The percentage of the asset population which was physically tested within last 5 years – and the nature of that test;
   iii. The percentage of the asset population that is subject to only a visual inspection.
   iv. The percentage of the asset population that is not tested or subject to visual inspection in the last 3 years.

Response:

a) A table with asset category information relevant to questions i), ii), iii) and iv) is provided below:

Asset Category	Units in Inventory (number)	Type of Asset Data used in the Health Index	Percentage of Asset Population which was Physically Tested	Percentage of Asset Population Subject to ONLY Visual Inspection	Percentage of Asset Population that is NOT Tested or Subject to Visual Inspection in last 3 years (%)
Substation Transformers	43	- nameplate information - loading - oil test results (DGA, GOQ) - non conformance logs	100%[2]	0%	0
Pad Mounted Transformers	1,440	- nameplate information - loading - non conformance logs	0%	100%	0
Pole Mounted Transformers	3,232	- nameplate information - loading - non conformance logs	0%	100%	0
Submersible Transformers	16	- nameplate information - loading - non conformance logs	0%	100%	0
Vault Transformers	131	- nameplate information - loading - non conformance logs	0%	100%	0

Overhead Line Switches	2,173	- nameplate information - non conformance logs	0%	100%	0
Pad Mounted Switchgear	80	- nameplate information - non conformance logs	0%	100%	0
Pad Mounted Junction Enclosures	70	- nameplate information - non conformance logs	0%	100%	0
GSU Wood Poles	11,755	- nameplate information - non conformance logs	24.4%[1]	75.6%	0
GSU Concrete Poles	120	- nameplate information - non conformance logs	0%	100%	0
Bell Wood Poles	2,695	- nameplate information - non conformance logs	0%	100%	0
Hydro One Wood Poles	349	- nameplate information - non conformance logs	0%	100%	0

Please note:

1) With respect to the nature of testing associated with GSHi wood poles, in 2016, Sudbury Hydro partnered with G-Tel, a subsidiary of Oakville Hydro, to bring new pole testing technology to Greater Sudbury. The technology, branded as POLUX, was developed by the Swiss Federal Institute of Technology in partnership with Electricite de France. Using two needle probes inserted into the pole at the ground line, both penetration resistance and electrical resistivity are measured with data locally

collected for further back- office evaluation. The output of the test includes pole strength and minimum remaining life, among other attributes. This data was collected as part of a pilot project covering approximately 3,000 GSHI-owned poles located predominantly in GSHi's non-contiguous operating districts.

2) With respect to substation transformers, dissolved gas in oil testing is completed yearly.

2-VECC-15

Question:

Reference: Exhibit 2, Tab 2, Schedule 1, Attachment 1, DSP, pg. 94 Table 26

a) Please explain why only some of the projects shown in Table 26 are scored.

Response:

The intent of the 'Capital Project Scoring Matrix' is to objectively evaluate prospective investments against GSHi's asset management objectives and associated sub-criterion. Projects that provide the greatest benefits and highest levels of risk mitigation will receive a higher prioritization ranking and preference for inclusion in the proposed capital expenditure plan.

However, there are certain investments that must be made throughout the year by GSHi, such as mandatory connection or upgrade projects which are customer demand-driven and must be connected within a timeline prescribed by the Ontario Energy Board, that do not lend themselves to being "prioritized" against other prospective investments. Most of the investments of this type can be mapped to the *System Access* category. They include mandatory items such as 'Overhead/Underground Services', 'Meter Installations' and 'City Road Work'. If (and when) any requirements in these areas arise, GSHi must attend to them urgently. Similarly, annual anticipated investments that map to the *System Renewal* category such as 'Emergency Plant Replacement' or 'Failed Transformers' must be urgently addressed by the utility.

As an integral part of the prospective 2020 – 2024 capital investments tabled by GSHi in its 2019 *Distribution System Plan,* these investments were included for completeness in Table 26.

2-VECC-16

Question:

Reference: Exhibit 2, Tab 2, Schedule 1, Attachment 1, DSP, pg. 180

a) Please provide the capital expenditures (actual and forecast) for projects carried out under the Innovation Policy.
b) Please explain who sits on the Executive Committee of the Innovation Office.
c) Please provide the annual operating budget of the Innovation Office allocated to GSHI (2016 through 2023).

Response:

a) The table below shows the capital expenditures (actual and forecast) for projects carried out under the Innovation Policy:

Project	Actual (2015-18)	Actual (2019)	Projected (2020)	Forecast (2020)	Forecast (21-23)
Data Literacy Training Program (learning management system-LMS & associated training program curriculum deliverables ex. videos, manuals)	0	18,732.00	$6,244.00		$10,000/yr.*
Enterprise GIS Platform Programming (QA/QC, email notification python scripts, etc.)	0	$5,633.75	$1,850	$8,150	$10,000/yr.
Outage Mapping Automation (SQL programming, procs, integration scripts for data centralization & Empowered Community Portal views)	0	$3,376.25	0	$5,000	0
Azure Data, BI Gateway (solution development, programming & config to support internal business intelligence developers)	0	0	$7,840	0	0
Mobile & Web GIS Solution Development (external solution development/programming, for example build estimate process improvement through mobility, data centralization & integration to asset cost tables. Streamline & centralize.)	0	$25,000	0	0	$25,000/yr
Outage Management System - OMS (base software purchase, deployment, project management, integrations &	0	0	0	$400,000	

training)					
OMS Additional Module (extend base deployment with additional modules & required integrations, ex. mobile)	0	0	0	0	$40,000
Asset & Work Order Management System (base software purchase, deployment, project management, integrations & training)	0	0	0	0	$500,000
Event monitoring/work dispatch system (IoT pipeline development, sensor purchase for key assets, etc.)	0	0	0	0	$200,000
Integration Analytics Platform upgrades (software upgrades, redundancy, performance, high availability improvements)	0	0	0	0	$100,000
Plastic Free Utility Project (capital costs to help reduce plastics + support product development around employees' internal innovation idea)	0	0	0	$5,000	$50,000

b) The members of the Executive Committee of the Innovation Office are as follows:

President & CEO (Frank Kallonen),
Vice-President, Corporate Services (Catherine Huneault),
Vice-President, Engineering & Operations (Kerry Taylor/Phil Guido),
Vice-President, Competitive Services (Josey Frescura), and
Manager, Human Resources (Dawn Bates)

c) For the annual operating budget of the Innovation Office allocated to GSHi (2016 through 2023) please see **Attachment #1**.

Attachment 1 (of 1):

2-VECC-16 Attachment 1: Annual operating budget for the Innovation Office

	2023*	2022*	2021*	2020	2019	2018	2017	2016
GSHi Allocation	95%	95%	95%	95%	95%	95%	95%	60%
Labour costs	$267,089.55	$261,852.50	$256,718.14	$251,684.45	$149,097.84	$119,162.42	$6,282.72	$-
Project costs	$65,277.56	$63,997.61	$62,742.75	$61,512.50	$29,339.40	$12,711.69	$12,082.40	$7,527.93
Training costs	$3,528.52	$3,459.33	$3,391.50	$3,325.00	$877.80	$-	$-	$-
Shared costs	$17,056.85	$16,722.40	$16,394.51	$16,073.05	$10,812.93	$5,790.13	$4,960.83	$-
Totals	**$352,952.47**	**$346,031.84**	**$339,246.90**	**$332,595.00**	**$190,127.97**	**$137,664.24**	**$23,325.96**	**$7,527.93**

2-VECC-17

Question:

Reference: Exhibit 2, Tab 2, Schedule 1, Attachment 1, DSP, Appendix 2-AB

a) GSHI has historically underspent is planned capital budget in each year 2013 through 2019, sometimes significantly (i.e. net in 2013 of 44.7% less) and never by less than around 7.5% (net). Please explain the reasons for the systemic underspending.
b) What changes have been made which would argue against similar underspending in the future?

Response:

a) **2013**

GSHi experienced a decrease in capital expenditures of $5,027,000 from 2013 Plan to 2013 Actual results as summarized below:

Net Capital Expenditures ($'000)	PLAN	ACTUAL	VARIANCE
	11,253	6,226	-5,027

Several projects and factors contributed to this decrease and were mostly in the *System Renewal* and *General Plant* categories:

i) Capital contributions were $543,000 higher than forecast;
ii) As part of its system renewal planning in 2013, GSHi intended on incurring capital expenditures to renew municipal substation Arthur MS5 at a cost of $1,985,384. Based on the findings of an Asset Condition Report on municipal substations prepared by Costello Associates in 2008, which indicated that MS5 (among other substations) should be replaced in one year, GSHi prioritized the project for its 2013 Budget. At the time, the station was 54 years old. As GSHi began incurring expenses to design and build, the existing station experienced several equipment failure events. As

a result, GSHi began exploring options to permanently shift the load. Due to changes in the load profile of a significant large customer, capacity was available at another station and so GSHi reallocated the load to that station. GSHi monitored the utilization of the station assets for several months and determined that the permanent redistribution of load was the most cost-effective solution. GSHi decided that Arthur MS5 would be decommissioned instead of rebuilt. The costs that had been incurred to date for the rebuild were written off.

iii) Planned capital spending of $543,102 towards reactive “Major Repairs for Substations” was ultimately not required, as the 2013 Actual spending in this area was $332,236 for a net decrease of $210,866;

iv) Actual ‘Emergency Plant Replacement’ costs of $23,965 were $102,260 less than were planned;

v) Two planned renewal projects were deferred:
   a. Hillsdale/Mark/Lakeview: Planned cost to renew assets in this area were $302,723; this project was deferred to accommodate Bell Aliant. GSHi was a joint use tenant on these poles which were owned by Bell and required their cooperation for a positive project outcome. Unfortunately, resources for both GSHi and Bell were strained in 2013 by the Bell-driven “Fiber to the Home” FTTH project and affected completion of capital work as crews were kept busy performing “make-ready” repairs to Sudbury Hydro plant in preparation for Bell to attach their fiber facilities;
   b. Gary Ave/Madison Ave: As the year progressed, the operational and engineering resources that were necessary to address the Bell Aliant FTTH project resulted in a subsequent decision to defer planned renewal of the distribution system assets along Gary Ave & Madison Ave in Sudbury, at a planned cost of $334,661;

vi) The majority of planned capital spending of $1,036,536 relating to major building retrofits for GSHi’s main headquarters located at 500 Regent St in Sudbury was deferred until 2014 pending

finalization of design(s) amidst ongoing challenges with construction contractors. With an actual incurred cost of $176,906, the total underspend in this area amounted to $859,630;

vii) Actual spending of $77,672 on 'Tools & Equipment', resulting in an overall underspend of $82,328 in this area as compared with the original planned budget;

viii) An ERP/Warehouse Automation project which was initially planned to cost $75,000 to deploy was deferred by senior management because staff needed more time to investigate potential technology options and/or availability of products that would interface with GSHi's internal processes; and

ix) A planned investment of $66,000 to purchase distribution system design software was deferred.

2014

GSHi experienced a decrease in capital expenditures of $1,163,000 from 2014 Plan to 2014 Actual results as summarized below:

Net Capital Expenditures ($'000)	PLAN	ACTUAL	VARIANCE
	8,555	7,392	-1,163

Several projects and factors contributed to this decrease and were mostly in the *System Service* and *General Plant* categories:

i) A planned SCADA RTU Upgrade project, with a planned cost of $228,375, was deferred;

ii) Based on a forecasted requirement that GSHi would incur capital spending in relation to prospective renewable generation connections, planned costs of $110,928 did not materialize in any significant way in 2014. In fact, no costs were incurred against the planned budget;

iii) An investment to extend the existing three phase circuit along Cambrian Heights Dr to provide additional service reliability for College Boreal (post-secondary institution) was completed under-budget. Budgeted at $223,691, the operations department were able to construct this important

feeder tie for $166,094, resulting in a net underspend of $57,597;

iv) All planned work to install 44kV motorized switches throughout GSHi's service territory was not finished prior to December 31, which resulted in WIP costs that were carried over and re-budgeted in 2015. As a result, actual spending of $330,212 resulted in a net underspend of $91,230 in this area for the year;

v) The planned renovations to GSHi's head office building, which were budgeted at $1,552,377, were completed under-budget, resulting in an actual underspend of $188,054 as compared with the plan;

vi) Actual spending of $85,032 on 'Tools & Equipment', resulting in an overall underspend of $82,312 in this area as compared with the original planned budget.

vii) Actual spending of $280,740 on 'Vehicles', resulting in an overall underspend of $55,073 in this area as compared with the original planned budget.

viii) All planned work to upgrade our Harris Customer Information System (CIS) was not finished prior to December 31, which resulted in WIP costs that were carried over and re-budgeted in 2015. As a result, actual spending of $0 resulted in a net underspend of $33,000 in this area for the year;

ix) Plans to purchase/integrate Business Process Improvement software at a cost of $225,000 were deferred to allow more time to procure the best possible solution that fit GSHI's business processes.

2015

GSHi experienced a decrease in capital expenditures of $1,125,000 from 2015 Plan to 2015 Actual results as summarized below:

Net Capital Expenditures ($'000)	PLAN	ACTUAL	VARIANCE
	8,760	7,635	-1,125

Several factors contributed to this decrease:

i) Capital contributions were $512,000 higher than forecast; and
ii) Some of the planned renovations to GSHi's head office building, which were budgeted at $1,322,775, were deferred, resulting in an actual underspend of $565,941 as compared with the plan.

2016

GSHi experienced a decrease in capital expenditures of $629,000 from 2016 Plan to 2016 Actual results as summarized below:

Net Capital Expenditures ($'000)	PLAN	ACTUAL	VARIANCE
	8,372	7,743	-629

Much of the actual underspending was a result of a job to re-establish the 9M4 44kV aerial conductors owned by GSHi on new joint use poles owned by Hydro One that was not completed in 2016. The job, which was budgeted at $499,930, was classified as WIP and re-budgeted/completed in 2017.

2017

GSHi experienced a decrease in capital expenditures of $703,000 from 2017 Plan to 2017 Actual results as summarized below:

Net Capital Expenditures ($'000)	PLAN	ACTUAL	VARIANCE
	9,418	8,715	-703

Several factors contributed to this decrease:

i) An energy recovery unit/ventilation retrofit that had been planned to occur at GSHi' head office building at a cost of $279,997 was deferred;
ii) Most of the other planned renovations to GSHi's head office building, which were budgeted at $274,763, were deferred, resulting in an actual underspend of $200,322 as compared with the plan; and
iii) Plans to purchase/integrate an Enterprise Service Bus at a cost of $332,000 to continue with digital transformation at the utility were

deferred to allow more time to procure the best possible solution that fit GSHI's business processes.

2018

GSHi experienced a decrease in capital expenditures of $833,000 from 2018 Plan to 2018 Actual results as summarized below:

Net Capital Expenditures ($'000)	PLAN	ACTUAL	VARIANCE
	10,483	9,650	-833

Several factors contributed to this decrease:

i) Capital contributions were $271,000 higher than forecast;
ii) Most of the planned renovations to GSHi's head office building, which were budgeted at $314,000, were deferred, resulting in an actual underspend of $292,535 as compared with the plan; and
iii) Plans to purchase/integrate an Enterprise Service Bus at a cost of $332,000 to continue with digital transformation at the utility were deferred to allow more time to procure the best possible solution that fit GSHI's business processes.

2019

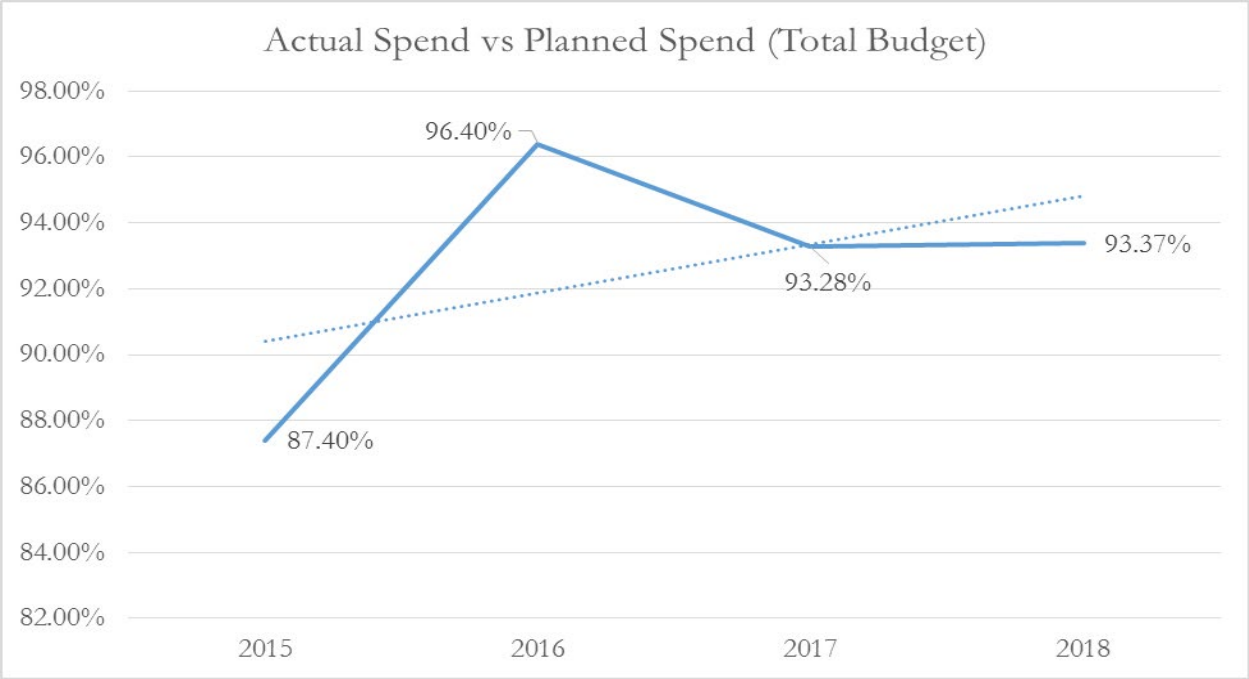
GSHi experienced a decrease in capital expenditures of $1,055,000 from 2019 Plan to 2019 Actual results as summarized below:

Net Capital Expenditures ($'000)	PLAN	ACTUAL	VARIANCE
	9,558	8,503	-1,055

Several factors contributed to this decrease:

i) Capital contributions were $603,000 higher than forecast;
ii) Some of the planned renovations to GSHi's head office building, which were budgeted at $465,000, were deferred, resulting in an actual underspend of $222,671 as compared with the plan;
iii) Actual spending of $144,362 on 'Vehicles', resulting in an overall underspend of $305,638 in this area as compared with the original planned budget.
iv) Actual 'Emergency Plant Replacement' costs of $46,633 were $279,914 less than were planned; and
v) Actual 'Failed Transformers' costs of $180,301 were $169,699 less than were planned.

b) GSHi acknowledges that its actual net capital expenditures were on average below the planned expenditure from 2013-2019. However, since its last Cost of Service (COS), GSHi has continued to work on its capital expenditure planning to improve the confidence level in its estimations. As an illustration of this improvement, the figure below shows the Actual Spend vs the Planned Spend (Total Budget) over the historical period 2015-2018 of the DSP:



Prior to the commencement of the yearly construction cycle, the Engineering department meets with Operations, Stores and the Control Room to map the various capital projects to the projected internal staffing capabilities using its Scheduling Tool.

Further, since the last COS, staff in both the Engineering and Operations departments have continued to enhance inter-departmental communication during project design and estimation. Guided by GSHI's ISO Management System, a vital component of prospective investment estimation involves a formal 'Design and Development' review between the responsible Project Coordinator (Engineering Technologist) and an Operations Supervisor. The Project Coordinator will produce a design using the appropriate USF

distribution standards and/or GSHi-approved standards. These standards are digitized inside the corporate Superion financial system which facilitates the correct selection of materials for a given design. Design verification is subsequently accomplished by the Supervisor, Engineering's review of design outputs. Finally, the prospective work order (complete with approved standards) is reviewed and approved prior to the formal 'Pre-Construction Review' meeting with the pertinent Operations department staff. This review occurs for all jobs over $50,000 to review the scope of the job prior to the release of the work order package.

2-VECC-18

Question:

Reference: Exhibit 2 Material Investments /5.4.3.2.6.4 System Access Road Authority Work

a) Please explain how road authority work is forecast. Specifically, please address the reasons the annual budgets for 2020-2024 are significantly larger than the amounts spent on this category of projects during the 2015-2018 period.
b) Please clarify the net, gross and capital contributions for each of the years shown in the budget planning document.

Response:

a) The City of Greater Sudbury and the Ministry of Transportation can each undertake annual vehicle right of way construction work within GSHi's various operating districts. It is often requested that GSHi relocate existing distribution system plant that conflicts with proposed construction work. This investment is needed to cover the anticipated costs to complete relocation work at the request of the relevant Road Authority (RA).

Typically, Road Authority requests have a project schedule and indicate a date by which GSHi has been requested to have its plant removed from the affected area. If possible, when a *System Renewal* driver exists and a re-location request is known well in advance, the work will be deferred to ensure cohesion with the appropriate Road Authority's construction schedule.

Upon a request by a Road Authority, GSHi is obligated to complete distribution system plant relocations as per the *Public Service on Highway Act*. Every year, the City of Greater Sudbury hosts a meeting with its regional partners, to discuss its short and long term capital spending plan

for its roads, bridges, culverts and sewer infrastructure. The City's plans are incorporated into GSHi's Asset Management Process to ensure both party's construction schedules are properly aligned. Additionally, GSHi attends meetings hosted by the MTO to learn about and align their planned construction work with GSHi's own Asset Management Process. Construction activities relating to a request from a RA have a relatively high priority rating as they are not deferrable and must be completed immediately.

System Access-related investments that are needed to comply with statutory orders for the relocation of distribution system assets from Road Authority right-of-way's can tend to be volatile and unpredictable. Despite the efforts put forth by all interested parties to plan for road work as comprehensibly as possible, situations inevitably arise that either accelerates or delays construction schedules for prospective right-of-way work. Accordingly, the timing and quantum for *System Access* investments is monitored continuously to ensure that sufficient business capacity exists to meet the expectations of the appropriate Road Authority. These projects cannot be deferred once the RA has notified GSHi of its intent to proceed with its road construction schedule.

To forecast the annual budgets for 2020-2024 under "*Road Authority Work*", Sudbury Hydro considered its historical costs dating to 2013. The program costs for the years 2013 through 2019 inclusive are as follows:

2013 - $484,101

2014 – $360,002

2015 - $81,302

2016 – $153,024

2017– $159,247

2018 – $172,058

2019 - $311,204

The forecast annual budget for 2020 capital of $275,000 seeks to strike a balance between the average value of this grouping, which is $245,848

and the large variability in program costs, where in 2013 the incurred costs were as high as $484,101 yet in 2015 incurred costs were as low as $81,302.

Following 2020, the forecast annual budget for the period 2021-2024 is projected to grow by 2% per annum as capital investment requirements associated with known “Road Authority Work” requests from Regional/Provincial road authorities are projected to remain flat through 2024.

b) The projected Gross Cost, Net Cost and capital contributions during the forecast period 2020-2024 are as depicted in the table below:

Year	Gross Cost ($)	Capital Contribution ($)	Net Cost ($)
2020	550,000	275,000	275,000
2021	561,000	280,500	280,500
2022	572,000	286,000	286,000
2023	583,000	291,500	291,500
2024	594,000	297,000	297,000

2-VECC-19

Question:

Reference: Exhibit 2, Tab 2, Schedule 6 - ACM

a) For the proposed ACM projects, has GSHI commissioned an Asset Condition Report similar to that prepared by Costello Associates for the MS5 Arthur Station?
b) For the proposed ACM projects has GSHI had a third-party engineering project plan (i.e. with current station asset assessment/station replacement engineering plan, drawings etc.) completed? If not please explain why not.
c) Has GHSI contracted for construction for any of the ACM projects?
d) Please provide the detailed project construction costs for each of the ACM projects showing cost of transformers, contingencies etc.

Response:

a) Please see the following attachments relating to the proposed ACM projects:

Cressey MS3 – **Attachment #1**;

Moonlight MS18 – **Attachment #2**;

Martilla MS8 – **Attachment #3**; and

Paris MS13 – **Attachment #4**

b) No, GSHi has not had a third-party engineering project plan completed for the proposed ACM projects. As these projects are 2-5 years out, GSHi has historically contracted for services the year prior to construction. Some preliminary work has been completed by GSHi staff for budget development processes. It is our practice to complete the detailed engineering and begin equipment tendering Q3 and Q4 of the year prior to construction. At that point, a Class 'A' budget is developed and built into the following year proposed capital expenditure budget.

c) GSHI has not contracted for construction for any of the ACM projects.

d) Please see the following attachments relating to the detailed project construction costs for each of the proposed ACM projects:

Cressey MS3 – **Attachment #5**;

Moonlight MS18 – **Attachment #6**;

Martilla MS8 – **Attachment #7**; and

Paris MS13 – **Attachment #8**

Attachment 1 (of 8):

2-VECC-19 Attachment 1: Cressey MS3

Costello Associates

MS Inspection Sheet

Utility: Sudbury Hydro Inspected by: S Costello

Station: MS-3 Cressey T1 + T2 Date: June 16/08

Transformer Make: Packard Size: 7x10 1667 kVA Imp.: 5.73 Pri. Volt: 44 Sec Volt: 2.4

S/N: Units OLTC: NO Manufactured: 1951

Vector Diagram

Yard	OK	Concern	
Fence Security	○	✓	Gaps, Barbed Wire,
Fence Grounding	○	✓	Falling over.
Fence Foundations	○	✓	
Fence Attachments	✓	○	
Warning Signs	✓	○	
Barbed Wire	○	✓	
Ground grid	✓	○	
Lighting	✓	○	
Locks	✓	○	
Crushed Stone:	○	✓	Insufficient
Snow	✓	○	
Trees	○	✓	
Vegitation/Weeds	○	✓	
House Keeping	✓	○	

Building	OK	Concern
Grounding	✓	○
Paint	✓	○
Roof	✓	○
Windows	✓	○
Doors	✓	○
Structure	✓	○
Warning Signs	✓	○
Security	✓	○
Station Power	○	○
Sump Pump	○	○
Eye Wash	✓	○
Lights	✓	○
Building Temperature	✓	○

Transformer	OK	Concern	
Conservator Oil Level	○	○	See bank sheet
LTC Oil Level	○	○	
Gas Detector Relay	○	○	
Winding Temperature			
Oil Temperature			
Silica Gel	○	○	
Bushing Oil Level	○	○	
Paint Condition	○	○	
Grounding	○	○	
OLTC Padlock	○	○	
Bushing Condition	○	○	
Explosion Diaphram	○	○	
Neutral Connection	○	○	
Oil Leaks/Sweating	○	○	
PCB Free Sticker	○	○	

Switchgear/Structures	OK	Concern	
Grounding	✓	○	
Structure	○	✓	Some rust
Height Clearances	○	✓	Indoor bus
Porcelain Arrestors	✓	○	
Pin-type Insulators	✓	○	
Load Break Switches	✓	○	
Gradient Control Mats	○	✓	In process
Station Service Tx	○	○	
Recloser Op Counters	○	○	na
Recloser Target Reset	○	○	
Switchgear Pilot Lights	✓	○	

Comments: Serious fence issues. Fence falling over, Barbed wire removed. Most fence grounding stolen. No stone around fence perimeter or walkway between building and gard. Low clearances inside building - open 4kV equipment. Reported to Terry P.

Costello Associates

MS Inspection Sheet

Utility: Sudbury Hydro

Inspected by: S. Costello

Station: MS-3 Cressey T1 + T2

Date: June 16/08

Power Transformers / Regulators

	Bank 1			Bank 2			Spare
Check if there is a concern	**TX 1**	**TX 2**	**TX 3**	**TX 1**	**TX 2**	**TX 3**	
Identify the transformer ->	B	W	R	B	W	R	
Grounding	☐	☐	☐	☐	☐	☐	☐
Age	☑	☑	☑	☑	☑	☑	☑
Clearances	☐	☐	☐	☐	☐	☐	☐
Condensation in explosion glass	☐	☐	☐	☑	☑	☐	☑
Containment	☑	☑	☑	☑	☑	☑	☑
Rust	☐	☐	☐	☐	☐	☐	☐
Oil leakage / sweating	☑	⊗	☐	☐	☐	☐	☐
Cracked bushings	☑	☑	☑	☑	☑	☑	☑
Arrestors	☐	☐	☐	☐	☐	☐	☐
Bushings	☐	☐	☐	☐	☐	☐	☐
Temperature devices	☐	☐	☐	☐	☐	☐	☐
Tap changers	☐	☐	☐	☐	☐	☐	☐
PCB > 50 ppm historically	☐	☐	☐	☐	☐	☐	☐
PCB last reading							
Year installed	—	1951	—	—	—	1951	—
Engineer Life Expectancy Report							
Number of faults since 1986							

⊗ Heavy

Explanation of hazardous situations and solutions:

T1-W High water content. High acidity.
T1-B High water, low dielectric 52 PPM.
T2-R High water
T2-W High water

Costello Associates

Substation Risk Assessment Form

Station MS-3 Cressy Year Built 1951

Section 1: Public Safety – conditions that impact public safety at the station:

Area of Concern	Check		
	1	2	3
Perimeter Security			✓
Fence Grounding and Bonding			✓
Station Yard			✓
Station Building	✓		
Station Setting – Proximity		✓	
Station Setting - Encroachments	✓		
Overall public safety condition			✓

1 = Acceptable

2 = Some deficiencies

3 = Needs attention soon

Overall Public Safety Risk Rating	Blue	Purple	Yellow	Orange	Red
	20+ Years	11-20 years	4-10 years	2-3 years	1 year
					✓

Section 2: Worker Safety – conditions that impact worker safety at the station:

Area of Concern	Check		
	1	2	3
Grounding and Bonding	✓		
Safe limits of approach		✓	
Working clearances			✓
Switching access difficult		✓	
Multiple sources of voltage	✓		
Porcelain		✓	
Operational Issues		✓	
Maintenance Issues		✓	
Overall worker safety condition		✓	

1 = Acceptable

2 = Some deficiencies

3 = Needs attention soon

Maintenance issues that can be quickly rectified may be eliminated from risk assessment.

Overall Worker Safety Risk Rating	Blue	Purple	Yellow	Orange	Red
	20+ Years	11-20 years	4-10 years	2-3 years	1 year
			✓		

Inspected by: SC Date: June 16/08

Costello Associates

Substation Risk Assessment Form

Section 3: Risks of Major Equipment Failure

A. Condition of Equipment

Area of Concern	Check		
	1	2	3
Power Transformers			✓
High-side switchgear			✓
Distribution-side switchgear		✓	
Protection and Control Equipment	✓		
Underground cables	✓		
Structures		✓	
Overall equipment condition		✓	

1 = Acceptable

2 = Some deficiencies

3 = Needs attention soon

B. Factors that may impact the consequences of major equipment failure

Concern	Impact of Consequence		
	L	M	H
Station setting – proximity	More than 100m	Between 100m and 10m	10m or less
Station setting – watercourses	None	Storm sewers/drains	Open water
Lack of backup supply	<2 hours switching	Between 2 – 24h outage	No backup
Critical loads (hospitals etc)	None	With generators	No generators
Grounding and bonding	Today's code	Some deficiencies	Poor
Oil containment	Yes	Partial	None
Explosion barriers	Yes	Partial	None
Fire fighting capability	Hydrants	Storage Tanks	None
Presence of PCB's	None	Storage Only	In-service
Overall equipment condition	**L**	**M**	**H**

C. Based on the equipment condition and consequences, state the risk rating for a major equipment failure:

Overall Failure Risk Rating	Blue	Purple	Yellow	Orange	Red
	20+ Years	11-20 years	4-10 years	2-3 years	1 year
				✓	

Section 4: Overall Substation Risk Assessment

Station Risk Assessment	Blue	Purple	Yellow	Orange	Red
	20+ Years	11-20 years	4-10 years	2-3 years	1 year
					✓

Comments: Security and grounding issues need to be immediately corrected. Transformer age is concern. Low clearances inside building from 4kV open busses.

Inspected by: SCostello Date: June 16/08

Attachment 2 (of 8):

2-VECC-19 Attachment 2: Moonlight MS 18

Costello Associates

MS Inspection Sheet

Utility: Sudbury Hydro Inspected by: S. Costello

Station: MS-18 Moonlight Date: June 18/08

Transformer Make: Maloney Size: 5/6.7 Imp.: 5.99 Pri. Volt: 44 Sec Volt: 12.5

S/N: 214436 OLTC: ±5% Primary Fuses: 400

1962

Vector Diagram 

Yard	OK	Concern
Fence Security	○	✓ Gaps @ rear.
Fence Grounding	✓	○
Fence Foundations	✓	○
Warning Signs	✓	○
Barbed Wire	✓	○
Locks	✓	○
Crushed Stone:	○	✓ insufficient
Snow	○	○
Trees	○	○
Vegitation/Weeds	○	✓

Building		
Grounding	○	✓ Telecom Shack.
Paint	○	✓ LB gear needs paint.
Roof	○	○
Windows	○	○ NG
Doors	✓	○
Structure	✓	○
Warning Signs	✓	○
Security	✓	○
Station Power	✓	○
Sump Pump	○	○
Eye Wash	○	○
Lights	○	○
Building Temperature	○	○

Transformer	OK	Concern
Conservator Oil Level	○	✓ Bit Low.
Winding Temperature	○	○
Oil Temperature	○	○ 38/65
Silica Gel	○	✓ none.
LTC Oil Level	—	—
LTC Operations Ctr	—	
LTC Min	—	
LTC Max	—	
LTC Reset	—	—
Bushing Oil Level	○	○ n/a
Paint Condition	✓	○
Grounding	✓	○
OLTC Padlock	✓	○
Bushing Condition	○	○ Throat.
Explosion Diaphram	✓	○
Neutral Connection	○	○ Throat.
Oil Leaks	○	✓

Switchgear/Structures		
Grounding	○	✓ none visible.
Structure	✓	○
Height Clearances	✓	○
Porcelain Arrestors	✓	○
Pin-type Insulators	✓	○
Load Break Switches	✓	○
Gradient Control Mats	○	✓ in progress
Station Service Tx	○	○
Recloser Op Counters	○	○
Recloser Target Reset	○	○

Comments: - PCB Storage Area.

- Telecom bldg grounding.
- Potential for water leak on telecom bldg./2 broken vents
- Oil leak on top cover gasket on transformer.

Costello Associates

Substation Risk Assessment Form

Station MS-18 Moon light Year Built 1962

Section 1: Public Safety – conditions that impact public safety at the station:

Area of Concern	Check		
	1	2	3
Perimeter Security		✓	
Fence Grounding and Bonding	✓		
Station Yard	✓		
Station Building	✓		
Station Setting – Proximity	✓		
Station Setting - Encroachments	✓		
Overall public safety condition		✓	

1 = Acceptable

2 = Some deficiencies

3 = Needs attention soon

6APS

Overall Public Safety Risk Rating	Blue	Purple	Yellow	Orange	Red
	20+ Years	11-20 years	4-10 years	2-3 years	1 year
				✓	

Section 2: Worker Safety – conditions that impact worker safety at the station:

Area of Concern	Check		
	1	2	3
Grounding and Bonding	✓		
Safe limits of approach	✓		
Working clearances	✓		
Switching access difficult	✓		
Multiple sources of voltage	✓		
Porcelain	✓		
Operational Issues	✓		
Maintenance Issues	✓		
Overall worker safety condition	✓		

1 = Acceptable

2 = Some deficiencies

3 = Needs attention soon

Maintenance issues that can be quickly rectified may be eliminated from risk assessment.

Overall Worker Safety Risk Rating	Blue	Purple	Yellow	Orange	Red
	20+ Years	11-20 years	4-10 years	2-3 years	1 year
	✓				

Inspected by: S. Costello Date: June 18/08

Costello Associates

Substation Risk Assessment Form

Section 3: Risks of Major Equipment Failure

A. Condition of Equipment

Area of Concern	Check		
	1	2	3
Power Transformers		✓ (age)	
High-side switchgear	✓		
Distribution-side switchgear	✓		
Protection and Control Equipment	✓		
Underground cables	✓		
Structures	✓		
Overall equipment condition		✓	

1 = Acceptable

2 = Some deficiencies

3 = Needs attention soon

B. Factors that may impact the consequences of major equipment failure

Concern	Impact of Consequence		
	L	M	H
Station setting – proximity	More than 100m	Between 100m and 10m	10m or less
Station setting – watercourses	None	Storm sewers/drains	Open water
Lack of backup supply	<2 hours switching	Between 2 – 24h outage	No backup
Critical loads (hospitals etc)	None	With generators	No generators
Grounding and bonding	Today's code	Some deficiencies	Poor
Oil containment	Yes	Partial	None
Explosion barriers	Yes	Partial	None
Fire fighting capability	Hydrants	Storage Tanks	None
Presence of PCB's	None	Storage Only	In-service
Overall equipment condition	**L**	**M**	**H**

C. Based on the equipment condition and consequences, state the risk rating for a major equipment failure:

Overall Failure Risk Rating	Blue	Purple	Yellow	Orange	Red
	20+ Years	11-20 years	4-10 years	2-3 years	1 year
			✓		

Section 4: Overall Substation Risk Assessment

Station Risk Assessment	Blue	Purple	Yellow	Orange	Red
	20+ Years	11-20 years	4-10 years	2-3 years	1 year
			✓		

Comments: Station equipment risk is low. However onsite PCB storage increases risk due to vandalism, fire, etc. Suggest additional security measures to manage risk.

Inspected by: S Costello Date: June 18/08.

Attachment 3 (of 8):

2-VECC-19 Attachment 3: Martilla MS8

Costello Associates

MS Inspection Sheet

Utility: Sudbury Hydro. Inspected by: S. Costello

Station: MS-8 MacHilla Date: June 18/08

Transformer Make: (W) Size: 5/6.7 Imp.: 6.7 Pri. Volt: 44 Sec Volt: 12.5

S/N: 291966 OLTC: ±5% Primary Fuses: yes.

1962

Vector Diagram: Δ — Y

Yard	OK	Concern
Fence Security	✓	
Fence Grounding		✓
Fence Foundations		
Warning Signs	✓	
Barbed Wire		✓
Locks		
Crushed Stone:		✓ Needs to be placed o/s fence
Snow		
Trees		✓
Vegitation/Weeds		✓

Building	OK	Concern
Grounding		✓ 2 shacks.
Paint	✓	
Roof	✓	
Windows		na
Doors	✓	
Structure	✓	
Warning Signs		✓
Security	✓	
Station Power	✓	
Sump Pump		na
Eye Wash		na
Lights	✓	
Building Temperature	✓	

Transformer	OK	Concern
Conservator Oil Level		✓ High?
Winding Temperature		
Oil Temperature		45/50
Silica Gel		✓ none.
LTC Oil Level		
LTC Operations Ctr		
LTC Min		
LTC Max		
LTC Reset		
Bushing Oil Level		Throat
Paint Condition	✓	
Grounding	✓	
OLTC Padlock		Top?
Bushing Condition		Throat
Explosion Diaphram	✓	
Neutral Connection		Throat.

Oil leak *

Switchgear/Structures	OK	Concern
Grounding	✓	
Structure	✓	
Height Clearances		
Porcelain Arrestors		
Pin-type Insulators		
Load Break Switches	✓	
Gradient Control Mats		✓ none.
Station Service Tx		
Recloser Op Counters		
Recloser Target Reset		

Comments: Insufficient fence grounding. Gate grounding damaged.

- 2 shacks need grounding.
- Stone needs to extend 1.5m outside fence.
- tx oil leak around HV bushings.

Costello Associates

Substation Risk Assessment Form

Station MS-8 Martilla Year Built 1962

Section 1: Public Safety – conditions that impact public safety at the station:

Area of Concern	Check		
	1	2	3
Perimeter Security	✓		
Fence Grounding and Bonding		✓	
Station Yard	✓		
Station Building	✓		
Station Setting – Proximity	✓		
Station Setting - Encroachments	✓		
Overall public safety condition		✓	

1 = Acceptable

2 = Some deficiencies

3 = Needs attention soon

Overall Public Safety Risk Rating	Blue	Purple	Yellow	Orange	Red
	20+ Years	11-20 years	4-10 years	2-3 years	1 year
				✓	

Section 2: Worker Safety – conditions that impact worker safety at the station:

Area of Concern	Check		
	1	2	3
Grounding and Bonding		✓	
Safe limits of approach	✓		
Working clearances	✓		
Switching access difficult	✓		
Multiple sources of voltage	✓		
Porcelain	✓		
Operational Issues	✓		
Maintenance Issues	✓		
Overall worker safety condition		✓	

1 = Acceptable

2 = Some deficiencies

3 = Needs attention soon

Maintenance issues that can be quickly rectified may be eliminated from risk assessment.

Overall Worker Safety Risk Rating	Blue	Purple	Yellow	Orange	Red
	20+ Years	11-20 years	4-10 years	2-3 years	1 year
				✓	

Inspected by: S. Costello Date: June 18/08.

Costello Associates

Substation Risk Assessment Form

Section 3: Risks of Major Equipment Failure

A. Condition of Equipment

Area of Concern	Check		
	1	2	3
Power Transformers		✓	
High-side switchgear	✓		
Distribution-side switchgear	✓		
Protection and Control Equipment	✓		
Underground cables	✓		
Structures	✓		
Overall equipment condition	✓		

1 = Acceptable

2 = Some deficiencies

3 = Needs attention soon

B. Factors that may impact the consequences of major equipment failure

Concern	Impact of Consequence		
	L	M	H
Station setting – proximity	More than 100m	~~Between 100m and 10m~~	10m or less
Station setting – watercourses	None	~~Storm sewers/drains~~	Open water
Lack of backup supply	<2 hours switching	Between 2 – 24h outage	No backup
Critical loads (hospitals etc)	None	With generators	~~No generators~~
Grounding and bonding	Today's code	~~Some deficiencies~~	~~Poor~~
Oil containment	Yes	Partial	~~None~~
Explosion barriers	~~Yes~~	Partial	~~None~~
Fire fighting capability	~~Hydrants~~	Storage Tanks	None
Presence of PCB's	None	Storage Only	In-service
Overall equipment condition	**L**	**M**	**H**

C. Based on the equipment condition and consequences, state the risk rating for a major equipment failure:

Overall Failure Risk Rating	Blue	Purple	Yellow	Orange	Red
	20+ Years	11-20 years	4-10 years	2-3 years	1 year
			✓		

Section 4: Overall Substation Risk Assessment

Station Risk Assessment	Blue	Purple	Yellow	Orange	Red
	20+ Years	11-20 years	4-10 years	2-3 years	1 year
			✓		

Comments:

Inspected by: S. Costello Date: June 18/08

Attachment 4 (of 8):

2-VECC-19 Attachment 4: Paris MS 13

Costello Associates

MS Inspection Sheet

Utility: Sudbury Hydro Inspected by: S. Costello

Station: MS-13 Paris Date: June 18, 08

Transformer Make: CGE Size: 5/6.7/7.5 Imp.: 6.2% Pri. Volt: 44 Sec Volt: 12.5

S/N: 286651 1967 OLTC: ± 5% Primary Fuses: 40

Vector Diagram

Yard	OK	Concern
Fence Security	○	✓ GAPS.
Fence Grounding	✓	○
Fence Foundations	✓	○
Warning Signs	✓	○
Barbed Wire	✓	○
Locks	✓	○
Crushed Stone:	○	✓
Snow	✓	○
Trees	✓	○
Vegitation/Weeds	✓	○

Building	OK	Concern
Grounding	○	✓ Telecom shack.
Paint	✓	○
Roof	✓	○
Windows	○	○ NA
Doors	✓	○
Structure	✓	○
Warning Signs	○	○ none
Security	✓	○
Station Power	✓	○
Sump Pump	○	○
Eye Wash	✓	○
Lights	✓	○
Building Temperature	✓	○

Transformer	OK	Concern
Conservator Oil Level	○	✓ High level.
Winding Temperature	○	○
Oil Temperature	✓	○ 45/60
Silica Gel	○	✓ none.
LTC Oil Level	✓	✓
LTC Operations Ctr		
LTC Min		
LTC Max		
LTC Reset	✓	○
Bushing Oil Level	○	○ Throat
Paint Condition	✓	○
Grounding	✓	○
OLTC Padlock	○	✓
Bushing Condition	○	○ Throat.
Explosion Diaphram	✓	○
Neutral Connection	○	○ Throat.

Switchgear/Structures	OK	Concern
Grounding	✓	○
Structure	✓	○
Height Clearances	✓	○
Porcelain Arrestors	○	○
Pin-type Insulators	○	○
Load Break Switches	✓	○
Gradient Control Mats	○	✓ none.
Station Service Tx	○	○
Recloser Op Counters	○	○
Recloser Target Reset	○	○

Comments: Birds in pads – lots of excrement.
Crushed rock needs to extend 1.5m outside fence + swing of gate.

Costello Associates

Substation Risk Assessment Form

Station MS-13 Paris Year Built 1967

Section 1: Public Safety – conditions that impact public safety at the station:

Area of Concern	Check		
	1	2	3
Perimeter Security		✓	
Fence Grounding and Bonding	✓		
Station Yard	✓		
Station Building	✓		
Station Setting – Proximity	✓		
Station Setting - Encroachments	✓		
Overall public safety condition		✓	

1 = Acceptable

2 = Some deficiencies

3 = Needs attention soon

Overall Public Safety Risk Rating	Blue	Purple	Yellow	Orange	Red
	20+ Years	11-20 years	4-10 years	2-3 years	1 year
				✓	

Section 2: Worker Safety – conditions that impact worker safety at the station:

Area of Concern	Check		
	1	2	3
Grounding and Bonding		✓	
Safe limits of approach	✓		
Working clearances	✓		
Switching access difficult	✓		
Multiple sources of voltage	✓		
Porcelain	✓		
Operational Issues	✓		
Maintenance Issues	✓		
Overall worker safety condition		✓	

1 = Acceptable

2 = Some deficiencies

3 = Needs attention soon

Maintenance issues that can be quickly rectified may be eliminated from risk assessment.

Overall Worker Safety Risk Rating	Blue	Purple	Yellow	Orange	Red
	20+ Years	11-20 years	4-10 years	2-3 years	1 year
				✓	

Inspected by: S. C. Date: June 18/08

Costello Associates

Substation Risk Assessment Form

Section 3: Risks of Major Equipment Failure

A. Condition of Equipment

Area of Concern	Check		
	1	2	3
Power Transformers	✓		
High-side switchgear	✓		
Distribution-side switchgear	✓		
Protection and Control Equipment	✓		
Underground cables	✓		
Structures	✓		
Overall equipment condition	✓		

1 = Acceptable

2 = Some deficiencies

3 = Needs attention soon

B. Factors that may impact the consequences of major equipment failure

Concern	Impact of Consequence		
	L	M	H
Station setting – proximity	More than 100m	Between 100m and 10m	10m or less
Station setting – watercourses	None	Storm sewers/drains	Open water
Lack of backup supply	≤2 hours switching	Between 2 – 24h outage	No backup
Critical loads (hospitals etc)	None	With generators	No generators
Grounding and bonding	Today's code	Some deficiencies	Poor
Oil containment	Yes	Partial	None
Explosion barriers	Yes	Partial	None
Fire fighting capability	Hydrants	Storage Tanks	None
Presence of PCB's	None	Storage Only	In-service
Overall equipment condition	**L**	**M**	**H**

C. Based on the equipment condition and consequences, state the risk rating for a major equipment failure:

Overall Failure Risk Rating	Blue	Purple	Yellow	Orange	Red
	20+ Years	11-20 years	4-10 years	2-3 years	1 year
		✓			

Section 4: Overall Substation Risk Assessment

Station Risk Assessment	Blue	Purple	Yellow	Orange	Red
	20+ Years	11-20 years	4-10 years	2-3 years	1 year
				✓	

Comments: Fence security + crushed stone. Dead front switchgear. No exposed H.V., or risk would be "RED".

Inspected by: S. Costello Date: June 18/08

Attachment 5 (of 8):

2-VECC-19 Attachment 5: Cressey MS3

Greater Sudbury Utilities

Prepared by: K. England

Cressey MS3 Substation - Budget Costs

Cressey MS3 Details

Voltage	44 - 12.47/7.2 kV
Capacity	20/26.66 MVA ONAN/ONAF
Transformer(s)	Two - 10/13MVA, ONAN/ONAF - 44kV-12.47/7.2kV w. OLTC 17 Taps. +- 5%. Oil Filled Power Transformers
Switchgear Type	Indoor Metal Clad and Outdoor Pad mount Metal Enclosed
44kV Main Breaker/Switch	S&C Electric 46kV LBS c/w fuses and motor operator
15kV Switchgear	Gas Insulated Swg. Main-Tie-Main configuration
Feeder Breakers	15 kV 800A Vacuum Breakers
Feeder Egress	8 Underground 15 kV Risers

Item	Cost Detail	Summary	Notes
Engineering & Design			
1.1) Preliminary Design	$ 16,700		
1.2) Geotechnical investigation	$ 18,000		Geotechnical
Construction Geotechnical	$ 22,000		
1.3) Public input session	$ 2,500		
1.4) Project Management	$ 92,000		Project oversight & includes Onsite Owners Engineer for Const.
1.5) Typical Grounding Design	$ 35,000		Includes Neutral Driving Point Impedance test
1.6) Detailed engineering & Design	$ 145,000		External Engineering
1.7) Protection Study and Final Commissioning	$ 15,000		Internal Protection study and Develop relay settings
		$ 346,200	
Civil Construction			
2.1) Construction Power	$ 9,500		
2.2) Clearing, Grubbing, Grading, compacting, fill	$ 80,625		No Allocation for rock removal, blasting or drilling.
Granular Backfill	$ 111,474		Assumes no contaminated soils, Assumes 3m excavation
2.3) Site access and controls	$ 13,000		
2.4) Oil Containment	$ 77,100		Shared containment, Concrete poured.
2.5) Duct Banks 15kV (approx. 490m)	$ 213,800		Estimated Distances, assumed concrete encased, 5 duct. No drilling
44kV (approx. 125m)	$ 52,800		Estimated Distances, assumed concrete encased, 4 duct
2.6) Concrete Foundations	$ 220,000		
2.7) TX Fire Wall ($495 pr sq m)	$ 158,400		Approx. dimensions 4m High, 80 Linear meters
2.8) Fence, Yard Stone and Landscaping	$ 125,000		
		$ 1,061,699	
Major equipment			
3.1) Power Transformers 10/13.33 MVA OLTC (x2)	$ 1,123,000		CSA and Hydro One Standard - OLTC
3.2) 44kV Switchgear	$ 220,000		Pad Mounted metal clad switchgear, c/w Motor operator and fuses
3.3) 15 kV Switchgear and breakers	$ 920,000		Metal clad with breakers
3.5) Cable Support and tray in building	$ 15,000		
3.6) Station DC Plant	$ 75,000		
3.7) Station Service / Street Service	$ 12,500		
3.8) 44 kV Cables/Terminators est. 390m	$ 22,680		Estimated Distances and # of terminations, includes labour
3.9) 15 kV 350 MCM Cables/Terminators est. 1720m	$ 118,860		Estimated Distances and # of terminations, includes Labour
3.10) Solid Blade Riser Switches (24)	$ 22,080		Riser Pole Switches
		$ 2,529,120	
Electrical			
4.1) Grounding	$ 62,581		
4.2) 44 kV Dip Pole x2	$ 16,200		
4.3) 15 kV Riser Poles x8	$ 38,400		
4.4) Installation of Transformers	$ 27,000		Assumes 1 crane visit, both units shipped together
4.5) Installation of Switchgear	$ 58,000		Forklift and equipment rental and installation, leveling
4.6) Power & Control Cabling. Building LV work	$ 73,150		
4.7) Station Service Panels, Disconnects	$ 20,158		
4.8) Electrical Commissioning	$ 35,000		
		$ 330,489	
Miscellaneous			
5.1) Mobilization, Bonding, Misc.	$ 20,000		
5.2) Fees & Permits	$ 12,000		
5.3) Building Improvements	$ 22,092		Building assessment + Minor Improvements
		$ 54,092	
SCADA & Protection and Control			
6.1) Communications and Fiber	$ 32,000		SCADA Equipment supplied and installed by GSHI
6.2) SCADA Equipment and RTU	$ 22,150		
6.3) Programing and Commissioning	$ 10,500		
		$ 64,650	
Sub-Total		$ 4,386,250	
Contingency 7.5%		$ 4,715,219	
Total		**$ 4,715,219**	

Further Assumptions

Assumed Average hourly wage per tradesperson with overheads $75.00
Assumed Construction labour 2 person crew with vehicle - $196
Budget is accurate within 15%, (+ or -7.5%)
Budget will be reviewed after preliminary studies and after detailed engineering in Q3 and Q4 of 2020
Equipment values are based on previous projects and budgetary estimates from vendors

Attachment 6 (of 8):

2-VECC-19 Attachment 6: Moonlight MS18

Greater Sudbury Utilities

Prepared by: K. England

Moonlight Substation - Budget Costs

Moonlight MS18 Details

Voltage		44 - 12.47/7.2 kV		
Capacity	18T1	10/13.33 MVA	ONAN/ONAF	+-5%
Capacity (Future)	18T2	20/26.33 MVA	Added Main-Tie-Main	
Switchgear Type		Indoor Pad mount and outdoor pad mount		
44kV Main Breaker/Switch		S&C Electric 46kV LBS c/w Fuses		
15kV Switchgear		Air Insulated Swg. 5 Cells		
15kV Switchgear (Future)	18T2	Air Insulated Swg. 6 Cells		
Feeder Breakers		15 kV 800A Vacuum Breakers		
Feeder Egress		4 Underground 15 kV Risers		
Feeder Egress (Future)	18T2	7 Underground 15kV Risers		

Item		Cost Detail		Summary		Notes
Engineering & Design						
1.1) Preliminary Design		$	10,500			300 man hours. Includes Building assessment, budget update
1.2) Geotechnical investigation		$	13,000			Geotechnical
Construction Geotechnical		$	26,000			
1.3) Public input session		$	2,500			
1.4) Project Management		$	52,000			Project oversight & includes Onsite Owners Engineer for Const.
1.5) Typical Grounding Design		$	3,000			Includes Neutral Driving Point Impedance test
1.6) Detailed engineering & Design		$	122,000			External Engineering 18T1 and 18T2
1.7) Protection Study and Final Commissioning		$	16,500			Includes work for generator connections/protections
				$	**245,500**	
Civil Construction						
2.1) Construction Power		$	5,500			
2.2) Clearing, Grubbing, Grading, compacting, fill		$	52,000			No Allocation for rock removal, blasting or drilling.
Granular Backfill		$	61,141			Assumes no contaminated soils, Assumes 3m excavation
2.3) Site access and controls		$	7,000			Assumes Access road is clear to new property
2.4) Oil Containment		$	70,000			18T1 and 18T2
2.5) Duct Banks	15kV (approx.250m)	$	123,000			Estimated Distances, assumed concrete encased, 5 duct. No drilling - 18T1
	44kV (approx. 50m)	$	20,500			Estimated Distances, assumed concrete encased, 4 duct - 18T1 Only
2.6) Concrete Foundations		$	195,000			
2.7) TX Fire Wall		$	22,000			Foundation for Firewall installed only. Wall Future
2.8) Fence, Yard Stone and Landscaping		$	105,000			Assumes chain-link fence, gravel finish, no paving
				$	**661,141**	
Major equipment						
3.1) Power Transformer 10/13.3MVA DETC (x1)		$	460,000			CSA and Hydro One Standard - 18T1 Only
3.2) 44kV Switchgear		$	110,000			Pad Mounted metal clad switchgear, with Motor operator and fuses
3.3) 15 kV Switchgear and breakers		$	290,000			Metal clad with Vacuum breakers
3.4) E-House Price		$	340,000			Prefabricated building to house Switchgear, SCADA and equip.
3.5) Building technical and FAT		$	5,000			
3.6) Station Service / Street Service		$	7,500			
3.9) Solid Blade Riser Switches (12)		$	9,800			Riser Pole Switches
				$	**1,222,300**	
Electrical						
4.1) Grounding		$	58,000			
4.2) 44 kV Dip Pole	x1	$	4,200			
4.3) 15 kV Riser Poles	x3	$	10,845			
4.4) Installation of Transformer		$	16,265			Assumes 1 crane visit
4.5) Installation of Switchgear		$	25,000			Forklift/Crane and equipment rental. Installation 1 crane.
4.6) Power & Control Cabling. Building LV work		$	3,500			
4.7) Station Service work		$	7,640			
4.8) 44 kV Cables/Terminators est. 150m		$	14,000			
4.9) 15 kV 350 MCM Cables/Terminators est. 750m		$	67,500			
4.8) Electrical Commissioning		$	26,000			
				$	**232,950**	
Miscellaneous						
5.1) Mobilization, Bonding, Insurance		$	18,200			
5.2) Purchase New land		$	150,000			Assumes purchase of new land near Kingsway corridor
5.3) Fees & Permits		$	6,600			
				$	**174,800**	
SCADA & Protection and Control						
6.1) Communications and Fiber		$	20,500			New Connections to Generators, Transfer Trip to LFG
6.2) SCADA Equipment and RTU		$	21,950			SCADA Equipment supplied and installed by GSHI
6.3) Commissioning		$	8,500			18T1 SCADA only, 18T2 in Future
				$	**50,950**	
Sub-Total				$	2,587,641	
Contingency 10%				$	2,846,405	
Total				**$**	**2,846,405**	

Assumptions

Assumed Average hourly wage with burdens $90.00
Assumed Construction 2 person crew with vehicle - $225
Assumes new property will be purchased for site to add Future T2
Budget is accurate within 20%, (+ or - 10%)
Budget will be reviewed after preliminary studies and after detailed engineering in Q3 and Q4 of 2021
Equipment values are based on previous projects and budgetary estimates from vendors
Engineering will be completed for 18T1 and 18T2 (Future)
Civil Construction will be completed within the fence for 18T1 and 18T2 (Future)

Attachment 7 (of 8):

2-VECC-19 Attachment 7 Martilla MS8

Greater Sudbury Utilities

Prepared by: K. England

Martilla Substation - Budget Costs

Martilla MS8 Details

Voltage	44 - 12.47/7.2 kV		
Capacity	7.5/10 MVA	ONAN/ONAF	+-5%
Switchgear Type	Indoor Pad mount and outdoor pad mount		
44kV Main Breaker/Switch	S&C Electric 46kV LBS with Fuses		
15kV Switchgear	Gas Insulated Swg. 5 Cells		
Feeder Breakers	15 kV 800A GIS Breakers		
Feeder Egress	3 Underground 15 kV Risers		

	Item	Cost Detail	Summary	Notes
Engineering & Design				
	1.1) Preliminary Design	$ 10,500		
	1.2) Geotechnical investigation	$ 15,000		Geotechnical
	Construction Geotechnical	$ 22,272		
	1.3) Public input session	$ 2,500		
	1.4) Project Management	$ 52,000		Project oversight & includes Onsite Owners Engineer for Const.
	1.5) Typical Grounding Design	$ 25,000		Includes Neutral Driving Point Impedance test
	1.6) Detailed engineering & Design	$ 105,000		External Engineering
	1.7) Protection Study and Final Commissioning	$ 7,500		
			$ 239,772	
Civil Construction				
	2.1) Construction Power	$ 9,500		
	2.2) Clearing, Grubbing, Grading, compacting, fill	$ 42,000		No Allocation for rock removal, blasting or drilling.
	Granular Backfill	$ 50,200		Assumes no contaminated soils, Assumes 3m excavation
	2.3) Site access and controls	$ 5,000		
	2.4) Oil Containment	$ 35,000		Concrete poured
	2.5) Duct Banks 15kV (approx. 260m)	$ 96,000		Estimated Distances, assumed concrete encased, 5 duct. No drilling
	44kV (approx. 60m)	$ 29,800		Estimated Distances, assumed concrete encased, 4 duct
	2.6) Concrete Foundations	$ 108,000		
	2.7) TX Fire Wall	$ -		
	2.8) Fence, Yard Stone and Landscaping	$ 78,000		Includes replacing paving in front of station to Martilla St.
			$ 453,500	
Major equipment				
	3.1) Power Transformer 7.5/10 MVA DETC (x1)	$ 417,000		CSA and Hydro One Standard
	3.2) 44kV Switchgear	$ 110,000		Pad Mounted metal clad switchgear, with Motor operator and fuses
	3.3) 15 kV Switchgear and breakers	$ 380,000		Metal clad with breakers
	3.4) Ehouse Price	$ 326,000		Prefabricated building to house Switchgear, SCADA and equip.
	3.5) Building technical and FAT	$ 5,000		
	3.6) Station Service / Street Service	$ 7,500		
	3.9) Solid Blade Riser Switches (12)	$ 9,800		Riser Pole Switches
			$ 1,255,300	
Electrical				
	4.1) Grounding	$ 42,053		
	4.2) 44 kV Dip Pole x1	$ 4,200		
	4.3) 15 kV Riser Poles x3	$ 10,845		
	4.4) Installation of Transformer	$ 8,500		Assumes 1 crane visit
	4.5) Installation of Switchgear	$ 9,550		Forklift/Crane and equipment rental and installation
	4.6) Power & Control Cabling. Building LV work	$ 3,500		
	4.7) Station Service work	$ 3,000		
	4.8) 44 kV Cables/Terminators est. 180m	$ 18,800		
	4.9) 15 kV 350 MCM Cables/Terminators est. 780m	$ 76,600		
	4.8) Electrical Commissioning	$ 22,500		
			$ 199,548	
Miscellaneous				
	5.1) Mobilization, Bonding, Insurance	$ 18,200		
	5.2) Pop Site Relocation	$ 14,600		
	5.2) Fees & Permits	$ 6,600		
			$ 39,400	
SCADA & Protection and Control				
	6.1) Communications and Fiber	$ 12,500		SCADA Equipment supplied and installed by GSHI
	6.2) SCADA Equipment and RTU	$ 22,550		
	6.3) Commissioning	$ 6,500		
			$ 41,550	
	Sub-Total		$ 2,229,070	
	Contingency 10%		$ 2,451,977	
	Total		**$ 2,451,977**	

Assumptions

Assumed Average hourly wage with burdens $90.00
Assumed Construction 2 person crew with truck - $225
Budget is accurate within 20%, (+ or - 10%)
Budget will be reviewed after preliminary studies and after detailed engineering in Q3 and Q4 of 2022
Equipment values are based on previous projects and budgetary estimates from vendors

Attachment 8 (of 8):

2-VECC-19 Attachment 8: Paris MS13

Greater Sudbury Utilities

Prepared by: K. England

Paris Substation - Budget Costs

Paris MS13 Details

Voltage	44 - 12.47/7.2 kV		
Capacity	7.5/10 MVA	ONAN/ONAF	+-5%
Switchgear Type	Indoor Pad mount and outdoor pad mount		
44kV Main Breaker/Switch	S&C Electric 46kV LBS with Fuses		
15kV Switchgear	Gas Insulated Swg. 5 Cells		
Feeder Breakers	15 kV 800A GIS Breakers		
Feeder Egress	3 Underground 15 kV Risers		

Item	Cost Detail	Summary	Notes
Engineering & Design			
1.1) Preliminary Design	$ 10,500		300 man hours. Includes Building assessment, budget update
1.2) Geotechnical investigation	$ 13,000		Geotechnical
Construction Geotechnical	$ 18,000		
1.3) Public input session	$ 2,500		
1.4) Project Management	$ 52,000		Project oversight & includes Onsite Owners Engineer for Const.
1.5) Typical Grounding Design	$ 25,000		Includes Neutral Driving Point Impedance test
1.6) Detailed engineering & Design	$ 102,000		External Engineering
1.7) Protection Study and Final Commissioning	$ 7,500		
		$ 230,500	
Civil Construction			
2.1) Construction Power	$ 13,500		
2.2) Clearing, Grubbing, Grading, compacting, fill	$ 40,100		No Allocation for rock removal, blasting or drilling.
Granular Backfill	$ 49,140		Assumes no contaminated soils, Assumes 2m excavation
2.3) Site access and controls	$ 17,000		Assumes Access road in Neighbours Property
2.4) Oil Containment	$ 35,000		
2.5) Duct Banks 15kV (approx. 200m)	$ 94,000		Estimated Distances, assumed concrete encased, 5 duct. No drilling
44kV (approx. 100m)	$ 36,000		Estimated Distances, assumed concrete encased, 4 duct
2.6) Concrete Foundations	$ 88,000		
2.7) TX Fire Wall	$ -		
2.8) Fence, Yard Stone and Landscaping	$ 95,000		Includes repaving from Station to Paris St
		$ 467,740	
Major equipment			
3.1) Power Transformer 7.5/10 MVA DETC (x1)	$ 417,000		CSA and Hydro One Standard
3.2) 44kV Switchgear	$ 110,000		Pad Mounted metal clad switchgear, with Motor operator and fuses
3.3) 15 kV Switchgear and breakers	$ 380,000		Metal clad with breakers
3.4) Ehouse Price	$ 326,000		Prefabricated building to house Switchgear, SCADA and equip.
3.5) Building technical and FAT	$ 5,000		
3.6) Station Service / Street Service	$ 7,500		
3.9) Solid Blade Riser Switches (12)	$ 9,800		Riser Pole Switches
		$ 1,255,300	
Electrical			
4.1) Grounding	$ 38,936		
4.2) 44 kV Dip Pole x1	$ 4,200		
4.3) 15 kV Riser Poles x3	$ 10,845		
4.4) Installation of Transformer	$ 12,500		Assumes 1 crane visit, 2 Cranes
4.5) Installation of Switchgear	$ 18,250		Forklift/Crane and equipment rental. Installation 2 cranes.
4.6) Power & Control Cabling. Building LV work	$ 3,500		
4.7) Station Service work	$ 4,300		
4.8) 44 kV Cables/Terminators est. 300m	$ 20,660		
4.9) 15 kV 350 MCM Cables/Terminators est. 600m	$ 70,600		
4.8) Electrical Commissioning	$ 22,500		
		$ 206,291	
Miscellaneous			
5.1) Mobilization, Bonding, Insurance	$ 18,200		
5.2) POP Site Relocation	$ 14,540		
5.3) Fees & Permits	$ 6,600		
		$ 39,340	
SCADA & Protection and Control			
6.1) Communications and Fiber	$ 12,500		SCADA Equipment supplied and installed by GSHI
6.2) SCADA Equipment and RTU	$ 22,550		
6.3) Commissioning	$ 6,500		
		$ 41,550	
Sub-Total		$ 2,240,721	
Contingency 10%		$ 2,464,793	
Total		**$ 2,464,793**	

Assumptions

Assumed Average hourly wage with burdens $90.00
Assumed Construction 2 person crew with Truck - $225
Budget is accurate within 20%, (+ or -10%)
Budget will be reviewed after preliminary studies and after detailed engineering in Q3 and Q4 of 2023
Equipment values are based on previous projects and budgetary estimates from vendors

3-VECC-20

Question:

Reference: Exhibit 3, Tab 1, Schedule 1, page 1(lines 19-27)

Preamble: The Application states:

"A range of degree day bases beyond the default 18°C were considered in each class model and were typically found to be stronger variables than HDD or CDD at 18°C".

a) When the Application states that a range of degree day bases were considered does this mean that for each customer class regression analyses were undertaken to determine which "degree day base" provided the strongest results?

b) If not, how did the Application consider a range of degree day bases?

Response:

a) No.

b) Figures 1, 3, and 5 from the load forecast report (Exhibit 3, Tab 1, Schedule 1, Attachment 1), which are also in the 'Monthly Data' tab of the load forecast model, were used as a guide to determine the appropriate range of HDDs and CDDs to consider. For example, Figure 1 (Residential kWh and Average Temperature) shows that there is not substantial variation in consumption when the average temperature is near 15°C so only CDDs above 15°C and HDDs below 15°C were considered.

This method is a change from Elenchus' previous load forecast methodology. Methods that use only one degree day reference point, which is typically 18°C, suggests there is an inflection point at that temperature. Consumption was expected to decline as temperatures increase to 18°C and then immediately increase after 18°C. The new methodology reflects the observation that there is a small range of temperatures in which there is minimal heating/cooling load.

3-VECC-21

Question:

Reference: Exhibit 3, Tab 1, Schedule 1, page 2 (lines 8-14))
Load Forecast Model, CDM Tab

a) Please provide the OPA/IESO Verified CDM Reports that support the historical and forecast CDM savings from CDM activities undertaken in the years 2009-2018 as set out in the CDM Tab.

Response:

a) The OPA/IESO Verified CDM Reports that support the historical and forecast CDM savings from CDM activities undertaken in the years 2009-2018 as set out in the CDM Tab have been included as live models with this interrogatory response submission.

3-VECC-22 2016 Sentinel Light Demand Billed

Question:

Reference: Exhibit 3, Tab 1, Schedule 1, page 3 (lines 2-7)
Exhibit 3, Tab 1, Schedule 1, Attachment 1, page 24

a) It is noted that, for the Sentinel Light class, the 2016 kW/kWh ratio is materially different from that in any of the other years from 2011-2018. Can GHSI explain why? Would it be reasonable to also exclude 2016 from the calculation?

Response:

Sentinel light kW demand was lower in 2016 because there was one month that was billed for 61 days (two months) rather than the typical 30 or 31 day bill. Therefore the demand based charge was only charged once covering 61 days of consumption rather than typically being charged twice. This was in error, as a demand-based bill issued by GSHi will typically only be billed up to a maximum of 45 days.

This would impact total distribution revenue that GSHi collected in the year, however the impact is immaterial – total distribution revenue collected on sentinel demand charges in 2016 was approximately $13,599 versus $14,503 in 2017, therefore lower collection of approximately $904.

The 2016 kW figure has been scaled up in the revised load forecast by 12/11ths. This brings the 2016 kW/kWh ratio in line with the other kW/kWh ratios.

3-VECC-23

Question:

Reference: Exhibit 3, Tab 1, Schedule 1, Attachment 1, page 14

a) Please update the economic forecasts of the five major banks based on the most recent forecasts available from each.

Response:

a) See the revised economic forecast data below. The economic forecast data, and actual Statcan economic data, has been updated in the revised load forecast. Note that CIBC, which is known to update provincial economic forecasts infrequently, has not updated its provincial economic forecasts since October 9th. CIBC's 2020 forecasts are substantially out of date and out of line with other bank economic forecasts, so CIBC's figures are not included in the averages used to forecast 2020 FTEs or GDP.

	BMO	TD	Scotia	RBC	CIBC	Average
Report Date	12-Feb-2020	17-Dec-2019	13-Jan-2020	Dec-2019	9-Oct-2019	
FTEs						
2019	2.90%	2.80%	2.90%	2.80%	2.60%	2.85%
2020	1.90%	1.40%	1.20%	1.40%	0.50%	1.48%
GDP						
2019	1.70%	1.80%	1.70%	1.70%	1.70%	1.73%
2020	1.80%	1.70%	1.50%	1.60%	1.30%	1.65%
					*Out of date	
Latest as of February 21, 2020					CIBC data not used	

3-VECC-24

Question:

Reference: Exhibit 3, Tab 1, Schedule 1, Attachment 1, pages 16, 18, 19, 22, 24 and 25

a) Please confirm that the historical customer/connection/device counts shown are based on the average of the 12 monthly values for the year. If not confirmed, please explain the basis for the values shown.
b) For each customer class, please provide the actual customer/connection/device count for each of the months in 2019 and the overall 12-month average.

Response:

a) Customer/connection counts are based on quarter end counts.

b) Monthly customer counts are not available. Quarterly customer counts are provided below and included in the updated load forecast.

Customers	Q1	Q2	Q3	Q4	2019 Avg.
Residential	42,986	42,987	43,023	43,049	43,011
GS < 50	4,154	4,171	4,170	4,173	4,167
GS > 50	506	496	500	503	501
Street Light	9,885	9,883	9,937	9,962	9,917
Sentinel Light	371	371	367	356	366
USL	292	292	297	293	294
Total	**58,194**	**58,200**	**58,294**	**58,336**	**58,256**

3-VECC-25

Question:

Reference: Exhibit 3, Tab 1, Schedule 1, Attachment 1, page 27
Load Forecast Model, CDM Forecast Tab

a) Please confirm that for purposes of the LRMVA calculations 100% of the verified savings are assumed to be achieved in the first year.
b) If confirmed, please explain why it is appropriate to include 2018 savings in the determination of the LRAMVA thresholds.

Response:

a) Confirmed.

a) The updated load forecast includes only 2019 and 2020 in the LRAMVA threshold calculation.

4-VECC-26 Other Revenue

Question:

Reference: Exhibit 3, Tab 3, Schedule 1
Chapter 2 Appendices, Tab 2-H – Other Revenue

a) Please provide a revised version of Tab 2-H with the actual 2019 values.
b) With respect to pole attachment charges (page 6), if the rate increased January 1, 2019 why does the increase in revenue only occur in 2020 (Per Tab 2-H)?
c) With respect to the pole attachment charges (page 6) and the referenced in increase to $46.93 per pole, what rate did GSHI charge in 2019, what rate is it proposing for 2020 and is the proposed 2020 rate consistent with the Board's Letter of November 28, 2019?
d) How many microFIT customers does GSHI have and where are the revenues from the microFIT charges included in Tab 2-H?
e) What was the actual Loss on Disposition of Utility and Other Property (Acct 4360) in 2019?
f) What is the basis for the forecast 2020 Loss on Disposition of Utility and Other Property of $564,690?
g) With respect to page 6, please further explain what was the basis for the Regulatory Credits (Acct 4310) in 2016-2019 and why is there no forecast value for 2020?
h) Please update the 2020 Retail Services Revenue to reflect the Retailer Service Charges approved by the Board on November 28, 2019 (EB-2019-0280).

Response:

a) GSHI has provided an updated Appendix 2-H included as Attachment 1 to this interrogatory response and has also included an updated live Chapter

2 Appendices model with this submission. These figures are unaudited and are based on preliminary year-end work.

Also in this updated appendix, GSHi has corrected for an error noted in its original budget for pole rental revenue (one attacher was budgeted for twice). GSHi also updated its budget for 2020 pole rental revenue based on its most recent pole count and increased its inflationary increase from 1.5% (used as a placeholder) to 2% as per the Board's November 28th 2019 letter. GSHi also noted some description and grouping errors in Appendix 2-H and has corrected those as well.

b) GSHi implemented the increased wireline pole attachment charge as of September 1, 2018 per EB-2015-0304 and deferred the increased revenue as per the Wireline Pole Attachment Charges report dated March 22nd, 2018. In its initial application, GSHi split out the incremental revenue and included it in account 4310 (Other Regulatory Credits) for 2018 in Appendix 2-H. However, GSHi has noted that there was an error in Appendix 2-H where the incremental revenue from 2019 of $491,079 was omitted in the balance for account 4310. GSHi now recognizes that this incorrect and has updated Appendix 2-H to show the gross amount of pole rental revenue in 4210 and included a debit to account for 4305 (Regulatory Debits) for the incremental portion to be deferred and returned to rate payers. For 2020, the total amount of pole rental revenue is included in 4210 with no offset to 4305, as there will no longer be an incremental portion.

c) GSHi charged $43.63 per pole in 2019 and has updated its 2020 budget (included in the updated Appendix 2-H) to reflect the Board's letter of November 28, 2019. The 2020 pole rental revenue is based on a rate of $44.50 per pole.

d) GSHi has 80 microFIT customers and $4,368 worth of revenue has been included in the 2020 budget for account 4235 Specific Service Charges. This has been updated as per the direction in the letter from the Board on February 24, 2020 *Review of Fixed Monthly Charge for microFIT Generator Service Classification* which decreased the monthly fee from $5.40 to $4.55.

e) GSHi's unaudited 2019 loss on disposal figure is $515,799 and appendix 2-H has been updated to reflect this.

f) GSHi predicted its 2020 loss on disposal based on the average losses experienced from 2016 through 2018.

g) In its initial application, GSHi had included in account 4310 both the incremental pole rental revenue and the deferred loss on disposal. However, while preparing these interrogatory responses, GSHi noted the loss on disposal figure was omitted in error for 2019. Based on its interpretation of the Accounting Procedures Handbook, GSHi has now separated the deferral for loss on disposal and the deferred incremental pole rental revenue into 4305 Regulatory Debits (contains the deferred incremental pole rental revenue) and 4310 Regulatory Credits (contains the deferred loss on disposal). Neither account contain a budget for 2020 since these items will now form base rates and will no longer need to be deferred.

h) An updated Appendix 2-H is provided as Attachment 1 to this response. This reflects the updated budget for the 2020 Retail Services Charges approved by the Board on November 28, 2019 (EB-2019-0280). A live version of Appendix 2-H has also been included as part of the updated Chapter 2 Appendices file.

Attachment 1 (of 1):

4-VECC-26 Attachment 1: Updated Appendix 2-H

File Number:	EB-2019-0037
Exhibit:	
Tab:	
Schedule:	
Page:	
Date:	

TO BE UPDATED AT THE DRAFT RATE ORDER STAGE

Appendix 2-H
Other Operating Revenue

USoA #	USoA Description	2013 Actual²	2014 Actual²	2015 Actual²	2016 Actual²	2017 Actual²	2018 Actual	Bridge Year	Test Year		CGAAP
		2013	2014	2015	2016	2017	2018	2019	2020		2015
	Reporting Basis	CGAAP	CGAAP	MIFRS	MIFRS	MIFRS	MIFRS	MIFRS	MIFRS		CGAAP
4235	**Specific Service Charges**	-$ 486,033	-$ 500,020	-$ 477,143	-$ 516,505	-$ 441,434	-$ 320,068	-$ 299,383	-$ 218,602		-$ 477,143
4225	**Late Payment Charges**	-$ 144,064	-$ 175,092	-$ 182,322	-$ 195,236	-$ 166,761	-$ 148,898	-$ 155,235	-$ 156,800		-$ 182,322
4082	**Retail Services Revenues**	-$ 39,393	-$ 33,127	-$ 30,989	-$ 30,666	-$ 21,848	-$ 20,810	-$ 29,915	-$ 35,915		-$ 30,989
4086	Standard Supply Service - Administrative Charge	-$ 134,163	-$ 135,548	-$ 135,841	-$ 157,979	-$ 139,356	-$ 140,733	-$ 141,750	-$ 140,473		-$ 135,841
4084	Service Transactions Requests	-$ 1,114	-$ 733	-$ 853	-$ 643	-$ 306	-$ 302	-$ 496	-$ 930		-$ 853
4210	Rent from Electric Property	-$ 549,227	-$ 514,367	-$ 777,359	-$ 587,682	-$ 577,201	-$ 619,546	-$ 1,095,853	-$ 1,110,955		-$ 777,359
4360	Loss on Disposition of Utility and Other Property			$ 538,014	$ 637,754	$ 454,852	$ 624,722	$ 515,799	$ 564,690		$ 538,014
4375	Revenues from Non-Utility Operations	-$ 499,147	-$ 984,572	-$ 1,106,728	-$ 1,383,432	-$ 2,033,252	-$ 3,188,326	-$ 2,886,713	-$ 2,495,805		-$ 1,106,728
4380	Expenses of Non-Utility Operations	$ 487,219	$ 966,943	$ 878,607	$ 1,383,432	$ 2,033,252	$ 2,725,752	$ 2,886,714	$ 2,495,805		$ 878,607
4390	Miscellaneous Non-Operating Income⁵	-$ 168,815	-$ 98,068	-$ 165,644	-$ 202,201	-$ 130,581	-$ 147,480	-$ 117,098	-$ 133,000		-$ 165,644
4405	Interest and Dividend Income²	-$ 413,019	-$ 333,360	-$ 361,395	-$ 196,989	-$ 290,798	-$ 233,287	-$ 200,065	-$ 60,000		-$ 361,395
4385	Non Rate-Regulated Utility Rental Income	-$ 12,418	-$ 21,537	-$ 21,758	-$ 23,029	-$ 20,106	-$ 20,073	-$ 19,504	-$ 20,000		-$ 21,758
4220	Other Electric Revenues	$ -	$ -	-$ 8,242	-$ 1,268	-$ 121,903	$ -	$ -	$ -		-$ 8,242
4305	Regulatory Debits						$ 38,525	$ 507,989	$ -		$ -
4310	Regulatory Credits	$ -	$ -	$ -	-$ 1,624,754	-$ 461,851	-$ 624,722	-$ 515,799	$ -		$ -
4245	Deferred revenue			-$ 42,626	-$ 70,037	-$ 92,007	-$ 115,823	-$ 131,564	-$ 207,802		-$ 42,626
4355	Gain on Disposition of Utility and Other Property	-$ 1,402	-$ 26,005					-$ 2,696	$ -		$ -
Specific Service Charges		-$ 486,033	-$ 500,020	-$ 477,143	-$ 516,505	-$ 441,434	-$ 320,068	-$ 299,383	-$ 218,602		-$ 477,143
Late Payment Charges		-$ 144,064	-$ 175,092	-$ 182,322	-$ 195,236	-$ 166,761	-$ 148,898	-$ 155,235	-$ 156,800		-$ 182,322
Other Operating Revenues		-$ 723,897	-$ 683,775	-$ 995,911	-$ 848,274	-$ 952,621	-$ 897,215	-$ 1,399,577	-$ 1,496,075		-$ 995,911
Other Income or Deductions		-$ 607,581	-$ 496,598	-$ 238,904	-$ 1,409,220	-$ 448,483	-$ 824,889	$ 168,626	$ 351,690		-$ 238,904
Total		-$ 1,961,576	-$ 1,855,484	-$ 1,894,278	-$ 2,969,236	-$ 2,009,298	-$ 2,191,070	-$ 1,685,569	-$ 1,519,787		-$ 1,894,278

<u>**Description**</u> <u>**Account(s)**</u>
Specific Service Charges: 4235
Late Payment Charges: 4225
Other Distribution Revenues: 4082, 4084, 4090, 4205, 4210, 4215, 4220, 4230, 4240, 4245
Other Income and Expenses: 4305, 4310, 4315, 4320, 4325, 4330, 4335, 4340, 4345, 4350, 4355, 4357, 4360, 4362, 4365, 4370, 4375, 4380, 4385, 4390, 4395, 4398, 4405, 4410, 4415, 4420

Note: Add all applicable accounts listed above to the table and include all relevant information.

Account Breakdown Details

For each "Other Operating Revenue" and "Other Income or Deductions" Account, a detailed breakdown of the account components is required. See the example below for Account 4405, Interest and Dividend Income. Tables for the detailed breakdowns will be generated after cell B89 is filled in.

Example: Account 4405 - Interest and Dividend Income

	2013 Actual²	2014 Actual²	2015 Actual²	2016 Actual²	2017 Actual²	2018 Actual	Bridge Year	Test Year		CGAAP
	2013	2014	2015	2016	2017	2018	2019	2020		$ 2,015
Reporting Basis	CGAAP	CGAAP	MIFRS	MIFRS	MIFRS	MIFRS	MIFRS	MIFRS		CGAAP
Short-term Investment Interest										
Bank Deposit Interest										
Miscellaneous Interest Revenue										
etc.¹										
Total	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -		$ -

Notes:
1 List and specify any other interest revenue.
2 In the transition year to IFRS, the applicant is to present information in both MIFRS and CGAAP. In column N, present CGAAP transition year information. For the typical applicant that adopted IFRS on January 1, 2015, 2014 must be presented in both a CGAAP and MIFRS basis.

15 **Enter the number of "Other Operating Revenue" and "Other Income or Deductions" Accounts that require a detailed breakdown of the account components.**

Account 4405 - Interest and Dividend Incon

	2013 Actual²	2014 Actual²	2015 Actual²	2016 Actual²	2017 Actual²	2018 Actual	Bridge Year	Test Year	CGAAP
	2013	2014	2015	2016	2017	2018	2019	2020	$ 2,015
Reporting Basis									CGAAP
Bank Interest	-$ 53,537	-$ 57,046	-$ 52,963	-$ 42,964	-$ 51,721	-$ 72,061	-$ 84,121	-$ 60,000	-$ 52,963
Deferral & Variance Account Interest	-$ 171,895	-$ 79,031	-$ 127,357	-$ 4,713	-$ 78,340	-$ 60,952	-$ 15,670	$ -	-$ 127,357
Intercompany interest	-$ 187,586	-$ 197,283	-$ 181,074	-$ 149,312	-$ 160,737	-$ 100,274	-$ 100,274	$ -	-$ 181,074
Total	-$ 413,019	-$ 333,360	-$ 361,395	-$ 196,989	-$ 290,798	-$ 233,287	-$ 200,065	-$ 60,000	-$ 361,395

Account 4082 - Retail Services Revenue

	2013 Actual²	2014 Actual²	2015 Actual²	2016 Actual²	2017 Actual²	2018 Actual	Bridge Year	Test Year	CGAAP
	2013	2014	2015	2016	2017	2018	2019	2020	$ 2,015
Reporting Basis									CGAAP
DCBR Bill Charges	-$ 13,170	-$ 11,015	-$ 9,912	-$ 9,734	-$ 6,778	-$ 6,240	-$ 8,484	-$ 9,926	-$ 9,912
Monthly Fixed Fees Retailers	-$ 4,180	-$ 3,920	-$ 4,320	-$ 4,580	-$ 3,760	-$ 4,440	-$ 7,220	-$ 9,302	-$ 4,320
Monthly Variable Charges	-$ 22,044	-$ 18,192	-$ 16,757	-$ 16,352	-$ 11,310	-$ 10,131	-$ 14,211	-$ 16,687	-$ 16,757
Total	-$ 39,393	-$ 33,127	-$ 30,989	-$ 30,666	-$ 21,848	-$ 20,810	-$ 29,915	-$ 35,915	-$ 30,989

Account 4086 - Standard Supply Service

	2013 Actual²	2014 Actual²	2015 Actual²	2016 Actual²	2017 Actual²	2018 Actual	Bridge Year	Test Year	CGAAP
	2013	2014	2015	2016	2017	2018	2019	2020	$ 2,015
Reporting Basis									CGAAP
Residential Customers	-$ 120,399	-$ 121,707	-$ 122,265	-$ 142,590	-$ 125,796	-$ 127,053	-$ 128,066	-$ 126,713	-$ 122,265
GS < 50 kW Customers	-$ 11,311	-$ 11,401	-$ 11,194	-$ 12,795	-$ 11,243	-$ 11,420	-$ 11,439	-$ 11,500	-$ 11,194
GS > 50 kW Customers	-$ 1,290	-$ 1,297	-$ 1,288	-$ 1,389	-$ 1,289	-$ 1,260	-$ 1,265	-$ 1,250	-$ 1,288
Non-metered Customers	-$ 584	-$ 576	-$ 559	-$ 633	-$ 526	-$ 506	-$ 504	-$ 510	-$ 559
Sentinel Light Customers	-$ 573	-$ 560	-$ 529	-$ 565	-$ 496	-$ 489	-$ 470	-$ 500	-$ 529
Streetlight Customers	-$ 7	-$ 6	-$ 6	-$ 7	-$ 6	-$ 6	-$ 6	$ -	-$ 6
Total	-$ 134,163	-$ 135,548	-$ 135,841	-$ 157,979	-$ 139,356	-$ 140,733	-$ 141,750	-$ 140,473	-$ 135,841

Account 4084 - Standard Supply Service- A

	2013 Actual²	2014 Actual²	2015 Actual²	2016 Actual²	2017 Actual²	2018 Actual	Bridge Year	Test Year	CGAAP
	2013	2014	2015	2016	2017	2018	2019	2020	$ 2,015
Reporting Basis	CGAAP	CGAAP	MIFRS	MIFRS	MIFRS	MIFRS	MIFRS	MIFRS	CGAAP
Service Transaction Request Fees	-$ 1,114	-$ 733	-$ 853	-$ 643	-$ 306	-$ 302	-$ 496	-$ 930	-$ 853
Total	-$ 1,114	-$ 733	-$ 853	-$ 643	-$ 306	-$ 302	-$ 496	-$ 930	-$ 853

Account 4210 - Rent from Electric Property

	2013 Actual²	2014 Actual²	2015 Actual²	2016 Actual²	2017 Actual²	2018 Actual	Bridge Year	Test Year	CGAAP
	2013	2014	2015	2016	2017	2018	2019	2020	$ 2,015
Reporting Basis									CGAAP
Rental Income	-$ 90,627	-$ 90,627	-$ 90,627	-$ 61,234	-$ 59,807	-$ 59,807	-$ 61,235	-$ 61,235	-$ 90,627
Pole Rental Income	-$ 458,599	-$ 423,740	-$ 686,732	-$ 526,448	-$ 517,395	-$ 559,739	-$ 1,034,618	-$ 1,049,720	-$ 686,732
Total	-$ 549,227	-$ 514,367	-$ 777,359	-$ 587,682	-$ 577,201	-$ 619,546	-$ 1,095,853	-$ 1,110,955	-$ 777,359

Account 4375 - Revenues from Non Utility

	2013 Actual²	2014 Actual²	2015 Actual²	2016 Actual²	2017 Actual²	2018 Actual	Bridge Year	Test Year	CGAAP
	2013	2014	2015	2016	2017	2018	2019	2020	$ 2,015
Reporting Basis									CGAAP
OPA programs	-$ 499,147	-$ 984,572	-$ 1,106,728	-$ 1,383,432	-$ 2,033,252	-$ 2,432,446	-$ 921,770	-$ 1,418,525	-$ 1,106,728
Affordability Fund Trust						-$ 755,880	-$ 1,964,944	-$ 1,077,280	$ -
Total	-$ 499,147	-$ 984,572	-$ 1,106,728	-$ 1,383,432	-$ 2,033,252	-$ 3,188,326	-$ 2,886,713	-$ 2,495,805	-$ 1,106,728

Account 4380 - Expenses of Non Utility Op

	2013 Actual²	2014 Actual²	2015 Actual²	2016 Actual²	2017 Actual²	2018 Actual	Bridge Year	Test Year	CGAAP
	2013	2014	2015	2016	2017	2018	2019	2020	$ 2,015
Reporting Basis									CGAAP
OPA programs - Expenditure Offset	$ 487,219	$ 966,943	$ 878,607	$ 1,383,432	$ 2,033,252	$ 1,969,873	$ 921,770	$ 1,418,525	$ 878,607
Affordability Fund Trust						$ 755,880	$ 1,964,944	$ 1,077,280	

Total	$ 487,219	$ 966,943	$ 878,607	$ 1,383,432	$ 2,033,252	$ 2,725,752	$ 2,886,714	$ 2,495,805	$ 878,607

Account 4390 - Expenses of Non Utility Op

	2013 Actual²	2014 Actual²	2015 Actual²	2016 Actual²	2017 Actual²	2018 Actual	Bridge Year	Test Year	CGAAP
	2013	2014	2015	2016	2017	2018	2019	2020	$ 2,015
Reporting Basis									CGAAP
Sale of materials/service	-$ 225	-$ 1,538	-$ 1,944	-$ 3,856	-$ 7,330	-$ 5,509	-$ 12,682	-$ 5,000	-$ 1,944
Sale of Scrap Material	-$ 157,304	-$ 82,477	-$ 114,377	-$ 170,869	-$ 102,368	-$ 119,371	-$ 99,046	-$ 128,000	-$ 114,377
Miscellaneous Revenue	-$ 11,286	-$ 14,053	-$ 49,323	-$ 27,476	-$ 20,884	-$ 22,600	-$ 5,369	$ -	-$ 49,323
Total	-$ 168,815	-$ 98,068	-$ 165,644	-$ 202,201	-$ 130,581	-$ 147,480	-$ 117,098	-$ 133,000	-$ 165,644

Account 4385 - Non Rate-Regulated Utility

	2013 Actual²	2014 Actual²	2015 Actual²	2016 Actual²	2017 Actual²	2018 Actual	Bridge Year	Test Year	CGAAP
	2013	2014	2015	2016	2017	2018	2019	2020	$ 2,015
Reporting Basis									CGAAP
Equipment Buyout/Sentinel	-$ 12,418	-$ 21,537	-$ 21,758	-$ 23,029	-$ 20,106	-$ 20,073	-$ 19,504	-$ 20,000	-$ 21,758
Total	-$ 12,418	-$ 21,537	-$ 21,758	-$ 23,029	-$ 20,106	-$ 20,073	-$ 19,504	-$ 20,000	-$ 21,758

Account 4220 - Other Electric Revenues

	2013 Actual²	2014 Actual²	2015 Actual²	2016 Actual²	2017 Actual²	2018 Actual	Bridge Year	Test Year	CGAAP
	2013	2014	2015	2016	2017	2018	2019	2020	$ 2,015
Reporting Basis									CGAAP
Fit Fees Revenue			-$ 8,242	-$ 1,268	-$ 1,903				-$ 8,242
Misc revenue					-$ 120,000				
Total	$ -	$ -	-$ 8,242	-$ 1,268	-$ 121,903	$ -	$ -	$ -	-$ 8,242

Account 4310 - Regulatory Credits

	2013 Actual²	2014 Actual²	2015 Actual²	2016 Actual²	2017 Actual²	2018 Actual	Bridge Year	Test Year	CGAAP
	2013	2014	2015	2016	2017	2018	2019	2020	$ 2,015
Reporting Basis									CGAAP
Loss on PP&E Disposal - transfer to deferral				-$ 1,624,754	-$ 461,851	-$ 624,722	-$ 515,799		
Total	$ -	$ -	$ -	-$ 1,624,754	-$ 461,851	-$ 624,722	-$ 515,799	$ -	$ -

4360- Loss on Disposition of Utility and Oth

	2013 Actual²	2014 Actual²	2015 Actual²	2016 Actual²	2017 Actual²	2018 Actual	Bridge Year	Test Year	CGAAP
	2013	2014	2015	2016	2017	2018	2019	2020	$ 2,015
Reporting Basis									CGAAP
Loss on PP&E Disposal			$ 538,014	$ 637,754	$ 454,852	$ 624,722	$ 515,799	$ 564,690	$ -
Total	$ -	$ -	$ 538,014	$ 637,754	$ 454,852	$ 624,722	$ 515,799	$ 564,690	$ -

4245- Government and Other Assistance D

	2013 Actual²	2014 Actual²	2015 Actual²	2016 Actual²	2017 Actual²	2018 Actual	Bridge Year	Test Year	CGAAP
	2013	2014	2015	2016	2017	2018	2019	2020	$ 2,015
Reporting Basis									CGAAP
Deferred Revenue			-$ 42,626	-$ 70,037	-$ 92,007	-$ 115,823	-$ 131,564	-$ 207,802	
Total	$ -	$ -	-$ 42,626	-$ 70,037	-$ 92,007	-$ 115,823	-$ 131,564	-$ 207,802	$ -

4355 Gain on Disposition of Utility and Othe

	2013 Actual²	2014 Actual²	2015 Actual²	2016 Actual²	2017 Actual²	2018 Actual	Bridge Year	Test Year	CGAAP
	2013	2014	2015	2016	2017	2018	2019	2020	$ 2,015
Reporting Basis									CGAAP
Gain on Disposal	-$ 1,402	-$ 26,005					-$ 2,696		

Total	-$ 1,402	-$ 26,005	$ -	$ -	$ -	$ -	-$ 2,696	$ -	$ -

4305 - Regulatory Debits

	2013 Actual[2]	2014 Actual[2]	2015 Actual[2]	2016 Actual[2]	2017 Actual[2]	2018 Actual	Bridge Year	Test Year	CGAAP
	2013	2014	2015	2016	2017	2018	2019	2020	$ 2,015
Reporting Basis									CGAAP
Incremental Pole Rental Revenue - trf to de						$ 38,525	$ 507,989		
Total	$ -	$ -	$ -	$ -	$ -	$ 38,525	$ 507,989	$ -	$ -

4-VECC-27

Question:

Reference: Exhibit 4, Appendix 2-JC & Exhibit 4, Tab 3, Schedule 1, page 2

a) Please explain the increase in Governance from $52k in 2019 to $114.6k in 2020.
b) What study did GSHI rely upon to justify the increase in director fees?

Response:

a) Since the launch of the OEB's policy initiative on governance under EB-2014-0255, GSHI has worked to improve its Board of Directors governance. Following the release of the *Draft Report of the Board - Corporate Governance Guidance for OEB Rate-Regulated Utilities* GSHI hired Elenchus Research Associates (ERA) consultants Cynthia Chapman and Marie Rounding to assist its Board of Directors in understanding where governance practices need to be improved. As a result of this review the Board of Directors has developed a clear Board Mandate, Board Chair Mandate, CEO Performance Mandate, a Skills Matrix for Directors, Terms of Reference and work plans for Board committees.

Subsequent to the work with ERA, the Board and senior staff completed significant governance training developed and delivered by Governance Solutions Inc. The Board of Directors also initiated the practice of completing annual Board self-evaluations and a CEO evaluation. GSHI paid significant attention to improving its governance and in 2019 all GSH Board members and Executive participated in an 8-day Governance training program. The training was approximately $11,000 per board member for a total of $55,000. Also, GSHi was successful in getting its Shareholder to agree to changing the composition of the Board to add 2 independent Directors so that a majority of Directors will now be independent. GSHI's nominating committee is currently receiving applications for these newly created positions.

b) GSHI reviewed the 2019 Survey on Board of Director Compensation for Local Distribution Companies. It was determined that the Directors of GSHi were under compensated as compared to other LDCs. Their compensation was $4,000 per annum with the Board Chair at $6,000 per annum. The current COS application will bring the Board members compensation in line with the rest of the industry at $7,500 and $10,000 per annum respectively.

4-VECC-28 2019 Bad Debt Expense

Question:

Reference: Exhibit 4, Tab 2, Schedule 1, page 7

a) What was the actual bad debt expense in 2019?

Response:

a) The actual bad debt expense in 2019 was $414,592 (this figure is unaudited and subject to adjustment).

4-VECC-29

Question:

Reference: Exhibit 4, Appendix 2-JC

a) What accounts for the large increase in "Miscellaneous Distribution Expenses" as between 2018 and 2020? What was the actual amount of spending in this category in 2019?

Response:

a) The Miscellaneous Distribution Expenses category includes amounts related to the Information Systems and Technology departments' allocations for Operations, Maintenance, Engineering and Stores. Purchasing costs are also included in this category. In 2019 GSHI reclassified costs associated with the training and development of GSHI's operations staff to this category from the payroll burden as it is not directly attributable.

Differences between 2018 and 2020:

- Increase of $108,391 in shared services for information technology. This included an increase in depreciation for hardware and software as well as insurance for cyber security.
- 2020 includes a reallocation of $244,539 related to training and development for its operations staff as discussed above. This variance also captures increased training for trades staff for succession purposes.

The actual amount spent in this category of expenses for 2019 is $755,590.

4-VECC-30 Incremental Monthly Billing Detail

Question:

Reference: Exhibit 4, Tab 3, Schedule 1, page 2

a) Please provide the calculation of the incremental billing costs of $272,000.
b) Please show a comparison as between 2013 and 2019 (year-end) of the number of customers on e-billing and paper billing.

Response:

a) Table 1 below provides the calculation to support the incremental billing costs of $272,000. In summary, GSHi took the amount included in its 2013 COS budget for postage and stationary and inflated it based on the IRM increases GSHi received. GSHi compared that amount to the total costs experienced for the first full year of monthly billing (2017). GSHi also included the incremental labour required for monthly billing (at 50% based on the transfer pricing study).

Incremental Monthly Billing Costs	**A**	**B**	**=A-B**		
		IRM Inflated	Expense in Excess		
	2017 Expense	COS Budget	of COS Budget		
Postage	350,141	178,791	171,350		
Stationary	147,211	84,381	62,829		
	497,352	263,173	234,180	**C**	
		Incremental Labour	37,886	**D**	
		Total Incremental	**272,066**	**=C+D**	
B COS Budget - IRM Increases					
	2013 COS	**2014**	**2015**	**2016**	**2017**
Pro-rated Inflationary Factor **(E)**		0.93%	1.23%	0.38%	1.07%
Postage Budget from 2013 COS **(F)**	172,472	174,082	176,229	176,904	178,791
Stationary Budget from 2013 COS **(G)**	81,399	82,159	83,172	83,491	84,381
(Fx**E)**+(**G**x**E)**	253,871	256,240	259,401	260,395	263,173
E - Prorated Inflationary Factor	**2014**	**2015**	**2016**	**2017**	
Price Escalator	1.70%	1.60%	0.00%	1.90%	
Stretch Factor	0.30%	0.45%	0.00%	0.30%	
Price Cap Index	1.40%	1.15%	0.00%	1.60%	
May 1 Rate (4/12 x Year 1) + (8/12 x Year 2)	**0.93%**	**1.23%**	**0.38%**	**1.07%**	**E**

b) The number of customers on e-billing in 2013 was 744 and in 2019 was 8,666.

4-VECC-31

Question:

Reference: Exhibit 4, Tab 3, Schedule 1, page 5

a) Did GSHI complete a business case for the Innovation-Workshop program?
b) Please confirm (or correct) that the ongoing annual cost of this program is estimated at $378.6k.
c) GSHI notes at Ex4/T4/S1/pg.6 that only a portion of the Innovation Officer is allocated to GSHI. What is the total cost of this program (labour and administration) and what portion of the cost is allocated to GSHI? To whom are the other portions allocated?

Response:

a) GSHi did not complete a formal business case for The Workshop-Innovation program.

The Workshop was initially conceived of as a business development and process improvement vehicle that has since become the hub for digital transformation projects that align with the organization's Innovation Policy. The Policy was approved by GSHi's Board of Directors in recognition of the organization's need to find new ways to add value to customers by meeting their evolving needs, running operations more efficiently, saving on costs, and maintaining a deep understanding of the current energy landscape while also keeping an eye to the future. These actions mirror the expected performance outcomes detailed in the Ontario Energy Board's *Renewed Regulatory Framework for Electricity Distributors: A Performance-Based Approach* (the *RRFE*).[1]

The RRFE is a comprehensive approach to regulation centered on the achievement of four separate but interconnected outcomes that ensure that

[1] Released October 18, 2012

Ontario's electricity system provides value for money for customers. The four RRFE outcomes are as follows:

1. Customer Focus
Services are provided in a manner that responds to identified customer preferences

2. Operational Effectiveness
Continuous improvement in productivity and cost performance achieved; and utilities deliver on system reliability and quality objectives

3. Public Policy Responsiveness
Utilities deliver on obligations mandated by government (e.g., in legislation and in regulatory requirements imposed further to Ministerial directives to the Board)

4. Financial Performance
Financial viability is maintained

GSHi has consistently demonstrated strong alignment between its business practices and the four RRFE outcomes, and its commitment to digital transformation is no exception. Each incremental increase in GSHi's capacity to gather, access, analyze, store and share data across departments elevates the utility in its ability to deliver value to its customers. Ongoing service improvements and significant cost savings will be realized through the identification and implementation of new operational efficiencies and enhanced asset management capabilities. For these reasons, supporting digital transformation projects—key drivers of these improvements—is a priority for GSHi moving forward.

b) GSHi confirms the ongoing annual cost of this program is $378,595.00

c) The Innovation program is 95% allocated to GSHI based on the docket of projects. The remaining costs are allocated to the other affiliates based on the projects that pertain to them.

4-VECC-32 Updated Appendix 2-K

Question:

Reference: Exhibit 4, Tab 4, Schedule 1, page 4

a) Please amend Table 1 (Appendix 2-K) to
   i. Show the actual 2019 amounts
   ii. Show the total amount of compensation capitalized in each year.

Response:

Please see Attachment 1 to this interrogatory response. GSHi notes that its original application submission for this appendix contained a formula error for the 2020 FTE count. Appendix 2K originaly showed a 2020 FTE count of 111 and it should have been 107.

Attachment 1 (of 1):

4-VECC-32 Attachment 1: Updated Appendix 2-K

Updated Appendix 2K with Capital & OM&A Split

	Last Rebasing Year (2013 Board Approved)	Revised for Rebasing Year 2013	Last Rebasing Year (2013 Actuals)	2014 Actuals	2015 Actuals	2016 Actuals	2017 Actuals	2018 Actuals	2019 Bridge Year	2019 Bridge updated	2020 Test Year
Number of Employees (FTEs including Part-Time)[1]											
Management (including executive)	16.3	16.3	14.6	15.4	16.5	17.6	18.1	18.0	17.6	17.9	17.6
Non-Management (union and non-union)	86.2	81.8	79.2	78.5	79.6	81.7	84.3	81.9	87.0	82.8	89.5
Total	102.5	98.1	93.8	93.9	96.1	99.4	102.4	99.9	104.7	100.8	107.1
Total Salary and Wages including ovetime and incentive pay											
Management (including executive)	$ 1,821,045	$ 1,821,045	$ 1,707,454	$ 1,962,963	$ 1,974,270	$ 2,241,687	$ 2,361,673	$ 2,463,787	$ 2,362,824	$ 2,433,555	$ 2,431,457
Non-Management (union and non-union)	$ 6,095,351	$ 5,844,920	$ 6,080,523	$ 6,477,564	$ 6,400,056	$ 6,590,524	$ 6,731,389	$ 6,818,813	$ 7,270,559	$ 6,954,530	$ 7,722,175
Total	$ 7,916,396	$ 7,665,965	$ 7,787,977	$ 8,440,527	$ 8,374,325	$ 8,832,211	$ 9,093,062	$ 9,282,600	$ 9,633,383	$ 9,388,085	$ 10,153,632
Total Benefits (Current + Accrued)											
Management (including executive)	$ 524,621	$ 524,621	$ 478,087	$ 490,741	$ 533,053	$ 605,255	$ 637,652	$ 640,585	$ 614,334	$ 693,563	$ 632,179
Non-Management (union and non-union)	$ 1,944,095	$ 1,881,862	$ 1,702,546	$ 1,619,391	$ 1,728,015	$ 1,779,442	$ 1,817,475	$ 1,772,891	$ 1,890,345	$ 1,982,041	$ 2,007,765
Total	$ 2,468,716	$ 2,406,483	$ 2,180,634	$ 2,110,132	$ 2,261,068	$ 2,384,697	$ 2,455,127	$ 2,413,476	$ 2,504,680	$ 2,675,604	$ 2,639,944
Total Compensation (Salary, Wages, & Benefits)											
Management (including executive)	$ 2,345,666	$ 2,345,665	$ 2,185,541	$ 2,453,704	$ 2,507,322	$ 2,846,942	$ 2,999,325	$ 3,104,371	$ 2,977,158	$ 3,127,118	$ 3,063,636
Non-Management (union and non-union)	$ 8,039,446	$ 7,726,782	$ 7,783,069	$ 8,096,955	$ 8,128,071	$ 8,369,966	$ 8,548,863	$ 8,591,705	$ 9,160,905	$ 8,936,572	$ 9,729,940
Total	$ 10,385,112	$ 10,072,448	$ 9,968,611	$ 10,550,659	$ 10,635,393	$ 11,216,908	$ 11,548,188	$ 11,696,076	$ 12,138,063	$ 12,063,690	$ 12,793,576

Total Employee compensation in Capital			1,771,785.04	1,765,073.28	1,944,950.27	2,018,247.10	2,091,066.78	2,405,917.39		2,226,789.23	2,431,281.00
Total Employee Compensation in OM&A			8,196,825.52	8,785,585.72	8,690,442.81	9,198,660.99	9,457,121.59	9,290,158.68		9,836,900.28	10,362,294.88

4-VECC-33

Question:

Reference: Exhibit 4, Tab 4, Schedule 1, page 7

a) What is the current number of vacancies at GSHI?
b) How many of these vacancies are expected to be filled by or before April 1, 2020?
c) Please identify the position titles that are not expected to be filled prior to April 1, 2020.
d) What is the number of GSHI (allocated) employees who are or will be eligible for non-reduced pension retirement within the next 24 months?

Response:

a) At the end of January 2020 GSHI has 6 vacancies totalling 5.33FTE.

b) GSHI expects 4 of the six positions to be filled or 3.58FTE

c) The Big Data Technician and the Project Management positions are new positions for 2020. GSHI is not expecting to fill these positions prior to the approval of the Cost of Service application.

d) The total number of employee positions who are eligible for non-reduced pension within the next 24 months from GSHI and those allocated to GSHI is 15.623 FTEs.

4-VECC-34

Question:

Reference: Exhibit 4, Tab 4, Schedule 2, page 10

a) What grants or other services does the Grant Writer provide to GSHI as part of the 20% cost allocation of these costs?

Response:

a) The 20% cost allocation to GSHi for the Grant Writer translates to $19,079. As stated in Exhibit 4, Tab 4, Schedule 2, page 10, a significant recent success for the inaugural Grant Writer—hired in 2019—was securing $75,000 from an Ontario Centres of Excellence fund held by a local post-secondary institution to develop and deliver a needed data literacy training program for GSU staff, including GSHi employees.

Following completion of this training, GSHi staff will be better prepared to gather, read and interpret organizational data available to them to make more informed decisions and identify process improvements using the software and digital tools at their disposal. Ultimately, any improvements in service and operational efficiency driven by improved data literacy among GSHi staff will benefit GSHi's customers. The first phase of the program delivery will be implemented in April 2020. In addition to securing funding support for the project, the Grant Writer has also taken on the responsibility of coordinating training delivery logistics and is the primary point of contact between the utility and the post-secondary institution developing the program.

Beyond being a resource to leverage funding opportunities, GSHi has utilized the Grant Writer's unique skillset, which includes strong writing ability, to support special projects. For example, the Grant Writer served as a key member of the team that prepared GSHi's 2020 Cost of Service application. The Grant Writer also served as lead on the identification and articulation of GSU's corporate values,

which has provided GSHi employees with guideposts for decision making.

Moving forward, the Grant Writer has been asked to play a role in exploring the possibility of developing an organization-wide learning management system that will assist GSHi employees in setting goals and achieving career development milestones.

In GSHi's view, these benefits noted above provide excellent value for ratepayers when compared to the low cost.

4-VECC-35

Question:

Reference: Exhibit 4, Tab 4, Schedule 2, page 14, Table 1

a) Please amend Table 1 – GSHI Overtime Hours to include 2019 actuals and 2020-2023 projections.

Response:

a) Please see below for the table updated with the 2020 projection. Please note, GSHi refined its process for extracting this data from its ERP system and provides updated information for the historical period. Based on filing all vacancies, GSHi has budgeted a lower overtime figure for 2020 and expects the following years to be in line with that figure.

Year	Overtime Hours	Cost - Wages only
2013	9,129	$ 617,179
2014	8,806	$ 616,092
2015	8,563	$ 596,656
2016	8,203	$ 590,751
2017	6,947	$ 504,611
2018	10,473	$ 809,164
2019	9,419	$ 719,774
2020 Budget	6,668	$ 601,071

4-VECC-36

Question:

Reference: Exhibit 4, Tab 5, Schedule 1, page 12

Please modify Table 10 to show for each category the percentage of total costs allocated to GSHI (or costs allocated from GSHI) in each of 2013 through 2020 (forecast).

Response:

Preamble:

GSHi would like to note that in its original submission of Exhibit 4 – Tab 5 – Schedule 1 and Exhibit 4 – Tab 5 – Schedule 1 – Attachment 1, and the Chapter 2 Appendix 2-N, GSHi did not include costs related to IT and a few other small amounts in 2013 actuals through 2016 actuals. GSHi has updated Chapter 2 Appendix 2-N for these changes. GSHi also noticed that the 2013 pre-settlement budget was used in its initial submission of Exhibit 4 – Tab 5 – Schedule 1 and Exhibit 4 – Tab 5 – Schedule 1 – Attachment 1, and the Chapter 2 Appendix 2-N. GSHi has updated the Chapter 2 Appendix 2-N for the final post settlement Board Approved Budget figures with this submission. These updates can be found in Attachment 1 of this submission as well as in the Chapter 2 Appendices Live Models included with this submission. GSHi would like to note that this has not changed GSHi's explanation for the variances between the 2020 Test Year vs. 2013 Board Approved or the 2018 Actual vs. 2020 Test Year.

Response:

GSHi has modified Table 10 into separate tables to show for each category the percentage of total costs allocated to GSHi (or costs allocated from GSHi) in

each of 2013 through 2020 (forecast). Please see the tables for each year in Attachment 1 of this submission.

Attachment 1 (of 1):

4-VECC-36 Attachment 1: Appendix 2-N

File Number: EB-2019-0037
Exhibit:
Tab:
Schedule:
Page:

Date:

Appendix 2-N
Shared Services and Corporate Cost Allocation [1]

Year: 2013 Board Approved

Shared Services

Name of Company		Service Offered	Pricing Methodology	% Cost Allocation	Price for the Service	Cost for the Service
From	To				$	$
Affiliate	Greater Sudbury Hydro	Executive/Finance/Communications/Innovation	Time Records	83%	$748,948	$897,724
Affiliate	Greater Sudbury Hydro	Regulatory	No current activities identifiable with affiliates; therefore 100% assigned to Greater Sudbury	100%	$144,339	$144,339
Affiliate	Greater Sudbury Hydro	HR	HR - Directly assigned where possible, number of employees for other costs; 2nd tier allocation to reallocate portionassociated with shared services/	86%	$288,060	$335,463
Affiliate	Greater Sudbury Hydro	Risk Management	97% of costs allocated to Greater Sudbury, based on time records	87%	$244,314	$282,378
Affiliate	Greater Sudbury Hydro	Quality Management	QMS - Costs of the Plus Company directly assigned to Greater Sudbury, as the other affiliates pay for their own programs directly	100%	$155,842	$155,842
Affiliate	Greater Sudbury Hydro	Insurance	Revenue	79%	$214,767	$271,733
Affiliate	Greater Sudbury Hydro	IT	Telephone systems, PCs and ERP, by unweighted number of users; telephone sets by weighted number of users reflecting complexity of the units; systems for customer information and billing by factors related to that function; costs directly assigned where specifically identified with an affiliate or function.	33%	$316,896	$965,425
Affiliate	Greater Sudbury Hydro	Accounts Payable/Payroll/Accounting	AP - Time tracking for activities identifiable with one affiliate; number of invoices for other costs Payroll - Time tracking for activities identifiable with one affiliate number of employees for other costs Accounting - A time estimate for forecast; time records for actual	77%	$773,456	$1,000,220
Affiliate	Greater Sudbury Hydro	Customer Billing and related services	Detailed analysis of each costcomponent, with differen allocation methods, including number of bills, call volumes, number of meters, and space occupied on the shared bill. Direct assignment where applicable.	61%	$1,571,801	$2,595,977
Affiliate	Greater Sudbury Hydro	Any costs of the Plus Company not otherwise allocated	For redistribution of costs which were allocated by other methodologies to the Plus Company. In proportion to the allocation of other costs.	50%	$29,400	$58,800
Affiliate	Greater Sudbury Hydro	Board of Directors	50% cost of two boards, (GSHi and GSU), plus direct assignment of two independent directors	50%	$44,200	$88,400
Affiliate	Greater Sudbury Hydro	Stores/Procurement	Materials Issued/Time record of staff	83%	$568,175	$686,988
Greater Sudbury Hydro	Affiliate	Garage/Fleet Services	Hourly charge out rate based on full cost recovery	12%	$160,000	$1,191,103
Greater Sudbury Hydro	Affiliate	Streetlight Maintenance	Time of staff as recorded in the work order system	100%	$680,000	$680,000
Greater Sudbury Hydro	Affiliate	Building Services and Occupancy Costs	Market Rate applied to square footage	260%	$90,627	$34,798
Greater Sudbury Hydro	Affiliate	Building Services and Occupancy Costs	Cost recovery based on square footage	31%	$307,503	$678,220

Corporate Cost Allocation

Name of Company		Service Offered	Pricing Methodology		Price for the Service	Amount Allocated
From	To				%	$

Year: 2013 Actual

Shared Services

Name of Company		Service Offered	Pricing Methodology	% Cost Allocation	Price for the Service	Cost for the Service
From	To				$	$
Affiliate	Greater Sudbury Hydro	Executive/Finance/Communications/Innovation	Time Records	83%	$590,981	$709,835
Affiliate	Greater Sudbury Hydro	Regulatory	No current activities identifiable with affiliates; therefore 100% assigned to Greater Sudbury	100%	$152,403	$152,403
Affiliate	Greater Sudbury Hydro	HR	HR - Directly assigned where possible, number of employees for other costs; 2nd tier allocation to reallocate portionassociated with shared services/	84%	$206,278	$245,569
Affiliate	Greater Sudbury Hydro	Risk Management	97% of costs allocated to Greater Sudbury, based on time records	85%	$241,761	$283,733
Affiliate	Greater Sudbury Hydro	Quality Management	QMS - Costs of the Plus Company directly assigned to Greater Sudbury, as the other affiliates pay for their own programs directly	100%	$128,830	$128,830
Affiliate	Greater Sudbury Hydro	Insurance	Revenue	79%	$214,767	$271,733
Affiliate	Greater Sudbury Hydro	IT	Telephone systems, PCs and ERP, by unweighted number of users; telephone sets by weighted number of users reflecting complexity of the units; systems for customer information and billing by factors related to that function; costs directly assigned where specifically identified with an affiliate or function.	46%	$435,302	$956,502
Affiliate	Greater Sudbury Hydro	Accounts Payable/Payroll/Accounting	AP - Time tracking for activities identifiable with one affiliate; number of invoices for other costs Payroll - Time tracking for activities identifiable with one affiliate number of employees for other costs Accounting - A time estimate for forecast; time records for actual	75%	$630,090	$839,231
Affiliate	Greater Sudbury Hydro	Customer Billing and related services	Detailed analysis of each costcomponent, with differen allocation methods, including number of bills, call volumes, number of meters, and space occupied on the shared bill. Direct assignment where applicable.	63%	$1,517,288	$2,420,803
Affiliate	Greater Sudbury Hydro	Any costs of the Plus Company not otherwise allocated	For redistribution of costs which were allocated by other methodologies to the Plus Company. In proportion to the allocation of other costs.	59%	$9,959	$16,801
Affiliate	Greater Sudbury Hydro	Board of Directors	50% cost of two boards, (GSHi and GSU), plus direct assignment of two independent directors	50%	$36,334	$72,667
Affiliate	Greater Sudbury Hydro	Stores/Procurement	Materials Issued/Time record of staff	93%	$334,691	$359,427
Greater Sudbury Hydro	Affiliate	Garage/Fleet Services	Hourly charge out rate based on full cost recovery	93%	$97,387	$1,310,440
Greater Sudbury Hydro	Affiliate	Streetlight Maintenance	Time of staff as recorded in the work order system	100%	$473,038	$473,038
Greater Sudbury Hydro	Affiliate	Building Services and Occupancy Costs	Market Rate applied to square footage	276%	$90,627	$32,855
Greater Sudbury Hydro	Affiliate	Building Services and Occupancy Costs	Cost recovery based on square footage	82%	$119,904	$665,341

Corporate Cost Allocation

Name of Company		Service Offered	Pricing Methodology		Price for the Service	Cost for the Service
From	To				%	$

Year: 2014 Actual

Shared Services

Name of Company		Service Offered	Pricing Methodology	% Cost Allocation	Price for the Service	Cost for the Service
From	To				$	$
Affiliate	Greater Sudbury Hydro	Executive/Finance/Communications/Innovation	Time Records	87%	$663,490	$765,976
Affiliate	Greater Sudbury Hydro	Regulatory	No current activities identifiable with affiliates; therefore 100% assigned to Greater Sudbury	100%	$128,923	$128,923
Affiliate	Greater Sudbury Hydro	HR	HR - Directly assigned where possible, number of employees for other costs; 2nd tier allocation to reallocate portionassociated with shared services/	84%	$195,967	$233,294
Affiliate	Greater Sudbury Hydro	Risk Management	97% of costs allocated to Greater Sudbury, based on time records	98%	$302,013	$308,491
Affiliate	Greater Sudbury Hydro	Quality Management	QMS - Costs of the Plus Company directly assigned to Greater Sudbury, as the other affiliates pay for their own programs directly	100%	$140,822	$140,822
Affiliate	Greater Sudbury Hydro	Insurance	Revenue	76%	$224,083	$295,475
Affiliate	Greater Sudbury Hydro	IT	Telephone systems, PCs and ERP, by unweighted number of users; telephone sets by weighted number of users reflecting complexity of the units; systems for customer information and billing by factors related to that function; costs directly assigned where specifically identified with an affiliate or function.	46%	$438,485	$953,002
Affiliate	Greater Sudbury Hydro	Accounts Payable/Payroll/Accounting	AP - Time tracking for activities identifiable with one affiliate; number of invoices for other costs Payroll - Time tracking for activities identifiable with one affiliate number of employees for other costs Accounting - A time estimate for forecast; time records for actual	79%	$659,493	$830,221
Affiliate	Greater Sudbury Hydro	Customer Billing and related services	Detailed analysis of each costcomponent, with differen allocation methods, including number of bills, call volumes, number of meters, and space occupied on the shared bill. Direct assignment where applicable.	78%	$1,688,936	$2,175,005
Affiliate	Greater Sudbury Hydro	Any costs of the Plus Company not otherwise allocated	For redistribution of costs which were allocated by other methodologies to the Plus Company. In proportion to the allocation of other costs.	91%	$28,664	$31,441
Affiliate	Greater Sudbury Hydro	Board of Directors	50% cost of two boards, (GSHi and GSU), plus direct assignment of two independent directors	50%	$32,593	$65,187
Affiliate	Greater Sudbury Hydro	Stores/Procurement	Materials Issued/Time record of staff	90%	$313,416	$347,815
Greater Sudbury Hydro	Affiliate	Garage/Fleet Services	Hourly charge out rate based on full cost recovery	95%	$49,275	$963,454
Greater Sudbury Hydro	Affiliate	Streetlight Maintenance	Time of staff as recorded in the work order system	100%	$332,352	$332,352
Greater Sudbury Hydro	Affiliate	Building Services and Occupancy Costs	Market Rate applied to square footage	280%	$90,627	$32,324
Greater Sudbury Hydro	Affiliate	Building Services and Occupancy Costs	Cost recovery based on square footage	83%	$117,967	$688,540

Corporate Cost Allocation

Name of Company		Service Offered	Pricing Methodology		Price for the Service	Cost for the Service
From	To				%	$

Year: 2015 Actual

Shared Services

Name of Company		Service Offered	Pricing Methodology	% Cost Allocation	Price for the Service	Cost for the Service
From	To				$	$
Affiliate	Greater Sudbury Hydro	Executive/Finance/Communications/Innovation	Time Records	83%	$848,144	$1,028,005
Affiliate	Greater Sudbury Hydro	Regulatory	No current activities identifiable with affiliates; therefore 100% assigned to Greater Sudbury	100%	$149,384	$149,384
Affiliate	Greater Sudbury Hydro	HR	HR - Directly assigned where possible, number of employees for other costs; 2nd tier allocation to reallocate portionassociated with shared services/	84%	$270,254	$321,731
Affiliate	Greater Sudbury Hydro	Risk Management	97% of costs allocated to Greater Sudbury, based on time records	99%	$238,347	$240,868
Affiliate	Greater Sudbury Hydro	Quality Management	QMS - Costs of the Plus Company directly assigned to Greater Sudbury, as the other affiliates pay for their own programs directly	100%	$131,659	$131,659
Affiliate	Greater Sudbury Hydro	Insurance	Revenue	91%	$234,618	$259,150
Affiliate	Greater Sudbury Hydro	IT	Telephone systems, PCs and ERP, by unweighted number of users; telephone sets by weighted number of users reflecting complexity of the units; systems for customer information and billing by factors related to that function; costs directly assigned where specifically identified with an affiliate or function.	47%	$484,699	$1,022,493
Affiliate	Greater Sudbury Hydro	Accounts Payable/Payroll/Accounting	AP - Time tracking for activities identifiable with one affiliate; number of invoices for other costs Payroll - Time tracking for activities identifiable with one affiliate number of employees for other costs Accounting - A time estimate for forecast; time records for actual	76%	$745,077	$974,196
Affiliate	Greater Sudbury Hydro	Customer Billing and related services	Detailed analysis of each costcomponent, with differen allocation methods, including number of bills, call volumes, number of meters, and space occupied on the shared bill. Direct assignment where applicable.	79%	$1,894,586	$2,402,748
Affiliate	Greater Sudbury Hydro	Any costs of the Plus Company not otherwise allocated	For redistribution of costs which were allocated by other methodologies to the Plus Company. In proportion to the allocation of other costs.	0%	$0	$8,682
Affiliate	Greater Sudbury Hydro	Board of Directors	50% cost of two boards, (GSHi and GSU), plus direct assignment of two independent directors	50%	$29,769	$59,848
Affiliate	Greater Sudbury Hydro	Stores/Procurement	Materials Issued/Time record of staff	100%	$381,610	$381,610
Greater Sudbury Hydro	Affiliate	Garage/Fleet Services	Hourly charge out rate based on full cost recovery	94%	$65,876	$1,113,917
Greater Sudbury Hydro	Affiliate	Streetlight Maintenance	Time of staff as recorded in the work order system	100%	$414,682	$414,682
Greater Sudbury Hydro	Affiliate	Building Services and Occupancy Costs	Market Rate applied to square footage	87%	$90,627	$103,759
Greater Sudbury Hydro	Affiliate	Building Services and Occupancy Costs	Cost recovery based on square footage	48%	$354,639	$686,914

Corporate Cost Allocation

Name of Company		Service Offered	Pricing Methodology		Price for the Service	Cost for the Service
From	To				%	$

Year: 2016 Actual

Shared Services

Name of Company		Service Offered	Pricing Methodology	% Cost Allocation	Price for the Service	Cost for the Service
From	To				$	$
Affiliate	Greater Sudbury Hydro	Executive/Finance/Communications/Innovation	Time Records	78%	$1,016,646	$1,300,620
Affiliate	Greater Sudbury Hydro	Regulatory	No current activities identifiable with affiliates; therefore 100% assigned to Greater Sudbury	100%	$200,011	$200,011
Affiliate	Greater Sudbury Hydro	HR	HR - Directly assigned where possible, number of employees for other costs; 2nd tier allocation to reallocate portionassociated with shared services/	86%	$334,749	$389,832
Affiliate	Greater Sudbury Hydro	Risk Management	97% of costs allocated to Greater Sudbury, based on time records	97%	$233,641	$240,868
Affiliate	Greater Sudbury Hydro	Quality Management	QMS - Costs of the Plus Company directly assigned to Greater Sudbury, as the other affiliates pay for their own programs directly	100%	$150,826	$150,826
Affiliate	Greater Sudbury Hydro	Insurance	Revenue	79%	$225,367	$285,098
Affiliate	Greater Sudbury Hydro	IT	Telephone systems, PCs and ERP, by unweighted number of users; telephone sets by weighted number of users reflecting complexity of the units; systems for customer information and billing by factors related to that function; costs directly assigned where specifically identified with an affiliate or function.	47%	$464,252	$991,138
Affiliate	Greater Sudbury Hydro	Accounts Payable/Payroll/Accounting	AP - Time tracking for activities identifiable with one affiliate; number of invoices for other costs Payroll - Time tracking for activities identifiable with one affiliate number of employees for other costs Accounting - A time estimate for forecast; time records for actual	78%	$682,969	$877,018
Affiliate	Greater Sudbury Hydro	Customer Billing and related services	Detailed analysis of each costcomponent, with differen allocation methods, including number of bills, call volumes, number of meters, and space occupied on the shared bill. Direct assignment where applicable.	82%	$1,928,911	$2,366,183
Affiliate	Greater Sudbury Hydro	Any costs of the Plus Company not otherwise allocated	For redistribution of costs which were allocated by other methodologies to the Plus Company. In proportion to the allocation of other costs.	72%	$16,943	$23,607
Affiliate	Greater Sudbury Hydro	Board of Directors	50% cost of two boards, (GSHi and GSU), plus direct assignment of two independent directors	50%	$28,764	$57,529
Affiliate	Greater Sudbury Hydro	Stores/Procurement	Materials Issued/Time record of staff	91%	$433,464	$476,540
Greater Sudbury Hydro	Affiliate	Garage/Fleet Services	Hourly charge out rate based on full cost recovery	93%	$78,488	$1,191,749
Greater Sudbury Hydro	Affiliate	Streetlight Maintenance	Time of staff as recorded in the work order system	100%	$484,459	$484,459
Greater Sudbury Hydro	Affiliate	Building Services and Occupancy Costs	Market Rate applied to square footage	278%	$61,234	$22,025
Greater Sudbury Hydro	Affiliate	Building Services and Occupancy Costs	Cost recovery based on square footage	77%	$189,399	$826,877

Year: 2017 Actual

Shared Services

Name of Company		Service Offered	Pricing Methodology	% Cost Allocation	Price for the Service	Cost for the Service
From	To				$	$
Affiliate	Greater Sudbury Hydro	Executive/Finance/Communications/Innovation	Time Records	83%	$1,087,083	$1,304,397
Affiliate	Greater Sudbury Hydro	Regulatory	No current activities identifiable with affiliates; therefore 100% assigned to Greater Sudbury	100%	$257,177	$257,177
Affiliate	Greater Sudbury Hydro	HR	HR - Directly assigned where possible, number of employees for other costs; 2nd tier allocation to reallocate portionassociated with shared services/	89%	$354,869	$398,730
Affiliate	Greater Sudbury Hydro	Risk Management	97% of costs allocated to Greater Sudbury, based on time records	98%	$262,107	$266,640
Affiliate	Greater Sudbury Hydro	Quality Management	QMS - Costs of the Plus Company directly assigned to Greater Sudbury, as the other affiliates pay for their own programs directly	100%	$127,692	$127,692
Affiliate	Greater Sudbury Hydro	Insurance	Revenue	81%	$225,217	$279,471
Affiliate	Greater Sudbury Hydro	IT	Telephone systems, PCs and ERP, by unweighted number of users; telephone sets by weighted number of users reflecting complexity of the units; systems for customer information and billing by factors related to that function; costs directly assigned where specifically identified with an affiliate or function.	48%	$498,270	$1,030,362
Affiliate	Greater Sudbury Hydro	Accounts Payable/Payroll/Accounting	AP - Time tracking for activities identifiable with one affiliate; number of invoices for other costs Payroll - Time tracking for activities identifiable with one affiliate number of employees for other costs Accounting - A time estimate for forecast; time records for actual	54%	$373,787	$695,541
Affiliate	Greater Sudbury Hydro	Customer Billing and related services	Detailed analysis of each costcomponent, with differen allocation methods, including number of bills, call volumes, number of meters, and space occupied on the shared bill. Direct assignment where applicable.	75%	$2,073,049	$2,761,191
Affiliate	Greater Sudbury Hydro	Any costs of the Plus Company not otherwise allocated	For redistribution of costs which were allocated by other methodologies to the Plus Company. In proportion to the allocation of other costs.	86%	$50,033	$58,045
Affiliate	Greater Sudbury Hydro	Board of Directors	50% cost of two boards, (GSHi and GSU), plus direct assignment of two independent directors	56%	$35,251	$63,474
Affiliate	Greater Sudbury Hydro	Stores/Procurement	Materials Issued/Time record of staff	92%	$476,299	$518,848
Greater Sudbury Hydro	Affiliate	Garage/Fleet Services	Hourly charge out rate based on full cost recovery	92%	$91,752	$1,128,205
Greater Sudbury Hydro	Affiliate	Streetlight Maintenance	Time of staff as recorded in the work order system	100%	$503,246	$503,246
Greater Sudbury Hydro	Affiliate	Building Services and Occupancy Costs	Market Rate applied to square footage	327%	$59,807	$18,309
Sudbury Hydro	Affiliate	Occupancy Costs	Cost recovery based on square footage	84%	$109,606	$701,013

Corporate Cost Allocation

Name of Company		Service Offered	Pricing Methodology		Price for the Service	Cost for the Service
From	To				%	$

Year: 2018 Actual

Shared Services

Name of Company		Service Offered	Pricing Methodology	% Cost Allocation	Price for the Service	Cost for the Service
From	To				$	$
Affiliate	Greater Sudbury Hydro	Executive/Finance/Communications/Innovation	Time Records	83%	$1,080,877	$1,300,485
Affiliate	Greater Sudbury Hydro	Regulatory	No current activities identifiable with affiliates; therefore 100% assigned to Greater Sudbury	100%	$253,456	$253,456
Affiliate	Greater Sudbury Hydro	HR	HR - Directly assigned where possible, number of employees for other costs; 2nd tier allocation to reallocate portionassociated with shared services/	89%	$334,947	$376,345
Affiliate	Greater Sudbury Hydro	Risk Management	97% of costs allocated to Greater Sudbury, based on time records	98%	$336,231	$341,999
Affiliate	Greater Sudbury Hydro	Quality Management	QMS - Costs of the Plus Company directly assigned to Greater Sudbury, as the other affiliates pay for their own programs directly	100%	$126,387	$126,387
Affiliate	Greater Sudbury Hydro	Insurance	Revenue	81%	$208,255	$258,552
Affiliate	Greater Sudbury Hydro	IT	Telephone systems, PCs and ERP, by unweighted number of users; telephone sets by weighted number of users reflecting complexity of the units; systems for customer information and billing by factors related to that function; costs directly assigned where specifically identified with an affiliate or function.	48%	$546,047	$1,138,785
Affiliate	Greater Sudbury Hydro	Accounts Payable/Payroll/Accounting	AP - Time tracking for activities identifiable with one affiliate; number of invoices for other costs Payroll - Time tracking for activities identifiable with one affiliate number of employees for other costs Accounting - A time estimate for forecast; time records for actual	54%	$336,708	$626,129
Affiliate	Greater Sudbury Hydro	Customer Billing and related services	Detailed analysis of each costcomponent, with differen allocation methods, including number of bills, call volumes, number of meters, and space occupied on the shared bill. Direct assignment where applicable.	75%	$2,130,734	$2,850,615
Affiliate	Greater Sudbury Hydro	Any costs of the Plus Company not otherwise allocated	For redistribution of costs which were allocated by other methodologies to the Plus Company. In proportion to the allocation of other costs.	94%	$88,110	$93,437
Affiliate	Greater Sudbury Hydro	Board of Directors	50% cost of two boards, (GSHi and GSU), plus direct assignment of two independent directors	56%	$50,230	$90,414
Affiliate	Greater Sudbury Hydro	Stores/Procurement	Materials Issued/Time record of staff	93%	$474,928	$512,900
Greater Sudbury Hydro	Affiliate	Garage/Fleet Services	Hourly charge out rate based on full cost recovery	92%	$101,083	$1,208,358
Greater Sudbury Hydro	Affiliate	Streetlight Maintenance	Time of staff as recorded in the work order system	100%	$483,837	$483,837
Greater Sudbury Hydro	Affiliate	Building Services and Occupancy Costs	Market Rate applied to square footage	277%	$59,807	$21,558
Greater	Affiliate	Building Services and	Cost recovery based on square footage	82%	$144,563	$822,329

Corporate Cost Allocation

Name of Company		Service Offered	Pricing Methodology		Price for the Service	Cost for the Service
From	To				%	$

Year: 2019 Bridge

Shared Services

Name of Company		Service Offered	Pricing Methodology	% Cost Allocation	Price for the Service	Cost for the Service
From	To				$	$
Affiliate	Greater Sudbury Hydro	Executive/Finance/Communications/Innovation	Time Records	75%	$1,184,661	$1,571,440
Affiliate	Greater Sudbury Hydro	Regulatory	No current activities identifiable with affiliates; therefore 100% assigned to Greater Sudbury	100%	$284,117	$284,117
Affiliate	Greater Sudbury Hydro	HR	HR - Directly assigned where possible, number of employees for other costs; 2nd tier allocation to reallocate portionassociated with shared services/	77%	$363,748	$474,547
Affiliate	Greater Sudbury Hydro	Risk Management	97% of costs allocated to Greater Sudbury, based on time records	98%	$268,142	$272,780
Affiliate	Greater Sudbury Hydro	Quality Management	QMS - Costs of the Plus Company directly assigned to Greater Sudbury, as the other affiliates pay for their own programs directly	100%	$127,126	$127,126
Affiliate	Greater Sudbury Hydro	Insurance	Revenue	79%	$212,120	$268,638
Affiliate	Greater Sudbury Hydro	IT	Telephone systems, PCs and ERP, by unweighted number of users; telephone sets by weighted number of users reflecting complexity of the units; systems for customer information and billing by factors related to that function; costs directly assigned where specifically identified with an affiliate or function.	41%	$500,740	$1,215,446
Affiliate	Greater Sudbury Hydro	Accounts Payable/Payroll/Accounting	AP - Time tracking for activities identifiable with one affiliate; number of invoices for other costs Payroll - Time tracking for activities identifiable with one affiliate number of employees for other costs Accounting - A time estimate for forecast; time records for actual	54%	$342,260	$635,813
Affiliate	Greater Sudbury Hydro	Customer Billing and related services	Detailed analysis of each costcomponent, with differen allocation methods, including number of bills, call volumes, number of meters, and space occupied on the shared bill. Direct assignment where applicable.	75%	$2,152,088	$2,869,852
Affiliate	Greater Sudbury Hydro	Any costs of the Plus Company not otherwise allocated	For redistribution of costs which were allocated by other methodologies to the Plus Company. In proportion to the allocation of other costs.	96%	$174,124	$181,794
Affiliate	Greater Sudbury Hydro	Board of Directors	50% cost of two boards, (GSHi and GSU), plus direct assignment of two independent directors	56%	$97,678	$175,821
Affiliate	Greater Sudbury Hydro	Stores/Procurement	Materials Issued/Time record of staff	92%	$493,513	$535,428
Greater Sudbury Hydro	Affiliate	Garage/Fleet Services	Hourly charge out rate based on full cost recovery	90%	$138,399	$1,379,939
Greater Sudbury Hydro	Affiliate	Streetlight Maintenance	Time of staff as recorded in the work order system	100%	$449,755	$449,755
Greater Sudbury Hydro	Affiliate	Building Services and Occupancy Costs	Market Rate applied to square footage	309%	$61,235	$19,798
Greater Sudbury Hydro	Affiliate	Building Services and Occupancy Costs	Cost recovery based on square footage	82%	$135,794	$772,101

Corporate Cost Allocation

Name of Company		Service Offered	Pricing Methodology		Price for the Service	Cost for the Service
From	To				%	$

Year: 2020 Test

Shared Services

Name of Company		Service Offered	Pricing Methodology	% Cost Allocation	Price for the Service	Cost for the Service
From	To				$	$
Affiliate	Greater Sudbury Hydro	Executive/Finance/Communications/Innovation	Time Records	75%	$1,539,617	$2,039,769
Affiliate	Greater Sudbury Hydro	Regulatory	No current activities identifiable with affiliates; therefore 100% assigned to Greater Sudbury	100%	$285,986	$285,986
Affiliate	Greater Sudbury Hydro	HR	HR - Directly assigned where possible, number of employees for other costs; 2nd tier allocation to reallocate portionassociated with shared services/	74%	$355,076	$479,832
Affiliate	Greater Sudbury Hydro	Risk Management	97% of costs allocated to Greater Sudbury, based on time records	98%	$380,388	$386,966
Affiliate	Greater Sudbury Hydro	Quality Management	QMS - Costs of the Plus Company directly assigned to Greater Sudbury, as the other affiliates pay for their own programs directly	100%	$117,494	$117,494
Affiliate	Greater Sudbury Hydro	Insurance	Revenue	80%	$211,901	$264,519
Affiliate	Greater Sudbury Hydro	IT	Telephone systems, PCs and ERP, by unweighted number of users; telephone sets by weighted number of users reflecting complexity of the units; systems for customer information and billing by factors related to that function; costs directly assigned where specifically identified with an affiliate or function.	51%	$721,563	$1,401,140
Affiliate	Greater Sudbury Hydro	Accounts Payable/Payroll/Accounting	AP - Time tracking for activities identifiable with one affiliate; number of invoices for other costs Payroll - Time tracking for activities identifiable with one affiliate number of employees for other costs Accounting - A time estimate for forecast; time records for actual	54%	$392,144	$729,272
Affiliate	Greater Sudbury Hydro	Customer Billing and related services	Detailed analysis of each costcomponent, with differen allocation methods, including number of bills, call volumes, number of meters, and space occupied on the shared bill. Direct assignment where applicable.	76%	$2,455,443	$3,228,782
Affiliate	Greater Sudbury Hydro	Any costs of the Plus Company not otherwise allocated	For redistribution of costs which were allocated by other methodologies to the Plus Company. In proportion to the allocation of other costs.	91%	$128,628	$141,641
Affiliate	Greater Sudbury Hydro	Board of Directors	50% cost of two boards, (GSHi and GSU), plus direct assignment of two independent directors	50%	$109,675	$219,350
Affiliate	Greater Sudbury Hydro	Stores/Procurement	Materials Issued/Time record of staff	91%	$527,359	$580,080
Greater Sudbury Hydro	Affiliate	Garage/Fleet Services	Hourly charge out rate based on full cost recovery	92%	$104,738	$1,347,616
Greater Sudbury Hydro	Affiliate	Streetlight Maintenance	Time of staff as recorded in the work order system	100%	$441,246	$441,246
Greater Sudbury Hydro	Affiliate	Building Services and Occupancy Costs	Market Rate applied to square footage	309%	$61,235	$19,798
Greater Sudbury Hydro	Affiliate	Building Services and Occupancy Costs	Cost recovery based on square footage	82%	$132,773	$755,178

Corporate Cost Allocation

Name of Company		Service Offered	Pricing Methodology		Price for the Service	Cost for the Service
From	To				%	$

Year: Variance Analysis

Shared Services

Name of Company		Service Offered	Pricing Methodology	2013 Board Approved (BA)	2020 Test Year	Variance 2020/2013 BA		2018 Actual	2020 Test Year	Variance 2018/2020 Test	
From	To			$		%	$	$	$	%	$
Affiliate	Greater Sudbury Hydro	Executive/Finance/Communications/Innovation	Time Records	748,948	1,539,617	106%	790,669	$1,080,877	1,539,617	42%	458,740
Affiliate	Greater Sudbury Hydro	Regulatory	No current activities identifiable with affiliates; therefore 100% assigned to Greater Sudbury	144,339	285,986	98%	141,647	$253,456	285,986	13%	32,530
Affiliate	Greater Sudbury Hydro	HR	HR - Directly assigned where possible, number of employees for other costs; 2nd tier allocation to reallocate portionassociated with shared services/	288,060	355,076	23%	67,016	$334,947	355,076	6%	20,129
Affiliate	Greater Sudbury Hydro	Risk Management	97% of costs allocated to Greater Sudbury, based on time records	244,314	380,388	56%	136,074	$336,231	380,388	13%	44,157
Affiliate	Greater Sudbury Hydro	Quality Management	QMS - Costs of the Plus Company directly assigned to Greater Sudbury, as the other affiliates pay for their own programs directly	155,842	117,494	-25%	(38,348)	$126,387	117,494	-7%	(8,893)
Affiliate	Greater Sudbury Hydro	Insurance	Revenue	214,767	211,901	-1%	(2,866)	$208,255	211,901	2%	3,646
Affiliate	Greater Sudbury Hydro	IT	Telephone systems, PCs and ERP, by unweighted number of users; telephone sets by weighted number of users reflecting complexity of the units; systems for customer information and billing by factors related to that function; costs directly assigned where specifically identified with an affiliate or function.	316,896	721,563	128%	404,667	$546,047	721,563	32%	175,516
Affiliate	Greater Sudbury Hydro	Accounts Payable/Payroll/Accounting	AP - Time tracking for activities identifiable with one affiliate; number of invoices for other costs Payroll - Time tracking for activities identifiable with one affiliate number of employees for other costs Accounting - A time estimate for forecast; time records for actual	773,456	392,144	-49%	(381,312)	$336,708	392,144	16%	55,436
Affiliate	Greater Sudbury Hydro	Customer Billing and related services	Detailed analysis of each costcomponent, with differen allocation methods, including number of bills, call volumes, number of meters, and space occupied on the shared bill. Direct assignment where applicable.	1,571,801	2,455,443	56%	883,642	$2,130,734	2,455,443	15%	324,709
Affiliate	Greater Sudbury Hydro	Any costs of the Plus Company not otherwise allocated	For redistribution of costs which were allocated by other methodologies to the Plus Company. In proportion to the allocation of other costs.	29,400	128,628	338%	99,228	$88,110	128,628	46%	40,518
Affiliate	Greater Sudbury Hydro	Board of Directors	50% cost of two boards, (GSHi and GSU), plus direct assignment of two independent directors	44,200	109,675	148%	65,475	$50,230	109,675	118%	59,445
Affiliate	Greater Sudbury Hydro	Stores/Procurement	Materials Issued/Time record of staff	568,175	527,359	-7%	(40,816)	$474,928	527,359	11%	52,431
Greater Sudbury Hydro	Affiliate	Garage/Fleet Services	Hourly charge out rate based on full cost recovery	160,000	104,738	-35%	(55,262)	$101,083	104,738	4%	3,655
Greater Sudbury Hydro	Affiliate	Streetlight Maintenance	Time of staff as recorded in the work order system	680,000	441,246	-35%	(238,754)	$483,837	441,246	-9%	(42,591)
Greater Sudbury Hydro	Affiliate	Building Services and Occupancy Costs	Market Rate applied to square footage	90,627	61,235	-32%	(29,393)	$59,807	61,235	2%	1,428
Greater Sudbury Hydro	Affiliate	Building Services and Occupancy Costs	Cost recovery based on square footage	307,503	132,773	-57%	(174,730)	$144,563	132,773	-8%	(11,790)

Corporate Cost Allocation

Name of Company		Service Offered	Pricing Methodology		Costs Allocated	Amount Allocated
From	To				%	$

Note:

1 **This appendix must be completed in relation to each service provided or received for the Historical (actuals), Bridge and Test years. The required information includes:**

- ***Type of Service:***

Services such as billing, accounting, payroll, etc. The applicant must identify any costs related to the Board of Directors of the parent

- ***Pricing Methodology:***

Pricing Methodology includes approaches such as cost-base, market-base, tendering, etc. The applicant must provide evidence

- **% *Allocation:***

The applicant must provide the percentage of the costs allocated to the entity for the service being offered. The Applicant must also provide

4-VECC-37

Question:

Reference: Exhibit 4, Tab 5, Schedule 1, page 15

a) Are the GSHI and GSU Board of Directors composed of the same members?

b) What is the total compensation provided to each director annually (including chair) and what portion of this cost is allocated to GSHI?

Response:

a) The same three municipal councillors sit on both the GSU and the GSHi Boards of Directors. The independent citizen members are different in each board. Currently there are 2 independent directors on the GSHI board. As per the OEB best practices listed in Section 2.2 of *Report of the OEB Best Practices regarding Governance of OEB Rate-Regulated Utilties EB-2014-0255*, GSHi and GSU will be increasing the number independent citizen directors to 4. The Board's nominating committee is receiving applications for these 2 newly created independent directors and the new directors are expected to be in place in late April or early May 2020. Once these positions are filled there will be a majority of independent directors on the GSHI Board of Directors.

b)

Board Compensation			
	2019 and previous		2020
Chair	6,000 per annum		10,000 per annum
	$250/4 hours per diem		$300/4 hours per diem
	expense reimbursement		expense reimbursement
Director	$4,000 per annum		$7,500 per annum
	$250/4 hours per diem		$300/4 hours per diem
	expense reimbursement		expense reimbursement
1 Chair	$ 6,000.00		$ 10,000.00
6 directors total for both boards	$ 24,000.00		$ 45,000.00
estimated per diems	$ 40,000.00		$ 45,000.00
4 new additional directors			$ 30,000.00
total for annual fees	$ 70,000.00		$ 130,000.00
50% to GSHI	$ 35,000.00		$ 65,000.00

1

4-VECC-38 Historical Taxes Paid

Question:

Reference: Exhibit 4, Tab 9, Schedule 1

a) Please provide a table showing the actual PILs paid in each of 2013 through 2019.

Response:

Please see the requested table below. Please note this is summarized on a cash basis by year.

Year	Actual PILs Paid (Refunded)
2013	1,037,865.00
2014	480,757.00
2015	(92,523.31)
2016	618,675.96
2017	304,030.62
2018	239,839.00
2019	191,332.06

5-VECC-39 Promissory Note

Question:

Reference: Exhibit 5, Tab , Schedule 2

"In October 2019, GSHi issued a promissory note to its parent company, GSU, in the amount of $3,250,000. This debt has a variable rate that matches the Board's deemed long-term debt rate as amended from time to time."

a) GSHI is required to act prudently and to seek to find the most cost-effective means of financing its long-term debt. Please explain what due diligence GSHI did to do this and how it satisfied itself that issuing a promissory note of $3.35 million with its affiliate was the cheapest option.
b) Please provide the Board of Director motion and approval of this debt plan.
c) Please explain what projects the $3.25 million raised is meant to address.
d) Who are the counter signatures to the Promissory Note shown at Attachment 2 (of 4)?
e) Please show the transaction which transferred the funds to GSHI.

Response:

a) The Ontario Energy Board issued its 2019 Cost of Capital Parameters in a letter dated November 22, 2018. In this letter, the Board published a deemed long-term debt rate of 4.13%. The letter states: *"The OEB considers the cost of capital parameter values shown in the above table, and the relationships between them, to be reasonable and representative of market conditions at this time."* GSHi considers the OEB's published long-term debt rate in effect at a given time to be a fair rate on which to establish long-term debt.

Furthermore, GSHi included the following provision in the Affiliated Promissory Note: "*… which interest rate will be automatically amended from time to time to be consistent with any interest rate approved by the Ontario Energy Board ("OEB") in connection with the then current decision and order issued by the OEB approving the electricity distribution rates that WiresCo is permitted to recover."* This provision was included to ensure that the Affiliated debt agreement interest rate be adjusted to the most current deemed rate in a rate proceeding, to match the most current market rate as published by the OEB.

At the time of submission of these interrogatory responses, GSHi is actively investigating the arranging of third-party debt financing. In doing so, GSHi would endeavor to replace the $3,250,000 of Affiliated Debt entered into in October 2019 with third party debt. GSHi estimates that $5,500,000 in external debt will be arranged by April 1, 2020 at a rate of 2.42%. As terms have not been finalized, these are provided as placeholder figures only and are subject to change. This differs from the debt structure proposed in the initial application. As such, GSHi submits as part of these interrogatory responses an updated Chapter 2 Appendix 2-OB.

b) The Affiliated debt agreement was approved by the VP Corporate Services and CFO (Catherine Huneault) and the VP of Engineering and Operations (Kerry Taylor). This debt plan was presented for information purposes to the Board of Directors at a Greater Sudbury Utilities Inc. meeting held on October 28th, 2019. The Board of Directors for Greater Sudbury Utilities Inc and Greater Sudbury Hydro Inc share common Directors. All Directors for both Boards were present.

c) As per its audited financial statements, GSHi had bank indebtedness of $5.5M at December 31, 2018 (see Exhibit 1, Tab 8, Schedule 1, Attachment 4 of the initial application). GSHi operated throughout 2018 and 2019 in a cash deficit position, with the net deficit amount fluctuating month-to-month. By entering into the Affiliated Debt agreement of $3.25M, GSHi formalized an affiliated debt loan agreement to alleviate cash balance and cash flow pressures. GSHi did not attribute the $3.25M raised to specific projects, but the funds could be attributed to general capital spending in 2018 and 2019.

d) The Affiliated debt agreement was approved by the VP Corporate Services and CFO (Catherine Huneault) and the VP of Engineering and Operations (Kerry Taylor).

e) Please see Attachment 1 to this interrogatory response.

Attachment 1 (of 1):

5--39 Attachment 1: Transfer of Affiliated Funds

GROUP NUMBER : 04028 move to LT Due to/from
ACCOUNTING PERIOD: 2019/10
GROUP USER ID : SUDBOJC
GROUP CREATED BY : SUDBOJC
GROUP UPDATED BY : SUDBOJC

TRANS NO	TRANS DATE	DOCUMENT	BANK ACCOUNT NUMBER	DESCRIPTION 1	PROJECT	DEBIT AMOUNT	CREDIT AMOUNT
	DESCRIPTION 2	TYPE	WORK ORDER	JOB# FACILITIES ID			
100	2019/10/18		900-0000-301.02-01	Transfer $3.25m from Hold			3,250,000.00
	co to Wiresco 2019						
200	2019/10/18		500-0000-301.02-06	Transfer $3.25m from Hold		3,250,000.00	
	co to Wiresco 2019						
300	2019/10/18		900-0000-349.02-01	Transfer $3.25m from Hold		3,250,000.00	
	co to Wiresco 2019						
400	2019/10/18		500-0000-349.02-06	Transfer $3.25m from Hold			3,250,000.00
	co to Wiresco 2019						

GROUP TOTALS

COUNT:	4
DEBITS:	6,500,000.00
CREDITS:	6,500,000.00

7-VECC-40

Question:

Reference: Exhibit 7, Tab 1, Schedule 1, page 4

a) Where/how are the costs GSHI incurs to monitor and maintain the customer connection/device count and estimated average usage for its Streetlights, Sentinel Lighting and USL classes incorporated in the Cost Allocation Model?
b) Apart from the additional meter reading for the GS>50 class, is the bill preparation process the same for all customer classes
c) If not, how does the process differ by class and what are the cost implications?

Response:

a) These activities are primarily in the Operations, Engineering and GIS departments and therefore not directly allocated in the Cost Allocation Model. However GSHi estimates that the time and effort required are negligible.
b) Yes the bill preparation process is the same for all customer classes.
c) Not applicable.

7-VECC-41

Question:

Reference: Cost Allocation Model, Tab I6.2, Tab I8 and Tab O5

a) Please explain why in Tab I6.2 there are no GS>50 customer count values for the Primary Customer Base, the Line Transformer Customer Base or the Secondary Customer Base while in Tab I8 there are 4NCP values for Primary, Line Transformer and Secondary.
b) Please explain why in Tab O5 the only customer-related costs allocated to the GS>50 class are those related to Meters (Acct. 1860).

Response:

a) GS>50 customer counts have been corrected. Please see the 7-Staff-75 (Tab 1, Schedule 75) and the updated cost allocation model.

b) The allocation of most costs categorized as customer-related relies on customer counts. Customer counts were zero for the GS > 50 kW class so it didn't receive an allocation. This has been corrected in the updated cost allocation model.

7-VECC-42

Question:

Reference: Exhibit 7, Tab 1, Schedule 1, pages 5-7

a) Please explain why the Residential 2020 Primary, Line Transformer and Secondary 4NCP values are all the same (see page 7) but the 2013 values differ (see page 6).
b) Please explain why the GS<50 2020 Primary, Line Transformer and Secondary 4NCP values are all the same (see page 7) but the 2013 values differ (see page 6).

Response:

a) & b) GSHi cannot determine at this time why Line Transformer and Secondary NCP figures in 2013 are different from Load Data and Primary NCP figures for the residential and GS<50 kW classes. GSHi can confirm that customers within the residential and GS<50 kW classes take service from secondary and do not own their line transformers.

7-VECC-43

Question:

Reference: Exhibit 7, Tab 1, Schedule 2, page 1

a) Please explain why the GS>50 Minimum System with PLCC Adjustment value (per Table 1) is less than the values for either the GS<50 or Residential classes.

Response:

a) The Minimum System with PLCC Adjustment is lower for the GS>50 class due to the customer count and meter data entry errors. The GS>50 kW figure is greater than the residential and GS<50 kW figures in the updated cost allocation model.

7-VECC-44

Question:

Reference: Exhibit 7, Tab 1, Schedule 2, page 4
RRWF, Tab 11-Cost Allocation

a) The 2021 and 2022 Revenue to Cost Ratio values for Residential on page 4 do not match those in the RRWF. Please reconcile.

Response:

a) The revenue to cost ratio values in the cost allocation model have been updated. Both updated versions of the Cost Allocation Model and the Revenue Requirement Workform have been submitted as part of these interrogatory responses, and the values reconcile.

8-VECC-45

Question:

Reference: Exhibit 8, Tab 3, Schedule 1

a) Please update GSHI's proposed 2020 RTSRs to reflect the 2020 Uniform Transmission Rates approved by the Board on an interim basis on December 19, 2019 (EB-2019-0296).

Response:

a) GSHi has updated the RTSR Model with the updated UTRs and Hydro One Sub-Transmission rates issued on December 19, 2019 and December 17, 2019 respectively and a live model has been included with this interrogatory response submission.

8-VECC-46

Question:

Reference: Exhibit 8, Tab 3, Schedule 2

a) Please update GSHI's proposed 2020 Retail Service Charges to reflect the Retailer Service Charges approved by the Board on November 28, 2019 (EB-2019-0280).

Response:

a) Table 1 below shows the Retail Service Charges approved by the Board on November 28, 2019 and sought for approval in this proceeding.

Table 1 – Retail Service Charges

One-time charge, per retailer, to establish the service agreement between the distributor and the retailer	$	102.00
Monthly fixed charge, per retailer	$	40.80
Monthly variable charge, per customer, per retailer	$/cust.	1.02
Distributor-consolidated billing monthly charge, per customer, per retailer	$/cust.	0.61
Retailer-consolidated billing monthly credit, per customer, per retailer	$/cust.	(0.61)
Service Transaction Requests (STR)		
Request fee, per request, applied to the requesting party	$	0.51
Processing fee, per request, applied to the requesting party	$	1.02
Request for customer information as outlined in Section 10.6.3 and Chapter 11 of the Retail Settlement Code directly to retailers and customers, if not delivered electronically through the Electronic Business Transaction (EBT) system, applied to the requesting party		
Up to twice a year	$	no charge
More than twice a year, per request (plus incremental delivery costs)	$	4.08
Notice of switch letter charge, per letter (unless the distributor has opted out of applying the charge as per the Ontario Energy Board's Decision and Order EB-2015-0304, issued on February 14, 2019)	$	2.04

8-VECC-47

Question:

Reference: Exhibit 8, Tab 3, Schedule 7

a) Does GSHI have the actual 2019 billing determinants for the full year as used by Hydro One? If yes, please update Table 1 accordingly.

Response:

Please see the updated Table 1 below:

Description	2019 Annual Billing Determinants (A)	2019 Approved Rates (B)	Estimated 2020 Low Voltage Payable (A * B)
Meter Charge	96.00	$ 571.12	$ 54,828
Service Charge	84.00	$ 546.47	$ 45,903
Specific ST Lines	9.36	$ 480.7922	$ 4,500
Common ST Lines	179,662.61	$ 1.4434	$ 259,325
Low Voltage	7,065.60	$ 1.5386	$ 10,871
Total			**$ 375,427**

9-VECC-48

Question:

Reference: Exhibit 9, Account 1508 – IFRS Transition Costs

a) Please provide an explanation of the accounting feeds in 2010-2011 and how these fees were related to IFRS transition.
b) Please explain what work was carried out in support of IFRS transition in 2012 ($2,664) and 2016 ($41,598) and how the salaries/wages/benefits were incremental to the normal activities of the Utility.

Response:

a) In 2010 and 2011, GSHi hired consultants to assist in many matters related to IFRS transition. These matters included but were not limited to: assisting with establishing cash generating units for historical assets, determining age of assets, teaching and training regarding IFRS, and to establish the historical balances for IFRS.

b) Regarding the $2,664 in 2012, this was incremental overtime worked by a staff member to work with a consultant on IFRS transitional matters.

Regarding the $41,598 in 2016, these staff salaries pertained to the IFRS transition year of 2015, as the work was performed in both 2015 and 2016. These salaries were incurred to perform IFRS transition tasks not limited to: the creation and implementation of A2 (GSHi's capital asset module, which interfaces with its general ledger), componentization of assets, analyzing historical asset data, calculating one-time adjustments to re-value assets and establish new useful lives for substations, programming changes required with the system, and preparing one-time IFRS transition

notes for financial statements. The salaries were incremental as one additional Accountant was hired temporarily as a full-time staff was off-desk working on IFRS transition matters.

9-VECC-49

Question:

Reference: Exhibit 9, Account 1534/35- Smart Grid Costs

a) Please describe the projects whose costs GSHI is seeking to recover in accounts 1534 & 1535.
b) Did the OEB provide pre-approval of these projects?

Response:

a) The projects whose costs GSHI is seeking to recover in accounts 1534 & 1535 are projects that addressed concerns expressed in GSHI's 2013 "Basic Plan to Enable Bill 150 – The Green Energy and Economy act (GEA plan). These Smart Grid projects were specifically selected to address challenges caused by large scale penetration of distributed generation (DG), as outline in the GEA plan. The most notable projects were as follows:

1. Education – As outline in the GEA plan, GSHI conducted a significant amount of field research by attending IEEE, USF, CEATI, NRCananda and other conferences or technical sessions. GSHI gathered information and networked with other utilities, industry partners, and vendors to develop solutions to the ever evolving challenges posed by largescale implementation of DG.
2. LV Power Regulator Field Trial – Also outlined in the GEA plan was a need for technological advancement to mitigate high voltages caused by the presence of aggregated DG. The LV Power Regulator Field Trail project was one where GSHI partnered with a manufacturer to test a new power electronic device, the LV-IPR (Low Voltage In-line Power Regulator), designed to regulate the voltage on the secondary side of a distribution transformer. The project studied ability of the LV-IPR to maintain a constant secondary bus voltage, while also providing reactive power and harmonic compensation in an environment with a high penetration of solar PV.
3. Microgrid Demonstration – One of the projects discussed in the GEA Plan revolved around the need to utilize community energy storage systems (CES) to mitigate localized high voltages caused by distributed generation. The Microgrid demonstration project studied this hypothesis. Although the GEA Plan discussed installing CES units in a number of locations, the microgrid project was localized to a single customer facility. The purpose of the project was to explore the advanced functionality of the CES inverter in an

environment with a large solar PV installation connected to the same secondary bus. The project explored the CES' ability to regulate system voltage, provide power factor correction, shape the customer load profile, as well as provide emergency backup power to the facility. The interaction between both the CES and PV system was controlled by a custom DERMS (Distributed Energy Resource Management System) that was designed specifically for the project.

4. Transfer Trip Pilot Project – Per the GEA Plan, transfer trip installations were expected to increase from 2013 to 2017. Historically, GSHI utilized dedicated fiber optic connections or point to point radios to transmit transfer trip signals. Since dedicated fiber optic strands are quite expensive, GSHI investigated the possibility of utilizing their telecommunication affiliate's MPLS (Multiprotocol Label Switching) network to transmit IEC 61850 Goose messages from one device to another at separate locations. This project was completed in collaboration with an Electrical Engineering co-op student from the University of Waterloo.

b) GSHi confirms that the OEB provided pre-approval of these projects. All of the project costs tracked in 1534 and 1535 relate to projects contained in the Green Energy Act (GEA) Plan submitted by GSHi in its 2013 Cost of Service application (EB-2012-0126) for pre-approval as contemplated by the then prevailing Filing Requirements. GSHi's GEA Plan was approved by the OEB on an as filed basis subject only to the following as set out in the approved settlement agreement in EB-2012-0126:

For the purposes of settlement, the Parties agree that Greater Sudbury's Green Energy Act Plan, as amended below, is appropriate.

• The Green Energy Act Plan will only include planned expenditures to a maximum of $500,000, for a Demonstration Project, relating to the mitigation of sustained localized high voltages caused by renewable connections.

• While the Green Energy Act Plan contemplates the use of Community Energy Storage (CES), as the technology to be used to mitigate sustained localized high voltages caused by renewable connections, Greater Sudbury may use other technologies that may become available.

• Greater Sudbury will make available the results of its Demonstration Project to the Board as required by the Board's Filing Requirements: Distribution System Plans - Filing under Deemed Conditions of Licence.

The 2013 Cost of Service Rate Application does not include any rate riders, capital expenditures, or OM&A costs relating to the Green Energy Act. Greater Sudbury will use the appropriate deferral accounts and will seek recovery through a prudence review of costs at a future date.

As contemplated by the Settlement Agreement, the OEB's approval of the Settlement Agreement, and the nature of the accounts, GSHi has tracked all its GEA Plan spending in accounts 1534 and 1535 and is seeking recovery through a prudence review of the costs as part of this Cost of Service proceeding.