John A.D. Vellone
T 416-367-6730
F 416.367.6749
jvellone@blg.com

Flora Ho
T 416-367-6581
F 416.367.6749
fho@blg.com

Borden Ladner Gervais LLP
Bay Adelaide Centre, East Tower
22 Adelaide Street West
Toronto, ON, Canada M5H 4E3
T 416.367.6000
F 416.367.6749
blg.com

Borden Ladner Gervais

January 10, 2020

Delivered by Email, RESS & Courier

Ms. Christine Long, Registrar and Board Secretary
Ontario Energy Board
P.O. Box 2319, 27th Floor
2300 Yonge Street
Toronto, ON M4P 1E4

Dear Ms. Long:

Re: PUC Distribution Inc.
2020 IRM Distribution Rate Application
Board File No. EB-2019-0170
Responses to Interrogatories

In accordance with Procedural Order No. 1, please find enclosed PUC Distribution Inc.'s Responses to Interrogatories in the above noted proceeding.

This filing has been submitted electronically using the Board's Regulatory Electronic Submission System and two (2) hard copies will be sent via courier.

Yours very truly,

BORDEN LADNER GERVAIS LLP

Per:

Original signed by Flora Ho

Flora Ho

cc: All Parties to EB-2019-0170

PUC Distribution Inc.

EB-2019-0170

Responses to Interrogatories

Filed: January 10, 2020

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PUC DISTRIBUTION INC.
INTERROGATORY RESPONSES

Ontario Energy Board Staff Interrogatories

Staff-1

Reference: Rate Generator Model, Tab 16 – Rev2Cost_GDPIPI

Preamble:

OEB staff has updated the input price index (IPI) applicable for 2020 distribution rate application to 2.0% as announced by the OEB on October 31, 2019. The Price Cap Index has been updated accordingly to 1.55%.

OEB staff has also updated PUC Distribution's Rate Generator Model for the most recent TOU pricing (Nov 1) and new Ontario Electricity Rebate (31.8%).

Question:

Please confirm PUC Distribution's acceptance of the updated model provided with these OEB staff interrogatories.

Response:

PUC Distribution ("PUC") accepts the update made to the PUC_2020-IRM-Rate-Generator-Model_OEBstaffupated_20200110 (included as Attachment A). PUC acknowledges the Rate Generator Model has been updated to reflect the most recent TOU pricing (Nov 1) and the new Ontario Electricity Rebate (31. 8%).

Staff-2

Reference: Rate Generator Model, Tab 3 – Continuity Schedule

Preamble:

PUC Distribution has entered data in Columns BM and BN for principle and interest amounts approved for disposition by the OEB in its 2019 rate application.

Question:

Please populate the Account 1595 (2019) line in the model provided in Staff-1 to show the transfer of the principle and interest balances into the applicable 1595 (2019) sub- account in columns BM and BN, respectively.

Response:

PUC has made the correction to the attached PUC_2020-IRM-Rate-Generator-Model_OEBstaffupated_20200110 (included as Attachment A), Tab 3 – Continuity Schedule.

Staff-3

Reference: Rate Generator Model, Tab 3 - Continuity Schedule

Preamble:

PUC Distribution is not requesting disposition of its Group 1 Accounts in this proceeding, however, on tab 3 of the model, PUC Distribution has selected “yes” to dispose of Accounts 1588 and 1589.

Question:

Please correct the model provided in Staff-1

Response:

PUC has updated the answer to “No” for the disposition of accounts 1588 and 1589 in the PUC_2020-IRM-Rate-Generator-Model_OEBstaffupated_20200110 (included as Attachment A), Tab 3 – Continuity Schedule.

Staff-4

Reference: EB-2019-0170 Application, Manager's Summary, Page 12

Preamble:

PUC Distribution is currently in the process of conducting an internal review of its Account 1588 and 1589 balances in the context of the new accounting guidance. The review will be completed before December 31, 2019.

Question:

a) Please provide a status update on the internal review.
b) Please confirm that PUC Distribution is performing the review for balances that were approved on an interim basis for 2015 and 2016, as well as 2017 and 2018, which have yet to be disposed.

Response:

a) PUC has completed a preliminary review of Account 1588 and 1589 balances in the context of the new accounting guidance and believes minor timing variances may exist. PUC aims to complete the full review and update its processes in the upcoming year, prior to submitting any claims for balances in these accounts.

b) PUC will confirm the balances for 2015, 2016, 2017 and 2018 as part of above process.

Staff-5

Reference: EB-2019-0170 Application, Manager's Summary, Page 12

Preamble:

The new accounting guidance *Accounting Guidance Related to Commodity Pass- Through Accounts 1588 & 1589* issued on February 21, 2019 is effective January 1, 2019 and to be implemented by August 31, 2019.

Question:

a) Please indicate whether PUC Distribution has implemented the new accounting guidance by August 31, 2019.
b) If not, please explain when the new accounting guidance will be implemented.
c) Please confirm the new accounting guidance has been implemented retroactive to January 1, 2019.

Response:

a) PUC's process substantially conforms to the new accounting guidance with the exception of minor adjustments required to address timing differences related to unbilled amounts.

b) PUC plans to complete a full review and update its processes in the upcoming year, prior to submitting any claims for balances in these accounts.

c) PUC confirms that when implementation is completed in full, the new accounting guidance will be retroactive to January 1, 2019.

Staff-6

Reference: Rate Generator Model, Tab 3 – Continuity Schedule

Preamble:

In tab 3 of the Rate Generator Model, Account 1580 WMS, CBR Class A has a balance at the 2018 year-end. Though the balance is small, this sub-account is not expected to hold a balance at year-end as per the accounting guidance for this sub-account.

Question:

a) Please explain why the sub-account holds a balance at year-end.
b) Please confirm that PUC Distribution is adhering to the accounting guidance for this sub-account.

Response:

a) The balance is due to an accounting timing variance between WMS, CBR Class A revenue and cost of power.

b) PUC confirms it is following the accounting guidance for this sub-account.

Staff-7

Reference 1: Rate Generator Model, Tab 19 – Proposed Tariff of Rates and Charges
Reference 2: Rate Generator Model, Tab 2 – Current Tariff Schedule

Preamble:

OEB staff notes that the Rate Generator Model was not pulling the "Rate Rider for Embedded Generation Adjustment" as found on Tab 2 (current tariff) for all rate classes onto Tab 19 (proposed tariff). OEB staff has updated the model.

Questions:

Please confirm PUC Distribution's acceptance of the updated model provided with Staff- 1.

Response:

PUC confirms the acceptance of the updated model provided with Staff-1

Staff-8

Reference: Rate Generator Model, Tab 19 - Proposed Tariff of Rates and Charges

Question:

As per the Rate Order in EB-2017-0183, OEB staff will update the tariff at the decision and rate order stage of this proceeding for the following changes to Non-Payment of Account Service Charges:

1. Removal of all "Collection of Account" charges
2. Removal of all "Install/Remove Load Control Device" charges
3. Change any reference of "Disconnect/Reconnect" to "Reconnection"
4. Alter the "Late Payment – per month" charge to "Late Payment – per month" (effective annual rate 19.56% per annum or 0.04896% compounded daily rate)

Please confirm PUC Distribution's acceptance of the above.

Response:

PUC confirms the acceptance of the above.

Staff-9

Reference 1: EB-2019-0170, Application, Appendix 7– 2020 Incremental Capital Module, Pg 9
Reference 2: Capital Module Applicable to ACM and ICM, Tab 1 – Information Sheet

Preamble:

Reference 1 shows the eligible incremental capital amount for PUC Distribution as follows:

Eligible Incremental Capital	Capital Expenditures
Total 2020 Capex	$9,100,376
Less: Materiality Threshold	$5,665,251
Maximum Eligible Incremental Capital	$3,435,125

Question:

a) Please provide an updated Capital Module Applicable to ACM and ICM with the 2020 input price index (IPI) of 2.0% as announced by the OEB on October 31, 2019.
b) Please confirm the updated maximum eligible incremental capital amount for PUC Distribution.

Response:

a) PUC has updated the Capital Module Applicable to ACM and ICM (Attachment B) with the 2020 IPI of 2.0%.

b) The updated maximum eligible incremental capital amount is now $2,602,851, which can be reviewed on page 9 of the Capital Module Applicable to ACM and ICM (Attachment B).

Eligible Incremental Capital	Capital Expenditures
Total 2020 Capex	$9,100,376
Less: Materiality Threshold	$6,497,525
Maximum Eligible Incremental Capital	$2,602,851

Staff-10

Reference 1: EB-2019-0046, Appendix 7 – 2020 Incremental Capital Module (ICM) Manager Summary and Appendices, Page 9
Reference 2: EB-2019-0046, Appendix 7-D – Material Capital Asset Justification

Preamble:

Reference 1 notes that the capital investment required for Substation 16 is over $4.7M, yet reference 2 estimates the cost of Substation 16 to be $3.9M.

Question:

a) Please provide confirmation that the cost of Substation 16 is $4.7M and provide a cost breakdown.
b) In the same cost breakdown, please provide an itemized list of the costs that have been incurred to date.

Response:

a) The cost of Substation 16 is confirmed to be $4.7M. Please see table below for a detailed cost breakdown.

Costs as of December 25, 2019

	Actual Costs Incurred to Date		Estimated Total
	2018	2019	
Consultants/Engineeri	$ 118,016	$ 121,110	$ 535,810
Construction	$ -	$ 13,710	$ 2,114,710
Switchgear	$ -	$ 341,502	$ 1,138,341
Transformers	$ -	$ 441,684	$ 939,368
Total	$ 118,016	$ 918,006	$ 4,728,229
	$ 1,014,403		

b) Please see above table in Staff-10 (a) for a detailed cost breakdown including an itemized list of the costs that have been incurred to date.

Staff-11

Reference: EB-2019-0046, Appendix 7 – 2020 Incremental Capital Module (ICM) Manager Summary and Appendices, Page 12

Preamble:

PUC Distribution states that a hospital is supplied by the 34.5kV system which also supplies Substation 16. PUC Distribution also states that Substation 16 must be isolated prior to any maintenance, repairs, or circuit switching, which eliminates back-up supply to connected customers.

Question:

a) Is the hospital supplied by a redundant 34.5kV supply? If the hospital has a redundant 34.5kV supply, will the redundant supply also supply the new Substation 16?
b) Please provide the number of scheduled outages on Substation 16 per year for the past five years.
c) Please explain the technical procedures to isolate Substation 16. Does the new Substation 16 require isolation for maintenance, repairs, or circuit switching? If not, please explain why?

Response:

a) The Sault Area Hospital is supplied by dual 34.5kV supplies, both of which are on-line in normal operating mode. The sources are interconnected in the customer's switchgear by an automatically operating tie switch that transfers load when one source of supply fails. Restoration to dual supplies requires manual on-site switching and coordination with the PUC.

   One of the 34.5kV supplies to the hospital is radially interconnected to Substation 16. Consequently, any planned or unplanned interruption of the supply to Substation 16 also results in a loss of one supply to the hospital.

   The planned Substation 16 rebuild includes an upgrade from this radial, single feed 34.5kV supply to a dual feed configuration, with integral bypass switching. This new configuration will eliminate the loss of this supply to the hospital for any planned work at Substation 16.

b) Maintenance at Substation 16 has been limited to activities deemed as essential only over the past several years given the fact that the current distribution system configuration results in the loss of one of the Sault Area Hospital's sources of supply. The number of scheduled outages on Substation 16 per year for the past five years is as follows:

Year	No. of Scheduled Outages
2015	2
2016	0
2017	2
2018	0
2019	0

c) The procedure to isolate Substation 16 requires the following steps:

- Switching to facilitate the continued dual 34.5kV supply to the Hospital
- Isolate Substation 16 by operating 34.5kV line switches on either side of the radial supply tap to the Substation

The new Substation will require isolation for some maintenance and repair activities but not for circuit switching. However, because the new Substation includes the isolation and integral bypass switching referenced in (a) above, the Hospital will no longer lose their dual 34.5kV supply for planned Substation work.

Staff-12

Reference: EB-2019-0046, Appendix 7 – 2020 Incremental Capital Module (ICM) Manager Summary and Appendices, Page 13

Preamble:

PUC Distribution states that it expects more than 2MW of new load to come online over the next 3 years. PUC Distribution is concerned that Substation 16 may be operating close to or beyond its 15MVA capacity over the 2019/2020 winter period.

Questions:

a) Please provide supporting information that there is 2MW of expected load.
b) Please provide historical actual load growth rates within the Substation 16 service area over the last five years.
c) Does the existing or new transformer have ratings based on ambient temperatures? If so, has PUC Distribution considered the higher rating available for winter conditions?
d) What is the cooling type for the old versus the new transformer (e.g. oil natural air natural or oil natural air forced)?
e) What are the estimated incremental savings for a transformer one size smaller than 10MVA?

Response:

a) The following list of new customers in the Substation 16 service area are expected to be connected over the next three years. In total the load is estimated to be approximately 2MW. For planning purpose, it is estimated that each residential lot is 3kW.
    i) Greenfield Subdivision – 50 residential lots – estimated at 150kW total
    ii) Castle Heights Subdivision – 36 residential lots – estimated at 108kW total
    iii) Sherbrook Subdivision – 9 residential lots – estimated at 27kW total
    iv) Sherwood Heights Subdivision – 58 residential lots – estimated at 174kW total
    v) Commercial Car Dealership – estimated at 500kW
    vi) Commercial property with multiple buildings – estimated at 1MW
    vii) Restaurant – estimated at 150kW

b) Historical actual load growth rates within the Substation 16 service area over the past 5 years are as follows:
    - Load Growth from 2014 to 2015 of 8.1%
    - Load Growth from 2015 to 2016 of -3.8%

- Load Growth from 2016 to 2017 of 3.4%
- Load Growth from 2017 to 2018 of 19.2%
- Load Growth from 2018 to 2019 of -2.24%
- Cumulative Load Growth from 2014 to 2019 of 24.6%
- Average Annual Load Growth from 2014 to 2019 of 4.93%

c) The existing transformers do not have ratings based on multiple ambient temperatures and have a single rating based upon an allowable 55 degree Celsius rise. The new transformers are rated based upon a 65 degree Celsius rise.

d) The cooling type for the old transformers is ONAN. The cooling type for the new transformers is ONAN/ONAF.

e) Although we would expect an incremental savings for a transformer one size smaller than 10 MVA (i.e. 7.5MVA), a recent budgetary quote received for 7.5MVA was in an amount of $31,000 higher than the price of the 10MVA unit just purchased for this project approximately four months ago. Transformer pricing is a function of many factors including raw materials, shipping, exchange rates and demand. PUC has standardized on 10/13.3MVA transformers at this station and all of its stations in order to match transformer capacities to the capacity of the outgoing 12.47kV station riser cables and switches, conductors and hardware in the distribution system which all have a nominal rating of 300A. This design maximizes the value leveraged from the assets and allows operating flexibility for both planned maintenance and contingencies.

Staff-13

Reference 1: EB-2017-0071 Exhibit 2, Pages 17-33, Variance Analysis
Reference 2: EB-2017-0071 Exhibit 2, Page 53, Capital Project Table

Preamble:

PUC Distribution shows in its variance analysis and capital project table that it has invested in planning costs for Substation 16 since 2014.

Question:

a) Please confirm if the costs shown for Substation 16 in the references above were included in base rates for PUC Distribution's last cost of service application.
b) If the costs were included in base rates, please confirm that these costs are not included in this ICM proposal.
c) The spending for Substation 16 for reference 1 and 2 does not match for the years 2013 and 2014. Please provide an updated capital project table.
d) In reference 2, there were investments for overhead conductors and line transformers included for Substation 16. Please explain the scope of work and also if those costs are included in this ICM.

Response:

a) The costs for Substation 16 included in references 1 and 2 above for the years 2015, 2016, and 2017 were included in base rates for PUC Distribution's last cost of service application. The costs referenced above were explicitly adjusted for 2018 through the interrogatory and settlement processes. The Board's Decision and Rate Order in EB-2017-0071, at pg 21 (included in Attachment C) provides:

   "This reduction in capital additions results from the removal of the costs associated with *Project #7 – Substation 16 Rebuild* in the Test Year given that Substation 16 will not be in service in 2018, as further described in response to interrogatories 2-CCC-42 and 2-Staff-28b and Exhibit 2/App. G/Project #7."

b) The costs in 2015, 2016, and 2017, mentioned in (a) above, are not included in this ICM proposal.

c) In 2013 there was a total spending of $156,883 for Substation 16. In reference 1, this amount was captured under the total for Account 1820 Distribution Station Equipment for 2013, but was not listed out in the descriptive variance analysis part of reference 1. In 2014 there was no spending related to Substation 16. The spending on Substation 16 in 2013 shown in the Capital Project Table in reference 2 was related to Overhead Conductors and Line Transformers. The costs in 2013 for Substation 16 were not part of this Substation 16 rebuild project. A detailed explanation can be seen in the response to Staff-13(d). Therefore, the Capital Project Table is correct and does not require updating.

d) The costs for Overhead Conductors and Devices and Line Transformers in 2013 to 2017 are not included in the costs in this ICM proposal. The costs for the 2018 test year from the Exhibit 2 references above were removed during the settlement process and therefore not included in current rates, rather they are included in this ICM proposal (Attachment C: The Board's Decision and Rate Order EB-2017-0071, pg 21).

The costs identified in Reference 2 described as 'overhead conductors' pertain to the installation of a circuit tie switch to facilitate circuit load transfers at Substation 16. The costs identified in Reference 2 described as 'line transformers' pertains to a core rebuild of power transformer T1 at Substation 16 in 2013. Both of these items are not included in this ICM and were in service and capitalized in 2013.

Staff-14

Reference: EB-2019-0046, Appendix 7 – 2020 Incremental Capital Module (ICM) Manager Summary and Appendices, Pages 5-6 and 9

Preamble:

The new Substation 16 will be housed in an aesthetically pleasing building with a residential exterior appearance.

Question:

a) The existing Substation 16 is not enclosed inside a building.
   i. Please explain the need to house the new Substation 16 in an aesthetically pleasing building.
   ii. Please provide the estimated price differential if the substation was not placed inside a building.
   iii. Did housing all the equipment inside a building drive the decision to use gas insulated equipment?
   iv. Please provide the cost savings analysis between gas insulated equipment versus non-gas insulated equipment.

b) Does housing the station inside a building incur costs it otherwise would not have (e.g. heating and ventilation, emergency lighting, and security alarm and doors)?

c) PUC Distribution states that the new substation will have barrier walls to limit transformer hums, however Substation 16 is surrounded by street and parking space with the exception of the west side, where there appears to be residential property. Did PUC Distribution consider only constructing a sound wall on the west side to mitigate noise pollution?

Response:

a)

i) PUC's three newest substations are all in fully enclosed buildings. Substation 16 is in keeping with this standard and provides the following benefits when compared to an outdoor fence-enclosed-style station as explained below:

- Public safety and security are improved with an enclosed station design. At several existing outdoor-style stations, PUC has had break-ins and copper thefts over the past three years. This presents a risk to the public, PUC's employees and station equipment.

- The winter climate in Northern Ontario presents a challenge to staff responding to emergencies/outages as a well as conducting maintenance and operating activities. The controlled environment of a building eliminates associated difficulties.

ii) PUC estimates no capital cost difference between an outdoor style station and a station enclosed in a building. This is based on the following factors:

- An indoor station does not require perimeter fencing and associated ground grid with crushed stone
- Outdoor-enclosed switchgear has a higher cost than indoor-style switchgear due to the more stringent weather rating requirements required for outdoor application.
- A single building to house switchgear along with ancillary and control equipment eliminates the need for a separate control building and minimizes the extent of associated low voltage equipment interconnections
- A basement for high voltage cable management eliminates the need for separate vaults and manholes and minimizes the need for duct banks

iii) No; housing all the equipment inside a building did not drive the decision to use Gas Insulated Switchgear (GIS). The decision was made for the following reasons:

- The reasons described in the 2020 IRM Application EB-2019-0170 on page 21, second paragraph under the section entitled “Planning and Cost Savings / Efficiency / Avoidance”;
- The physical dimensions of the existing substation property were limited; and
- Failures due to internal phase to phase faults are inherently eliminated with GIS equipment.

iv) The following table illustrates the cost comparison estimate between a station where air insulated switchgear (AIS) and gas insulated switchgear (GIS) are employed. Cost savings associated with using GIS rather than AIS are estimated to be $140,332.

		Substation Capital Cost Estimates		
		Using AIS	**Using GIS**	**Extra cost**
Detailed Design Engineering		$ 197,939	$ 259,508	$ 61,569
Building Cost	Area (sqf)	$ 1,981	$ 1,046	
	Cost (@ $315/sqf) Including Basement	$ 1,123,160	$ 659,139	$ (464,022)
Switchgear cost	VISTA 35 kV Switchgear	$ 346,882		$ 262,120
	Air Insulated 15 kV Switchgear	$ 529,339		
	GIS-35 kV Switchgear GIS-15 kV Switchgear		$ 1,138,341	
			Total Balance	$ (140,332)

b) No; as referenced in Staff-14(a)(ii) above, we expect the total incremental cost of an enclosed station to be similar to that of an outdoor type station. As well as the factors described therein, the following additional reasons are provided:
    - Heating and ventilation, emergency lighting, security alarm and doors are requirements for both substation types due to the need for a control building in an outdoor type station
    - Both designs require transformer oil containment, explosion firewalls and sound attenuating barriers
    - An outdoor station would also require fencing, ground grid and crushed stone

c) In designing the transformer barrier walls, PUC took several factors into consideration:
    - The design was done with the objective of meeting MOE standards for both the current and potential future land uses around the property
    - The walls also provide the function of perimeter security for the transformers
    - The walls also serve the function of a fire and explosion barrier

    Consequently, PUC did not consider only constructing a sound wall on the west side to mitigate noise pollution.

Staff-15

Reference 1: EB-2019-0046, Appendix 7-D, DSP Material Capital Asset Justification – Sub 16 Rebuild
Reference 2: EB-2018-0219, Appendix 11, Page 15, Sault Smart Grid (SSG)

Preamble:

PUC Distribution states in reference 1 that it completed the rebuild of substation 10 in 2015.

In reference 2, PUC Distribution states that its substations currently do not have the capability to dynamically regulate voltage levels. In reference 1, PUC Distribution states that it decided to specify on-load tap changers due to long feeders and load densification.

Question:

a) What automation capabilities does Substation 10 have?
b) Please compare the design specifications between Substation 10 and Substation 16 and explain the differences.
c) Please provide specific voltage issues that could not be addressed by an off-load tap changer for long feeders and load densification.
d) Did the Substation 16 rebuild project proposed in 2018 include off-load tap changers?
e) Is the need for an on-load tap changer in preparation for Volt/VAR optimization?
f) What is the incremental cost to retrofit a transformer with an off-load tap changer to an on-load tap changer?

Response:

a) Substation 10 has the following automation capabilities:
    - A secure, high speed, ethernet based interconnection with PUC's SCADA control room
    - Protection relays on all incoming and outgoing feeders are ethernet connected to SCADA, programmable, microprocessor based models with full analogue monitoring of feeder currents and voltages and status and control of all breakers.

b) The high-level system design specifications for Substation 16 and Substation 10 are the same. They both have two incoming 34.5kV feeds and four outgoing 12.47kV feeders. They both have the same bus configuration with high-side and low-side ties and two 10MVA transformers. They are both on PUC's fiber network, and utilize the same station type of RTU, protection relays and protection functions respectively.

Substation 10 and the Substation 16 have the same general building type and transformer bays – however the design was changed from utilizing air insulated switchgear (AIS) employed at Substation 10 to gas insulated switchgear (GIS) proposed for Substation 16. Please refer to response to question Staff-14 (a) (iii) and (iv) for rationale of utilizing GIS.

Substation 16 includes the addition of on-load tap changers (OLTCs) for automatic voltage regulation. The rationale is explained in further detail in c) below.

c) The following factors were taken into consideration:

- Variability in 34.5 kV sub-transmission supply voltage to Substation 16: For the year of 2019, station bus voltages dropped below IESO Market Manual 7.4 prescribed limits on 16 occasions and they were above on 12 occasions. These voltage swings are periodic and are a function of the supply transmission system variations which PUC Distribution does not have ability to automatically control otherwise. Only OLTCs and not off-line tap changers will address this issue at Substation 16.
- CSA Standard CAN-3-C235, Preferred Voltage Levels for AC Systems 0 – 50kV prescribes voltage limits to be delivered to distribution system customers at the service entrance. Analysis of 2018-2019 AMI for 25 customers located on the extremities of the Substation 16 feeders revealed that 19 of the 25 customers experienced voltages outside of the CSA normal operating range. These voltage variations are a function of feeder loading and are therefore periodic. In some cases, only automatic voltage regulation (OLTCs) and not the adjustment of individual distribution transformer taps will address this issue.
- Substation 16 feeders are rural in nature like Substation 18 which required the addition of automatic voltage regulation during the past 5 years.
- To support projected increased load growth at Substation 16 over the full planned station power transformer lifespan of 40 years.

The need for OLTCs does not preclude the need for renewal of the remaining Substation equipment which are driven by the factors identified in EB-2019-0171, Appendix 7, p. 11.

d) The Substation 16 project proposed in 2018 in the Distribution System Plan included off-load tap changers. An on-load tap changer (OLTC) can vary the transformer output voltage while the transformer is energized and carrying load whereas an off-load tap changer requires the transformer to be de-energized prior to modifying the tap position and consequently output voltage.

e) No, the need for OLTCs is not in preparation for Volt/VAR optimization but is premised on the need as described in Staff-15(c) above.

f) The total incremental cost to implement on-load tap changers for two power transformers at Substation 16 is estimated to be $600,000. This includes the differential cost for the transformers of $345,000 and associated consultant and construction costs.

Staff-16

Reference: EB-2018-0219, Appendix 11-J, Physical Scoping Diagram

Questions:

PUC Distribution provided a physical scoping diagram for components required in the substation for the proposed Sault Smart Grid project.

a) Does Substation 16 have a control house? If not, is there space for a control house in the future?
b) Will Substation 16 include capabilities for a fiber or wireless network? If so, please provide the cost of these items.
c) Are the new breakers programmable?
d) Does the new Substation 16 have local automation capabilities that the existing substation does not have? If so, what capabilities does it have?
e) Do these capabilities require additional investment with a centralized SCADA system?

Response:

a) Substation 16 is designed with a building that houses the primary switchgear and all control equipment (ie: relaying panel, SCADA/RTU, telecommunications rack, fibre patch panel, station batteries). Therefore, there is no need for a separate control house in the future.

b) Substation 16 will be connected to SCADA through an existing fibre network which is currently located on the property. The associated cost of the interconnection is approximately $3,500. There are no plans for wireless interconnections.

c) The protection relays and RTU that control the breakers and switches within the 34.5kV and 12.47kV switchgear are all programmable.

d) The new Substation 16 will have enhanced automation capabilities due to the fact that the newer microprocessor-based relays inherently have much more programming capability than the first-generation microprocessor-based relays currently installed.

e) These capabilities do not require additional investment and are a function of improvements in relaying technology.

Staff-17

Reference 1: EB-2019-0046, Appendix 7 – 2020 Incremental Capital Module (ICM) Manager Summary and Appendices, Page 9
Reference 2: EB-2017-0071 Exhibit 2 – Appendix 2 Distribution System Plan, Pages 59, 63, 79

Preamble:

PUC Distribution states in reference 1 that the closest stations to Substation 16 are Substations 18 and 20. In reference 2, the asset condition assessment shows that Substation 18 and 20 are also in similar condition as Substation 16.

Question:

a) Please provide the station refurbishment plans for Substation 18 and 20, if available.
b) Does PUC Distribution intend to file additional ICM applications for the renewal of Substation 18 and 20?
c) Did PUC Distribution consider retiring one of the substations and building a larger station with additional feeders during the rebuild? If not, please explain why.

Response:

a) PUC is not seeking any costs associated with the refurbishment of either Substations 18 or 20 as part of this ICM. The question is of limited relevance or probative value.

   PUC notes that its 2018-2022 DSP did not include reference to replacing Substations 18 or 20 over that plan period.

   While PUC plans to address station refurbishment plans for Substations 18 and 20 in the future as the need requires, in the last PUC Cost of Service application, the 5-year DSP capital plan expressly called for the replacement of Substation 16 and the construction of one additional new station 12.47kV Substation 22, which replaces 4kV Substations 4 and 5. These latter two stations are being retired as the final stage of PUC's voltage conversion program.

b) PUC intends to evaluate the need for separate ICM applications for Substations 18 and 20 in the future as and when required.

c) Yes. PUC did consider retiring one of the substations and building a larger station with additional feeders as part of the ICM application process but it was determined to be an unacceptable option from an operations and cost perspective (reference 1:EB-2019-0170,

Appendix 7-2020 Incremental Capital Module (ICM) Manager's Summary, p18, Option 5 – Transfer load to other stations and remove Sub 16 from service).

Staff-18

Reference 1: EB-2019-0046, Appendix 7 – 2020 Incremental Capital Module (ICM) Manager Summary and Appendices, Pages 16-19

Question:

The Electrical Safety Association (ESA) inspected Substation 16 and identified seven defects.

a) Please provide the defects identified.
b) If the ESA did not identify the transformer or switchgear as defects, please explain why.

Response:

a) ESA inspected Substation 16 in 2019 and identified seven defects as follows:
- A crushed stone ground surface covering layer must be a minimum thickness of 150 mm
- Grounding of metal fences
- Gang-operated switch ground
- Damaged ground at mat
- Guarding of bare live parts
- Fence shall be located at least 1 m inside perimeter of the station ground electrode area - remove trees by fence
- Power transformer T2 leaking oil

b) ESA generally does not inspect high-voltage equipment during their station inspections. Their focus is typically on building ancillaries, ground grids, fences, structures, environmental hazards, and vegetation management. In 2019, however, ESA did identify that power transformer T2 was defective due to observing oil leakage that was readily visible.

Staff-19

Reference: EB-2019-0046, Appendix 7 – 2020 Incremental Capital Module (ICM) Manager Summary and Appendices, Page 21

Preamble:

PUC Distribution states that it engaged customers on September 18, 2019 as part of a Town Hall meeting to present plans for the renewal of Substation 16

Questions:

a) How many customers attended the September 18, 2019 meeting?
b) Please provide any minutes, documentation of customer comments, questions etc. that PUC Distribution received during and/or after the presentation.

Response:

a) Four Customers attended the Customer Engagement Town Hall for the Substation 16 project on September 18, 2019.
b) Questions, comments, and feedback received was very positive from all four Customers that attended the Substation 16 Town Hall. Details of the event can be seen in the attached "EST3707 – PUC Sub 16 – Customer Event Evaluation Form"(included in attachment E) document.

Staff-20

Reference: EB-2019-0046, Appendix 7 – 2020 Incremental Capital Module (ICM) Manager Summary and Appendices, Pages 6 and 21

Question:

PUC Distribution states that its procurement process is through a competitive Request for Proposal (RFP) process and contracts are awarded on a best-value basis.

a) Please provide the RFP for the Substation 16 renewal project.
b) Please provide the scoring matrix used for evaluate the proposals.
c) At page 6, PUC states a detailed technical and lifecycle cost evaluation was used for the major equipment quote review. Please explain the technical and lifecycle cost evaluation methodology.

Response:

a) There have been four tender packages released and awarded thus far for the Substation 16 project for which documentation is attached:

- Engineering
  - 1C32-2-RFP - Sub 16 Engineering and Technical Services (Attachment F)
- Switchgear
  - RFQ EST3707-6-1 – Sub 16 Rebuild – Switchgear (Attachment G)
- Transformers
  - RFQ EST3707-6-2 – Sub 16 Rebuild – Transformers (Attachment H)
- Project Management
  - EST3707-4-RFP-3 – Project Management Services RFP (Attachment I)
- Construction Contract
  - To be issued for bid in 2020.

b) The proposals referenced in Staff-20 (a) were evaluated as follows.

i) Engineering
- Five bidders participated in this RFP. Each bidder's proposal was evaluated on the basis of the following seven criteria:

1. Corporate Profile of the Firm
   - Local presence and expertise
   - Experience in station builds locally and out-of-town

        - Project priority and commitment
    2. Project Team
        - Qualifications, experience, and time commitment of key personnel
        - Relevant experience with the PUC system
    3. Relevant Past Experience
        - Demonstrated ability on similar projects
        - Extent of experience in key areas of this project
    4. Proposed Work Program
        - Inclusion of all RFP components
        - Understanding of project complexities
        - Innovative approaches
        - Reasonableness of approval process
    5. Detailed Methodology
        - Completeness of task list
        - Level of effort
        - Scope omissions and identified constraints
    6. Schedule
        - Task timelines and deliverable dates
    7. Fee Estimates and Upset Limits
        - Reasonableness of fee estimates given project scope

  - PUC selected the proponent whose proposal best balanced and met the evaluation criteria.

- Switchgear
  - The RFQ was issued to six potential bidders in which three expressed interest. Included with the RFQ document were:

    - A specification describing the standards to which the switchgear was to be build and identifying all associated technical requirements. These requirements included many elements summarized into the categories of General Requirements, Electrical Ratings, Mechanical Ratings, Cable Terminations and Testing
    - a technical data sheet on which the bidders were required to indicate how they met each of the standards identified in the specification.

  One bid was received and evaluated based on the following criteria:
    - Technical (ability to meet the requirements described in the specification and the technical data sheet provided with the RFP)
    - Pricing
    - Schedule

        - Past vendor experience.
    - PUC selected the proponent whose proposal best balanced and met the evaluation criteria.

- Transformers
    - Four bidders participated in the RFQ. Included with the RFQ document were:
        - A specification describing the standards to which the transformers were to be build and identifying all associated technical requirements. These requirements included many elements summarized into the categories of General Requirements, Electrical Ratings, Accessories, Physical/Mechanical Ratings, Environment, Performance and Testing
        - a technical data sheet on which the bidders were required to indicate how they met each of the standards identified in the specification.

      Four bids were received and evaluated based on the following criteria:
        - Technical (ability to meet the requirements described in the specification and the technical data sheet provided with the RFP)
        - Pricing
        - Lifecycle cost (based on transformer no load and load losses)
        - Schedule
        - Past vendor experience.
    - PUC selected the proponent whose proposal best balanced and met the evaluation criteria.

- Project Management
    - Two bidders participated in this RFP. Each bidder's proposal was evaluated on the basis of the following five criteria:
        1. Corporate Qualifications and Experience
            - Utility projects
            - Total value of similar projects
            - Understanding of complexities
            - Contract Administration works
        2. Organization
            - Number of years the company has operated
            - Litigation and/or lien history against company
        3. Key Personnel Qualifications and Experience
            - Project Manager
            - Technical support personnel
        4. Other

- QA/QC procedures
- Schedule
- Health and Safety Policy

5. Price

- PUC selected the proponent whose proposal best balanced and met the evaluation criteria.

c) A detailed technical and lifecycle cost evaluation was used in the transformer quote review. Transformer no load and full load loss calculations were used to determine a lifetime loss cost for the transformers and the final price comparison accounted for both the initial purchase price and the lifetime loss costs.

Staff-21

Reference: Incremental Capital Module, Manager's Summary, Pages 23-25

Question:

PUC Distribution has included the effects of accelerated CCA in the calculation of the incremental revenue requirement for the ICM.

a) Please explain PUC Distribution's rationale for including the accelerated CCA in the ICM model instead of Account 1592 PILs and Tax Variances –CCA Changes.
b) Please provide a calculation of the CCA and the resulting incremental revenue requirement, using the CCA rules before the rule change to accelerated CCA.

Response:

a) PUC reviewed the OEB's letter "Accounting Direction Regarding Bill C-97 and Other Changes in Regulatory or Legislated Tax Rules for Capital Cost Allowance" dated July 25, 2019. Paragraph 4 of the letter states "The impact of any differences that are not reflected in rates (due to such factors as timing of known changes) are to be recorded in Account 1592 – PILs and Tax Variances." PUC determined that account 1592 was to be utilized for variances as a result of tax changes that occur subsequent to rates having been set and therefore the effects of which would not be reflected in rates. The change in CCA as a result of Bill C-97 is currently in effect and could be accounted for in the proposed ICM rate rider. The proposal to spread the effects of the accelerated CCA over the three-year period until the next cost of service rate application eliminates the revenue deficiency in the final two years of the current Cost of Service.

b) A calculation was completed using the CCA rules before the rule change which is provided in the below table.

Year 1 2020	Cost of Addition	# Years	Deprec Rate	Deprec Exp	CCA Class	CCA Rate	UCC	CCA
1808 Buildings & Fixtures	$700,000	50	2.00%	$14,000	47	8%	$700,000	$28,000
1820 DS Equipment	$3,928,229	40	2.50%	$98,206	47	8%	$3,928,229	$157,129
1980 System Supervisory Equipment	$100,000	20	5.00%	$5,000	47	8%	$100,000	$4,000
	$4,728,229			**$117,206**			**$4,728,229**	**$189,129**

The CCA was adjusted to reflect $189,129. After adjusting the CCA to $189,129 it increased the revenue requirement from $195,533 to $237,816 (please see chart below).

Ontario Energy Board

Capital Module
Applicable to ACM and ICM

PUC Distribution Inc.

Incremental Capital Adjustment Rate Year: 2020

Current Revenue Requirement

Current Revenue Requirement - Total		$	19,273,165	A

Eligible Incremental Capital for ACM/ICM Recovery

	Total Claim		Eligible for ACM/ICM (Full Year Prorated Amount) (from Sheet 10b)	
Amount of Capital Projects Claimed	$ 4,728,229	$	2,602,851	B
Depreciation Expense	$ 117,206	$	64,521	C
CCA	$ 189,129	$	104,114	V

ACM/ICM Incremental Revenue Requirement Based on Eligible Amount in Rate Year

Return on Rate Base

Incremental Capital			$	2,602,851	B
Depreciation Expense (prorated to Eligible Incremental Capital)			$	64,521	C
Incremental Capital to be included in Rate Base (average NBV in year)			$	2,570,591	D = B - C/2
	% of capital structure				
Deemed Short-Term Debt	4.0%	E	$	102,824	G = D * E
Deemed Long-Term Debt	56.0%	F	$	1,439,531	H = D * F
	Rate (%)				
Short-Term Interest	2.29%	I	$	2,355	K = G * I
Long-Term Interest	4.12%	J	$	59,309	L = H * J
Return on Rate Base - Interest			$	61,663	M = K + L
	% of capital structure				
Deemed Equity %	40.00%	N	$	1,028,236	P = D * N
	Rate (%)				
Return on Rate Base -Equity	9.00%	O	$	92,541	Q = P * O
Return on Rate Base - Total			$	154,205	R = M + Q

Amortization Expense

Amortization Expense - Incremental	C	$	64,521	S

Grossed up Taxes/PILs

Regulatory Taxable Income		O	$	92,541	T
Add Back Amortization Expense (Prorated to Eligible Incremental Capital)		S	$	64,521	U
Deduct CCA (Prorated to Eligible Incremental Capital)			$	104,114	V
Incremental Taxable Income			$	52,948	W = T + U - V
Current Tax Rate	26.5%	X			
Taxes/PILs Before Gross Up			$	14,031	Y = W * X
Grossed-Up Taxes/PILs			$	19,090	Z = Y / (1 - X)

Incremental Revenue Requirement

Return on Rate Base - Total	Q	$	154,205	AA
Amortization Expense - Total	S	$	64,521	AB
Grossed-Up Taxes/PILs	Z	$	19,090	AC
Incremental Revenue Requirement		$	237,816	AD = AA + AB + AC

Staff-22

Reference: Incremental Capital Module, Manager's Summary, Page 27

Question:

PUC Distribution requests to establish deferral and variance accounts to track the costs and recovery of costs related to Sub 16 renewal, for the purpose of truing up the balance in PUC Distribution's next cost of service rate application.

a) Please clarify whether PUC Distribution is requesting for additional accounts beyond what the OEB has already established for ICM purposes.
b) If yes, for each account, please discuss the causation, materiality and prudence eligibility criteria as set out in the Chapter 2 Filing Requirements for Electricity Distributors.
c) Please also provide the draft accounting order for each account, including a description of what the account is to record, and the mechanics of the account.

Response:

a) PUC will utilize account 1508 as set out in Chapter 3 Incentive Rate-Setting Applications, Section 3.3.2.5 ACM/ICM Accounting Treatment. PUC is not requesting additional accounts beyond what the OEB has already established.

b) N/A

c) PUC Distribution will record actual amounts in the following Sub-Accounts of

Account 1508 – Other Regulatory Assets:

- Account 1508 – Other Regulatory Assets, Sub 16 Incremental Capital Expenditures
- Account 1508 – Other Regulatory Assets, Sub 16 Depreciation Expense
- Account 1508 – Other Regulatory Assets, Sub 16 Accumulated Depreciation
- Account 1508 – Other Regulatory Assets, Sub 16 Incremental Capital Expenditures Rate Rider Revenues

PUC Distribution will also record monthly carrying charges using OEB prescribed interest rates in the following Sub Accounts:

- Account 1508 – Other Regulatory Assets, Sub 16 Incremental Capital Expenditures, Carrying charges
- Account 1508 – Other Regulatory Assets, Sub 16 Incremental Capital Expenditures Rate Rider Revenues, Carrying Charges

Vulnerable Energy Consumers Coalition (VECC) Interrogatories

VECC-1

Reference: Appendix 7 Page 5

Question:

PUC indicates PUC indicates (sic) reliability is the primary driver to renew the station.

a) Please provide the total number of outages, customer interruptions and customer interruption minutes for each of the years 2015 to 2019 on PUC's System.

b) Please provide the number of outages, customer interruptions and customer interruption minutes for each of the years 2015 to 2019 on PUC's System due to defective equipment.

c) Please provide the number of outages, customer interruptions and customer interruption minutes for each of the years 2015 to 2019 on PUC's System due to Substation 16.

d) Please provide the number of outages, customer interruptions and customer interruption minutes for each of the years 2015 to 2019 on PUC's System by major equipment type at Substation 16.

Response:

a) The total number of outages, customer interruptions and customer interruption hours for each of the years 2015 to 2019 (as of December 2) are as follows:

Year	Number of Outages	Number of Customer Interruptions	Sum of Customer Interruption Hours
2015	724	61482	111858
2016	557	70882	82337
2017	471	54002	65952
2018	364	58920	78699
2019 to Dec 2	448	66381	87121
Grand Total	2564	311667	425968

Note: data excludes loss of supply

b) The total number of outages, customer interruptions and customer interruption hours for each of the years 2015 to 2019 (as of December 2) due to defective equipment are follows:

Year	Number of Outages	Number of Customer Interruptions	Sum of Customer Interruption Hours
2015	203	26785	41355
2016	186	27643	27123
2017	144	10100	9547
2018	76	13730	19757
2019 to Dec 2	112	10481	10629
Grand Total	721	88739	108411

c) The defective equipment outage statistics referenced in VECC-1 (b) are predominantly associated with equipment failures within the distribution system but external to distribution substations. In the five-year timeframe of 2015-2019, 18 of the 721 defective equipment outages pertained to substation equipment failures. PUC's outage data for Substation 16 indicates defective equipment was not the root cause of any outages between 2015 and 2019. However, PUC does have records of defective equipment identified in the field that were corrected proactively when determined to be critical and may lead to a power interruption. PUC monthly sub-checks and ESA inspections were the means by which defects were identified.

A summary of some equipment deficiencies is as follows:

- From Monthly Sub-Checks:
  - Transformer T1 failed oil insulation tests & leaking; core rebuild and oil replaced (in 2013)
  - Several relays failed trip timing tests; replaced like-for-like (two replaced in 2008, two replaced in 2013)
  - Porcelain insulators, cracked & tracking; replaced primary insulators
- From ESA inspections (in 2019):
  - Power transformer T2 leaking oil; (managed by adding oil)

Continued proactive corrective activities will not mitigate the overall risks associated with Sub16. In addition, past end-of-life (50+ years) equipment is very deteriorated resulting in unacceptable operating risks and a reduction in service levels for customers.

d) Although PUC Distribution records defective equipment occurrences when they occur, it does not categorize them systematically in their database based on major equipment type.

VECC-2

Reference: Appendix 7 Page 9 Table 2: Capital

Question:

a) Please confirm the capital/in-service amount in rates.
b) Please explain the capital variance in 2018.
c) Please provide forecast compared to actual data related to capital for the years 2015 to 2017.
d) Please explain the capital variance in 2019 excluding Substation 16.
e) Please provide PUC's latest capital plan (Appendix 2-AA).
f) Please advise of any discretionary capital spending in 2020.

Response:

a) The Average Fixed Asset Balance included in rates as per the 2018 COS rate request is $92,962,875 (Attachment J - EB-2017-0071_PUC_Settlement Proposal_20180914_pg8). The costs for Substation 16 included in rates from 2015, 2016 and 2017 are $32,038, $35,585, and $186,746 respectively. Please see the response to Staff 13(a) above.

b) In 2018, the variation in overall capital expenditure from budget was small – less than 4% of the budget. This variation was primarily attributable to an underspend of approximately $130,000 on forced renewal (i.e.: renewal due to unforeseen events such as storms, accidents, etc.)

c) Forecast compared to actual data related to capital for the years 2015 to 2017 is summarised as follows:

	2015		2016		2017	
	Budget	Actual	Budget	Actual	Budget	Actual
System Access	1,265,490	1,549,411	1,214,680	1,211,917	1,271,457	1,384,000
System Renewal	4,752,934	4,639,948	4,542,992	4,243,808	3,372,227	3,824,000
System Service	-	-	-	-	38,236.0	-
General Plant	68,653	66,532	0	82,630	0	8,000
Total Capital Expenditure	**6,087,077**	**6,255,891**	**5,757,672**	**5,538,355**	**4,681,920**	**5,216,000**

d) In 2019 the planned capital budget excluding Substation 16 was $5,055,727. Projected actuals are forecast to be within 5% of budget (note that final actuals for 2019 were not available at the time of preparing this response).

e) PUC has updated its latest capital plan table (Appendix 2-AA) which is included in EB-2017-0071 Exhibit 2, Page 53, Capital Project Table (included as Attachment D). This table includes the following updates:

   a. $32,038 was added in 2015 to Substation 16 capital project

   b. $420,179 was removed from 2018 Test Year as part of the settlement process provided in The Board's Decision and Rate Order in EB-2017-0071, at pg 21 (included in Attachment C).

   c. 2017 Actual and 2018 Actuals columns were added.

f) PUC does not categorize its capital plan into "discretionary" and "non-discretionary" groupings. There is no longer any requirement that the project must be non-discretionary to be eligible for ICM funding. Any discrete project (discretionary or otherwise) adequately supported in the Application is eligible for ICM funding subject to capital funding availability flowing from the formula results. See the *Report of the Board: New Policy Options for the Funding of Capital Investments: the Advanced Capital Module (EB-2014-0219)* issued September 18, 2014 at Section 4.1.3.

VECC-3

Reference: Appendix 7 Page 11

Question:

a) Please provide a list of the key equipment types, quantities and age of each at Substation 16.
b) Please provide the Expected Service Life of each of these key equipment types.
c) Please provide the number of outages, customer interruptions and customer interruption minutes for each of the years 2015 to 2019 related to each of these key equipment types at Substation 16.

Response:

a) A list of the key equipment types, the quantities and age of each at Substation 16 follows:

Equipment	Age	Life Expectancy
Transformer T1	54 years	40 years
Transformer T2	53 years	40 years
34.5kV Switchgear (4 switches, 2 sets of fuses)	approx. 54 years	40 years
12.47kV Switchgear (7 breakers, 2 switches)	54 years	40 years
48VDC System	21 years	20 years
Protection Relays (7)	20+ years	12-15 years

b) The Expected Service Life of each of these key equipment types is included in the table in part (a).

c) Please refer to response to VECC-1 (d).

VECC-4

Reference: Appendix 7 Page 6

Question:

The evidence states "PUC has proceeded with the ordering of power transformers and switchgear with the expected delivery in the fourth quarter of 2020 to allow sufficient time to meet the 2020 in service requirements prior to the winter season."

Please provide the expected delivery dates in Q4 2020 for power transformers and switchgear and explain the impacts of any delays.

Response:

The expected delivery date for the power transformers and switchgear is mid-July 2020. The reference to the "fourth quarter of 2020" in the original Application was incorrect, it should have read "third quarter of 2020".

Given the expected delivery date, PUC believes that there is a large enough buffer to cover any delays in delivery while keeping the project completion within the year 2020. In the very unlikely event that the project is delayed beyond the end of year 2020, continuity of electrical service to customers will be maintained but at a potentially reduced service level. This is a result of having customers that would normally be supplied by Substation 16 supplied by adjacent circuits. The potential risk is that more customers will be impacted by an outage.

VECC-5

Reference: Appendix 7 Page 12

Question:

PUC indicates maintaining the station in service over the past five years has required significant repairs.

a) Please provide the maintenance costs at Substation 16 for each of the years 2015 to 2019.

Response:

a) The maintenance costs at Substation 16 for each of the years 2015 to 2019 are as follows:

	2015	2016	2017	2018	2019
Maintenance Costs	$9,422	$10,121	$19,539	$852	$125

It is noted that maintenance costs are minimal because of the planned reconstruction of the substation.

VECC-6

Reference: P15 Figure 3 (sic)

Questions:
PUC provides the historical loading at Substation 16 for the years 2000 to 2019.

a) Please provide a schedule that sets out numerical load details at Substation 16 by month for the years 2018 and 2019.

b) Please provide the load forecast for 2020 to 2022.

Response:

a) We assume the reference noted above should actually be page 13 of Appendix 7.

The following schedule sets out numerical monthly peak load details at Substation 16 by month for the years 2018 and 2019:

Sub 16 Historical Loading (MW)

MW	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2018	*	*	10.448	10.391	9.372	9.846	11.424	11.222	10.450	12.058	13.134	11.208
2019	13.363	12.473	11.994	10.376	9.043	9.836	12.121	10.180	9.390	*	10.693	11.286

* representative monthly peak not available

In the above table, load data was not representative of the typical Substation 16 service area peak for the months identified and therefore was not provided. This is a result of half of the substation being offline with the corresponding load transferred to adjacent substations.

b) The load forecast from 2020 to 2022 is as follows:

Forecast	2020	2021	2022
Maximum (MW)	14.4	14.9	15.4
Minimum (MW)	10.0	10.5	11.0

VECC-7

Reference: Appendix 7 P15 Figure 6

Question:

Please provide explain (sic) any data gaps (i.e. incomplete testing) regarding the condition of switchgear at Substation 16.

Response:

Data used to assess the condition of switchgear is in accordance with PUC's Asset Condition Assessment and Asset Management Plan (AMP) filed with 2018 Cost of Service Application EB-2017-0071 (Exhibit2, Appendix 2, Appendix B, Tables 3-5 through 3-9). The criteria used by PUC's consultant METCO Energy Solutions is detailed in the AMP and includes the following criteria:

- Age
- Visual inspection
- Breaker Testing
- Protection Relay Testing

All available data was utilized to assess the condition of the Substation 16 switchgear.

VECC-8

Reference: Appendix 7 P15 Figure 7

Questions:
The health index of other assets at Substation 16 is poor condition.

a) Please provide the asset types including under "other assets".

b) Please explain any data gaps regarding the condition of other assets at Substation 16.

Response:

a) The following are asset types included in the "Substation Other Asset Health Index":
   - Ground grid
   - Surface stone
   - Fences
   - Buildings

   These can be found described in further detail in PUC's Asset Condition Assessment and Asset Management Plan (AMP) filed with 2018 Cost of Service Application EB-2017-0071.

b) All available data was utilized to assess the condition of the Substation 16 other assets.

VECC-9

Reference: Appendix 7 P16 Option 1

Question:

a) Please provide a copy of ESA's inspection report of Substation 16 and the date of the report.

b) Please provide a schedule that sets out each of the seven deficiencies, the estimated cost to address each ESA deficiency and identify the work completed to date and the work that is outstanding.

Response:

a) A copy of ESA's inspection report from June 27, 2019 is attached as requested. (included as Attachment K - ESA Defects 2019 Sub 16).

b) The seven deficiencies identified by ESA in respect of Substation 16, the estimated cost to address each and associated work completed to date or outstanding are summarized as follows:

- Code Rule: OESC 2018 Rule 36-304 5) & 2-030 - Where GPR study is not required as per Bulletin 36-10-*, a crushed stone ground surface covering layer must be a minimum thickness of 150 mm.
    - Solution: The entire inside perimeter of the Substation requires crushed stone which would cost approximately $5,300.
    - Status: Remedial work not undertaken since Station is to be re-built in 2020.

- Code Rule: OESC 2018 Rule 36-312 4) - The tap conductor shall be connected to the fence post, the bottom tension wire, the fence fabric (for which the conductor may be woven in at least two places), the top rail, and each strand of barbed wire, with the connection to the bottom tension wire, the fence fabric, and barbed wire strands made with bolted or equivalent connectors, and with the top rail connections bonded at every joint by a jumper equivalent to No. 2/0 AWG copper
    - Solution: The fence and ground grid are no longer in compliance with todays standards and would need to be fully replaced. Estimated cost $215,000
    - Status: Remedial work not undertaken since Station is to be re-built in 2020.

- Code Rule: OESC 2018 Rule 36-310 2) b) - The gradient control mat shall be placed on a minimum of 150 mm (6") of crushed stone and be at grade level.

  - Solution: Needs crushed stone under gradient control mat.
  - Status: Completed at a cost of $150

- Code Rule: OESC 2018 Rule 02-300 - Damaged ground mat.
  - Solution: Ground mat was replaced.
  - Status: Completed at a cost of $200
- Code Rule: OESC 2018 Rule 02-202 - Access to Sub Station confirmed, beer can by T2
  - Solution: No signs of unauthorized access observed, perhaps can was thrown over fence.
  - Status: Beer can was removed. The rebuilt station will feature an enclosed design, thereby minimizing unauthorized access concerns.

- Code Rule: OESC 2018 Rule 36-312 1) - Fence shall be located at least 1 m inside perimeter of the station ground electrode area.
  - Solution: Remove trees on west side as they are within 1 meter of fence.
  - Status: Trees to be removed in 2020 at time of station rebuild; estimated cost to remediate otherwise $15,000

- Code Rule: OESC 2018 Rule 02-300 – T2 leaking oil.
  - Solution: Staff attempted to make repairs as best they could in 2016 by replacing gaskets around leak, site glass, and re-torqueing bolts.
  - Status: Made repairs in 2016 but continues to leak oil at a slower rate. Station due to be re-built in 2020. Cost of transformer refurbishment and oil containment to address environmental concerns estimated at $370,000. This refurbishment cost is being avoided as a result of the re-build.

VECC-10

Reference: Appendix 7 Page 12 Appendix D P1

Question:

PUC's Substation 10 rebuild was completed in 2015 for a total of $4,483,000 and the total estimated cost of the Sub 16 rebuild is 3,910,244.00. Sub 16 is estimated to be less than Sub 10 d ue to a different switchgear type being used which will allow the buildings footprint to be reduce by about 40%.

a) Please provide a schedule that sets out the original estimated budget of Substation 10 compared to actuals and explain any actuals.

b) Please provide the original estimated schedule with milestones for Substation 10 compared to actuals and explain any variances.

c) Please provide the cost and schedule contingency for the Substation 10 project and explain how much was used any why.

Response:

a) A schedule that sets out the original estimated budget of Substation 10 compared to actuals is as follows:

	2013	2014	2015	Totals
Budget	$3,019,655	$565,373	$154,053	$3,739,082
Actuals	$3,274,360	$701,779	$178,930	$4,155,068

It is further clarified here that the actual total capital cost provided for Substation 10 in the reference document Appendix 7, p12, Appendix D P1 in the amount of $4,483,000 is incorrect. The correct value is $4,155,068 as shown in the table and has been confirmed with Appendix 2-AA of the 2018 rate application filing.

The variance in cost was primarily attributable to engineering resource constraints, equipment delivery timing and poor winter weather conditions.

Regarding Substation 16, the estimated budget submitted with the Cost of Service application and included in EB-2019-0170, Appendix D, p1 was $3,910,244 and with the subsequent Substation 16 ICM application (EB-2019-0170, page 8), the estimated budget was revised to $4,728,229. The difference identified in the updated estimate is attributable to the inclusion of tendered pricing for major equipment (power transformers and switchgear) and power transformer on-load tap changers.

b) The original schedule called for a two-year project across 2013 and 2014. Due to the engineering resource constraints (unexpected personnel changes), equipment delivery timing and poor winter weather conditions discussed in (a) above some deficiency work was not completed until 2015.

c) PUC allowed for a 5% cost contingency and a six-week schedule contingency for the Substation 10 project.

   For the reasons described in (a) and (b) above, the project was over budget by 11%.

   The two-month schedule contingency was adequate in that the project was substantially complete and placed in service in accordance with the plan. The exception was the deficiency items described above that were pushed out into 2015.

VECC-11

Reference: Appendix 7 Page 12 Appendix D P3

Question:

PUC indicates maintaining
the new Sub 16 will reduce O&M when compared to the existing Sub 16 O&M requirements.

Please provide the anticipated annual savings in 2021.

Response:

Although maintaining the new Substation 16 is expected to result in a reduction in costs relative to maintaining the existing Substation 16, these savings (identified in EB-2019-017, Appendix 7, page 12) are incremental and will not result in overall material distribution system savings. The incremental savings from Substation 16 will be offset by rising maintenance costs associated with the aging and deteriorating condition of other station assets. As illustrated in EB-2019-0170, Appendix 7 – 2020 Incremental Capital Module (ICM) Manager Summary and Appendices, p. 14 (Figures 4 & 5) and p. 15 (Figures 6 & 7), the majority of station assets are in either poor or very poor condition.

VECC-12

Reference: Appendix E Project Schedule

Question:

a) The Tendering Phase is shown as May 15 to Dec 6. Please provide the current status of the tendering process and summarize the bids and the outcome of the process or explain any delays.

b) Please provide the schedule contingency for the project.

Response:

a) There have been four tender packages released and awarded thus far for the Substation 16 project and a fifth which is currently in progress as follows:

- Engineering
    - Tendering Status: complete, PO issued November 10, 2016
    - Bid Summary & Outcome: Five bidders participated in this RFP. Each bidder's proposal was evaluated on the basis of the following seven criteria:
        - Corporate Profile of the Firm
        - Project Team
        - Relevant experience with the PUC system
        - Relevant Past Experience
        - Proposed Work Program
        - Detailed Methodology
        - Schedule
        - Fee Estimates and Upset Limits

      PUC selected the proponent whose proposal best balanced and met the evaluation criteria.

- Project Management
    - Tendering Status: complete, PO issued April 4, 2019
    - Bid Summary & Outcome: Two bidders participated in this RFP. Each bidder's proposal was evaluated on the basis of the following five criteria:
        - Corporate Qualifications and Experience
        - Organization
        - Key Personnel Qualifications and Experience
        - Other (safety, schedule)
        - Price

      PUC selected the proponent whose proposal best balanced and met the evaluation criteria.

- Switchgear
    - Tendering Status: complete, PO issued October 10, 2019
    - Bid Summary & Outcome: The RFQ was issued to six potential bidders in which three expressed interest. One bid was received and evaluated based on technical, pricing, schedule, and past vendor experience.
      PUC selected the proponent whose proposal best balanced and met the evaluation criteria

- Transformers
    - Tendering Status: complete, PO issued August 26, 2019
    - Bid Summary & Outcome: Four bidders participated in the RFQ. Bids were evaluated based on technical, pricing, lifecycle cost, schedule, and past vendor experience.
      PUC selected the proponent whose proposal best balanced and met the evaluation criteria.

- Construction Contract
    - Tendering Status: To be issued for bid in January 2020.
      Delays: approximately one month delay but no material impact to overall project schedule.

b) There is a six week project schedule contingency.

VECC-13

Question:

a) Please provide the detailed cost estimate for Substation 16.

b) Please provide the cost contingency amount for Substation 16.

c) Please provide the latest expenditure timing for the test year by quarter.

Response:

a) The detailed cost estimate for Substation 16 is as follows:

	Estimated Total
Consultants/Engineering	$ 535,810
Construction	$ 2,114,710
Switchgear	$ 1,138,341
Transformers	$ 939,368
Total	$ 4,728,229

b) PUC allowed for a 5% cost contingency for the Substation 16 project

c) The estimated expenditures up to December 31, 2019 are $1,051,393. For 2020 the following table illustrates estimated expenditure timing by quarter:

2020 Q1	2020 Q2	2020 Q3	2020 Q4
$ 31,559	$ 1,205,737	$ 2,077,309	$ 362,231

Attachments

<u>Attachment A - PUC_2020-IRM-Rate-Generator-Model_OEBstaffupated_20200110</u>

Ontario Energy Board

Incentive Rate-setting Mechanism Rate Generator for 2020 Filers

Please complete the following continuity schedule for the following Deferral/Variance Accounts. Enter information into green cells only. Please see instructions tab for detailed instructions on how to complete tabs 3 to 7. Column BV has been prepopulated from the latest 2.1.7 RRR filing.

Please refer to the footnotes for further instructions.

Account Descriptions	Account Number	2016 Opening Principal Amounts as of Jan 1, 2016	Transactions Debit / (Credit) during 2016	OEB-Approved Disposition during 2016	Principal Adjustments[1] during 2016	Closing Principal Balance as of Dec 31, 2016	Opening Interest Amounts as of Jan 1, 2016	Interest Jan 1 to Dec 31, 2016	OEB-Approved Disposition during 2016	Interest Adjustments[1] during 2016	Closing Interest Amounts as of Dec 31, 2016
Group 1 Accounts											
LV Variance Account	1550	0				0	0				0
Smart Metering Entity Charge Variance Account	1551	0				0	0				0
RSVA - Wholesale Market Service Charge[5]	1580	0				0	0				0
Variance WMS – Sub-account CBR Class A[5]	1580	0				0	0				0
Variance WMS – Sub-account CBR Class B[5]	1580	0				0	0				0
RSVA - Retail Transmission Network Charge	1584	0				0	0				0
RSVA - Retail Transmission Connection Charge	1586	0				0	0				0
RSVA - Power[4]	1588	0			(614,316)	(614,316)	0			8,897	8,897
RSVA - Global Adjustment[4]	1589	0			73,743	73,743	0			43,356	43,356
Disposition and Recovery/Refund of Regulatory Balances (2013)[3]	1595	0				0	0				0
Disposition and Recovery/Refund of Regulatory Balances (2014)[3]	1595	0				0	0				0
Disposition and Recovery/Refund of Regulatory Balances (2015)[3]	1595	0				0	0				0
Disposition and Recovery/Refund of Regulatory Balances (2016)[3]	1595	0				0	0				0
Disposition and Recovery/Refund of Regulatory Balances (2017)[3]	1595	0				0	0				0
Disposition and Recovery/Refund of Regulatory Balances (2018)[3]	1595	0				0	0				0
Disposition and Recovery/Refund of Regulatory Balances (2019)[3] *Not to be disposed of until a year after rate rider has expired and that balance has been audited*	1595	0				0	0				0
RSVA - Global Adjustment	**1589**	0	0	0	73,743	73,743	0	0	0	43,356	43,356
Total Group 1 Balance excluding Account 1589 - Global Adjustment		0	0	0	(614,316)	(614,316)	0	0	0	8,897	8,897
Total Group 1 Balance		0	0	0	(540,574)	(540,574)	0	0	0	52,253	52,253
LRAM Variance Account (only input amounts if applying for disposition of this account)	**1568**	0	(23)		(13,368)	(13,391)	0	(125)		3,014	2,889
Total including Account 1568		0	(23)	0	(553,942)	(553,965)	0	(125)	0	55,267	55,142

2017

Opening Principal Amounts as of Jan 1, 2017	Transactions Debit / (Credit) during 2017	OEB-Approved Disposition during 2017	Principal Adjustments[1] during 2017	Closing Principal Balance as of Dec 31, 2017	Opening Interest Amounts as of Jan 1, 2017	Interest Jan 1 to Dec 31, 2017	OEB-Approved Disposition during 2017	Interest Adjustments[1] during 2017	Closing Interest Amounts as of Dec 31, 2017
0				0	0				0
0			63	63	0			24,852	24,852
0			(3,344,527)	(3,344,527)	0			(65,811)	(65,811)
0			(5)	(5)	0			0	0
0			3,690	3,690	0			86	86
0			(282,667)	(282,667)	0			(1,614)	(1,614)
0				0	0				0
(614,316)	(1,012,943)			(1,627,260)	8,897	5,774			14,671
73,743	468,260			542,003	43,356	1,192			44,548
0				0	0				0
0				0	0				0
0				0	0				0
0				0	0				0
0				0	0				0
0				0	0				0
0				0	0				0
73,743	468,260	0	0	542,003	43,356	1,192	0	0	44,548
(614,316)	(1,012,943)	0	(3,623,446)	(5,250,705)	8,897	5,774	0	(42,488)	(27,817)
(540,574)	(544,683)	0	(3,623,446)	(4,708,703)	52,253	6,966	0	(42,488)	16,731
(13,391)	(96,469)			(109,860)	2,889	1,482			4,371
(553,965)	(641,152)	0	(3,623,446)	(4,818,563)	55,142	8,448	0	(42,488)	21,102

2018									
Opening Principal Amounts as of Jan 1, 2018	Transactions Debit / (Credit) during 2018	OEB-Approved Disposition during 2018	Principal Adjustments[1] during 2018	Closing Principal Balance as of Dec 31, 2018	Opening Interest Amounts as of Jan 1, 2018	Interest Jan 1 to Dec 31, 2018	OEB-Approved Disposition during 2018	Interest Adjustments[1] during 2018	Closing Interest Amounts as of Dec 31, 2018
0				0	0				0
63	(18,701)	33,839		(52,477)	24,852	556	2,003		23,404
(3,344,527)	(191,287)	(2,364,294)		(1,171,520)	(65,811)	(52,079)	(73,826)		(44,064)
(5)	235			230	0	2			2
3,690	(4,543)			(853)	86	(10)			76
(282,667)	84,818	(98,043)		(99,806)	(1,614)	(6,318)	(645)		(7,287)
0				0	0				0
(1,627,260)	382,487	(614,316)		(630,457)	14,671	20,938	(1,545)		37,154
542,003	768,691	73,743		1,236,951	44,548	48,479	44,610		48,416
0			127,552	127,552	0			(127,550)	(127,550)
0				0	0				0
0				0	0				0
0	80		187,267	187,346	0	3,489		(126,072)	(122,583)
0				0	0				0
0	455,088	3,028,152		(2,573,065)	0	(16,625)	32,584		(49,209)
0				0	0				0
542,003	768,691	73,743	0	1,236,951	44,548	48,479	44,610	0	48,416
(5,250,705)	708,175	(14,662)	314,819	(4,213,050)	(27,817)	(50,047)	(41,429)	(253,622)	(290,057)
(4,708,703)	1,476,866	59,081	314,819	(2,976,099)	16,731	(1,568)	3,181	(253,622)	(241,641)
(109,860)	528,978			419,118	4,371	3,120			7,491
(4,818,563)	2,005,844	59,081	314,819	(2,556,981)	21,102	1,552	3,181	(253,622)	(234,150)

2019				Projected Interest on Dec-31-18 Balances					2.1.7 RRR	
Principal Disposition during 2019 - instructed by OEB	Interest Disposition during 2019 - instructed by OEB	Closing Principal Balances as of Dec 31, 2018 Adjusted for Disposition during 2019	Closing Interest Balances as of Dec 31, 2018 Adjusted for Disposition during 2019	Projected Interest from Jan 1, 2019 to Dec 31, 2019 on Dec 31, 2018 balance adjusted for disposition during 2019 [2]	Projected Interest from Jan 1, 2020 to Apr 30, 2020 on Dec 31, 2018 balance adjusted for disposition during 2019 [2]	Total Interest	Total Claim	Account Disposition: Yes/No?	As of Dec 31, 2018	Variance RRR vs. 2018 Balance *(Principal + Interest)*
		0	0			0	0		0	0
(33,777)	22,385	(18,700)	1,019	(420)	(136)	463	(18,237)		(29,072)	1
(980,234)	(10,184)	(191,286)	(33,880)	(4,299)	(1,390)	(39,569)	(230,855)		(1,216,129)	(546)
		230	2	5	2	8	0		232	0
3,690	155	(4,543)	(79)	(102)	(33)	(214)	(4,757)		(777)	0
(184,625)	(4,416)	84,819	(2,871)	1,906	616	(349)	84,470		(107,093)	0
		0	0			0	0		0	0
		(630,457)	37,154	(14,170)	(4,581)	18,403	0	No	(593,303)	0
		1,236,951	48,416	27,800	8,989	85,205	0	No	1,285,367	0
		127,552	(127,550)			(127,550)	0	No	0	(2)
		0	0			0	0	No	0	0
		0	0			0	0	No	0	0
189,267	(123,460)	(1,921)	877			877	0	No	64,762	(1)
		0	0			0	0	No	0	0
		(2,573,065)	(49,209)	(57,830)	(18,698)	(125,737)	0	No	(2,622,274)	0
1,005,679	115,520	(1,005,679)	(115,520)			(115,520)	0	No		0
0	0	1,236,951	48,416	27,800	8,989	85,205	0		1,285,367	0
0	0	(4,213,050)	(290,057)	(74,909)	(24,220)	(389,186)	(169,379)		(4,503,109)	(2)
(1,005,679)	0	(2,976,099)	(241,641)	(47,109)	(15,231)	(303,981)	(169,379)		(3,217,742)	(2)
372,491	11,820	46,627	(4,329)	1,048	339	(2,942)	43,685		426,609	0
(633,188)	11,820	(2,929,472)	(245,970)	(46,061)	(14,892)	(306,923)	(125,694)		(2,791,133)	(1)

Ontario Energy Board

Incentive Rate-setting Mechanism Rate Generator for 2020 Filers

Data on this worksheet has been populated using your most recent RRR filing.
If you have identified any issues, please contact the OEB.
Have you confirmed the accuracy of the data below? Yes

If a distributor uses the actual GA price to bill non-RPP Class B customers for an entire rate class, it must exclude these customers from the allocation of the GA balance and the calculation of the resulting rate riders. These rate classes are not to be charged/refunded the general GA rate rider as they did not contribute to the GA balance.

Please contact the OEB to make adjustments to the IRM rate generator for this situation.

Rate Class	Unit	Total Metered kWh	Total Metered kW	Metered kWh for Non-RPP Customers (excluding WMP)	Metered kW for Non-RPP Customers (excluding WMP)	Metered kWh for Wholesale Market Participants (WMP)	Metered kW for Wholesale Market Participants (WMP)	Total Metered kWh less WMP consumption *(if applicable)*	Total Metered kW less WMP consumption *(if applicable)*	1568 LRAM Variance Account Class Allocation ($ amounts)	Number of Customers for Residential and GS<50 classes[3]
RESIDENTIAL SERVICE CLASSIFICATION	kWh	295,617,650	0	8,593,883	0	0	0	295,617,650	0		29,837
GENERAL SERVICE LESS THAN 50 KW SERVICE CLASSIFICATION	kWh	92,759,999	0	14,222,565	0	0	0	92,759,999	0		3,414
GENERAL SERVICE 50 to 4,999 kW SERVICE CLASSIFICATION	kW	241,817,729	604,549	201,564,198	483,227	0	0	241,817,729	604,549		
UNMETERED SCATTERED LOAD SERVICE CLASSIFICATION	kWh	895,217	0	0	0	0	0	895,217	0		
SENTINEL LIGHTING SERVICE CLASSIFICATION	kW	209,111	612	0	0	0	0	209,111	612		
STREET LIGHTING SERVICE CLASSIFICATION	kW	2,398,221	7,030	2,271,157	6,658	0	0	2,398,221	7,030		
	Total	633,697,927	612,191	226,651,803	489,885	0	0	633,697,927	612,191	43,685	33,251

Threshold Test

Total Claim (including Account 1568)	($125,694)	
Total Claim for Threshold Test (All Group 1 Accounts)	($169,379)	
Threshold Test (Total claim per kWh)[2]	($0.0003)	Claim does not meet the threshold test.

As per Section 3.2.5 of the 2019 Filing Requirements for Electricity Distribution Rate Applications, an applicant may elect to dispose of the Group 1 account balances below the threshold. If doing so, please select YES from the adjacent drop-down cell and also indicate so in the Manager's Summary. If not, please select NO.

NO

Incentive Rate-setting Mechanism Rate Generator for 2020 Filers

Ontario Energy Board

No input required. This workshseet allocates the deferral/variance account balances (Group 1 and 1568) to the appropriate classes as per EDDVAR dated July 31, 2009

Allocation of Group 1 Accounts (including Account 1568)

Rate Class	% of Total kWh	% of Customer Numbers **	% of Total kWh adjusted for WMP	1550	1551	1580 (allocated based on Total less WMP)	1584	1586	1588 (allocated based on Total less WMP)	1568
RESIDENTIAL SERVICE CLASSIFICATION	46.6%	89.7%	46.6%							0
GENERAL SERVICE LESS THAN 50 KW SERVICE CLASSIFICATION	14.6%	10.3%	14.6%							0
GENERAL SERVICE 50 to 4,999 kW SERVICE CLASSIFICATION	38.2%	0.0%	38.2%							0
UNMETERED SCATTERED LOAD SERVICE CLASSIFICATION	0.1%	0.0%	0.1%							0
SENTINEL LIGHTING SERVICE CLASSIFICATION	0.0%	0.0%	0.0%							0
STREET LIGHTING SERVICE CLASSIFICATION	0.4%	0.0%	0.4%							0
Total	100.0%	100.0%	100.0%	0	0	0	0	0	0	0

*** Used to allocate Account 1551 as this account records the variances arising from the Smart Metering Entity Charges to Residential and GS<50 customers.*

Ontario Energy Board

Incentive Rate-setting Mechanism Rate Generator for 2020 Filers

Input required at cells C13 and C14. This workshseet calculates rate riders related to the Deferral/Variance Account Disposition (if applicable) and rate riders for Account 1568. Rate Riders will not be generated for the microFIT class.

Default Rate Rider Recovery Period (in months)	12	
DVA Proposed Rate Rider Recovery Period (in months)	12	Rate Rider Recovery to be used below
LRAM Proposed Rate Rider Recovery Period (in months)	12	Rate Rider Recovery to be used below

Rate Class	Unit	Total Metered kWh	Metered kW or kVA	Total Metered kWh less WMP consumption	Total Metered kW less WMP consumption	Allocation of Group 1 Account Balances to All Classes [2]	Allocation of Group 1 Account Balances to Non-WMP Classes Only (If Applicable) [2]	Deferral/Variance Account Rate Rider [2]	Deferral/Variance Account Rate Rider for Non-WMP (if applicable) [2]	Account 1568 Rate Rider	Revenue Reconcilation [1]
RESIDENTIAL SERVICE CLASSIFICATION	kWh	295,617,650	0	295,617,650	0	0		0.0000		0.0000	
GENERAL SERVICE LESS THAN 50 KW SERVICE CLASSIFICATION	kWh	92,759,999	0	92,759,999	0	0		0.0000		0.0000	
GENERAL SERVICE 50 to 4,999 kW SERVICE CLASSIFICATION	kW	241,817,729	604,549	241,817,729	604,549	0		0.0000		0.0000	
UNMETERED SCATTERED LOAD SERVICE CLASSIFICATION	kWh	895,217	0	895,217	0	0		0.0000		0.0000	
SENTINEL LIGHTING SERVICE CLASSIFICATION	kW	209,111	612	209,111	612	0		0.0000		0.0000	
STREET LIGHTING SERVICE CLASSIFICATION	kW	2,398,221	7,030	2,398,221	7,030	0		0.0000		0.0000	
											0.00

[1] When calculating the revenue reconciliation for distributors with Class A customers, the balances of sub-account 1580-CBR Class B will not be taken into consideration if there are Class A customers since the rate riders, if any, are calculated separately.
[2] Only for rate classes with WMP customers are the Deferral/Variance Account Rate Riders for Non-WMP (column H and J) calculated separately. For all rate classes without WMP customers, balances in account 1580 and 1588 are included in column G and disposed through a combined Deferral/Variance Account and Rate Rider.

Ontario Energy Board

Incentive Rate-setting Mechanism Rate Generator for 2020 Filers

Summary - Sharing of Tax Change Forecast Amounts

	2018	2020
OEB-Approved Rate Base	$ 99,658,054	$ 99,658,054
OEB-Approved Regulatory Taxable Income	$ 1,627,305	$ 1,627,305
Federal General Rate		15.0%
Federal Small Business Rate		9.0%
Federal Small Business Rate (calculated effective rate)[1,2]		15.0%
Ontario General Rate		11.5%
Ontario Small Business Rate		3.5%
Ontario Small Business Rate (calculated effective rate)[1,2]		11.5%
Federal Small Business Limit		$ 500,000
Ontario Small Business Limit		$ 500,000
Federal Taxes Payable		$ 244,096
Provincial Taxes Payable		$ 187,140
Federal Effective Tax Rate		15.0%
Provincial Effective Tax Rate		11.5%
Combined Effective Tax Rate	26.5%	26.5%
Total Income Taxes Payable	$ 431,236	$ 431,236
OEB-Approved Total Tax Credits (enter as positive number)	$ -	$ -
Income Tax Provision	$ 431,236	$ 431,236
Grossed-up Income Taxes	$ 586,715	$ 586,715
Incremental Grossed-up Tax Amount		$ -
Sharing of Tax Amount (50%)		**$ -**

Notes

1. Regarding the small business deduction, if applicable,
   a. If taxable capital exceeds $15 million, the small business rate will not be applicable.
   b. If taxable capital is below $10 million, the small business rate would be applicable.
   c. If taxable capital is between $10 million and $15 million, the appropriate small business rate will be calculated.

2. The OEB's proxy for taxable capital is rate base.

Ontario Energy Board

Incentive Rate-setting Mechanism Rate Generator for 2020 Filers

Calculation of Rebased Revenue Requirement and Allocation of Tax Sharing Amount. Enter data from the last OEB-Approved Cost of Service application in columns C through H.

As per Chapter 3 Filing Requirements, shared tax rate riders are based on a 1 year disposition.

Rate Class		Re-based Billed Customers or Connections	Re-based Billed kWh	Re-based Billed kW	Re-based Service Charge	Re-based Distribution Volumetric Rate kWh	Re-based Distribution Volumetric Rate kW	Service Charge Revenue
RESIDENTIAL SERVICE CLASSIFICATION	kWh	29,816	288,323,799	0	24.41	0.0086	0.0000	8,733,703
GENERAL SERVICE LESS THAN 50 KW SERVICE CLASSIFICATION	kWh	3,431	92,411,463	0	20.73	0.0248	0.0000	853,496
GENERAL SERVICE 50 to 4,999 kW SERVICE CLASSIFICATION	kW	357	244,620,698	614,743	114.46	0.0000	6.7295	490,347
UNMETERED SCATTERED LOAD SERVICE CLASSIFICATION	kWh	22	944,731	0	12.69	0.0383	0.0000	3,350
SENTINEL LIGHTING SERVICE CLASSIFICATION	kW	354	209,800	593	3.55	0.0000	33.1502	15,080
STREET LIGHTING SERVICE CLASSIFICATION	kW	8,070	2,398,221	7,030	1.37	0.0000	8.9284	132,671
Total		42,050	628,908,712	622,366				10,228,646

Rate Class		Total kWh (most recent RRR filing)	Total kW (most recent RRR filing)	Allocation of Tax Savings by Rate Class	Distribution Rate Rider	
RESIDENTIAL SERVICE CLASSIFICATION	kWh	295,617,650		0	0.00	$/customer
GENERAL SERVICE LESS THAN 50 KW SERVICE CLASSIFICATION	kWh	92,759,999		0	0.0000	kWh
GENERAL SERVICE 50 to 4,999 kW SERVICE CLASSIFICATION	kW	241,817,729	604,549	0	0.0000	kW
UNMETERED SCATTERED LOAD SERVICE CLASSIFICATION	kWh	895,217		0	0.0000	kWh
SENTINEL LIGHTING SERVICE CLASSIFICATION	kW	209,111	612	0	0.0000	kW
STREET LIGHTING SERVICE CLASSIFICATION	kW	2,398,221	7,030	0	0.0000	kW
Total		633,697,927	612,191	$0		

Distribution Volumetric Rate Revenue kWh	Distribution Volumetric Rate Revenue kW	Revenue Requirement from Rates	Service Charge % Revenue	Distribution Volumetric Rate % Revenue kWh	Distribution Volumetric Rate % Revenue kW	Total % Revenue
2,479,585	0	11,213,287	77.9%	22.1%	0.0%	58.2%
2,291,804	0	3,145,300	27.1%	72.9%	0.0%	16.3%
0	4,136,913	4,627,260	10.6%	0.0%	89.4%	24.0%
36,183	0	39,533	8.5%	91.5%	0.0%	0.2%
0	19,658	34,738	43.4%	0.0%	56.6%	0.2%
0	62,767	195,437	67.9%	0.0%	32.1%	1.0%
4,807,572	4,219,338	19,255,556				100.0%

Ontario Energy Board

Incentive Rate-setting Mechanism Rate Generator for 2020 Filers

Columns E and F have been populated with data from the most recent RRR filing. Rate classes that have more than one Network or Connection charge will notice that the cells are highlighted in green and unlocked. If the data needs to be modified, please make the necessary adjustments and note the changes in your manager's summary. As well, the Loss Factor has been imported from Tab 2.

Rate Class	Rate Description	Unit	Rate	Non-Loss Adjusted Metered kWh	Non-Loss Adjusted Metered kW	Applicable Loss Factor	Loss Adjusted Billed kWh
Residential Service Classification	Retail Transmission Rate - Network Service Rate	$/kWh	0.0061	295,617,650	0	1.0481	309,836,859
General Service Less Than 50 kW Service Classification	Retail Transmission Rate - Network Service Rate	$/kWh	0.0057	92,759,999	0	1.0481	97,221,755
General Service 50 To 4,999 kW Service Classification	Retail Transmission Rate - Network Service Rate	$/kW	2.2941	156,004,056	410,081		
General Service 50 To 4,999 kW Service Classification	Retail Transmission Rate - Network Service Rate - Interval Metered	$/kW	2.8852	85,813,673	194,468		
Unmetered Scattered Load Service Classification	Retail Transmission Rate - Network Service Rate	$/kWh	0.0057	895,217	0	1.0481	938,277
Sentinel Lighting Service Classification	Retail Transmission Rate - Network Service Rate	$/kW	1.7389	209,111	612		
Street Lighting Service Classification	Retail Transmission Rate - Network Service Rate	$/kW	1.7303	2,398,221	7,030		

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Incentive Rate-setting Mechanism Rate Generator for 2020 Filers

Uniform Transmission Rates	Unit	2018	2019 (Jan 1 - June 30)	2019 (July 1 - Dec	2020
Rate Description		Rate	Rate	Rate	Rate
Network Service Rate	kW	$ 3.61	$ 3.71	$ 3.83	$ 3.83
Line Connection Service Rate	kW	$ 0.95	$ 0.94	$ 0.96	$ 0.96
Transformation Connection Service Rate	kW	$ 2.34	$ 2.25	$ 2.30	$ 2.30

Hydro One Sub-Transmission Rates	Unit	2018	2019 (Jan 1 - June 30)	2019 (July 1 - Dec	2020
Rate Description		Rate	Rate	Rate	Rate
Network Service Rate	kW	$ 3.1942	$ 3.1942	$ 3.2915	$ 3.2915
Line Connection Service Rate	kW	$ 0.7710	$ 0.7710	$ 0.7877	$ 0.7877
Transformation Connection Service Rate	kW	$ 1.7493	$ 1.7493	$ 1.9755	$ 1.9755
Both Line and Transformation Connection Service Rate	kW	$ 2.5203	$ 2.5203	$ 2.7632	$ 2.7632

If needed, add extra host here. (I)	Unit	2018	2019	2020
Rate Description		Rate	Rate	Rate
Network Service Rate	kW			
Line Connection Service Rate	kW			
Transformation Connection Service Rate	kW			
Both Line and Transformation Connection Service Rate	kW	$ -	$ -	$ -

If needed, add extra host here. (II)	Unit	2018	2019	2020
Rate Description		Rate	Rate	Rate
Network Service Rate	kW			
Line Connection Service Rate	kW			
Transformation Connection Service Rate	kW			
Both Line and Transformation Connection Service Rate	kW	$ -	$ -	$ -

		Historical 2018	Current 2019	Forecast 2020
Low Voltage Switchgear Credit (if applicable, enter as a negative value)	$			

Ontario Energy Board

Incentive Rate-setting Mechanism Rate Generator for 2020 Filers

In the green shaded cells, enter billing detail for wholesale transmission for the same reporting period as the billing determinants on Tab 10. For Hydro One Sub-transmission Rates, if you are charged a combined Line and Transformer connection rate, please ensure that both the Line Connection and Transformation Connection columns are completed.
If any of the Hydro One Sub-transmission rates (column E, I and M) are highlighted in red, please double check the billing data entered in "Units Billed" and "Amount" columns. The highlighted rates do not match the Hydro One Sub-transmission rates approved for that time period. If data has been entered correctly, please provide explanation for the discrepancy in rates.

IESO	Network			Line Connection			Transformation Connection			Total Connection
Month	Units Billed	Rate	Amount	Units Billed	Rate	Amount	Units Billed	Rate	Amount	Amount
January	127,152	$3.61	$ 459,531		$0.00			$0.00		$ -
February	109,948	$3.61	$ 397,143		$0.00			$0.00		$ -
March	98,411	$3.61	$ 355,480		$0.00			$0.00		$ -
April	97,365	$3.61	$ 351,795		$0.00			$0.00		$ -
May	63,059	$3.61	$ 227,755		$0.00			$0.00		$ -
June	67,153	$3.61	$ 242,509		$0.00			$0.00		$ -
July	69,279	$3.61	$ 250,303		$0.00			$0.00		$ -
August	71,057	$3.61	$ 256,642		$0.00			$0.00		$ -
September	70,108	$3.61	$ 253,346		$0.00			$0.00		$ -
October	75,236	$3.61	$ 271,844		$0.00			$0.00		$ -
November	111,013	$3.61	$ 400,995		$0.00			$0.00		$ -
December	104,297	$3.61	$ 376,772		$0.00			$0.00		$ -
Total	1,064,078	$ 3.61	$ 3,844,116	-	$ -	$ -	-	$ -	$ -	$ -

Hydro One	Network			Line Connection			Transformation Connection			Total Connection
Month	Units Billed	Rate	Amount	Units Billed	Rate	Amount	Units Billed	Rate	Amount	Amount
January		$0.0000			$0.0000			$0.0000		$ -
February		$0.0000			$0.0000			$0.0000		$ -
March		$0.0000			$0.0000			$0.0000		$ -
April		$0.0000			$0.0000			$0.0000		$ -
May		$0.0000			$0.0000			$0.0000		$ -
June		$0.0000			$0.0000			$0.0000		$ -
July		$0.0000			$0.0000			$0.0000		$ -
August		$0.0000			$0.0000			$0.0000		$ -
September		$0.0000			$0.0000			$0.0000		$ -
October		$0.0000			$0.0000			$0.0000		$ -
November		$0.0000			$0.0000			$0.0000		$ -
December		$0.0000			$0.0000			$0.0000		$ -
Total	-	$ -	$ -	-	$ -	$ -	-	$ -	$ -	$ -

Add Extra Host Here (I) (if needed)	Network			Line Connection			Transformation Connection			Total Connection
Month	Units Billed	Rate	Amount	Units Billed	Rate	Amount	Units Billed	Rate	Amount	Amount
January		$ -			$ -			$ -		$ -
February		$ -			$ -			$ -		$ -
March		$ -			$ -			$ -		$ -
April		$ -			$ -			$ -		$ -
May		$ -			$ -			$ -		$ -
June		$ -			$ -			$ -		$ -
July		$ -			$ -			$ -		$ -
August		$ -			$ -			$ -		$ -
September		$ -			$ -			$ -		$ -
October		$ -			$ -			$ -		$ -
November		$ -			$ -			$ -		$ -
December		$ -			$ -			$ -		$ -
Total	-	$ -	$ -	-	$ -	$ -	-	$ -	$ -	$ -

Add Extra Host Here (II) (if needed)	Network			Line Connection			Transformation Connection			Total Connection
Month	Units Billed	Rate	Amount	Units Billed	Rate	Amount	Units Billed	Rate	Amount	Amount
January		$ -			$ -			$ -		$ -
February		$ -			$ -			$ -		$ -
March		$ -			$ -			$ -		$ -
April		$ -			$ -			$ -		$ -
May		$ -			$ -			$ -		$ -
June		$ -			$ -			$ -		$ -
July		$ -			$ -			$ -		$ -
August		$ -			$ -			$ -		$ -
September		$ -			$ -			$ -		$ -
October		$ -			$ -			$ -		$ -
November		$ -			$ -			$ -		$ -
December		$ -			$ -			$ -		$ -
Total	-	$ -	$ -	-	$ -	$ -	-	$ -	$ -	$ -

Total	Network			Line Connection			Transformation Connection			Total Connection
Month	Units Billed	Rate	Amount	Units Billed	Rate	Amount	Units Billed	Rate	Amount	Amount
January	127,152	$ 3.6140	$ 459,531	-	$ -	$ -	-	$ -	$ -	$ -
February	109,948	$ 3.6121	$ 397,143	-	$ -	$ -	-	$ -	$ -	$ -
March	98,411	$ 3.6122	$ 355,480	-	$ -	$ -	-	$ -	$ -	$ -
April	97,365	$ 3.6132	$ 351,795	-	$ -	$ -	-	$ -	$ -	$ -
May	63,059	$ 3.6118	$ 227,755	-	$ -	$ -	-	$ -	$ -	$ -
June	67,153	$ 3.6113	$ 242,509	-	$ -	$ -	-	$ -	$ -	$ -
July	69,279	$ 3.6130	$ 250,303	-	$ -	$ -	-	$ -	$ -	$ -
August	71,057	$ 3.6118	$ 256,642	-	$ -	$ -	-	$ -	$ -	$ -
September	70,108	$ 3.6136	$ 253,346	-	$ -	$ -	-	$ -	$ -	$ -
October	75,236	$ 3.6132	$ 271,844	-	$ -	$ -	-	$ -	$ -	$ -
November	111,013	$ 3.6121	$ 400,995	-	$ -	$ -	-	$ -	$ -	$ -
December	104,297	$ 3.6125	$ 376,772	-	$ -	$ -	-	$ -	$ -	$ -
Total	1,064,078	$ 3.61	$ 3,844,116	-	$ -	$ -	-	$ -	$ -	$ -

Low Voltage Switchgear Credit (if applicable)	$ -
Total including deduction for Low Voltage Switchgear Credit	$ -

Ontario Energy Board

Incentive Rate-setting Mechanism Rate Generator for 2020 Filers

The purpose of this sheet is to calculate the expected billing when current 2019 Uniform Transmission Rates are applied against historical 2018 transmission units.

IESO	Network			Line Connection			Transformation Connection			Total Connection
Month	**Units Billed**	**Rate**	**Amount**	**Units Billed**	**Rate**	**Amount**	**Units Billed**	**Rate**	**Amount**	**Amount**
January	127,152	$ 3.7100	$ 471,734	-	$ 0.9400	$ -	-	$ 2.2500	$ -	$ -
February	109,948	$ 3.7100	$ 407,906	-	$ 0.9400	$ -	-	$ 2.2500	$ -	$ -
March	98,411	$ 3.7100	$ 365,104	-	$ 0.9400	$ -	-	$ 2.2500	$ -	$ -
April	97,365	$ 3.7100	$ 361,223	-	$ 0.9400	$ -	-	$ 2.2500	$ -	$ -
May	63,059	$ 3.7100	$ 233,949	-	$ 0.9400	$ -	-	$ 2.2500	$ -	$ -
June	67,153	$ 3.7100	$ 249,139	-	$ 0.9400	$ -	-	$ 2.2500	$ -	$ -
July	69,279	$ 3.8300	$ 265,337	-	$ 0.9600	$ -	-	$ 2.3000	$ -	$ -
August	71,057	$ 3.8300	$ 272,150	-	$ 0.9600	$ -	-	$ 2.3000	$ -	$ -
September	70,108	$ 3.8300	$ 268,515	-	$ 0.9600	$ -	-	$ 2.3000	$ -	$ -
October	75,236	$ 3.8300	$ 288,154	-	$ 0.9600	$ -	-	$ 2.3000	$ -	$ -
November	111,013	$ 3.8300	$ 425,181	-	$ 0.9600	$ -	-	$ 2.3000	$ -	$ -
December	104,297	$ 3.8300	$ 399,458	-	$ 0.9600	$ -	-	$ 2.3000	$ -	$ -
Total	1,064,078	$ 3.77	$ 4,007,850	-	$ -	$ -	-	$ -	$ -	$ -

Hydro One	Network			Line Connection			Transformation Connection			Total Connection
Month	**Units Billed**	**Rate**	**Amount**	**Units Billed**	**Rate**	**Amount**	**Units Billed**	**Rate**	**Amount**	**Amount**
January	-	$ 3.1942	$ -	-	$ 0.7710	$ -	-	$ 1.7493	$ -	$ -
February	-	$ 3.1942	$ -	-	$ 0.7710	$ -	-	$ 1.7493	$ -	$ -
March	-	$ 3.1942	$ -	-	$ 0.7710	$ -	-	$ 1.7493	$ -	$ -
April	-	$ 3.1942	$ -	-	$ 0.7710	$ -	-	$ 1.7493	$ -	$ -
May	-	$ 3.1942	$ -	-	$ 0.7710	$ -	-	$ 1.7493	$ -	$ -
June	-	$ 3.1942	$ -	-	$ 0.7710	$ -	-	$ 1.7493	$ -	$ -
July	-	$ 3.2915	$ -	-	$ 0.7877	$ -	-	$ 1.9755	$ -	$ -
August	-	$ 3.2915	$ -	-	$ 0.7877	$ -	-	$ 1.9755	$ -	$ -
September	-	$ 3.2915	$ -	-	$ 0.7877	$ -	-	$ 1.9755	$ -	$ -
October	-	$ 3.2915	$ -	-	$ 0.7877	$ -	-	$ 1.9755	$ -	$ -
November	-	$ 3.2915	$ -	-	$ 0.7877	$ -	-	$ 1.9755	$ -	$ -
December	-	$ 3.2915	$ -	-	$ 0.7877	$ -	-	$ 1.9755	$ -	$ -
Total	-	$ -	$ -	-	$ -	$ -	-	$ -	$ -	$ -

Add Extra Host Here (I)	Network			Line Connection			Transformation Connection			Total Connection
Month	**Units Billed**	**Rate**	**Amount**	**Units Billed**	**Rate**	**Amount**	**Units Billed**	**Rate**	**Amount**	**Amount**
January	-	$ -	$ -	-	$ -	$ -	-	$ -	$ -	$ -
February	-	$ -	$ -	-	$ -	$ -	-	$ -	$ -	$ -
March	-	$ -	$ -	-	$ -	$ -	-	$ -	$ -	$ -
April	-	$ -	$ -	-	$ -	$ -	-	$ -	$ -	$ -
May	-	$ -	$ -	-	$ -	$ -	-	$ -	$ -	$ -
June	-	$ -	$ -	-	$ -	$ -	-	$ -	$ -	$ -
July	-	$ -	$ -	-	$ -	$ -	-	$ -	$ -	$ -
August	-	$ -	$ -	-	$ -	$ -	-	$ -	$ -	$ -
September	-	$ -	$ -	-	$ -	$ -	-	$ -	$ -	$ -
October	-	$ -	$ -	-	$ -	$ -	-	$ -	$ -	$ -
November	-	$ -	$ -	-	$ -	$ -	-	$ -	$ -	$ -
December	-	$ -	$ -	-	$ -	$ -	-	$ -	$ -	$ -
Total	-	$ -	$ -	-	$ -	$ -	-	$ -	$ -	$ -

Add Extra Host Here (II)	Network			Line Connection			Transformation Connection			Total Connection
Month	**Units Billed**	**Rate**	**Amount**	**Units Billed**	**Rate**	**Amount**	**Units Billed**	**Rate**	**Amount**	**Amount**
January	-	$ -	$ -	-	$ -	$ -	-	$ -	$ -	$ -
February	-	$ -	$ -	-	$ -	$ -	-	$ -	$ -	$ -
March	-	$ -	$ -	-	$ -	$ -	-	$ -	$ -	$ -
April	-	$ -	$ -	-	$ -	$ -	-	$ -	$ -	$ -
May	-	$ -	$ -	-	$ -	$ -	-	$ -	$ -	$ -
June	-	$ -	$ -	-	$ -	$ -	-	$ -	$ -	$ -
July	-	$ -	$ -	-	$ -	$ -	-	$ -	$ -	$ -
August	-	$ -	$ -	-	$ -	$ -	-	$ -	$ -	$ -
September	-	$ -	$ -	-	$ -	$ -	-	$ -	$ -	$ -
October	-	$ -	$ -	-	$ -	$ -	-	$ -	$ -	$ -
November	-	$ -	$ -	-	$ -	$ -	-	$ -	$ -	$ -
December	-	$ -	$ -	-	$ -	$ -	-	$ -	$ -	$ -
Total	-	$ -	$ -	-	$ -	$ -	-	$ -	$ -	$ -

Total	Network			Line Connection			Transformation Connection			Total Connection
Month	**Units Billed**	**Rate**	**Amount**	**Units Billed**	**Rate**	**Amount**	**Units Billed**	**Rate**	**Amount**	**Amount**
January	127,152	$ 3.7100	$ 471,734	-	$ -	$ -	-	$ -	$ -	$ -
February	109,948	$ 3.7100	$ 407,906	-	$ -	$ -	-	$ -	$ -	$ -
March	98,411	$ 3.7100	$ 365,104	-	$ -	$ -	-	$ -	$ -	$ -
April	97,365	$ 3.7100	$ 361,223	-	$ -	$ -	-	$ -	$ -	$ -
May	63,059	$ 3.7100	$ 233,949	-	$ -	$ -	-	$ -	$ -	$ -
June	67,153	$ 3.7100	$ 249,139	-	$ -	$ -	-	$ -	$ -	$ -
July	69,279	$ 3.8300	$ 265,337	-	$ -	$ -	-	$ -	$ -	$ -
August	71,057	$ 3.8300	$ 272,150	-	$ -	$ -	-	$ -	$ -	$ -
September	70,108	$ 3.8300	$ 268,515	-	$ -	$ -	-	$ -	$ -	$ -
October	75,236	$ 3.8300	$ 288,154	-	$ -	$ -	-	$ -	$ -	$ -
November	111,013	$ 3.8300	$ 425,181	-	$ -	$ -	-	$ -	$ -	$ -
December	104,297	$ 3.8300	$ 399,458	-	$ -	$ -	-	$ -	$ -	$ -
Total	1,064,078	$ 3.77	$ 4,007,850	-	$ -	$ -	-	$ -	$ -	$ -

Low Voltage Switchgear Credit (if applicable)	$ -
Total including deduction for Low Voltage Switchgear Credit	$ -

Ontario Energy Board

Incentive Rate-setting Mechanism Rate Generator for 2020 Filers

The purpose of this sheet is to calculate the expected billing when forecasted 2019 Uniform Transmission Rates are applied against historical 2018 transmission units.

IESO	Network			Line Connection			Transformation Connection			Total Connection
Month	**Units Billed**	**Rate**	**Amount**	**Units Billed**	**Rate**	**Amount**	**Units Billed**	**Rate**	**Amount**	**Amount**
January	127,152	$ 3.8300	$ 486,992	-	$ 0.9600	$ -	-	$ 2.3000	$ -	$ -
February	109,948	$ 3.8300	$ 421,100	-	$ 0.9600	$ -	-	$ 2.3000	$ -	$ -
March	98,411	$ 3.8300	$ 376,914	-	$ 0.9600	$ -	-	$ 2.3000	$ -	$ -
April	97,365	$ 3.8300	$ 372,907	-	$ 0.9600	$ -	-	$ 2.3000	$ -	$ -
May	63,059	$ 3.8300	$ 241,516	-	$ 0.9600	$ -	-	$ 2.3000	$ -	$ -
June	67,153	$ 3.8300	$ 257,197	-	$ 0.9600	$ -	-	$ 2.3000	$ -	$ -
July	69,279	$ 3.8300	$ 265,337	-	$ 0.9600	$ -	-	$ 2.3000	$ -	$ -
August	71,057	$ 3.8300	$ 272,150	-	$ 0.9600	$ -	-	$ 2.3000	$ -	$ -
September	70,108	$ 3.8300	$ 268,515	-	$ 0.9600	$ -	-	$ 2.3000	$ -	$ -
October	75,236	$ 3.8300	$ 288,154	-	$ 0.9600	$ -	-	$ 2.3000	$ -	$ -
November	111,013	$ 3.8300	$ 425,181	-	$ 0.9600	$ -	-	$ 2.3000	$ -	$ -
December	104,297	$ 3.8300	$ 399,458	-	$ 0.9600	$ -	-	$ 2.3000	$ -	$ -
Total	1,064,078	$ 3.83	$ 4,075,420	-	$ -	$ -	-	$ -	$ -	$ -

Hydro One	Network			Line Connection			Transformation Connection			Total Connection
Month	**Units Billed**	**Rate**	**Amount**	**Units Billed**	**Rate**	**Amount**	**Units Billed**	**Rate**	**Amount**	**Amount**
January	-	$ 3.2915	$ -	-	$ 0.7877	$ -	-	$ 1.9755	$ -	$ -
February	-	$ 3.2915	$ -	-	$ 0.7877	$ -	-	$ 1.9755	$ -	$ -
March	-	$ 3.2915	$ -	-	$ 0.7877	$ -	-	$ 1.9755	$ -	$ -
April	-	$ 3.2915	$ -	-	$ 0.7877	$ -	-	$ 1.9755	$ -	$ -
May	-	$ 3.2915	$ -	-	$ 0.7877	$ -	-	$ 1.9755	$ -	$ -
June	-	$ 3.2915	$ -	-	$ 0.7877	$ -	-	$ 1.9755	$ -	$ -
July	-	$ 3.2915	$ -	-	$ 0.7877	$ -	-	$ 1.9755	$ -	$ -
August	-	$ 3.2915	$ -	-	$ 0.7877	$ -	-	$ 1.9755	$ -	$ -
September	-	$ 3.2915	$ -	-	$ 0.7877	$ -	-	$ 1.9755	$ -	$ -
October	-	$ 3.2915	$ -	-	$ 0.7877	$ -	-	$ 1.9755	$ -	$ -
November	-	$ 3.2915	$ -	-	$ 0.7877	$ -	-	$ 1.9755	$ -	$ -
December	-	$ 3.2915	$ -	-	$ 0.7877	$ -	-	$ 1.9755	$ -	$ -
Total	-	$ -	$ -	-	$ -	$ -	-	$ -	$ -	$ -

Add Extra Host Here (I)	Network			Line Connection			Transformation Connection			Total Connection
Month	**Units Billed**	**Rate**	**Amount**	**Units Billed**	**Rate**	**Amount**	**Units Billed**	**Rate**	**Amount**	**Amount**
January	-	$ -	$ -	-	$ -	$ -	-	$ -	$ -	$ -
February	-	$ -	$ -	-	$ -	$ -	-	$ -	$ -	$ -
March	-	$ -	$ -	-	$ -	$ -	-	$ -	$ -	$ -
April	-	$ -	$ -	-	$ -	$ -	-	$ -	$ -	$ -
May	-	$ -	$ -	-	$ -	$ -	-	$ -	$ -	$ -
June	-	$ -	$ -	-	$ -	$ -	-	$ -	$ -	$ -
July	-	$ -	$ -	-	$ -	$ -	-	$ -	$ -	$ -
August	-	$ -	$ -	-	$ -	$ -	-	$ -	$ -	$ -
September	-	$ -	$ -	-	$ -	$ -	-	$ -	$ -	$ -
October	-	$ -	$ -	-	$ -	$ -	-	$ -	$ -	$ -
November	-	$ -	$ -	-	$ -	$ -	-	$ -	$ -	$ -
December	-	$ -	$ -	-	$ -	$ -	-	$ -	$ -	$ -
Total	-	$ -	$ -	-	$ -	$ -	-	$ -	$ -	$ -

Add Extra Host Here (II)	Network			Line Connection			Transformation Connection			Total Connection
Month	**Units Billed**	**Rate**	**Amount**	**Units Billed**	**Rate**	**Amount**	**Units Billed**	**Rate**	**Amount**	**Amount**
January	-	$ -	$ -	-	$ -	$ -	-	$ -	$ -	$ -
February	-	$ -	$ -	-	$ -	$ -	-	$ -	$ -	$ -
March	-	$ -	$ -	-	$ -	$ -	-	$ -	$ -	$ -
April	-	$ -	$ -	-	$ -	$ -	-	$ -	$ -	$ -
May	-	$ -	$ -	-	$ -	$ -	-	$ -	$ -	$ -
June	-	$ -	$ -	-	$ -	$ -	-	$ -	$ -	$ -
July	-	$ -	$ -	-	$ -	$ -	-	$ -	$ -	$ -
August	-	$ -	$ -	-	$ -	$ -	-	$ -	$ -	$ -
September	-	$ -	$ -	-	$ -	$ -	-	$ -	$ -	$ -
October	-	$ -	$ -	-	$ -	$ -	-	$ -	$ -	$ -
November	-	$ -	$ -	-	$ -	$ -	-	$ -	$ -	$ -
December	-	$ -	$ -	-	$ -	$ -	-	$ -	$ -	$ -
Total	-	$ -	$ -	-	$ -	$ -	-	$ -	$ -	$ -

Total	Network			Line Connection			Transformation Connection			Total Connection
Month	**Units Billed**	**Rate**	**Amount**	**Units Billed**	**Rate**	**Amount**	**Units Billed**	**Rate**	**Amount**	**Amount**
January	127,152	$ 3.83	$ 486,992	-	$ -	$ -	-	$ -	$ -	$ -
February	109,948	$ 3.83	$ 421,100	-	$ -	$ -	-	$ -	$ -	$ -
March	98,411	$ 3.83	$ 376,914	-	$ -	$ -	-	$ -	$ -	$ -
April	97,365	$ 3.83	$ 372,907	-	$ -	$ -	-	$ -	$ -	$ -
May	63,059	$ 3.83	$ 241,516	-	$ -	$ -	-	$ -	$ -	$ -
June	67,153	$ 3.83	$ 257,197	-	$ -	$ -	-	$ -	$ -	$ -
July	69,279	$ 3.83	$ 265,337	-	$ -	$ -	-	$ -	$ -	$ -
August	71,057	$ 3.83	$ 272,150	-	$ -	$ -	-	$ -	$ -	$ -
September	70,108	$ 3.83	$ 268,515	-	$ -	$ -	-	$ -	$ -	$ -
October	75,236	$ 3.83	$ 288,154	-	$ -	$ -	-	$ -	$ -	$ -
November	111,013	$ 3.83	$ 425,181	-	$ -	$ -	-	$ -	$ -	$ -
December	104,297	$ 3.83	$ 399,458	-	$ -	$ -	-	$ -	$ -	$ -
Total	1,064,078	$ 3.83	$ 4,075,420	-	$ -	$ -	-	$ -	$ -	$ -

Low Voltage Switchgear Credit (if applicable)	$ -
Total including deduction for Low Voltage Switchgear Credit	$ -

Ontario Energy Board

Incentive Rate-setting Mechanism Rate Generator for 2020 Filers

The purpose of this table is to re-align the current RTS Network Rates to recover current wholesale network costs.

Rate Class	Rate Description	Unit	Current RTSR-Network	Loss Adjusted Billed kWh	Billed kW	Billed Amount	Billed Amount %	Current Wholesale Billing	Adjusted RTSR Network
Residential Service Classification	Retail Transmission Rate - Network Service Rate	$/kWh	0.0061	309,836,859	0	1,890,005	47.7%	1,910,627	0.0062
General Service Less Than 50 kW Service Classification	Retail Transmission Rate - Network Service Rate	$/kWh	0.0057	97,221,755	0	554,164	14.0%	560,211	0.0058
General Service 50 To 4,999 kW Service Classification	Retail Transmission Rate - Network Service Rate	$/kW	2.2941		410,081	940,767	23.7%	951,032	2.3191
General Service 50 To 4,999 kW Service Classification	Retail Transmission Rate - Network Service Rate - Interval Metered	$/kW	2.8852		194,468	561,079	14.2%	567,201	2.9167
Unmetered Scattered Load Service Classification	Retail Transmission Rate - Network Service Rate	$/kWh	0.0057	938,277	0	5,348	0.1%	5,407	0.0058
Sentinel Lighting Service Classification	Retail Transmission Rate - Network Service Rate	$/kW	1.7389		612	1,064	0.0%	1,076	1.7579
Street Lighting Service Classification	Retail Transmission Rate - Network Service Rate	$/kW	1.7303		7,030	12,164	0.3%	12,297	1.7492

The purpose of this table is to re-align the current RTS Connection Rates to recover current wholesale connection costs.

Rate Class	Rate Description	Unit	Current RTSR-Connection	Loss Adjusted Billed kWh	Billed kW	Billed Amount	Billed Amount %	Current Wholesale Billing	Adjusted RTSR-Connection
Residential Service Classification									
General Service Less Than 50 kW Service Classification									
General Service 50 To 4,999 kW Service Classification									
General Service 50 To 4,999 kW Service Classification									
Unmetered Scattered Load Service Classification									
Sentinel Lighting Service Classification									
Street Lighting Service Classification									

The purpose of this table is to update the re-aligned RTS Network Rates to recover future wholesale network costs.

Rate Class	Rate Description	Unit	Adjusted RTSR-Network	Loss Adjusted Billed kWh	Billed kW	Billed Amount	Billed Amount %	Forecast Wholesale Billing	Proposed RTSR-Network
Residential Service Classification	Retail Transmission Rate - Network Service Rate	$/kWh	0.0062	309,836,859	0	1,910,627	47.7%	1,942,840	0.0063
General Service Less Than 50 kW Service Classification	Retail Transmission Rate - Network Service Rate	$/kWh	0.0058	97,221,755	0	560,211	14.0%	569,656	0.0059
General Service 50 To 4,999 kW Service Classification	Retail Transmission Rate - Network Service Rate	$/kW	2.3191		410,081	951,032	23.7%	967,066	2.3582
General Service 50 To 4,999 kW Service Classification	Retail Transmission Rate - Network Service Rate - Interval Metered	$/kW	2.9167		194,468	567,201	14.2%	576,764	2.9659
Unmetered Scattered Load Service Classification	Retail Transmission Rate - Network Service Rate	$/kWh	0.0058	938,277	0	5,407	0.1%	5,498	0.0059
Sentinel Lighting Service Classification	Retail Transmission Rate - Network Service Rate	$/kW	1.7579		612	1,076	0.0%	1,094	1.7875
Street Lighting Service Classification	Retail Transmission Rate - Network Service Rate	$/kW	1.7492		7,030	12,297	0.3%	12,504	1.7787

The purpose of this table is to update the re-aligned RTS Connection Rates to recover future wholesale connection costs.

Ontario Energy Board

Incentive Rate-setting Mechanism Rate Generator for 2020 Filers

If applicable, please enter any adjustments related to the revenue to cost ratio model into columns C and E. The Price Escalator and Stretch Factor have been set at the 2018 values and will be updated by OEB staff at a later date.

Price Escalator	2.00%	Productivity Factor	0.00%	# of Residential Customers (approved in the last CoS)	29,816	Effective Year of Residential Rate Design Transition (yyyy)	2016
Choose Stretch Factor Group	IV	Price Cap Index	1.55%	Billed kWh for Residential Class (approved in the last CoS)	288,323,799	OEB-approved # of Transition Years	5
Associated Stretch Factor Value	0.45%			Rate Design Transition Years Left	1		

Rate Class	Current MFC	MFC Adjustment from R/C Model	Current Volumetric Charge	DVR Adjustment from R/C Model	Price Cap Index to be Applied to MFC and DVR	Proposed MFC	Proposed Volumetric Charge
RESIDENTIAL SERVICE CLASSIFICATION	28.17		0.0043		1.55%	32.13	0.0000
GENERAL SERVICE LESS THAN 50 KW SERVICE CLASSIFICATION	20.95		0.0251		1.55%	21.27	0.0255
GENERAL SERVICE 50 to 4,999 kW SERVICE CLASSIFICATION	115.66		6.8002		1.55%	117.45	6.9056
UNMETERED SCATTERED LOAD SERVICE CLASSIFICATION	12.82		0.0387		1.55%	13.02	0.0393
SENTINEL LIGHTING SERVICE CLASSIFICATION	3.59		33.4983		1.55%	3.65	34.0175
STREET LIGHTING SERVICE CLASSIFICATION	1.38		9.0221		1.55%	1.40	9.1619
microFIT SERVICE CLASSIFICATION	5.4					5.4	

Rate Design Transition		Revenue from Rates	Current F/V Split	Decoupling MFC Split	Incremental Fixed Charge ($/month/year)	New F/V Split	Adjusted Rates[1]	Revenue at New F/V Split
Current Residential Fixed Rate (inclusive of R/C adj.)	28.1700	10,079,001	89.0%	11.0%	3.47	100.0%	31.64	11,320,539
Current Residential Variable Rate (inclusive of R/C adj.)	0.0043	1,239,792	11.0%			0.0%	0.0000	0
		11,318,793						11,320,539

[1] These are the residential rates to which the Price Cap Index will be applied to.

If applicable, Wheeling Service Rate will be adjusted for PCI on Sheet 19.

Ontario Energy Board

Incentive Rate-setting Mechanism Rate Generator for 2020 Filers

Update the following rates if an OEB Decision has been issued at the time of completing this application

Regulatory Charges

Effective Date of Regulatory Charges		January 1, 2019	January 1, 2020
Wholesale Market Service Rate (WMS) - not including CBR	$/kWh	0.0030	0.0030
Capacity Based Recovery (CBR) - Applicable for Class B Customers	$/kWh	0.0004	0.0004
Rural or Remote Electricity Rate Protection Charge (RRRP)	$/kWh	0.0005	0.0005
Standard Supply Service - Administrative Charge (if applicable)	$/kWh	0.25	0.25

Time-of-Use RPP Prices

As of		November 1, 2019
Off-Peak	$/kWh	0.1010
Mid-Peak	$/kWh	0.1440
On-Peak	$/kWh	0.2080

Smart Meter Entity Charge (SME)

Smart Meter Entity Charge (SME)	$	0.57

Distribution Rate Protection (DRP) Amount (Applicable to LDCs under the Distribution Rate Protection program):	$	36.86

Miscellaneous Service Charges

Wireline Pole Attachment Charge	Unit	Current charge	Inflation factor *	Proposed charge ** / ***
Specific charge for access to the power poles - per pole/year	$	43.63	2.00%	44.5

Retail Service Charges		Current charge	Inflation factor*	Proposed charge ***
One-time charge, per retailer, to establish the service agreement between the distributor and the retailer	$	100.00	2.00%	102.00
Monthly fixed charge, per retailer	$	40.00	2.00%	40.80
Monthly variable charge, per customer, per retailer	$/cust.	1.00	2.00%	1.02
Distributor-consolidated billing monthly charge, per customer, per retailer	$/cust.	0.60	2.00%	0.61
Retailer-consolidated billing monthly credit, per customer, per retailer	$/cust.	(0.60)	2.00%	(0.61)
Service Transaction Requests (STR)				-
Request fee, per request, applied to the requesting party	$	0.50	2.00%	0.51
Processing fee, per request, applied to the requesting party	$	1.00	2.00%	1.02
Electronic Business Transaction (EBT) system, applied to the requesting party				
up to twice a year		no charge		no charge
more than twice a year, per request (plus incremental delivery costs)	$	4.00	2.00%	4.08
Notice of switch letter charge, per letter	$	2.00	2.00%	2.04

* inflation factor subject to change pending OEB approved inflation rate effective in 2020

** applicable only to LDCs in which the province-wide pole attachment charge applies

*** subject to change pending OEB order on miscellaneous service charges

Ontario Energy Board

Incentive Rate-setting Mechanism Rate Generator for 2020 Filers

In the Green Cells below, enter all proposed rate riders/rates. Please note that the following rates/charges are to be entered in the Final Tariff Schedule tab: Monthly Service Charge, Distribution Volumetric Rate and Retail Transmission Rates.
In column A, select the rate rider descriptions from the drop-down list in the blue cells. If the rate description cannot be found, enter the rate rider descriptions in the green cells. The rate rider description must begin with "Rate Rider for".
In column B, choose the associated unit from the drop-down menu.
In column C, enter the rate. All rate riders with a "$" unit should be rounded to 2 decimal places and all others rounded to 4 decimal places.
In column E, enter the expiry date (e.g. April 30, 2020) or description of the expiry date in text (e.g. the effective date of the next cost of service-based rate order).
In column G, a sub-total (A or B) should already be assigned to the rate rider unless the rate description was entered into a green cell in column A. In these particular cases, from the dropdown list in column G, choose the appropriate sub-total (A or B). Sub-Total A refers to rates/rate riders that Not considered as pass through costs (eg: LRAMVA and ICM/ACM rate riders). Sub-Total B refers to rates/rate riders that are considered pass through costs.

RESIDENTIAL SERVICE CLASSIFICATION	UNIT	RATE		DATE (EG: April 30, 2020)	SUB-TOTAL
Rate Rider for Recovery of Incremental Capital	$	0.32	- effective until	2023-04-30	A
			- effective until		
			- effective until		
			- effective until		
			- effective until		
			- effective until		
			- effective until		
			- effective until		
			- effective until		
			- effective until		

GENERAL SERVICE LESS THAN 50 KW SERVICE CLASSIFICATION	UNIT	RATE		DATE (EG: April 30, 2020)	SUB-TOTAL
Rate Rider for Recovery of Incremental Capital	$	0.21	- effective until		A
Rate Rider for Recovery of Incremental Capital	$/kWh	0.0003	- effective until		A
			- effective until		
			- effective until		
			- effective until		
			- effective until		
			- effective until		
			- effective until		
			- effective until		
			- effective until		

GENERAL SERVICE 50 to 4,999 kW SERVICE CLASSIFICATION	UNIT	RATE		DATE (EG: April 30, 2020)	SUB-TOTAL
Rate Rider for Recovery of Incremental Capital	$	1.16	- effective until		A
Rate Rider for Recovery of Incremental Capital	$/kW	0.0684	- effective until		A
			- effective until		
			- effective until		
			- effective until		
			- effective until		
			- effective until		
			- effective until		
			- effective until		
			- effective until		

UNMETERED SCATTERED LOAD SERVICE CLASSIFICATION	UNIT	RATE		DATE (EG: April 30, 2020)	SUB-TOTAL
Rate Rider for Recovery of Incremental Capital	$	0.13	- effective until		A
Rate Rider for Recovery of Incremental Capital	$/kWh	0.0004	- effective until		A
			- effective until		
			- effective until		
			- effective until		
			- effective until		
			- effective until		
			- effective until		
			- effective until		
			- effective until		

SENTINEL LIGHTING SERVICE CLASSIFICATION	UNIT	RATE		DATE (EG: April 30, 2020)	SUB-TOTAL
Rate Rider for Recovery of Incremental Capital	$	0.04	- effective until		A
Rate Rider for Recovery of Incremental Capital	$/kW	0.3368	- effective until		A
			- effective until		
			- effective until		
			- effective until		
			- effective until		
			- effective until		
			- effective until		
			- effective until		
			- effective until		

STREET LIGHTING SERVICE CLASSIFICATION	UNIT	RATE		DATE (EG: April 30, 2020)	SUB-TOTAL
Rate Rider for Recovery of Incremental Capital	$	0.01	- effective until		A
Rate Rider for Recovery of Incremental Capital	$/kW	0.0907	- effective until		A
			- effective until		
			- effective until		
			- effective until		
			- effective until		
			- effective until		
			- effective until		
			- effective until		
			- effective until		

microFIT SERVICE CLASSIFICATION	UNIT	RATE		DATE (EG: April 30, 2020)	SUB-TOTAL
			- effective until		
			- effective until		
			- effective until		
			- effective until		
			- effective until		
			- effective until		
			- effective until		
			- effective until		
			- effective until		
			- effective until		

PUC Distribution Inc.
TARIFF OF RATES AND CHARGES
Effective and Implementation Date May 1, 2020
This schedule supersedes and replaces all previously approved schedules of Rates, Charges and Loss Factors

EB-2019-0170

RESIDENTIAL SERVICE CLASSIFICATION

This classification applies to an account taking electricity at 750 volts or less where the electricity is used exclusively in a single family unit, non-commercial. This can be a separately metered living accommodation, town house, apartment, semi-detached, duplex, triplex or quadruplex with residential zoning. Class B consumers are defined on accordance with O. Reg. 429/04. Further servicing details are available in the distributor's Conditions of Service.

APPLICATION

The application of these rates and charges shall be in accordance with the Licence of the Distributor and any Code or Order of the Ontario Energy Board, and amendments thereto as approved by the Ontario Energy Board, which may be applicable to the administration of this schedule.

No rates and charges for the distribution of electricity and charges to meet the costs of any work or service done or furnished for the purpose of the distribution of electricity shall be made except as permitted by this schedule, unless required by the Distributor's Licence or a Code or Order of the Ontario Energy Board, and amendments thereto as approved by the Ontario Energy Board, or as specified herein.

Unless specifically noted, this schedule does not contain any charges for the electricity commodity, be it under the Regulated Price Plan, a contract with a retailer or the wholesale market price, as applicable. In addition, the charges in the MONTHLY RATES AND CHARGES - Regulatory Component of this schedule do not apply to a customer that is an embedded wholesale market participant.

It should be noted that this schedule does not list any charges, assessments, or credits that are required by law to be invoiced by a distributor and that are not subject to Ontario Energy Board approval, such as the Global Adjustment and the HST.

MONTHLY RATES AND CHARGES - Delivery Component

Service Charge	$	32.13
Rate Rider for Recovery of Incremental Capital - effective until April 30, 2023	$	0.32
Smart Metering Entity Charge - effective until December 31, 2022	$	0.57
Retail Transmission Rate - Network Service Rate	$/kWh	0.0063

MONTHLY RATES AND CHARGES - Regulatory Component

Rate Rider for Embedded Generation Adjustment	$/kWh	(0.0004)
Wholesale Market Service Rate (WMS) - not including CBR	$/kWh	0.0030
Capacity Based Recovery (CBR) - Applicable for Class B Customers	$/kWh	0.0004
Rural or Remote Electricity Rate Protection Charge (RRRP)	$/kWh	0.0005
Standard Supply Service - Administrative Charge (if applicable)	$	0.25

GENERAL SERVICE LESS THAN 50 KW SERVICE CLASSIFICATION

This classification applies to a non residential account taking electricity at 750 volts or less whose average monthly peak demand is less than, or is forecast to be less than, 50 kW. Class B consumers are defined on accordance with O. Reg. 429/04. Further servicing details are available in the distributor's Conditions of Service.

APPLICATION

The application of these rates and charges shall be in accordance with the Licence of the Distributor and any Code or Order of the Ontario Energy Board, and amendments thereto as approved by the Ontario Energy Board, which may be applicable to the administration of this schedule.

No rates and charges for the distribution of electricity and charges to meet the costs of any work or service done or furnished for the purpose of the distribution of electricity shall be made except as permitted by this schedule, unless required by the Distributor's Licence or a Code or Order of the Ontario Energy Board, and amendments thereto as approved by the Ontario Energy Board, or as specified herein.

Unless specifically noted, this schedule does not contain any charges for the electricity commodity, be it under the Regulated Price Plan, a contract with a retailer or the wholesale market price, as applicable. In addition, the charges in the MONTHLY RATES AND CHARGES - Regulatory Component of this schedule do not apply to a customer that is an embedded wholesale market participant.

It should be noted that this schedule does not list any charges, assessments, or credits that are required by law to be invoiced by a distributor and that are not subject to Ontario Energy Board approval, such as the Global Adjustment and the HST.

MONTHLY RATES AND CHARGES - Delivery Component

Service Charge	$	21.27
Rate Rider for Recovery of Incremental Capital - effective until	$	0.21
Smart Metering Entity Charge - effective until December 31, 2022	$	0.57
Distribution Volumetric Rate	$/kWh	0.0255
Rate Rider for Recovery of Incremental Capital - effective until	$/kWh	0.0003
Retail Transmission Rate - Netw ork Service Rate	$/kWh	0.0059

MONTHLY RATES AND CHARGES - Regulatory Component

Rate Rider for Embedded Generation Adjustment	$/kWh	(0.0004)
Wholesale Market Service Rate (WMS) - not including CBR	$/kWh	0.0030
Capacity Based Recovery (CBR) - Applicable for Class B Customers	$/kWh	0.0004
Rural or Remote Electricity Rate Protection Charge (RRRP)	$/kWh	0.0005
Standard Supply Service - Administrative Charge (if applicable)	$	0.25

GENERAL SERVICE 50 TO 4,999 KW SERVICE CLASSIFICATION

This classification applies to a non residential account whose average monthly peak demand used for billing purposes over the past 12 months is equal to or greater than, or is forecast to be equal to or greater than, 50 kW but less than 5,000 kW. Class A and Class B consumers are defined on accordance with O. Reg. 429/04. Further servicing details are available in the distributor's Conditions of Service.

APPLICATION

The application of these rates and charges shall be in accordance with the Licence of the Distributor and any Code or Order of the Ontario Energy Board, and amendments thereto as approved by the Ontario Energy Board, which may be applicable to the administration of this schedule.

No rates and charges for the distribution of electricity and charges to meet the costs of any work or service done or furnished for the purpose of the distribution of electricity shall be made except as permitted by this schedule, unless required by the Distributor's Licence or a Code or Order of the Ontario Energy Board, and amendments thereto as approved by the Ontario Energy Board, or as specified herein.

Unless specifically noted, this schedule does not contain any charges for the electricity commodity, be it under the Regulated Price Plan, a contract with a retailer or the wholesale market price, as applicable. In addition, the charges in the MONTHLY RATES AND CHARGES - Regulatory Component of this schedule do not apply to a customer that is an embedded wholesale market participant.

If included in the following listing of monthly rates and charges, the rate rider for the disposition of WMS - Sub-account CBR Class B is not applicable to wholesale market participants (WMP), customers that transitioned between Class A and Class B during the variance account accumulation period, or to customers that were in Class A for the entire period. Customers who transitioned are to be charged or refunded their share of the variance disposed through customer specific billing adjustments. This rate rider is to be consistently applied for the entire period to the sunset date of the rate rider. In addition, this rate rider is applicable to all new Class B customers.

If included in the following listing of monthly rates and charges, the rate rider for the disposition of Global Adjustment is only applicable to non-RPP Class B customers. It is not applicable to WMP, customers that transitioned between Class A and Class B during the variance account accumulation period, or to customers that were in Class A for the entire period. Customers who transitioned are to be charged or refunded their share of the variance disposed through customer specific billing adjustments. This rate rider is to be consistently applied for the entire period to the sunset date of the rate rider. In addition, this rate rider is applicable to all new non-RPP Class B customers.

It should be noted that this schedule does not list any charges, assessments, or credits that are required by law to be invoiced by a distributor and that are not subject to Ontario Energy Board approval, such as the Global Adjustment and the HST.

MONTHLY RATES AND CHARGES - Delivery Component

Service Charge	$	117.45
Rate Rider for Recovery of Incremental Capital - effective until	$	1.16
Distribution Volumetric Rate	$/kW	6.9056
Rate Rider for Recovery of Incremental Capital - effective until	$/kW	0.0684
Retail Transmission Rate - Network Service Rate	$/kW	2.3582
Retail Transmission Rate - Network Service Rate - Interval Metered	$/kW	2.9659

MONTHLY RATES AND CHARGES - Regulatory Component

Rate Rider for Embedded Generation Adjustment	$/kWh	(0.0004)
Wholesale Market Service Rate (WMS) - not including CBR	$/kWh	0.0030
Capacity Based Recovery (CBR) - Applicable for Class B Customers	$/kWh	0.0004
Rural or Remote Electricity Rate Protection Charge (RRRP)	$/kWh	0.0005
Standard Supply Service - Administrative Charge (if applicable)	$	0.25

UNMETERED SCATTERED LOAD SERVICE CLASSIFICATION

This classification applies to an account taking electricity at 750 volts or less whose average monthly peak demand is less than, or is forecast to be less than, 50 kW and the consumption is unmetered. Such connections include cable TV power packs, bus shelters, telephone booths, traffic lights, railway crossings, etc. The customer will provide detailed manufacturer information documentation with regard to electrical demand/consumption of the proposed unmetered load. Class B consumers are defined on accordance with O. Reg. 429/04. Further servicing details are available in the Distributor's Conditions of Service.

APPLICATION

The application of these rates and charges shall be in accordance with the Licence of the Distributor and any Code or Order of the Ontario Energy Board, and amendments thereto as approved by the Ontario Energy Board, which may be applicable to the administration of this schedule.

No rates and charges for the distribution of electricity and charges to meet the costs of any work or service done or furnished for the purpose of the distribution of electricity shall be made except as permitted by this schedule, unless required by the Distributor’s Licence or a Code or Order of the Ontario Energy Board, and amendments thereto as approved by the Ontario Energy Board, or as specified herein.

Unless specifically noted, this schedule does not contain any charges for the electricity commodity, be it under the Regulated Price Plan, a contract with a retailer or the wholesale market price, as applicable. In addition, the charges in the MONTHLY RATES AND CHARGES - Regulatory Component of this schedule do not apply to a customer that is an embedded wholesale market participant.

It should be noted that this schedule does not list any charges, assessments, or credits that are required by law to be invoiced by a distributor and that are not subject to Ontario Energy Board approval, such as the Global Adjustment and the HST.

MONTHLY RATES AND CHARGES - Delivery Component

Service Charge	$	13.02
Rate Rider for Recovery of Incremental Capital - effective until	$	0.13
Distribution Volumetric Rate	$/kWh	0.0393
Rate Rider for Recovery of Incremental Capital - effective until	$/kWh	0.0004
Retail Transmission Rate - Netw ork Service Rate	$/kWh	0.0059

MONTHLY RATES AND CHARGES - Regulatory Component

Rate Rider for Embedded Generation Adjustment	$/kWh	(0.0004)
Wholesale Market Service Rate (WMS) - not including CBR	$/kWh	0.0030
Capacity Based Recovery (CBR) - Applicable for Class B Customers	$/kWh	0.0004
Rural or Remote Electricity Rate Protection Charge (RRRP)	$/kWh	0.0005
Standard Supply Service - Administrative Charge (if applicable)	$	0.25

SENTINEL LIGHTING SERVICE CLASSIFICATION

This classification applies to safety/security lighting with a Residential or General Service customer. This is typically exterior lighting, and unmetered. Consumption is estimated based on the equipment rating and estimated hours of use. Class B consumers are defined on accordance with O. Reg. 429/04. Further servicing details are available in the distributor's Conditions of Service.

APPLICATION

The application of these rates and charges shall be in accordance with the Licence of the Distributor and any Code or Order of the Ontario Energy Board, and amendments thereto as approved by the Ontario Energy Board, which may be applicable to the administration of this schedule.

No rates and charges for the distribution of electricity and charges to meet the costs of any work or service done or furnished for the purpose of the distribution of electricity shall be made except as permitted by this schedule, unless required by the Distributor's Licence or a Code or Order of the Ontario Energy Board, and amendments thereto as approved by the Ontario Energy Board, or as specified herein.

Unless specifically noted, this schedule does not contain any charges for the electricity commodity, be it under the Regulated Price Plan, a contract with a retailer or the wholesale market price, as applicable. In addition, the charges in the MONTHLY RATES AND CHARGES - Regulatory Component of this schedule do not apply to a customer that is an embedded wholesale market participant.

It should be noted that this schedule does not list any charges, assessments, or credits that are required by law to be invoiced by a distributor and that are not subject to Ontario Energy Board approval, such as the Global Adjustment and the HST.

MONTHLY RATES AND CHARGES - Delivery Component

Service Charge (per connection)	$	3.65
Rate Rider for Recovery of Incremental Capital - effective until	$	0.04
Distribution Volumetric Rate	$/kW	34.0175
Rate Rider for Recovery of Incremental Capital - effective until	$/kW	0.3368
Retail Transmission Rate - Network Service Rate	$/kW	1.7875

MONTHLY RATES AND CHARGES - Regulatory Component

Rate Rider for Embedded Generation Adjustment	$/kWh	(0.0004)
Wholesale Market Service Rate (WMS) - not including CBR	$/kWh	0.0030
Capacity Based Recovery (CBR) - Applicable for Class B Customers	$/kWh	0.0004
Rural or Remote Electricity Rate Protection Charge (RRRP)	$/kWh	0.0005
Standard Supply Service - Administrative Charge (if applicable)	$	0.25

STREET LIGHTING SERVICE CLASSIFICATION

This classification applies to an account for roadway lighting with a Municipality, Regional Municipality, Ministry of Transportation and private roadway lighting operation, controlled by photo cells. The consumption for these customers will be based on the calculated connected load times the required lighting times established in the approved Ontario Energy Board street lighting load shape template. Class B consumers are defined on accordance with O. Reg. 429/04. Further servicing details are available in the distributor's Conditions of Service.

APPLICATION

The application of these rates and charges shall be in accordance with the Licence of the Distributor and any Code or Order of the Ontario Energy Board, and amendments thereto as approved by the Ontario Energy Board, which may be applicable to the administration of this schedule.

No rates and charges for the distribution of electricity and charges to meet the costs of any work or service done or furnished for the purpose of the distribution of electricity shall be made except as permitted by this schedule, unless required by the Distributor’s Licence or a Code or Order of the Ontario Energy Board, and amendments thereto as approved by the Ontario Energy Board, or as specified herein.

Unless specifically noted, this schedule does not contain any charges for the electricity commodity, be it under the Regulated Price Plan, a contract with a retailer or the wholesale market price, as applicable. In addition, the charges in the MONTHLY RATES AND CHARGES - Regulatory Component of this schedule do not apply to a customer that is an embedded wholesale market participant.

It should be noted that this schedule does not list any charges, assessments, or credits that are required by law to be invoiced by a distributor and that are not subject to Ontario Energy Board approval, such as the Global Adjustment and the HST.

MONTHLY RATES AND CHARGES - Delivery Component

Service Charge (per connection)	$	1.40
Rate Rider for Recovery of Incremental Capital - effective until	$	0.01
Distribution Volumetric Rate	$/kW	9.1619
Rate Rider for Disposition of Lost Revenue Adjustment Mechanism Variance Account (LRAMVA) (2019)	$/kW	5.7106
Rate Rider for Recovery of Incremental Capital - effective until	$/kW	0.0907
Retail Transmission Rate - Network Service Rate	$/kW	1.7787

MONTHLY RATES AND CHARGES - Regulatory Component

Rate Rider for Embedded Generation Adjustment - effective until	$/kWh	(0.0004)
Wholesale Market Service Rate (WMS) - not including CBR	$/kWh	0.0030
Capacity Based Recovery (CBR) - Applicable for Class B Customers	$/kWh	0.0004
Rural or Remote Electricity Rate Protection Charge (RRRP)	$/kWh	0.0005
Standard Supply Service - Administrative Charge (if applicable)	$	0.25

microFIT SERVICE CLASSIFICATION

This classification applies to an electricity generation facility contracted under the Independent Electricity System Operator's microFIT program and connected to the distributor's distribution system. Further servicing details are available in the distributor's Conditions of Service.

APPLICATION

The application of these rates and charges shall be in accordance with the Licence of the Distributor and any Code or Order of the Ontario Energy Board, and amendments thereto as approved by the Ontario Energy Board, which may be applicable to the administration of this schedule.

No rates and charges for the distribution of electricity and charges to meet the costs of any work or service done or furnished for the purpose of the distribution of electricity shall be made except as permitted by this schedule, unless required by the Distributor's Licence or a Code or Order of the Ontario Energy Board, and amendments thereto as approved by the Ontario Energy Board, or as specified herein.

Unless specifically noted, this schedule does not contain any charges for the electricity commodity, be it under the Regulated Price Plan, a contract with a retailer or the wholesale market price, as applicable.

It should be noted that this schedule does not list any charges, assessments, or credits that are required by law to be invoiced by a distributor and that are not subject to Ontario Energy Board approval, such as the Global Adjustment and the HST.

MONTHLY RATES AND CHARGES - Delivery Component

Service Charge	$	5.40

ALLOWANCES

Transformer Allowance for Ownership - per kW of billing demand/month	$/kW	(0.60)
Primary Metering Allowance for transformer losses - applied to measured demand and energy	%	(1.00)

SPECIFIC SERVICE CHARGES

The application of these rates and charges shall be in accordance with the Licence of the Distributor and any Code or Order of the Ontario Energy Board, and amendments thereto as approved by the Ontario Energy Board, which may be applicable to the administration of this schedule.

No charges to meet the costs of any work or service done or furnished for the purpose of the distribution of electricity shall be made except as permitted by this schedule, unless required by the Distributor's Licence or a Code or Order of the Ontario Energy Board, and amendments thereto as approved by the Ontario Energy Board, or as specified herein.

It should be noted that this schedule does not list any charges, assessments, or credits that are required by law to be invoiced by a distributor and that are not subject to Ontario Energy Board approval, such as the Global Adjustment and the HST.

Customer Administration

Account set up charge/change of occupancy charge (plus credit agency costs if applicable)	$	30.00
Returned cheque (plus bank charges)	$	15.00
Legal letter charge	$	15.00
Meter dispute charge plus Measurement Canada fees (if meter found correct)	$	30.00

Non-Payment of Account

Late payment - per month		
(effective annual rate 19.56% per annum or 0.04896% compounded daily rate)	%	1.50
Reconnection charge - at meter - during regular hours	$	65.00
Reconnection charge - at meter - after hours	$	185.00
Reconnection charge - at pole - during regular hours	$	185.00
Reconnection charge - at pole - after hours	$	415.00

Other

Special meter reads	$	30.00
Service call - customer-owned equipment		Time & Materials
Service call - after regular hours		Time & Materials
Temporary service - install & remove - overhead - no transformer		Time & Materials
Temporary service - install & remove - underground - no transformer		Time & Materials
Temporary service - install & remove - overhead - with transformer		Time & Materials
Specific charge for access to the power poles - $/pole/year		
Specific charge for access to the power poles - $/pole/year		
(with the exception of wireless attachments)	$	44.50
Removal of overhead lines - during regular hours		Time & Materials
Removal of overhead lines - after hours		Time & Materials
Roadway escort - after regular hours		Time & Materials

RETAIL SERVICE CHARGES (if applicable)

The application of these rates and charges shall be in accordance with the Licence of the Distributor and any Code or Order of the Ontario Energy Board, and amendments thereto as approved by the Ontario Energy Board, which may be applicable to the administration of this schedule.

No rates and charges for the distribution of electricity and charges to meet the costs of any work or service done or furnished for the purpose of the distribution of electricity shall be made except as permitted by this schedule, unless required by the Distributor's Licence or a Code or Order of the Ontario Energy Board, and amendments thereto as approved by the Ontario Energy Board, or as specified herein.

Unless specifically noted, this schedule does not contain any charges for the electricity commodity, be it under the Regulated Price Plan, a contract with a retailer or the wholesale market price, as applicable.

It should be noted that this schedule does not list any charges, assessments, or credits that are required by law to be invoiced by a distributor and that are not subject to Ontario Energy Board approval, such as the Global Adjustment and the HST.

Retail Service Charges refer to services provided by a distributor to retailers or customers related to the supply of competitive electricity.

One-time charge, per retailer, to establish the service agreement between the distributor and the	$	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)	$	2.00

LOSS FACTORS

If the distributor is not capable of prorating changed loss factors jointly with distribution rates, the revised loss factors will be implemented upon the first subsequent billing for each billing cycle.

Total Loss Factor - Secondary Metered Customer < 5,000 kW	1.0481
Total Loss Factor - Primary Metered Customer < 5,000 kW	1.0385

Ontario Energy Board

Incentive Rate-setting Mechanism Rate Generator for 2020 Filers

The bill comparisons below must be provided for typical customers and consumption levels. Bill impacts must be provided for residential customers consuming 750 kWh per month and general service customers consuming 2,000 kWh per month and having a monthly demand of less than 50 kW. Include bill comparisons for Non-RPP (retailer) as well. **To assess the combined effects of the shift to fixed rates and other bill impacts associated with changes in the cost of distribution service, applicants are to include a total bill impact for a residential customer at the distributor's 10th consumption percentile (In other words, 10% of a distributor's residential customers consume at or less than this level of consumption on a monthly basis). Refer to section 3.2.3 of the Chapter 3 Filing Requirements For Electricity Distribution Rate Applications.**

For certain classes where one or more customers have unique consumption and demand patterns and which may be significantly impacted by the proposed rate changes, the distributor must show a typical comparison, and provide an explanation.

Note:
1. For those classes that are not eligible for the RPP price, the weighted average price including Class B GA through end of May 2018 of $0.1117/kWh (IESO's Monthly Market Report for May 2018, page 22) has been used to represent the cost of power. For those classes on a retailer contract, applicants should enter the contract price (plus GA) for a more accurate estimate. Changes to the cost of power can be made directly on the bill impact table for the specific class.
2. Please enter the applicable billing determinant (e.g. number of connections or devices) to be applied to the monthly service charge for unmetered rate classes in column N. If the monthly service charge is applied on a per customer basis, enter the number "1". Distributors should provide the number of connections or devices reflective of a typical customer in each class.

Note that cells with the highlighted color shown to the left indicate quantities that are loss adjusted.

Table 1

RATE CLASSES / CATEGORIES *(eg: Residential TOU, Residential Retailer)*	Units	RPP? Non-RPP Retailer? Non-RPP Other?	Current Loss Factor (eg: 1.0351)	Proposed Loss Factor	Consumption (kWh)	Demand kW (if applicable)	RTSR Demand or Demand-Interval?	Billing Determinant Applied to Fixed Charge for Unmetered Classes (e.g. # of devices/connections).
RESIDENTIAL SERVICE CLASSIFICATION	kWh	RPP	1.0481	1.0481	700		CONSUMPTION	
GENERAL SERVICE LESS THAN 50 KW SERVICE CLASSIFICATION	kWh	RPP	1.0481	1.0481	2,000		CONSUMPTION	
GENERAL SERVICE 50 to 4,999 kW SERVICE CLASSIFICATION	kW	Non-RPP (Other)	1.0481	1.0481	57,220	145	DEMAND	
UNMETERED SCATTERED LOAD SERVICE CLASSIFICATION	kWh	Non-RPP (Other)	1.0481	1.0481	3,600		CONSUMPTION	1
SENTINEL LIGHTING SERVICE CLASSIFICATION	kW	Non-RPP (Other)	1.0481	1.0481	50	1	DEMAND	1
STREET LIGHTING SERVICE CLASSIFICATION	kW	Non-RPP (Other)	1.0481	1.0481	199,852	585	DEMAND	8,070
RESIDENTIAL SERVICE CLASSIFICATION	kWh	RPP	1.0481	1.0481	294			
Add additional scenarios if required			1.0481	1.0481				
Add additional scenarios if required			1.0481	1.0481				
Add additional scenarios if required			1.0481	1.0481				
Add additional scenarios if required			1.0481	1.0481				
Add additional scenarios if required			1.0481	1.0481				
Add additional scenarios if required			1.0481	1.0481				
Add additional scenarios if required			1.0481	1.0481				
Add additional scenarios if required			1.0481	1.0481				
Add additional scenarios if required			1.0481	1.0481				
Add additional scenarios if required			1.0481	1.0481				
Add additional scenarios if required			1.0481	1.0481				
Add additional scenarios if required			1.0481	1.0481				
Add additional scenarios if required			1.0481	1.0481				

Table 2

RATE CLASSES / CATEGORIES *(eg: Residential TOU, Residential Retailer)*	Units	Sub-Total						Total	
		A		B		C		Total Bill	
		$	%	$	%	$	%	$	%
RESIDENTIAL SERVICE CLASSIFICATION - RPP	kWh	$ 1.94	6.4%	$ 5.79	18.5%	$ 5.94	16.6%	$ 4.82	4.6%
GENERAL SERVICE LESS THAN 50 KW SERVICE CLASSIFICATION - RPP	kWh	$ (0.85)	-1.1%	$ 9.95	13.2%	$ 10.37	11.9%	$ 8.42	2.9%
GENERAL SERVICE 50 to 4,999 kW SERVICE CLASSIFICATION - Non-RPP (Other)	kW	$ 40.19	3.7%	$ 320.12	39.5%	$ 329.42	28.8%	$ 372.24	4.1%
UNMETERED SCATTERED LOAD SERVICE CLASSIFICATION - Non-RPP (Other)	kWh	$ 15.59	11.1%	$ 35.39	25.6%	$ 36.14	22.6%	$ 40.84	6.3%
SENTINEL LIGHTING SERVICE CLASSIFICATION - Non-RPP (Other)	kW	$ 4.13	12.2%	$ 6.05	18.8%	$ 6.10	18.0%	$ 6.90	15.3%
STREET LIGHTING SERVICE CLASSIFICATION - Non-RPP (Other)	kW	$ (2,154.59)	-9.7%	$ (1,309.41)	-6.1%	$ (1,281.10)	-5.7%	$ (1,447.64)	-2.6%
RESIDENTIAL SERVICE CLASSIFICATION - RPP	kWh	$ 3.65	12.7%	$ 5.26	17.9%	$ 5.32	17.0%	$ 4.32	7.6%

Customer Class:	RESIDENTIAL SERVICE CLASSIFICATION
RPP / Non-RPP:	RPP
Consumption	700 kWh
Demand	- kW
Current Loss Factor	1.0481
Proposed/Approved Loss Factor	1.0481

	Current OEB-Approved			Proposed			Impact	
	Rate ($)	Volume	Charge ($)	Rate ($)	Volume	Charge ($)	$ Change	% Change
Monthly Service Charge	$ 28.17	1	$ 28.17	$ 32.13	1	$ 32.13	$ 3.96	14.06%
Distribution Volumetric Rate	$ 0.0043	700	$ 3.01	$ -	700	$ -	$ (3.01)	-100.00%
Fixed Rate Riders	$ (0.60)	1	$ (0.60)	$ 0.32	1	$ 0.32	$ 0.92	-153.33%
Volumetric Rate Riders	-$ 0.0001	700	$ (0.07)	$ -	700	$ -	$ 0.07	-100.00%
Sub-Total A (excluding pass through)			**$ 30.51**			**$ 32.45**	**$ 1.94**	**6.36%**
Line Losses on Cost of Power	$ 0.1280	34	$ 4.31	$ 0.1280	34	$ 4.31	$ -	0.00%
Total Deferral/Variance Account Rate Riders	-$ 0.0055	700	$ (3.85)	$ -	700	$ -	$ 3.85	-100.00%
CBR Class B Rate Riders	$ -	700	$ -	$ -	700	$ -	$ -	
GA Rate Riders	$ -	700	$ -	$ -	700	$ -	$ -	
Low Voltage Service Charge	$ -	700	$ -		700	$ -	$ -	
Smart Meter Entity Charge (if applicable)	$ 0.57	1	$ 0.57	$ 0.57	1	$ 0.57	$ -	0.00%
Additional Fixed Rate Riders	$ -	1	$ -	$ -	1	$ -	$ -	
Additional Volumetric Rate Riders	-$ 0.0004	700	$ (0.28)	-$ 0.0004	700	$ (0.28)	$ -	0.00%
Sub-Total B - Distribution (includes Sub-Total A)			**$ 31.26**			**$ 37.05**	**$ 5.79**	**18.52%**
RTSR - Network	$ 0.0061	734	$ 4.48	$ 0.0063	734	$ 4.62	$ 0.15	3.28%
RTSR - Connection and/or Line and Transformation Connection	$ -	734	$ -	$ -	734	$ -	$ -	
Sub-Total C - Delivery (including Sub-Total B)			**$ 35.74**			**$ 41.67**	**$ 5.94**	**16.61%**
Wholesale Market Service Charge (WMSC)	$ 0.0034	734	$ 2.49	$ 0.0034	734	$ 2.49	$ -	0.00%
Rural and Remote Rate Protection (RRRP)	$ 0.0005	734	$ 0.37	$ 0.0005	734	$ 0.37	$ -	0.00%
Standard Supply Service Charge	$ 0.25	1	$ 0.25	$ 0.25	1	$ 0.25	$ -	0.00%
TOU - Off Peak	$ 0.1010	448	$ 45.25	$ 0.1010	448	$ 45.25	$ -	0.00%
TOU - Mid Peak	$ 0.1440	126	$ 18.14	$ 0.1440	126	$ 18.14	$ -	0.00%
TOU - On Peak	$ 0.2080	126	$ 26.21	$ 0.2080	126	$ 26.21	$ -	0.00%
Total Bill on TOU (before Taxes)			**$ 128.45**			**$ 134.38**	**$ 5.94**	**4.62%**
HST	13%		$ 16.70	13%		$ 17.47	$ 0.77	4.62%
Ontario Electricity Rebate	31.8%		$ (40.85)	31.8%		$ (42.73)	$ (1.89)	
Total Bill on TOU			**$ 104.30**			**$ 109.12**	**$ 4.82**	**4.62%**

Customer Class:	GENERAL SERVICE LESS THAN 50 KW SERVICE CLASSIFICATION
RPP / Non-RPP:	RPP
Consumption	2,000 kWh
Demand	- kW
Current Loss Factor	1.0481
Proposed/Approved Loss Factor	1.0481

	Current OEB-Approved			Proposed			Impact	
	Rate ($)	Volume	Charge ($)	Rate ($)	Volume	Charge ($)	$ Change	% Change
Monthly Service Charge	$ 20.95	1	$ 20.95	$ 21.27	1	$ 21.27	$ 0.32	1.53%
Distribution Volumetric Rate	$ 0.0251	2000	$ 50.20	$ 0.0255	2000	$ 51.00	$ 0.80	1.59%
Fixed Rate Riders	$ (0.82)	1	$ (0.82)	$ 0.21	1	$ 0.21	$ 1.03	-125.61%
Volumetric Rate Riders	$ 0.0018	2000	$ 3.60	$ 0.0003	2000	$ 0.60	$ (3.00)	-83.33%
Sub-Total A (excluding pass through)			**$ 73.93**			**$ 73.08**	**$ (0.85)**	**-1.15%**
Line Losses on Cost of Power	$ 0.1280	96	$ 12.31	$ 0.1280	96	$ 12.31	$ -	0.00%
Total Deferral/Variance Account Rate Riders	-$ 0.0054	2,000	$ (10.80)	$ -	2,000	$ -	$ 10.80	-100.00%
CBR Class B Rate Riders	$ -	2,000	$ -	$ -	2,000	$ -	$ -	
GA Rate Riders	$ -	2,000	$ -	$ -	2,000	$ -	$ -	
Low Voltage Service Charge	$ -	2,000	$ -		2,000	$ -	$ -	
Smart Meter Entity Charge (if applicable)	$ 0.57	1	$ 0.57	$ 0.57	1	$ 0.57	$ -	0.00%
Additional Fixed Rate Riders	$ -	1	$ -	$ -	1	$ -	$ -	
Additional Volumetric Rate Riders	-$ 0.0004	2,000	$ (0.80)	-$ 0.0004	2,000	$ (0.80)	$ -	0.00%
Sub-Total B - Distribution (includes Sub-Total A)			**$ 75.21**			**$ 85.16**	**$ 9.95**	**13.23%**
RTSR - Network	$ 0.0057	2,096	$ 11.95	$ 0.0059	2,096	$ 12.37	$ 0.42	3.51%
RTSR - Connection and/or Line and Transformation Connection	$ -	2,096	$ -	$ -	2,096	$ -	$ -	
Sub-Total C - Delivery (including Sub-Total B)			**$ 87.16**			**$ 97.53**	**$ 10.37**	**11.90%**
Wholesale Market Service Charge (WMSC)	$ 0.0034	2,096	$ 7.13	$ 0.0034	2,096	$ 7.13	$ -	0.00%
Rural and Remote Rate Protection (RRRP)	$ 0.0005	2,096	$ 1.05	$ 0.0005	2,096	$ 1.05	$ -	0.00%
Standard Supply Service Charge	$ 0.25	1	$ 0.25	$ 0.25	1	$ 0.25	$ -	0.00%
TOU - Off Peak	$ 0.1010	1,280	$ 129.28	$ 0.1010	1,280	$ 129.28	$ -	0.00%
TOU - Mid Peak	$ 0.1440	360	$ 51.84	$ 0.1440	360	$ 51.84	$ -	0.00%
TOU - On Peak	$ 0.2080	360	$ 74.88	$ 0.2080	360	$ 74.88	$ -	0.00%
Total Bill on TOU (before Taxes)			**$ 351.59**			**$ 361.96**	**$ 10.37**	**2.95%**
HST	13%		$ 45.71	13%		$ 47.05	$ 1.35	2.95%
Ontario Electricity Rebate	31.8%		$ (111.80)	31.8%		$ (115.10)	$ (3.30)	
Total Bill on TOU			**$ 285.49**			**$ 293.91**	**$ 8.42**	**2.95%**

Customer Class:	GENERAL SERVICE 50 to 4,999 kW SERVICE CLASSIFICATION
RPP / Non-RPP:	Non-RPP (Other)
Consumption	57,220 kWh
Demand	145 kW
Current Loss Factor	1.0481
Proposed/Approved Loss Factor	1.0481

	Current OEB-Approved			Proposed			Impact	
	Rate ($)	Volume	Charge ($)	Rate ($)	Volume	Charge ($)	$ Change	% Change
Monthly Service Charge	$ 115.66	1	$ 115.66	$ 117.45	1	$ 117.45	$ 1.79	1.55%
Distribution Volumetric Rate	$ 6.8002	145	$ 986.03	$ 6.9056	145	$ 1,001.31	$ 15.28	1.55%
Fixed Rate Riders	$ (4.50)	1	$ (4.50)	$ 1.16	1	$ 1.16	$ 5.66	-125.78%
Volumetric Rate Riders	-$ 0.0520	145	$ (7.54)	$ 0.0684	145	$ 9.92	$ 17.46	-231.54%
Sub-Total A (excluding pass through)			**$ 1,089.65**			**$ 1,129.84**	**$ 40.19**	**3.69%**
Line Losses on Cost of Power	$ -	-	$ -	$ -	-	$ -	$ -	
Total Deferral/Variance Account Rate Riders	-$ 2.0884	145	$ (302.82)	$ -	145	$ -	$ 302.82	-100.00%
CBR Class B Rate Riders	$ -	145	$ -	$ -	145	$ -	$ -	
GA Rate Riders	$ 0.0004	57,220	$ 22.89	$ -	57,220	$ -	$ (22.89)	-100.00%
Low Voltage Service Charge	$ -	145	$ -		145	$ -	$ -	
Smart Meter Entity Charge (if applicable)	$ -	1	$ -	$ -	1	$ -	$ -	
Additional Fixed Rate Riders	$ -	1	$ -	$ -	1	$ -	$ -	
Additional Volumetric Rate Riders	-$ 0.0004	145	$ (0.06)	-$ 0.0004	145	$ (0.06)	$ -	0.00%
Sub-Total B - Distribution (includes Sub-Total A)			**$ 809.66**			**$ 1,129.78**	**$ 320.12**	**39.54%**
RTSR - Network	$ 2.2941	145	$ 332.64	$ 2.3582	145	$ 341.94	$ 9.29	2.79%
RTSR - Connection and/or Line and Transformation Connection	$ -	145	$ -	$ -	145	$ -	$ -	
Sub-Total C - Delivery (including Sub-Total B)			**$ 1,142.31**			**$ 1,471.72**	**$ 329.42**	**28.84%**
Wholesale Market Service Charge (WMSC)	$ 0.0034	59,972	$ 203.91	$ 0.0034	59,972	$ 203.91	$ -	0.00%
Rural and Remote Rate Protection (RRRP)	$ 0.0005	59,972	$ 29.99	$ 0.0005	59,972	$ 29.99	$ -	0.00%
Standard Supply Service Charge	$ 0.25	1	$ 0.25	$ 0.25	1	$ 0.25	$ -	0.00%
Average IESO Wholesale Market Price	$ 0.1101	59,972	$ 6,602.95	$ 0.1101	59,972	$ 6,602.95	$ -	0.00%
Total Bill on Average IESO Wholesale Market Price			**$ 7,979.40**			**$ 8,308.81**	**$ 329.42**	**4.13%**
HST	13%		$ 1,037.32	13%		$ 1,080.15	$ 42.82	4.13%
Total Bill on Average IESO Wholesale Market Price			**$ 9,016.72**			**$ 9,388.96**	**$ 372.24**	**4.13%**

Customer Class:	UNMETERED SCATTERED LOAD SERVICE CLASSIFICATION
RPP / Non-RPP:	Non-RPP (Other)
Consumption	3,600 kWh
Demand	- kW
Current Loss Factor	1.0481
Proposed/Approved Loss Factor	1.0481

	Current OEB-Approved			Proposed			Impact	
	Rate ($)	Volume	Charge ($)	Rate ($)	Volume	Charge ($)	$ Change	% Change
Monthly Service Charge	$ 12.82	1	$ 12.82	$ 13.02	1	$ 13.02	$ 0.20	1.56%
Distribution Volumetric Rate	$ 0.0387	3600	$ 139.32	$ 0.0393	3600	$ 141.48	$ 2.16	1.55%
Fixed Rate Riders	$ (0.50)	1	$ (0.50)	$ 0.13	1	$ 0.13	$ 0.63	-126.00%
Volumetric Rate Riders	-$ 0.0031	3600	$ (11.16)	$ 0.0004	3600	$ 1.44	$ 12.60	-112.90%
Sub-Total A (excluding pass through)			**$ 140.48**			**$ 156.07**	**$ 15.59**	**11.10%**
Line Losses on Cost of Power	$ 0.1101	173	$ 19.06	$ 0.1101	173	$ 19.06	$ -	0.00%
Total Deferral/Variance Account Rate Riders	-$ 0.0055	3,600	$ (19.80)	$ -	3,600	$ -	$ 19.80	-100.00%
CBR Class B Rate Riders	$ -	3,600	$ -	$ -	3,600	$ -	$ -	
GA Rate Riders	$ -	3,600	$ -	$ -	3,600	$ -	$ -	
Low Voltage Service Charge	$ -	3,600	$ -		3,600	$ -	$ -	
Smart Meter Entity Charge (if applicable)	$ -	1	$ -	$ -	1	$ -	$ -	
Additional Fixed Rate Riders	$ -	1	$ -	$ -	1	$ -	$ -	
Additional Volumetric Rate Riders	-$ 0.0004	3,600	$ (1.44)	-$ 0.0004	3,600	$ (1.44)	$ -	0.00%
Sub-Total B - Distribution (includes Sub-Total A)			**$ 138.30**			**$ 173.69**	**$ 35.39**	**25.59%**
RTSR - Network	$ 0.0057	3,773	$ 21.51	$ 0.0059	3,773	$ 22.26	$ 0.75	3.51%
RTSR - Connection and/or Line and Transformation Connection	$ -	3,773	$ -	$ -	3,773	$ -	$ -	
Sub-Total C - Delivery (including Sub-Total B)			**$ 159.81**			**$ 195.96**	**$ 36.14**	**22.62%**
Wholesale Market Service Charge (WMSC)	$ 0.0034	3,773	$ 12.83	$ 0.0034	3,773	$ 12.83	$ -	0.00%
Rural and Remote Rate Protection (RRRP)	$ 0.0005	3,773	$ 1.89	$ 0.0005	3,773	$ 1.89	$ -	0.00%
Standard Supply Service Charge	$ 0.25	1	$ 0.25	$ 0.25	1	$ 0.25	$ -	0.00%
Average IESO Wholesale Market Price	$ 0.1101	3,600	$ 396.36	$ 0.1101	3,600	$ 396.36	$ -	0.00%
Total Bill on Average IESO Wholesale Market Price			**$ 571.14**			**$ 607.28**	**$ 36.14**	**6.33%**
HST	13%		$ 74.25	13%		$ 78.95	$ 4.70	6.33%
Total Bill on Average IESO Wholesale Market Price			**$ 645.39**			**$ 686.23**	**$ 40.84**	**6.33%**

Customer Class:	SENTINEL LIGHTING SERVICE CLASSIFICATION
RPP / Non-RPP:	Non-RPP (Other)
Consumption	50 kWh
Demand	1 kW
Current Loss Factor	1.0481
Proposed/Approved Loss Factor	1.0481

	Current OEB-Approved			Proposed			Impact	
	Rate ($)	Volume	Charge ($)	Rate ($)	Volume	Charge ($)	$ Change	% Change
Monthly Service Charge	$ 3.59	1	$ 3.59	$ 3.65	1	$ 3.65	$ 0.06	1.67%
Distribution Volumetric Rate	$ 33.4983	1	$ 33.50	$ 34.0175	1	$ 34.02	$ 0.52	1.55%
Fixed Rate Riders	$ (0.14)	1	$ (0.14)	$ 0.04	1	$ 0.04	$ 0.18	-128.57%
Volumetric Rate Riders	-$ 3.0382	1	$ (3.04)	$ 0.3368	1	$ 0.34	$ 3.38	-111.09%
Sub-Total A (excluding pass through)			**$ 33.91**			**$ 38.04**	**$ 4.13**	**12.19%**
Line Losses on Cost of Power	$ 0.1101	2	$ 0.26	$ 0.1101	2	$ 0.26	$ -	0.00%
Total Deferral/Variance Account Rate Riders	-$ 1.9204	1	$ (1.92)	$ -	1	$ -	$ 1.92	-100.00%
CBR Class B Rate Riders	$ -	1	$ -	$ -	1	$ -	$ -	
GA Rate Riders	$ -	50	$ -	$ -	50	$ -	$ -	
Low Voltage Service Charge	$ -	1	$ -		1	$ -	$ -	
Smart Meter Entity Charge (if applicable)	$ -	1	$ -	$ -	1	$ -	$ -	
Additional Fixed Rate Riders	$ -	1	$ -	$ -	1	$ -	$ -	
Additional Volumetric Rate Riders	-$ 0.0004	1	$ (0.00)	-$ 0.0004	1	$ (0.00)	$ -	0.00%
Sub-Total B - Distribution (includes Sub-Total A)			**$ 32.25**			**$ 38.31**	**$ 6.05**	**18.77%**
RTSR - Network	$ 1.7389	1	$ 1.74	$ 1.7875	1	$ 1.79	$ 0.05	2.79%
RTSR - Connection and/or Line and Transformation Connection	$ -	1	$ -	$ -	1	$ -	$ -	
Sub-Total C - Delivery (including Sub-Total B)			**$ 33.99**			**$ 40.10**	**$ 6.10**	**17.95%**
Wholesale Market Service Charge (WMSC)	$ 0.0034	52	$ 0.18	$ 0.0034	52	$ 0.18	$ -	0.00%
Rural and Remote Rate Protection (RRRP)	$ 0.0005	52	$ 0.03	$ 0.0005	52	$ 0.03	$ -	0.00%
Standard Supply Service Charge	$ 0.25	1	$ 0.25	$ 0.25	1	$ 0.25	$ -	0.00%
Average IESO Wholesale Market Price	$ 0.1101	50	$ 5.51	$ 0.1101	50	$ 5.51	$ -	0.00%
Total Bill on Average IESO Wholesale Market Price			**$ 39.95**			**$ 46.06**	**$ 6.10**	**15.28%**
HST	13%		$ 5.19	13%		$ 5.99	$ 0.79	15.28%
Total Bill on Average IESO Wholesale Market Price			**$ 45.15**			**$ 52.04**	**$ 6.90**	**15.28%**

Customer Class:	STREET LIGHTING SERVICE CLASSIFICATION
RPP / Non-RPP:	Non-RPP (Other)
Consumption	199,852 kWh
Demand	585 kW
Current Loss Factor	1.0481
Proposed/Approved Loss Factor	1.0481

	Current OEB-Approved			Proposed			Impact	
	Rate ($)	Volume	Charge ($)	Rate ($)	Volume	Charge ($)	$ Change	% Change
Monthly Service Charge	$ 1.38	8070	$ 11,136.60	$ 1.40	8070	$ 11,298.00	$ 161.40	1.45%
Distribution Volumetric Rate	$ 9.0221	585	$ 5,277.93	$ 9.1619	585	$ 5,359.71	$ 81.78	1.55%
Fixed Rate Riders	$ (0.06)	8070	$ (484.20)	$ 0.01	8070	$ 80.70	$ 564.90	-116.67%
Volumetric Rate Riders	$ 10.8657	585	$ 6,356.43	$ 5.8013	585	$ 3,393.76	$ (2,962.67)	-46.61%
Sub-Total A (excluding pass through)			**$ 22,286.76**			**$ 20,132.17**	**$ (2,154.59)**	**-9.67%**
Line Losses on Cost of Power	$ -	-	$ -	$ -	-	$ -	$ -	
Total Deferral/Variance Account Rate Riders	-$ 1.5814	585	$ (925.12)	$ -	585	$ -	$ 925.12	-100.00%
CBR Class B Rate Riders	$ -	585	$ -	$ -	585	$ -	$ -	
GA Rate Riders	$ 0.0004	199,852	$ 79.94	$ -	199,852	$ -	$ (79.94)	-100.00%
Low Voltage Service Charge	$ -	585	$ -		585	$ -	$ -	
Smart Meter Entity Charge (if applicable)	$ -	1	$ -	$ -	1	$ -	$ -	
Additional Fixed Rate Riders	$ -	1	$ -	$ -	1	$ -	$ -	
Additional Volumetric Rate Riders	-$ 0.0004	585	$ (0.23)	-$ 0.0004	585	$ (0.23)	$ -	0.00%
Sub-Total B - Distribution (includes Sub-Total A)			**$ 21,441.35**			**$ 20,131.94**	**$ (1,309.41)**	**-6.11%**
RTSR - Network	$ 1.7303	585	$ 1,012.23	$ 1.7787	585	$ 1,040.54	$ 28.31	2.80%
RTSR - Connection and/or Line and Transformation Connection	$ -	585	$ -	$ -	585	$ -	$ -	
Sub-Total C - Delivery (including Sub-Total B)			**$ 22,453.58**			**$ 21,172.48**	**$ (1,281.10)**	**-5.71%**
Wholesale Market Service Charge (WMSC)	$ 0.0034	209,465	$ 712.18	$ 0.0034	209,465	$ 712.18	$ -	0.00%
Rural and Remote Rate Protection (RRRP)	$ 0.0005	209,465	$ 104.73	$ 0.0005	209,465	$ 104.73	$ -	0.00%
Standard Supply Service Charge	$ 0.25	8070	$ 2,017.50	$ 0.25	8070	$ 2,017.50	$ -	0.00%
Average IESO Wholesale Market Price	$ 0.1101	209,465	$ 23,062.08	$ 0.1101	209,465	$ 23,062.08	$ -	0.00%
Total Bill on Average IESO Wholesale Market Price			**$ 48,350.07**			**$ 47,068.97**	**$ (1,281.10)**	**-2.65%**
HST	13%		$ 6,285.51	13%		$ 6,118.97	$ (166.54)	-2.65%
Total Bill on Average IESO Wholesale Market Price			**$ 54,635.58**			**$ 53,187.94**	**$ (1,447.64)**	**-2.65%**

RPP / Non-RPP:	RPP	
Consumption	294	kWh
Demand	-	kW
Current Loss Factor	1.0481	
Proposed/Approved Loss Factor	1.0481	

	Current OEB-Approved			Proposed			Impact	
	Rate ($)	Volume	Charge ($)	Rate ($)	Volume	Charge ($)	$ Change	% Change
Monthly Service Charge	$ 28.17	1	$ 28.17	$ 32.13	1	$ 32.13	$ 3.96	14.06%
Distribution Volumetric Rate	$ 0.0043	294	$ 1.26	$ -	294	$ -	$ (1.26)	-100.00%
Fixed Rate Riders	$ (0.60)	1	$ (0.60)	$ 0.32	1	$ 0.32	$ 0.92	-153.33%
Volumetric Rate Riders	-$ 0.0001	294	$ (0.03)	$ -	294	$ -	$ 0.03	-100.00%
Sub-Total A (excluding pass through)			**$ 28.80**			**$ 32.45**	**$ 3.65**	**12.65%**
Line Losses on Cost of Power	$ 0.1280	14	$ 1.81	$ 0.1280	14	$ 1.81	$ -	0.00%
Total Deferral/Variance Account Rate Riders	-$ 0.0055	294	$ (1.62)	$ -	294	$ -	$ 1.62	-100.00%
CBR Class B Rate Riders	$ -	294	$ -	$ -	294	$ -	$ -	
GA Rate Riders	$ -	294	$ -	$ -	294	$ -	$ -	
Low Voltage Service Charge	$ -	294	$ -		294	$ -	$ -	
Smart Meter Entity Charge (if applicable)	$ 0.57	1	$ 0.57	$ 0.57	1	$ 0.57	$ -	0.00%
Additional Fixed Rate Riders	$ -	1	$ -	$ -	1	$ -	$ -	
Additional Volumetric Rate Riders	-$ 0.0004	294	$ (0.12)	-$ 0.0004	294	$ (0.12)	$ -	0.00%
Sub-Total B - Distribution (includes Sub-Total A)			**$ 29.45**			**$ 34.71**	**$ 5.26**	**17.87%**
RTSR - Network	$ 0.0061	308	$ 1.88	$ 0.0063	308	$ 1.94	$ 0.06	3.28%
RTSR - Connection and/or Line and Transformation Connection	$ -	308	$ -	$ -	308	$ -	$ -	
Sub-Total C - Delivery (including Sub-Total B)			**$ 31.33**			**$ 36.65**	**$ 5.32**	**16.99%**
Wholesale Market Service Charge (WMSC)	$ 0.0034	308	$ 1.05	$ 0.0034	308	$ 1.05	$ -	0.00%
Rural and Remote Rate Protection (RRRP)	$ 0.0005	308	$ 0.15	$ 0.0005	308	$ 0.15	$ -	0.00%
Standard Supply Service Charge	$ 0.25	1	$ 0.25	$ 0.25	1	$ 0.25	$ -	0.00%
TOU - Off Peak	$ 0.1010	188	$ 19.00	$ 0.1010	188	$ 19.00	$ -	0.00%
TOU - Mid Peak	$ 0.1440	53	$ 7.62	$ 0.1440	53	$ 7.62	$ -	0.00%
TOU - On Peak	$ 0.2080	53	$ 11.01	$ 0.2080	53	$ 11.01	$ -	0.00%
Total Bill on TOU (before Taxes)			**$ 70.41**			**$ 75.74**	**$ 5.32**	**7.56%**
HST	13%		$ 9.15	13%		$ 9.85	$ 0.69	7.56%
Ontario Electricity Rebate	31.8%		$ (22.39)	31.8%		$ (24.08)	$ (1.69)	
Total Bill on TOU			**$ 57.18**			**$ 61.50**	**$ 4.32**	**7.56%**

Attachment B - Capital Module Applicable to ACM and ICM

Ontario Energy Board

Capital Module
Applicable to ACM and ICM

Note: Depending on the selections made below, certain worksheets in this workbook will be hidden. Version 5.00

Utility Name	PUC Distribution Inc.		
Assigned EB Number	EB-2019-0170		
Name of Contact and Title	Mark Faught, Director Finance		
Phone Number	705-759-0105		
Email Address	regulatory@ssmpuc.com		
Is this Capital Module being filed in a CoS or Price-Cap IR Application?	**Price-Cap IR**	**Rate Year**	**2020**
Indicate the Price-Cap IR Year (1, 2, 3, 4, etc) in which PUC Distribution Inc. is applying:	**2**	**Next OEB Scheduled Rebasing Year**	**2023**
PUC Distribution Inc. is applying for:	**ICM Approval**		
Last Rebasing Year:	**2018**		
The most recent complete year for which actual billing and load data exists	**2018**		
Current IPI	**2.00%**		
Strech Factor Assigned to Middle Cohort*	**III**		
Stretch Factor Value	**0.30%**		
Price Cap Index	**1.70%**		

Based on the inputs above, the growth factor utilized in the Materiality Threshold Calculation will be determined by:

$$\frac{\text{Revenues Based on 2018 Board-Approved Distribution Demand}}{\text{Revenues Based on 2017 Actual Distribution Demand}}$$

Notes

- Pale green cells represent input cells.
- Pale blue cells represent drop-down lists. The applicant should select the appropriate item from the drop-down list.
- White cells contain fixed values, automatically generated values or formulae.

While this model has been provided in Excel format and is required to be filed with the applications, the onus remains on the applicant to ensure the accuracy of the data and the results.

**As per ACM/ICM policy, the middle cohort stretch factor is applied to all ACM/ICM applications.*

OEB policies regarding rate-setting and rebasing following distributor consolidations could allow a distributor to not rebase rates for up to ten years. A distributor could also apply for and receive OEB approval to defer rebasing. If a distributor is under Price Cap IR for more than four years after rebasing and applies for an ICM, this spreadsheet will need to be adapted to accommodate those circumstances. The distributor should contact OEB staff to discuss the circumstances so that a customized model can be provided.

Ontario Energy Board

Capital Module
Applicable to ACM and ICM

PUC Distribution Inc.

Select the appropriate rate classes as they appear on your most recent Board-Approved Tariff of Rates and Charges, excluding the MicroFit Class.

How many classes are on your most recent Board-Approved Tariff of Rates and Charges? **6**

Select Your Rate Classes from the **Blue Cells** below. Please ensure that a rate class is assigned to **each shaded cell.**

	Rate Class Classification
1	RESIDENTIAL
2	GENERAL SERVICE LESS THAN 50 kW
3	GENERAL SERVICE 50 TO 4,999 KW
4	UNMETERED SCATTERED LOAD
5	SENTINEL LIGHTING
6	STREET LIGHTING

Ontario Energy Board

Capital Module
Applicable to ACM and ICM

PUC Distribution Inc.

Input the billing determinants associated with PUC Distribution Inc.'s Revenues Based on 2018 Board-Approved Distribution Demand. Input the current approved distribution rates. Sheets 4 & 5 calculate the NUMERATOR portion of the growth factor calculation.

		2018 Board-Approved Distribution Demand			Current Approved Distribution Rates		
Rate Class	**Units**	**Billed Customers or Connections**	**Billed kWh**	**Billed kW (if applicable)**	**Monthly Service Charge**	**Distribution Volumetric Rate kWh**	**Distribution Volumetric Rate kW**
RESIDENTIAL	$/kWh	29,816	288,323,799		28.17	0.0043	
GENERAL SERVICE LESS THAN 50 kW	$/kWh	3,431	92,411,463		20.95	0.0251	
GENERAL SERVICE 50 TO 4,999 KW	$/kW	357	244,620,598	614,743	115.66		6.8002
UNMETERED SCATTERED LOAD	$/kWh	22	944,731		12.82	0.0387	
SENTINEL LIGHTING	$/kW	354	209,800	593	3.59		33.4983
STREET LIGHTING	$/kW	8,070	2,398,221	7,030	1.38		9.0221

Ontario Energy Board

Capital Module

Applicable to ACM and ICM

PUC Distribution Inc.

Calculation of pro forma 2018 Revenues. No input required.

Rate Class	2018 Board-Approved Distribution Demand			Current Approved Distribution Rates		
	Billed Customers or Connections	Billed kWh	Billed kW (if applicable)	Monthly Service Charge	Distribution Volumetric Rate kWh	Distribution Volumetric Rate kW
	A	B	C	D	E	F
RESIDENTIAL	29,816	288,323,799		28.17	0.0043	0.0000
GENERAL SERVICE LESS THAN 50 kW	3,431	92,411,463		20.95	0.0251	0.0000
GENERAL SERVICE 50 TO 4,999 KW	357	244,620,598	614,743	115.66	0.0000	6.8002
UNMETERED SCATTERED LOAD	22	944,731		12.82	0.0387	0.0000
SENTINEL LIGHTING	354	209,800	593	3.59	0.0000	33.4983
STREET LIGHTING	8,070	2,398,221	7,030	1.38	0.0000	9.0221
Total	**42,050**	**628,908,612**	**622,366**			

Ontario Energy Board

Capital Module
Applicable to ACM and ICM

PUC Distribution Inc.

Last COS Rebasing: 2018

Applicants Rate Base

Average Net Fixed Assets						
Gross Fixed Assets - Re-based Opening	$	106,264,141	A			
Add: CWIP Re-based Opening			B			
Re-based Capital Additions	$	5,358,355	C			
Re-based Capital Disposals			D			
Re-based Capital Retirements			E			
Deduct: CWIP Re-based Closing	-$	420,179	F			
Gross Fixed Assets - Re-based Closing	$	111,202,317	G			
Average Gross Fixed Assets				$	108,733,229	H = (A + G) / 2
Accumulated Depreciation - Re-based Opening	$	13,880,189	I			
Re-based Depreciation Expense	$	3,780,329	J			
Re-based Disposals			K			
Re-based Retirements			L			
Accumulated Depreciation - Re-based Closing	$	17,660,518	M			
Average Accumulated Depreciation				$	15,770,354	N = (I + M) / 2
Average Net Fixed Assets				**$**	**92,962,876**	O = H - N
Working Capital Allowance						
Working Capital Allowance Base	$	89,269,060	P			
Working Capital Allowance Rate		7.5%	Q			
Working Capital Allowance				**$**	**6,695,180**	R = P * Q
Rate Base				**$**	**99,658,055**	S = O + R
Return on Rate Base						
Deemed ShortTerm Debt %		4.00%	T	$	3,986,322	W = S * T
Deemed Long Term Debt %		56.00%	U	$	55,808,511	X = S * U
Deemed Equity %		40.00%	V	$	39,863,222	Y = S * V
Short Term Interest		2.29%	Z	$	91,287	AC = W * Z
Long Term Interest		4.12%	AA	$	2,299,311	AD = X * AA
Return on Equity		9.00%	AB	$	3,587,690	AE = Y * AB
Return on Rate Base				**$**	**5,978,287**	AF = AC + AD + AE
Distribution Expenses						
OM&A Expenses	$	11,543,633	AG			
Amortization	$	3,780,329	AH			
Ontario Capital Tax			AI			
Grossed Up Taxes/PILs	$	586,716	AJ			
Low Voltage			AK			
Transformer Allowance	$	82,800	AL			
			AM			
			AN			
			AO			
				$	**15,993,478**	AP = SUM (AG : AO)
Revenue Offsets						
Specific Service Charges	-$	2,698,600	AQ			
Late Payment Charges			AR			
Other Distribution Income			AS			
Other Income and Deductions			AT	-$	**2,698,600**	AU = SUM (AQ : AT)
Revenue Requirement from Distribution Rates				**$**	**19,273,165**	AV = AF + AP + AU
Rate Classes Revenue						
Rate Classes Revenue - Total (Sheet 4)				$	19,448,862	AW

Ontario Energy Board

Capital Module
Applicable to ACM and ICM

PUC Distribution Inc.

Input the billing determinants associated with PUC Distribution Inc.'s Revenues Based on 2017 Actual Distribution Demand. This sheet calculates the DENOMINATOR portion of the growth factor calculation.
Pro forma Revenue Calculation.

Rate Class	2017 Actual Distribution Demand			Current Approved Distribution Rates						
	Billed Customers or Connections	Billed kWh	Billed kW	Monthly Service Charge	Distribution Volumetric Rate kWh	Distribution Volumetric Rate kW	Service Charge Revenue	Distribution Volumetric Rate Revenue kWh	Distribution Volumetric Rate Revenue kW	Total Revenue By Rate Class
	A	B	C	D	E	F	G	H	I	J
RESIDENTIAL	29,729	282,820,547		28.17	0.0043	0.0000	10,049,591	1,216,128	0	11,265,720
GENERAL SERVICE LESS THAN 50 kW	3,417	91,035,995		20.95	0.0251	0.0000	859,034	2,285,003	0	3,144,037
GENERAL SERVICE 50 TO 4,999 KW	361	245,166,376	610,764	115.66	0.0000	6.8002	501,039	0	4,153,317	4,654,356
UNMETERED SCATTERED LOAD	21	907,713		12.82	0.0387	0.0000	3,231	35,128	0	38,359
SENTINEL LIGHTING	361	213,661	619	3.59	0.0000	33.4983	15,552	0	20,735	36,287
STREET LIGHTING	8,070	2,398,221	7,030	1.38	0.0000	9.0221	133,639	0	63,425	197,065
Total	**41,959**	**622,542,513**	**618,413**				**11,562,086**	**3,536,260**	**4,237,478**	**19,335,824**

Service Charge % Revenue	Distribution Volumetric Rate % Revenue kWh	Distribution Volumetric Rate % Revenue kW	Total % Revenue
$K = G / J_{total}$	$L = H / J_{total}$	$M = I / J_{total}$	N
52.0%	6.3%	0.0%	58.3%
4.4%	11.8%	0.0%	16.3%
2.6%	0.0%	21.5%	24.1%
0.0%	0.2%	0.0%	0.2%
0.1%	0.0%	0.1%	0.2%
0.7%	0.0%	0.3%	1.0%
			100.0%

Ontario Energy Board

Capital Module
Applicable to ACM and ICM

PUC Distribution Inc.

Current Revenue from Rates

This sheet is used to determine the applicant's most current allocation of revenues (after the most recent revenue to cost ratio adjustment, if applicable) to appropriately allocate the incremental revenue requirement to the classes.

	Current OEB-Approved Base Rates			2018 Board-Approved Distribution Demand		
Rate Class	Monthly Service Charge	Distribution Volumetric Rate kWh	Distribution Volumetric Rate kW	Re-based Billed Customers or Connections	Re-based Billed kWh	Re-based Billed kW
	A	B	C	D	E	F
RESIDENTIAL	28.17	0.0043	0	29,816	288,323,799	0
GENERAL SERVICE LESS THAN 50 kW	20.95	0.0251	0	3,431	92,411,463	0
GENERAL SERVICE 50 TO 4,999 KW	115.66	0	6.8002	357	244,620,598	614,743
UNMETERED SCATTERED LOAD	12.82	0.0387	0	22	944,731	0
SENTINEL LIGHTING	3.59	0	33.4983	354	209,800	593
STREET LIGHTING	1.38	0	9.0221	8,070	2,398,221	7,030
Total						

Current Base Service Charge Revenue	Current Base Distribution Volumetric Rate kWh Revenue	Current Base Distribution Volumetric Rate kW Revenue	Total Current Base Revenue	Service Charge % Total Revenue	Distribution Volumetric Rate % Total Revenue	Distribution Volumetric Rate % Total Revenue	Total % Revenue
G	**H**	**I**	**J**	**$L = G / J_{total}$**	**$M = H / J_{total}$**	**$N = I / J_{total}$**	**O**
10,079,001	1,239,792	0	11,318,793	51.82%	6.37%	0.00%	58.2%
862,553	2,319,528	0	3,182,081	4.43%	11.93%	0.00%	16.4%
495,487	0	4,180,375	4,675,863	2.55%	0.00%	21.49%	24.0%
3,384	36,561	0	39,946	0.02%	0.19%	0.00%	0.2%
15,250	0	19,864	35,115	0.08%	0.00%	0.10%	0.2%
133,639	0	63,425	197,065	0.69%	0.00%	0.33%	1.0%
11,589,315	**3,595,881**	**4,263,665**	**19,448,862**				**100.0%**

Ontario Energy Board

Capital Module
Applicable to ACM and ICM

PUC Distribution Inc.

No Input Required.

Final Materiality Threshold Calculation

$$Threshold\ Value\ (\%) = 1 + \left[\left(\frac{RB}{d}\right) \times (g + PCI \times (1+g))\right] \times ((1+g) \times (1+PCI))^{n-1} + 10\%$$

Cost of Service Rebasing Year		2018	
Price Cap IR Year in which Application is made		2	n
Price Cap Index		1.70%	PCI
Growth Factor Calculation			
Revenues Based on 2018 Board-Approved Distribution Demand		$19,448,862	
Revenues Based on 2017 Actual Distribution Demand		$19,335,824	
Growth Factor		0.58%	g (Note 1)
Dead Band		10%	
Average Net Fixed Assets			
Gross Fixed Assets Opening	$	106,264,141	
Add: CWIP Opening	$	-	
Capital Additions	$	5,358,355	
Capital Disposals	$	-	
Capital Retirements	$	-	
Deduct: CWIP Closing	-$	420,179	
Gross Fixed Assets - Closing	$	111,202,317	
Average Gross Fixed Assets	$	108,733,229	
Accumulated Depreciation - Opening	$	13,880,189	
Depreciation Expense	$	3,780,329	
Disposals	$	-	
Retirements	$	-	
Accumulated Depreciation - Closing	$	17,660,518	
Average Accumulated Depreciation	$	15,770,354	
Average Net Fixed Assets	$	92,962,876	
Working Capital Allowance			
Working Capital Allowance Base	$	89,269,060	
Working Capital Allowance Rate		8%	
Working Capital Allowance	$	6,695,180	
Rate Base	**$**	**99,658,055**	RB
Depreciation	**$**	**3,780,329**	d

Threshold Value (varies by Price Cap IR Year subsequent to CoS rebasing)

Price Cap IR Year 2019	**170%**
Price Cap IR Year 2020	**172%**
Price Cap IR Year 2021	**173%**
Price Cap IR Year 2022	**175%**
Price Cap IR Year 2023	**176%**
Price Cap IR Year 2024	**178%**
Price Cap IR Year 2025	**179%**
Price Cap IR Year 2026	**181%**
Price Cap IR Year 2027	**183%**
Price Cap IR Year 2028	**184%**

Threshold CAPEX — $Threshold\ Value \times d$

Price Cap IR Year 2019	**$**	**6,445,056**
Price Cap IR Year 2020	**$**	**6,497,525**
Price Cap IR Year 2021	**$**	**6,551,198**
Price Cap IR Year 2022	**$**	**6,606,102**
Price Cap IR Year 2023	**$**	**6,662,267**
Price Cap IR Year 2024	**$**	**6,719,720**
Price Cap IR Year 2025	**$**	**6,778,491**
Price Cap IR Year 2026	**$**	**6,838,611**
Price Cap IR Year 2027	**$**	**6,900,111**
Price Cap IR Year 2028	**$**	**6,963,021**

Note 1: The growth factor g is annualized, depending on the number of years between the numerator and denominator for the calculation. Typically, for ACM review in a cost of service and in the fourth year of Price Cap IR, the ratio is divided by 2 to annualize it. No division is normally required for the first three years under Price Cap IR.

Ontario Energy Board

Capital Module
Applicable to ACM and ICM

PUC Distribution Inc.

Identify ALL Proposed ACM and ICM projects and related CAPEX costs in the relevant years

	Cost of Service Test Year 2018	*Price Cap IR* Year 1 2019	*Price Cap IR* Year 2 2020
CAPEX[1]	$ 4,938,176	$ 5,770,421	$ 9,100,376
Materiality Threshold		$ 6,445,056	$ 6,497,525
Maximum Eligible Incremental Capital (Forecasted Capex less Threshold)		$ -	$ 2,602,851

Project Descriptions:	Type	Test Year 2018	Year 1 2019 Proposed ACM/ICM	Year 1 2019 Amortization Expense	Year 1 2019 CCA	Year 2 2020 Proposed ACM/ICM	Year 2 2020 Amortization Expense	Year 2 2020 CCA
Substation 16 Rebuild	New ICM					$ 4,728,229	$ 117,206	$ 402,164
Total Cost of ACM/ICM Projects			$ -	$ -	$ -	$ 4,728,229	$ 117,206	$ 402,164
Maximum Allowed Incremental Capital			$ -			$ 2,602,851		

Ontario Energy Board

Capital Module
Applicable to ACM and ICM

PUC Distribution Inc.

Incremental Capital Adjustment **Rate Year:** **2020**

Current Revenue Requirement

Current Revenue Requirement - Total	$	19,273,165	A

Eligible Incremental Capital for ACM/ICM Recovery

	Total Claim		Eligible for ACM/ICM (Full Year Prorated Amount) (from Sheet 10b)		
Amount of Capital Projects Claimed	$ 4,728,229	$	2,602,851		B
Depreciation Expense	$ 117,206	$	64,521		C
CCA	$ 402,164	$	221,388		V

ACM/ICM Incremental Revenue Requirement Based on Eligible Amount in Rate Year

Return on Rate Base

Incremental Capital			$	2,602,851	B
Depreciation Expense (prorated to Eligible Incremental Capital)			$	64,521	C
Incremental Capital to be included in Rate Base (average NBV in year)			$	2,570,591	D = B - C/2
	% of capital structure				
Deemed Short-Term Debt	4.0%	E	$	102,824	G = D * E
Deemed Long-Term Debt	56.0%	F	$	1,439,531	H = D * F
	Rate (%)				
Short-Term Interest	2.29%	I	$	2,355	K = G * I
Long-Term Interest	4.12%	J	$	59,309	L = H * J
Return on Rate Base - Interest			$	61,663	M = K + L
	% of capital structure				
Deemed Equity %	40.00%	N	$	1,028,236	P = D * N
	Rate (%)				
Return on Rate Base -Equity	9.00%	O	$	92,541	Q = P * O
Return on Rate Base - Total			$	154,205	R = M + Q

Amortization Expense

Amortization Expense - Incremental	C	$	64,521	S

Grossed up Taxes/PILs

Regulatory Taxable Income		O	$	92,541	T
Add Back Amortization Expense (Prorated to Eligible Incremental Capital)		S	$	64,521	U
Deduct CCA (Prorated to Eligible Incremental Capital)			$	221,388	V
Incremental Taxable Income			-$	64,326	W = T + U - V
Current Tax Rate	26.5%	X			
Taxes/PILs Before Gross Up			-$	17,046	Y = W * X
Grossed-Up Taxes/PILs			-$	23,192	Z = Y / (1 - X)

Incremental Revenue Requirement

Return on Rate Base - Total	Q	$	154,205	AA
Amortization Expense - Total	S	$	64,521	AB
Grossed-Up Taxes/PILs	Z	-$	23,192	AC
Incremental Revenue Requirement		$	195,533	AD = AA + AB + AC

Ontario Energy Board

Capital Module
Applicable to ACM and ICM

PUC Distribution Inc.

Calculation of incremental rate rider. Choose one of the 3 options: Fixed and Variable Rate Riders

Rate Class	Service Charge % Revenue	Distribution Volumetric Rate % Revenue kWh	Distribution Volumetric Rate % Revenue kW	Service Charge Revenue	Distribution Volumetric Rate Revenue kWh	Distribution Volumetric Rate Revenue kW	Total Revenue by Rate Class
	From Sheet 7	*From Sheet 7*	*From Sheet 7*	Col C * Col I_{total}	Col D* Col I_{total}	Col E* Col I_{total}	Col I_{total}
RESIDENTIAL	51.82%	6.37%	0.00%	101,331	12,465	0	113,796
GENERAL SERVICE LESS THAN 50 kW	4.43%	11.93%	0.00%	8,672	23,320	0	31,992
GENERAL SERVICE 50 TO 4,999 KW	2.55%	0.00%	21.49%	4,981	0	42,028	47,010
UNMETERED SCATTERED LOAD	0.02%	0.19%	0.00%	34	368	0	402
SENTINEL LIGHTING	0.08%	0.00%	0.10%	153	0	200	353
STREET LIGHTING	0.69%	0.00%	0.33%	1,344	0	638	1,981
Total	**59.59%**	**18.49%**	**21.92%**	**116,515**	**36,152**	**42,866**	**195,533**
							195,533

Billed Customers or Connections	Billed kWh	Billed kW	Service Charge Rate Rider	Distribution Volumetric Rate kWh Rate Rider	Distribution Volumetric Rate kW Rate Rider
From Sheet 4	*From Sheet 4*	*From Sheet 4*	Col F / Col K / 12	Col G / Col L	Col H / Col M
29,816	288,323,799		0.32	0.0000	0.0000
3,431	92,411,463		0.21	0.0003	0.0000
357	244,620,598	614,743	1.16	0.0000	0.0684
22	944,731		0.13	0.0004	0.0000
354	209,800	593	0.04	0.0000	0.3368
8,070	2,398,221	7,030	0.01	0.0000	0.0907
42,050	**628,908,612**	**622,366**			

Attachment C – The Board's Decision and Rate Order EB-2017-0071, pg 21

2.0 Planning

2.1 Capital

Is the level of planned capital expenditures appropriate and is the rationale for planning and pacing choices appropriate and adequately explained, giving due consideration to:

- *customer feedback and preferences*
- *productivity*
- *benchmarking of costs*
- *reliability and service quality*
- *impact on distribution rates*
- *trade-offs with OM&A spending*
- *government-mandated obligations*
- *the objectives of the Applicant and its customers*
- *the distribution system plan, and*
- *the business plan.*

Complete Settlement: For the purposes of the settlement of all of the issues in this proceeding, PUC agrees to adjust its 2018 rate base and Test Year capital plan to reflect the following changes:

- PUC agrees to reduce its Test Year capital additions by $420,179. This would result in a 2018 Capital Additions of $5,388,176.

This reduction in capital additions results from the removal of the costs associated with *Project #7 – Substation 16 Rebuild* in the Test Year given that Substation 16 will not be in service in 2018, as further described in response to interrogatories 2-CCC-42 and 2-Staff-28b and Exhibit 2/App. G/Project #7.

With the above adjustment, the Parties accept that the level of planned capital additions and capital expenditures, and the rationale for planning and pacing choices are appropriate and adequately explained, giving due consideration to:

- The customer feedback and preferences as more fully detailed in Exhibit 1 at Section 2.1.6.1, Appendix 10 and Exhibit 2 Appendix 2-H;

- The past and planned productivity initiatives of PUC as more fully detailed in Exhibit 1 at Section 2.1.6.2;

- PUC's benchmarking performance as more fully detailed in Exhibit 1 at Section 2.1.7.1 and Appendix 1-4. In this regard, the Parties also considered PUC's performance relative to comparable northern LDCs based on a total cost of delivery, including transmission and distribution, as shown in Appendix B;

Attachment D – Capital Project Table

Projects	2013 Board Approved	2013	2014	2015	2016	2017 Bridge Year	2017 Actual	2018 Test Year	2018 Actual
Reporting Basis	CGAAP	CGAAP	MIFRS	MIFRS	MIFRS	MIFRS	MIFRS	MIFRS	MIFRS
New Services & Subdivisions									
Land Rights (Formally known as Account 1906)			$ 3,411		$ 1,736	$ 1,057	$ 5,268	$ 1,138	$ 4,209
Buildings									
Transformer Station Equipment >50 kV		$ 10,633		$ 14,422		$ 5,143		$ 5,541	
Distribution Station Equipment <50 kV			$ 41		$ 468	$ 104	$ 524	$ 113	
Poles, Towers & Fixtures	$ 799,166	$ 256,877	$ 401,663	$ 184,799	$ 274,915	$ 229,541	$ 95,521	$ 247,298	$ 86,938
Overhead Conductors & Devices		$ 64,863	$ 200,363	$ 70,055	$ 101,891	$ 89,737	$ 93,696	$ 96,679	$ 59,769
Underground Conduit		$ 114,781	$ 177,913	$ 39,290	$ 37,655	$ 75,874	$ 85,536	$ 81,744	$ 30,793
Underground Conductors & Devices		$ 107,784	$ 171,551	$ 209,801	$ 94,176	$ 119,734	$ 142,631	$ 128,997	$ 16,249
Line Transformers		$ 238,554	$ 367,159	$ 418,565	$ 279,567	$ 267,636	$ 216,824	$ 288,341	$ 168,324
Services (Overhead & Underground)	$ 643,595	$ 810,182	$ 527,136	$ 357,901	$ 347,857	$ 419,376	$ 365,987	$ 451,820	$ 247,262
Meters		$ 799	$ 76	$ 10,431	$ 1,376	$ 2,603	$ 15,530	$ 2,805	$ 13,152
Sub-Total	$ 1,442,761	$ 1,604,473	$ 1,849,313	$ 1,305,264	$ 1,139,641	$ 1,210,805	$ 1,021,517	$ 1,304,476	$ 626,695
Joint Use									
Poles, Towers & Fixtures		$ 1,132,205	$ 1,010,215	$ 74,737	$ 35,201	$ 86,257	$ 105,436	$ 123,906	$ 220,981
Overhead Conductors & Devices		$ 114,063	$ 66,940		$ 28,982	$ 8,042	$ 37,263	$ 11,552	$ 36,034
Underground Conduit									$ 6,600
Underground Conductors & Devices									$ 2,860
Line Transformers		$ 19,507	$ 10,386	-$ 4,856	$ 8,696	$ 1,292		$ 1,856	$ 13,381
Sub-Total	$ -	$ 1,265,775	$ 1,087,540	$ 69,881	$ 72,879	$ 95,590	$ 142,699	$ 137,313	$ 279,858
Meters									
Transformer Station Equipment >50 kV					$ 529	$ 220		$ 146	
Distribution Station Equipment <50 kV									$ 9,790
Poles, Towers & Fixtures									$ 2,537
Overhead Conductors & Devices									-$ 1,804
Underground Conduit									-$ 14,532
Underground Conductors & Devices									$ 696
Line Transformers					$ 11,410	$ 4,740	$ 12,473	$ 3,157	
Services (Overhead & Underground)			$ 561			$ 233		$ 155	$ 46,800
Meters	$ 319,666	$ 229,274	$ 139,712	$ 42,513	$ 82,277	$ 205,105	$ 76,378	$ 136,601	$ 130,033
Sub-Total	$ 319,666	$ 229,274	$ 140,273	$ 42,513	$ 94,217	$ 210,298	$ 88,851	$ 140,060	$ 173,520
City Projects									
Land Rights (Formally known as Account 1906)									$ 2,816
Poles, Towers & Fixtures			$ 41,491	$ 63,781	$ 15,328	$ 19,709	$ 62,878	$ 22,649	$ 439,207
Overhead Conductors & Devices			$ 8,524	$ 24,949	$ 11,466	$ 7,344	$ 90,909	$ 8,440	$ 237,883
Underground Conduit		$ 12,345	$ 78,700	$ 120,026	$ 86,962	$ 48,705	$ 9,373	$ 55,971	$ 14,998
Underground Conductors & Devices		$ 213,579	$ 348,298	$ 379,454	$ 41,381	$ 160,597	$ 2,585	$ 184,556	$ 47,068
Line Transformers			$ 10,421	-$ 1,654	-$ 3,118	$ 923		$ 1,061	$ 59,714
Services (Overhead & Underground)			$ 10,198		$ 180	$ 1,696		$ 1,949	
Sub-Total	$ -	$ 225,924	$ 497,632	$ 586,556	$ 152,198	$ 238,975	$ 165,745	$ 274,627	$ 801,685
Distribution Overhead Renewal									
Land Rights (Formally known as Account 1906)			$ 3,387			$ 450		$ 483	
Distribution Station Equipment <50 kV			$ 224		-$ 96,685	-$ 12,806		-$ 13,752	
Poles, Towers & Fixtures		$ 166,342	$ 631,378	$ 644,093	$ 355,614	$ 238,631	$ 409,840	$ 256,256	$ 412,562
Overhead Conductors & Devices		$ 84,447	$ 187,156	$ 310,734	$ 210,691	$ 105,284	$ 83,344	$ 113,061	$ 156,693
Underground Conduit		$ 48,061	$ 515		$ 850	$ 6,562		$ 7,047	
Underground Conductors & Devices			$ 18,303	$ 32,261	$ 15,357	$ 8,752		$ 9,398	
Line Transformers		$ 30,758	$ 122,900	$ 40,144	$ 128,906	$ 42,844	$ 60,225	$ 46,008	$ 25,386
Services (Overhead & Underground)					$ 1,465	$ 195		$ 209	$ 1,113
Meters		$ 13,967				$ 1,854		$ 1,991	
System Supervisor Equipment		$ 1,154				$ 153		$ 165	
Sub-Total	$ -	$ 344,730	$ 963,864	$ 1,027,231	$ 616,199	$ 391,918	$ 553,409	$ 420,865	$ 595,754
Distribution Underground Renewal									
Land Rights (Formally known as Account 1906)					$ 4,740	$ 940			
Poles, Towers & Fixtures		$ 106	$ 6,556	$ 2,026	$ 21,084	$ 5,905	$ 1,319		
Overhead Conductors & Devices		$ 923		$ 2,060	$ 226	$ 636	$ 7,594		
Underground Conduit		$ 50,542	$ 17,968	$ 128,515	$ 86,025	$ 56,141			
Underground Conductors & Devices	$ 159,833	$ 14,008	$ 43,641	$ 145,482	$ 149,431	$ 69,928	$ 39,074		$ 81,995
Line Transformers			$ 9,389	$ 117,080	$ 114,163	$ 47,728	$ 607		
Services (Overhead & Underground)		$ 1,726				$ 342			
Sub-Total	$ 159,833	$ 67,304	$ 77,555	$ 395,164	$ 375,669	$ 181,621	$ 48,594	$ -	$ 81,995
Forced Overhead Renewal									
Poles, Towers & Fixtures		$ 174,753	$ 145,135	$ 107,906	$ 155,818	$ 177,116	$ 265,935	$ 190,818	$ 201,311
Overhead Conductors & Devices		$ 70,826	$ 28,380	$ 30,341	$ 42,914	$ 52,339	$ 55,720	$ 56,388	$ 12,817
Underground Conduit				$ 46	$ 2,390	$ 740		$ 797	
Underground Conductors & Devices				$ 1,075	$ 3,834	$ 1,490		$ 1,605	
Line Transformers		$ 40,398	$ 8,804	$ 40,494	$ 72,397	$ 49,192	$ 99,164	$ 52,998	$ 25,971
Services (Overhead & Underground)		$ 1,572	$ 3,662			$ 1,588	$ 781	$ 1,711	$ 3,583
Meters		$ 12,886	$ 1,300			$ 4,305		$ 4,638	
Sub-Total	$ -	$ 300,434	$ 187,280	$ 179,862	$ 277,353	$ 286,770	$ 421,600	$ 308,955	$ 243,683
Forced Underground Renewal									
Overhead Conductors & Devices					$ 2,011	$ 1,299		$ 1,575	
Underground Conductors & Devices					$ 23,637	$ 15,271	$ 92,560	$ 18,509	$ 21,939
Line Transformers	$ 958,998			$ 132,840	$ 236,062	$ 238,336	$ 306,023	$ 288,871	$ 185,719
Sub-Total	$ 958,998	$ -	$ -	$ 132,840	$ 261,710	$ 254,906	$ 398,583	$ 308,955	$ 207,658

Restricted Wire Replacement									
Poles, Towers & Fixtures	$ 532,777	$ 166,908	$ 23,679	$ 130,895	$ 372,010	$ 274,814	$ 400,224	$ 418,175	$ 257,647
Overhead Conductors & Devices		$ 195,224	$ 59,650	$ 90,998	$ 371,776	$ 284,386	$ 408,070	$ 432,741	$ 323,568
Line Transformers		$ 15,436	$ 12,128	$ 36,009	$ 133,426	$ 78,066	$ 81,726	$ 118,790	$ 76,079
Services (Overhead & Underground)									$ 272,910
Sub-Total	$ 532,777	$ 377,568	$ 95,458	$ 257,902	$ 877,211	$ 637,266	$ 890,020	$ 969,706	$ 930,204
Transformers									
Line Transformers		$ 88,125			$ 59,775			$ 56,024	
Sub-Total	$ -	$ 88,125	$ -	$ -	$ 59,775	$ -	$ -	$ 56,024	$ -
Substation 16									
Distribution Station Equipment <50 kV		$ 19,871		$ 32,083	$ 35,585	$ 73,445	$ 186,746		$ 118,016
Overhead Conductors & Devices		$ 14,420				$ 19,098			
Line Transformers		$ 122,592				$ 162,362			
Sub-Total	$ -	$ 156,883	$ -	$ 32,083	$ 35,585	$ 254,906	$ 186,746	$ -	$ 118,016
Station Upgrades - Dx									
Transformer Station Equipment >50 kV		$ 49,279				$ 12,288		$ 7,759	
Distribution Station Equipment <50 kV	$ 213,111	$ 855,072	$ 358,362	$ 433,146	$ 315,900	$ 489,365	$ 118,749	$ 308,987	$ 188,912
Poles, Towers & Fixtures		$ 348	$ 563		$ 850	$ 439		$ 277	
Overhead Conductors & Devices	$ 530,000	$ 3,135			$ 50,557	$ 13,389		$ 8,454	
Underground Conduit	$ 1,308,081		$ 7,042			$ 1,756		$ 1,109	
Services (Overhead & Underground)					$ 51	$ 13		$ 8	$ 5,318
System Supervisor Equipment			$ 6,466		$ 9,708	$ 4,033		$ 2,547	
Sub-Total	$ 2,051,192	$ 907,833	$ 372,433	$ 433,146	$ 377,066	$ 521,283	$ 118,749	$ 329,140	$ 194,230
Station Upgrades - Tx									
Transformer Station Equipment >50 kV	$ 213,111	$ 387,967	$ 459,406	$ 73,236	$ 71,955		$ 126,406	$ 105,163	$ 195,581
Distribution Station Equipment <50 kV		$ 11,738	$ 30,374		$ 21,672			$ 6,758	$ 14,168
Poles, Towers & Fixtures		$ 995						$ 105	$ 12,780
Underground Conductors & Devices					$ 202		$ 8,951	$ 21	-$ 719
Line Transformers									$ 1,087
Meters									$ 2,729
Sub-Total	$ 213,111	$ 400,700	$ 489,779	$ 73,236	$ 93,829	$ -	$ 135,357	$ 112,048	$ 225,626
Voltage Conversion									
Land Rights (Formally known as Account 1906)									$ 3,330
Distribution Station Equipment <50 kV	$ 2,728,887	$ 935		$ 257,569		$ 86,788	$ 2,998	$ 81,568	
Poles, Towers & Fixtures		$ 20,689		$ 646,133	$ 371,099	$ 348,464	$ 282,276	$ 327,507	$ 109,981
Overhead Conductors & Devices		$ 30,175	$ 45,055	$ 336,557	$ 457,601	$ 291,882	$ 464,974	$ 274,327	$ 123,285
Underground Conduit		$ 526		$ 51,597	$ 163,259	$ 72,311	$ 22,367	$ 67,962	$ 367,829
Underground Conductors & Devices		$ 5,787		$ 17,822	$ 5,606	$ 9,809	$ 31,293	$ 9,219	$ 141,011
Line Transformers		$ 19,694	$ 681	$ 299,308	$ 149,900	$ 157,654	$ 264,766	$ 148,173	$ 133,779
Services (Overhead & Underground)		$ 5,170				$ 1,736	$ 264	$ 1,631	
Sub-Total	$ 2,728,887	$ 82,976	$ 45,737	$ 1,608,986	$ 1,147,466	$ 968,644	$ 1,068,938	$ 910,387	$ 879,216
Switch Replacement									
Distribution Station Equipment <50 kV									
Poles, Towers & Fixtures			$ 13,236						
Overhead Conductors & Devices		$ 66,736	$ 105,124	$ 99,881					
Underground Conductors & Devices	$ 106,555		$ 19						
Line Transformers		$ 46,482	$ 4,578						
Services (Overhead & Underground)		$ 14,590							
Sub-Total	$ 106,555	$ 127,808	$ 122,957	$ 99,881	$ -	$ -	$ -	$ -	$ -
Insulator Replacement									
Poles, Towers & Fixtures		$ 291,484	$ 4,489						
Overhead Conductors & Devices		$ 10,491	$ 242,586	$ 185,049					
Sub-Total	$ -	$ 301,975	$ 247,076	$ 185,049	$ -	$ -	$ -	$ -	$ -
New Building									
Buildings		$ 1,861,207	$ 244,854	$ 66,532	$ 82,630		$ 8,109		$ 8,455
Poles, Towers & Fixtures		$ 11							
Sub-Total	$ -	$ 1,861,219	$ 244,854	$ 66,532	$ 82,630	$ -	$ 8,109	$ -	$ 8,455
POD Generation									
Poles, Towers & Fixtures			$ 2,726						
Sub-Total	$ -	$ -	$ 2,726	$ -	$ -	$ -	$ -	$ -	$ -

34.5 kV Expansion									
Distribution Station Equipment <50 kV			$ 86						
Transformer Station Equipment >50 kV							$ 1,157		$ 72,798
Underground Conductors & Devices			$ 902						
Services (Overhead & Underground)									$ 457
Sub-Total	$ -	$ -	$ 988	$ -	$ -	$ -	$ 1,157	$ -	$ 73,255
Substation 19									
Distribution Station Equipment <50 kV			$ 163,164						
Sub-Total	$ -	$ -	$ 163,164	$ -	$ -	$ -	$ -	$ -	$ -
Energy Storage Project									
Transformer Station Equipment >50 kV			$ 158,518	-$ 12,822	$ 203,253	$ 425,000	$ 971,770		
Sub-Total	$ -	$ -	$ 158,518	-$ 12,822	$ 203,253	$ 425,000	$ 971,770	$ -	$ -
PMH Replacement Program									
Distribution Station Equipment <50 kV			$ 16,238						
Poles, Towers & Fixtures			$ 837						
Overhead Conductors & Devices		$ 11,064	$ 10,456						
Underground Conductors & Devices		$ 1,976							
Line Transformers	$ 159,833		$ 99,486	$ 49,303	$ 87,999		$ 35,936		
Sub-Total	$ 159,833	$ 13,040	$ 127,016	$ 49,303	$ 87,999	$ -	$ 35,936	$ -	$ -
Substation 10									
Distribution Station Equipment <50 kV		$ 2,942,315	$ 674,216	$ 174,344					
Poles, Towers & Fixtures		$ 109,521							
Overhead Conductors & Devices		$ 97,288	$ 5,815	$ 237					
Underground Conductors & Devices		$ 57,863	$ 6						
Line Transformers		$ 35,219							
System Supervisor Equipment		$ 32,153	$ 21,741	$ 4,349					
Sub-Total	$ -	$ 3,274,360	$ 701,779	$ 178,930	$ -	$ -	$ -	$ -	$ -
SCADA									
Transformer Station Equipment >50 kV				$ 25,347			$ 77,560	$ 4,170	$ 15,867
Distribution Station Equipment <50 kV	$ 266,389	$ 128,475	$ 970				$ 1,853	$ 21,297	$ 7,569
Overhead Conductors & Devices							$ 148		
System Supervisor Equipment		$ 2,498	$ 128,386	$ 202	$ 33,359		$ 14,852	$ 27,055	$ 66,076
Sub-Total	$ 266,389	$ 130,973	$ 129,357	$ 25,548	$ 33,359	$ -	$ 94,413	$ 52,522	$ 89,511
Miscellaneous		$ 36,153	$ 1,483	$ 5,693	$ 588	$ -		$ 63,099	$ 13,694
Total	$ 8,940,002	$ 11,797,526	$ 7,706,781	$ 6,742,777	$ 5,988,627	$ 5,677,982	$ 6,352,193	$ 5,388,176	$ 5,543,054
Less Renewable Generation Facility Assets and Other Non-Rate-Regulated Utility Assets (input as negative)									
Total	$ 8,940,002	$ 11,797,526	$ 7,706,781	$ 6,742,777	$ 5,988,627	$ 5,677,982	$ 6,352,193	$ 5,388,176	$ 5,543,054

Attachment E - EST3707 – PUC Sub 16 – Customer Event Evaluation Form

PUC Services Inc.
500 Second Line East
Sault Ste. Marie, ON,
P6A 6P2
(705) 759-6522

Summary of Substation Townhall Community Event

Overview

Name of Engagement:	Substation Townhall Community Information Session	**Job Title/ Department:**	Communications Engineering Finance
Date:	September 18, 2019	**Location:**	Main Office
Type of Activity:	Customer Engagement Initiative	**Initiated By:**	PUC Distribution
Partnership/ Collaboration:	**Internal Department Collaboration**	**Participants:**	4

Activity

Objectives:	Our objective with this event was to engage with customers on the Substation 16 rebuild and answer any questions or concerns they had with the entire process. We issued a press release, sent door-to-door notices to surrounding businesses and customers, and posted on our social media platforms such as LinkedIn, Twitter and Facebook to inform customers about the townhall.
Purpose:	We believe customer engagement is the backbone of our community-driven operations and with townhalls like these, we give customers a chance to ask questions such as: • How will the rebuild affected my rates? • What is the project timeline? • How does the electrical distribution system function? Providing opportunities for customers to share feedback strengthens their relationship with PUC and improves the overall customer experience.
Customer Needs/ Preferences	Each customer wanted to know how the rebuild will affect their business; become more aware of when this rebuild will occur and for how long. We informed customers that any need they had would be proactively addressed whenever possible.

Evaluation

Methods to Collect Feedback	Hosted a come-and-go style community townhall on Wednesday, September 18th, 2019 from 6:00 PM-8:00 PM where 6 PUC employees attended. Most of our attendees were informed of the townhall through door-to-door notices.
Customer Feedback (theme and concerns/remark)	**General Theme:** • Most customers were concerned with power outages due to the rebuild **Concerns/Remarks:** • Concerned with underlying cables • Concerned with power interruptions/ duration and length (Informed them we cannot guarantee a power outage from a storm but that customers will be notified of a planned outage through our Atlas Notification System; there will be no lengthy power outages) • Customer concerned with length of power outages being longer than 8 hours because of expensive equipment on site that needs to remain powered • Commented on the length of time it will take to complete the rebuild – informed customers this is the time it will take to make sure the rebuild is up to safety standards etc. • Wondered about customers stealing items from old vs. new substation • Pleased to see PUC investing in aged infrastructure renewal • Pleased with aesthetics of the planned Sub 16 as it is next to their business

Customer Feedback (questions)	**Questions**: • Questioned the timeline and construction period of the rebuild – informed customers they will have plenty of notice for power interruptions or any road closures etc. • Neighbouring business asked if anything needs to be stored on their company property • How will PUC issue notices for any power outages or road closures? (Informed them of our process with each) • Questioned how you can tear down a substation and rebuild it without it affecting people – notified them on how we can distribute the 2400 customers to other substations for the duration of the rebuild without a noticeable difference • Question about who is able to bid on the work that will occur – informed customers that locally, there are not many contractors with the realm of knowledge needed to complete this job but that everyone is welcome to bid on the work • Questioned if this substation rebuild is the first of more rebuilds in the future • Questioned if the other substations are as reliable as the old ones
Follow-up Provided	Upon departure from the event, our employees let each customer know they can always follow-up and ask questions at a later date. We are here to help customers feel more comfortable and knowledgeable about the entire process before, during and after the rebuild. Posted on social media about the substation rebuild townhall as a follow-up to the original post about hosting the event. We want to make sure customers are as informed as possible with upcoming projects in the community.

Attachment F - 1C32-2-RFP- Sub 16 Engineering and Technical Services

1.0 **Purpose or Intent**

1.1 PUC Distribution Inc. (PUC) is requesting proposals for professional engineering and technical services for the rebuild of PUC Distribution's Substation 16. Background information, scope of work and contents of the proposal are presented in the remainder of this Request for Proposal (RFP).

2.0 **Schedule of Events**

2.1 The schedule of events for the Request for Proposal (RFP) process is as follows:

Event	**Date**
RFP release date	2016-08-09
Deadline for expression of interest	2016-08-16
Deadline for inquiries	2016-08-24
Responses to inquiries	2016-08-30
Proposal due date	2016-09-07
Proposal opening date	2016-09-08
Contract award date	2016-09-14

3.0 **Proposal Requirements**

3.1 Submission of Proposals

3.1.1 PUC shall accept sealed proposals from proponents on September 7, 2016 at its main office, located at 500 Second Line East, Sault Ste. Marie, Ontario, P6A 6P2, PUC P.O. Box 9000 until 3:00PM local time. Submit three (3) copies of the proposal in a sealed envelope bearing the consultant's name and address with the project title. Upon submission, all proposals shall become property of the PUC. The PUC assumes no responsibility for misdirected or lost submittals received after the deadline regardless of reason.

3.2 Proposal Content

3.2.1 Proposals shall be complete in all material respects and specifically prepared for this project:

- Proponents understanding of the project requirements.
- Provide a clear and detailed description of the services being offered.
- Qualifications of the firm's ability to perform the project tasks based on similar work.
- Key personnel, their qualifications and availability to perform the work.
- Project approach and methodology.
- Quality assurance and control process.
- Proposed schedule to complete the work.

- Provide fee information for all tasks listed in the proposal.
- Establish an all-inclusive lump sum price for each task so designated.
- Include hourly rates for all undefined tasks so designated.

3.2.2 Minimum requirements for each of these areas are discussed below:

PUC requests the preparation of a proposed scope of work for the project based on the Proponents understanding of the current situation and their previous experience with design and implementation of similar projects for other clients. The Proponent shall familiarize himself with the facilities, equipment, procedures and installations in order to determine for himself the scope of work.

PUC shall make its records, archive files and other information available to the Proponent during the preparation of the proposal. The Protection & Control Engineer in Training (EIT), Mitchell Paradis, shall be available throughout to meet with proponents, answer questions and explain the existing Substation 16 system. Access to the facilities shall be provided at the convenience of the Electrical Engineering Technician Mike Orr by contacting (705) 759-6505 or mike.orr@ssmpuc.com. Proponents are strongly encouraged to schedule site visits well in advance of the proposal deadline.

Qualifications of the firm shall include specific experience on projects similar in nature to the proposed project. In demonstrating the firm's experience in these areas, the proposal shall include descriptions of similar and related projects carried out by the firm in the past five years, including references (with contact information) and key personnel involved in each project. If the firm proposes to use sub-consultants or contractors for any aspect of the project, similar information as described above for each shall be included showing the area of responsibility.

The proposal shall identify the key personnel who shall be assigned to the project. Information about the key personnel shall include – resumes, their role in the project and how their experience qualifies them for this role, their anticipated percent participation, the location of the office(s) where key personnel are located and where they shall perform the work.
A proposed schedule for the project shall be included, indicating approximate dates for completion of major tasks.

PUC desires technical excellence for this project and shall select the firm which best demonstrates its experience and that of key personnel to perform similar projects.

3.3 Proposal Precedent

3.3.1 The following precedents have been established as a basis for conducting the proposal process.

Proposal Costs

Proponents submitting proposals agree that they enter into the proposal process at their option and that PUC is not obliged to accept their proposal. Each proponent entering into the proposal process does so at their expense with the understanding PUC has no obligation to reimburse any costs or expenses associated with the proposal process.

PUC Rights and Options

PUC reserves and holds the following rights and options to exercise at its discretion:

- To accept or reject any or all proposals.
- To waive any technicalities or irregularities in any proposal.
- To cancel, modify or change the scope of work.
- To change or modify the proposal schedule.

3.4 Addenda & Amendments

3.4.1 All addenda and amendments to the Request for Proposal (RFP) issued by PUC shall become part of the RFP. Addenda and amendments shall be issued up to five (5) working days before the proposal is due. Addenda and amendments shall be sent by email, facsimile or regular mail. Receipt of each addendum or amendment shall be acknowledged in the proposal.

3.5 Interpretations & Clarifications

3.5.1 No oral interpretation or clarification of the Request for Proposal (RFP) shall be made to any proponent during the proposal preparation period. All questions regarding the RFP shall be submitted in writing to Mitchell Paradis EIT, Protection & Control EIT, PUC P.O. Box 9000, Sault Ste. Marie, Ontario, P6A 6P2 or mitchell.paradis@ssmpuc.com. No interpretation or clarification shall be addressed by the PUC after August 30, 2016. Interpretation or clarification of all questions and inquiries submitted shall be made available to all candidates by email, facsimile or regular mail.

3.6 Withdrawal of Proposal

3.6.1 Proponents may withdraw from the proposal process at any time up to the time the proposal is submitted. Once the proposal is received by the PUC it may only be withdrawn by written request from a principle of the firm making the proposal.

4.0 General Information

4.1 Background – Sault Ste. Marie PUC Distribution Inc.

4.1.1 PUC distributes electricity to residences and businesses within the boundaries of the City of Sault Ste. Marie as well as parts of Prince Township and the Rankin Reserve. PUC Distribution Inc. is a provincially regulated Local Distribution Company (LDC) and must comply with requirements issued by the Ontario Energy Board (OEB) with respect to provision of services. As a participant in the Ontario electricity market, PUC Distribution Inc. must comply with the rules of the Independent Electricity System Operator (IESO). As an LDC, the company must adhere to Regulation 22/04 of the Electricity Act. The PUC Distribution system currently consists of two transmission stations that are each supplied by two 115 kV lines from Great Lakes Power Transmission (GLPT) and transform the voltage down to a sub-transmission level of 34.5 kV. This 34.5 kV system is transmitted throughout PUC's service area where there are fifteen distribution stations that transform the 34.5 kV down to a distributed level of 12.47 kV.

4.1.2 The integrated operation of this entire system is controlled using a computerized Electric Supervisory Control and Data Acquisition (SCADA) system.

4.2 Substation 16 Rebuild General Overview

4.2.1 The planned Substation 16 involves a new 34.5 kV – 12.47/7.2 kV, 26.6 MVA municipal substation that will replace an existing end of life Substation 16. The station shall have two incoming 34.5 kV supplies, two 10/13.3 MVA power transformers, and four outgoing 12.47 kV feeders supplied by arc resistant metalclad switchgear. The project is intended to be "turn-key" with the General Contractor responsible for all aspects of the project. These aspects include but are not limited to:

- Demolishing and disposal of all equipment at the existing Sub 16 site
- Design of electrical, structural, and mechanical aspects
- Procurement, supply, transportation, and installation of all required equipment
- Scheduling all aspects of the project
- Programming and commissioning any Intelligent Electronic Devices (IED's)
- Commissioning and documentation

Substation 16 is to utilize the recent Substation 10 design as a template. The design shall be like-for-like with opportunity for improvement and subtle changes. For example, incoming lines may enter the building at different locations. Required Substation 10 drawings are provided for reference.

5.0 **Payment**

5.1 Payment shall be for a Fixed Amount based on the deliverables defined in the Scope of Work. Progress invoices may be submitted as frequently as monthly for work completed to date.

6.0 **Technical Specifications**

6.1 The scope of work is to provide a "turn-key" Substation 16 as per:
0251.0.1 Functional Specification Distribution Station R2

6.2 Exclusions to Scope

6.2.1 The following tasks have already been completed and reports submitted:

- Soil Resistivity Tests
- Geotechnical Evaluation
- Environmental Assessment Phase 1

6.3 Project Management

6.3.1 A competent project manager shall be assigned to the project. This project manager shall serve as the primary project contact with the PUC project manager and shall provide written project progress updates a minimum of bi-weekly. The project manager shall also be responsible for giving the guidance required to keep the project on schedule and to advise the PUC project manager when it is anticipated the schedule might fall behind.

6.4 Deliverables

6.4.1 All deliverables shall be provided as one paper copy and one electronic copy in native file format unless specified otherwise below.

6.4.2 Site visits as required to take measurements and collect data. A PUC technician shall be available at all times through the project to make additional measurements, take photos, etc. at later dates.

6.5 Support, Training, Maintenance, and Follow-up

6.5.1 As required as defined in the Scope of Work.

7.0 **Project Schedule**

7.1 The schedule of events for the project is as follows:

Event	**Date**
Detailed Design, Develop Budget, Complete RFQ Documents, Tendering Process	2016-09-14 through 2016-12-21
Implementation (Manage Turn-Key Project)	2017-01-01 through 2017-11-16

8.0 Vendor Requirements

8.1 Mandatory Requirements

8.1.1 As per section 3.0 Proposal Requirements

8.1.2 All work shall be done in accordance with the requirements of the Electrical Safety Authority (ESA), PUC Distribution, the OEB Distribution System Code, the Independent Electricity System Operator (IESO), Hydro One Networks Inc. (HONI), the Ministry of Environment (MOE), The Ontario Building Code (OBC) latest edition, City of SSM Bylaws, and other local regulatory agencies.

9.0 **Cost Proposal**

9.1 Cost Breakdown of Proposal

9.1.1 Provide a detailed cost proposal for the following breakdown;

A) 2016 Cost – Design
B) 2016 Cost – Equipment Tendering
C) 2016 Cost – Services Tendering, Bid Analysis, and Recommendation
D) 2017 Cost – Equipment Purchasing
E) 2017 Cost – Demolishing Existing Substation 16
F) 2017 Cost – Building and Commissioning of new Substation 16

10.0 **Attachments**

10.1 0251.0.1 Functional Specification Distribution Station R2
10.2 0251.0.1 Substation Transformer Specifications
10.3 0251.0.1 Specification for Padmount 34.5kV Switchgear
10.4 15-1176 – Third Line Substation Final GEO March 7 16
10.5 110533 Phase I ESA 601 Third Line East Sault Ste Marie ON Tulloch Engineering and Surveying Jan 11 2016
10.6 110533.001 Phase II ESA 601 Third Line East, SSM ON Tulloch Engineering and Surveying Jan 11 2016
10.7 Final Report – Grounding Study – PUC Services Inc – Substation 16
10.8 Substation 10 Drawing Package

Attachment G – RFQ EST3707-6-1-Sub16 Rebuild - Switchgear

1.0 Purpose

1.1 PUC Distribution Inc. (PUC) is requesting quotes for switchgear to meet the following specifications for its new Substation 16.

2.0 Schedule of Events

2.1 The schedule of events for the Request for Quote (RFQ) process is as follows:

Event	**Date**
RFP release date	2019-05-30
Deadline for inquiries	2019-06-14
Responses to inquiries	2019-06-21
Quote due date	2019-07-09
Quote opening date	2019-07-10
Contract award date	2019-07-17

3.0 Quote Requirements

3.1 Submission of Quotes

3.1.1 PUC shall accept quotes from vendors on the due date listed above. The PUC assumes no responsibility for misdirected or lost submittals received after the deadline regardless of reason.

3.2 Quote Precedent

3.2.1 The following precedents have been established as a basis for conducting the Quote process.

Quote Costs

Proponents submitting Quotes agree that they enter into the Quote process at their option and that PUC is not obliged to accept their Quote. Each proponent entering into the Quote process does so at their expense with the understanding PUC has no obligation to reimburse any costs or expenses associated with the Quote process.

PUC Rights and Options

PUC reserves and holds the following rights and options to exercise at its discretion:

- To accept or reject any or all Quotes.
- To waive any technicalities or irregularities in any Quote.
- To cancel, modify or change the scope of work.

- To change or modify the Quote schedule.

3.3 Addenda & Amendments

3.3.1 All addenda and amendments to the Request for Quote (RFQ) issued by PUC shall become part of the RFQ. Addenda and amendments shall be issued up to five (5) working days before the Quote is due. Addenda and amendments shall be sent by email, facsimile or regular mail. Receipt of each addendum or amendment shall be acknowledged in the Quote.

3.4 Interpretations & Clarifications

3.4.1 No oral interpretation or clarification of the Request for Quote (RFQ) shall be made to any proponent during the Quote preparation period. All questions regarding the RFQ shall be submitted in writing to Mitchell Paradis, P.Eng, Protection & Control Engineer, PUC P.O. Box 9000, Sault Ste. Marie, Ontario, P6B 4K1 or mitchell.paradis@ssmpuc.com. No interpretation or clarification shall be addressed by the PUC after the responses to inquiries date specified above. Interpretation or clarification of all questions and inquiries submitted shall be made available to all candidates by email, facsimile or regular mail.

3.5 Withdrawal of Quote

3.5.1 Proponents may withdraw from the Quote process at any time up to the time the Quote is submitted.

4.0 Deliverables

4.1 All vendor deliverables shall be provided as one paper copy, one electronic copy in native file format, and one PDF copy unless specified otherwise below. These documents will become the sole property of the PUC to use as they wish to support the business upon completion of this project.

4.2 All drawings are to be completed in AutoCAD.

5.0 Vendor Requirements

5.1 As per section 3.0 Quote Requirements

5.2 All work shall be done in accordance with the requirements of the Electrical Safety Authority (ESA), PUC Distribution, the OEB Distribution System Code, the Independent Electricity System Operator (IESO), Hydro One Networks Inc. (HONI), the Ministry of Environment (MOE), The Ontario Building Code (OBC) latest edition, City of SSM Bylaws, and other local regulatory agencies.

6.0 Commercial Terms

6.1 Full warranty shall be for 18 months from date of delivery or 12 months from date of final commissioning if commissioned earlier than 6 months after delivery.

6.2 A payment schedule shall be agreed upon prior to order with a minimum of 20% holdback until successful commissioning.

7.0 **Attachments**

7.1 GIS Switchgears Specification Package

Attachment H – RFQ EST3707-6-2 Sub 16 Rebuild - Transformers

PUC SERVICES	**REQUEST FOR QUOTE FOR SUBSTATION 16 TRANSFORMERS**	RFQ No. EST3707-6-2 Rev. 0 Date: 2019-05-21

1.0 **Purpose**

1.1 PUC Distribution Inc. (PUC) is requesting quotes for power transformers to meet the following specifications for its new Substation 16.

2.0 **Schedule of Events**

2.1 The schedule of events for the Request for Quote (RFQ) process is as follows:

Event	**Date**
RFP release date	2019-05-30
Deadline for inquiries	2019-06-14
Responses to inquiries	2019-06-21
Quote due date	2019-07-09
Quote opening date	2019-07-10
Contract award date	2019-07-17

3.0 **Quote Requirements**

3.1 Submission of Quotes

3.1.1 PUC shall accept quotes from vendors on the due date listed above. The PUC assumes no responsibility for misdirected or lost submittals received after the deadline regardless of reason.

3.2 Quote Precedent

3.2.1 The following precedents have been established as a basis for conducting the Quote process.

Quote Costs

Proponents submitting Quotes agree that they enter into the Quote process at their option and that PUC is not obliged to accept their Quote. Each proponent entering into the Quote process does so at their expense with the understanding PUC has no obligation to reimburse any costs or expenses associated with the Quote process.

PUC Rights and Options

PUC reserves and holds the following rights and options to exercise at its discretion:

- To accept or reject any or all Quotes.
- To waive any technicalities or irregularities in any Quote.
- To cancel, modify or change the scope of work.

- To change or modify the Quote schedule.

3.3 Addenda & Amendments

3.3.1 All addenda and amendments to the Request for Quote (RFQ) issued by PUC shall become part of the RFQ. Addenda and amendments shall be issued up to five (5) working days before the Quote is due. Addenda and amendments shall be sent by email, facsimile or regular mail. Receipt of each addendum or amendment shall be acknowledged in the Quote.

3.4 Interpretations & Clarifications

3.4.1 No oral interpretation or clarification of the Request for Quote (RFQ) shall be made to any proponent during the Quote preparation period. All questions regarding the RFQ shall be submitted in writing to Mitchell Paradis, P.Eng, Protection & Control Engineer, PUC P.O. Box 9000, Sault Ste. Marie, Ontario, P6B 4K1 or mitchell.paradis@ssmpuc.com. No interpretation or clarification shall be addressed by the PUC after the responses to inquiries date specified above. Interpretation or clarification of all questions and inquiries submitted shall be made available to all candidates by email, facsimile or regular mail.

3.5 Withdrawal of Quote

3.5.1 Proponents may withdraw from the Quote process at any time up to the time the Quote is submitted.

4.0 Deliverables

4.1 All vendor deliverables shall be provided as one paper copy, one electronic copy in native file format, and one PDF copy unless specified otherwise below. These documents will become the sole property of the PUC to use as they wish to support the business upon completion of this project.

4.2 All drawings are to be completed in AutoCAD.

5.0 Vendor Requirements

5.1 As per section 3.0 Quote Requirements

5.2 All work shall be done in accordance with the requirements of the Electrical Safety Authority (ESA), PUC Distribution, the OEB Distribution System Code, the Independent Electricity System Operator (IESO), Hydro One Networks Inc. (HONI), the Ministry of Environment (MOE), The Ontario Building Code (OBC) latest edition, City of SSM Bylaws, and other local regulatory agencies.

6.0 Commercial Terms

6.1 Full warranty shall be for 18 months from date of delivery or 12 months from date of final commissioning if commissioned earlier than 6 months after delivery.

6.2 A payment schedule shall be agreed upon prior to order with a minimum of 20% holdback until successful commissioning.

7.0 **Attachments**

7.1 Power Transformer Specifications Package

Attachment I - EST3707-4-RFP-3 – Project Management Services RFP

1 Purpose or Intent

1.1 PUC Distribution Inc. (PUC) is requesting proposals for project management services for the rebuild of PUC Distribution's Substation 16. Background information, scope of work and contents of the proposal are presented in the remainder of this Request for Proposal (RFP).

2 Schedule of Events

2.1 The schedule of events for the Request for Proposal (RFP) process is as follows:

Event	**Date**
RFP Release Date	2019-01-07
Deadline for Expression of Interest	2019-01-21
Release of RFP Attachments (section 13)	2019-01-23
Deadline for Inquiries	2019-02-01
Responses to Inquiries	2019-02-05
Proposal Due Date	2019-02-11
Proposal Opening Date	2019-02-13
Contract Award Date	2019-02-15

3 Proposal Requirements

3.1 Submission of Proposals

3.1.1 If you are interested in obtaining a copy of the tender documents, please submit an expression of interest and a signed Confidentiality Agreement (attachment 13.9) to Mitchell Paradis (mitchell.paradis@ssmpuc.com) by the "Deadline for Expression of Interest" date above at 3:00PM EST.

3.1.2 PUC shall accept sealed proposals from proponents on the "Proposal due date", in section 2.1 at its main office, located at 500 Second Line East, Sault Ste. Marie, Ontario, P6A 6P2, PUC P.O. Box 9000 until 3:00PM local time. Submit three (3) hard copies and one (1) electronic via USB storage key of the proposal in a sealed envelope bearing the consultant's name and address with the project title. Upon submission, all proposals shall become property of the PUC. The PUC assumes no responsibility for misdirected or lost submittals received after the deadline regardless of reason. All proposals shall be submitted to Mitchell Paradis, Protection & Control Engineer, PUC P.O. Box 9000, Sault Ste. Marie, Ontario, P6A 6P2.

3.2 Proposal Content

3.2.1 Proposals shall be complete in all material respects and specifically prepared for this project:

- Proponents understanding of the project requirements.
- Provide a clear and detailed description of the services being offered.
- Qualifications of the firm’s ability to perform the project tasks based on similar work.
- Key personnel, their qualifications and availability to perform the work.
- Project approach and methodology.
- Quality assurance and control process.
- Proposed schedule to complete the work.
- Provide fee information for all tasks listed in the proposal.
- Establish an all-inclusive lump sum price for each task so designated.
- Include hourly rates for all undefined tasks so designated.

3.2.2 Minimum requirements for each of these areas are discussed below:

PUC requests the preparation of a proposed scope of work for the project based on the Proponents understanding of the current situation and their previous experience with construction and contract administration of similar projects for other clients. The Proponent shall familiarize himself with the facilities, equipment, procedures and installations in order to determine for them-self the scope of work.

PUC shall make its records, archive files and other information available to the Proponent during the preparation of the proposal. The Protection & Control Engineer, Mitchell Paradis, shall be available throughout to meet with proponents, answer questions and explain the existing Substation 16 system.

Qualifications of the firm shall include specific experience on projects similar in nature to the proposed project. In demonstrating the firm’s experience in these areas, the proposal shall include descriptions of similar and related projects carried out by the firm in the past five years, including references (with contact information) and key personnel involved in each project. If the firm proposes to use sub-consultants or contractors for any aspect of the project, similar information as described above for each shall be included showing the area of responsibility.

The proposal shall identify the key personnel who shall be assigned to the project. Information about the key personnel shall include – resumes, their role in the project and how their experience qualifies them for this role, their anticipated percent participation, the location of the office(s) where key personnel are located and where they shall perform the work.

The proposal shall include sufficient details to satisfy all sections of the evaluation form example provided as an appendix. This is to include, but not limited to, change control procedures and examples, budget tracking examples, and schedule examples, etc.

PUC desires technical excellence for this project and shall select the firm which best demonstrates its experience and that of key personnel to perform similar projects.

3.3 Proposal Precedent

3.3.1 The following precedents have been established as a basis for conducting the proposal process.

Proposal Costs

Proponents submitting proposals agree that they enter into the proposal process at their option and that PUC is not obliged to accept their proposal. Each proponent entering into the proposal process does so at their expense with the understanding PUC has no obligation to reimburse any costs or expenses associated with the proposal process.

PUC Rights and Options

PUC reserves and holds the following rights and options to exercise at its discretion:

- To accept or reject any or all proposals.
- To waive any technicalities or irregularities in any proposal.
- To cancel, modify or change the scope of work.
- To change or modify the proposal schedule.

3.4 Addenda & Amendments

3.4.1 All addenda and amendments to the Request for Proposal (RFP) issued by PUC shall become part of the RFP. Addenda and amendments shall be issued up to four (4) working days before the proposal is due. Addenda and amendments shall be sent by email, facsimile or regular mail. Receipt of each addendum or amendment shall be acknowledged in the proposal.

3.5 Interpretations & Clarifications

3.5.1 No oral interpretation or clarification of the Request for Proposal (RFP) shall be made to any proponent during the proposal preparation period. All questions regarding the RFP shall be submitted in writing to Mitchell Paradis P.Eng, Protection & Control Engineer, PUC P.O. Box 9000, Sault Ste. Marie, Ontario, P6A 6P2 or mitchell.paradis@ssmpuc.com. No interpretation or clarification shall be addressed by the PUC after the “Responses to Inquiries” date in section 2.1. Interpretation or clarification of all questions and inquiries submitted shall be made available to all candidates by email, facsimile or regular mail.

3.6 Withdrawal of Proposal

3.6.1 Proponents may withdraw from the proposal process at any time up to the time the proposal is submitted. Once the proposal is received by the PUC it may only be withdrawn by written request from a principle of the firm making the proposal.

4 General Information

4.2 Background – Sault Ste. Marie PUC Distribution Inc.

4.2.1 PUC distributes electricity to residences and businesses within the boundaries of the City of Sault Ste. Marie as well as parts of Prince Township and the Rankin Reserve. PUC Distribution Inc. is a provincially regulated Local Distribution

Company (LDC) and must comply with requirements issued by the Ontario Energy Board (OEB) with respect to provision of services. As a participant in the Ontario electricity market, PUC Distribution Inc. must comply with the rules of the Independent Electricity System Operator (IESO). As an LDC, the company must adhere to Regulation 22/04 of the Electricity Act. The PUC Distribution system currently consists of two transmission stations that are each supplied by two 115 kV lines from Hydro One Sault Ste. Marie and transform the voltage down to a sub-transmission level of 34.5 kV. This 34.5 kV system is transmitted throughout PUC's service area where there are fifteen distribution stations that transform the 34.5 kV down to a distributed level of 12.47 kV.

4.2.2 The integrated operation of this entire system is controlled using a computerized Electric Supervisory Control and Data Acquisition (SCADA) system.

5 Project Scope

5.1 Substation 16 Rebuild General Overview

5.1.1 The planned Substation 16 involves a new 34.5 kV – 12.47/7.2 kV, 26.6 MVA municipal substation that will replace an existing end of life Substation 16. The station shall have two incoming 34.5 kV supplies, two 10/13.3 MVA power transformers, and four outgoing 12.47 kV feeders supplied by arc resistant metalclad switchgear.

5.2 Scope of Work

5.2.1 The scope of this project is to provide professional services to implement and provide deliverables as defined in the technical specifications below.

6 Technical Specifications

6.1 Review of Detailed Design and Equipment Specifications

6.1.1 Review the completed detailed tender package and familiarize oneself with the project design and specifications.

6.2 Commissioning

6.2.1 Facilitate the commissioning activities on site with the Equipment Vendors, Contractor, Consultant, as well as PUC Operations and Engineering staff.

6.3 Construction and Contract Administration

6.3.1 Provide on-site construction and contract administration services during the implementation phase of the project as required.

6.3.2 Handle all change notices and issue change orders as required.

6.3.3 Review and approve all contractor and equipment invoicing prior to submitting a payment recommendation to the owner.

6.3.4 Coordinate all activities between the Owner, Consultant, and Contractor.

6.3.5 Provide detailed bi-weekly schedule and budget updates to PUC Engineering staff.

6.3.6 Any other construction and contract administration services that add value for the owner as seen fit.

6.5 Project Closeout

6.5.2 Ensure the Contractor and Consultant have provided all as-built drawings, equipment manuals, settings, specifications, and any other require documentation to the Owner as per deliverables below.

6.6 Other

6.6.1 Substation 16 must be online for the winter months (November-March) due to system operating restraints.

6.6.2 WSP is the electrical and civil consultant with IDEA Inc. as the architect.

6.7 Exclusions to Scope

6.7.1 N/A

7 Project Management

7.1 A competent project manager shall be assigned to the project. This project manager shall serve as the primary project contact with the PUC project manager and shall provide written project progress updates a minimum of bi-weekly. The project manager shall also be responsible for giving the guidance required to keep the project on schedule and to advise the PUC project manager when it is anticipated the schedule might fall behind.

8 Deliverables

8.1 All deliverables shall be provided as one paper copy and one electronic copy in native file format unless specified otherwise below.

8.2 As required as defined in the Scope of Work.

8 Project Schedule

9.1 The schedule of events for the project is as follows:

Event	**Date**
Equipment and Contractor Procurement	Jan. 1, 2019 – July 31, 2019
Implementation & Commissioning	Apr. 1, 2020 – Oct. 31, 2020
Project Closeout	Nov. 1, 2020 – Nov. 30, 2020

10 Vendor Requirements

10.1 Mandatory Requirements

10.1.1 As per section 3.0 Proposal Requirements

10.1.2 All work shall be done in accordance with the requirements of the Electrical Safety Authority (ESA), PUC Distribution, the OEB Distribution System Code, the Independent Electricity System Operator (IESO), Hydro One Networks Inc. (HONI), the Ministry of Environment (MOE), The Ontario Building Code (OBC) latest edition, City of SSM Bylaws, and other local regulatory agencies.

11 Proposal Costs

11.1 Cost Breakdown of Proposal shall be as per the attached Form of Proposal (Attachment 13.1).

12 Payment

12.1 Payment shall be for a Fixed Amount based on the deliverables defined in the Scope of Work. Progress invoices may be submitted as frequently as monthly for work completed to date.

13 Attachments

13.1 Form of Proposal Breakdown
13.2 15-1176 – PUC Substation GI Report. Combined
13.3 110533 Phase I ESA 601 Third Line East Sault Ste Marie ON Tulloch Engineering and Surveying Jan 11 2016
13.4 110533.001 Phase II ESA 601 Third Line East, SSM ON Tulloch Engineering and Surveying Jan 11 2016
13.5 Final Report – Grounding Study – PUC Services Inc – Substation 16
13.6 Sub 16 Phase 1 - Package for Tender (zip)
13.7 PUC General Terms
13.8 EST3707-4-RFP-3 - Sub 16 Rebuild - Consultant Evaluation Form - Example

Attachment J - EB-2017-0071_PUC_Settlement Proposal_20180914_pg8

1.0 Summary

In reaching this complete settlement, the Parties have been guided by the Filing Requirements for 2018 rates, the Issues List dated August 17, 2018, the Report of the Board titled *Renewed Regulatory Framework for Electricity Distributors: A Performance-Based Approach* dated October 18, 2012 ("RRFE"), and the Handbook for Utility Rate Applications (Handbook).

This Settlement Proposal reflects a complete settlement of the issues in this proceeding.

Between 2013-2017, PUC has found that its costs to deliver safe, reliable distribution service to its customers have exceeded the costs included in rates. Despite a concerted effort to control those costs, PUC's cost structure remains higher than its rate structure. The Parties believe this is not sustainable in the long term. This settlement, if approved by the Board, when combined with a continued focus on cost control and productivity by PUC, will facilitate the alignment of rates and costs over the next five years, and thus will benefit customers.

PUC specifically advises the Board and the Parties that, based on its internal analysis, the revenue requirement and capital plan resulting from this Settlement Proposal would, if approved, provide sufficient resources to PUC to provide safe and reliable distribution service to its customers.

In this settlement, PUC has made changes to its Revenue Requirement as depicted below in Table 1.

Table 1 - Revenue Requirement Summary

Description		Application (A)	Interrogatories (B)	Variance (C)=(B)-(A)	Settlement (D)	Variance (E)=(D)-(B)
Cost of Capital	Regulated Return on Capital	$5,975,027	$5,993,155	$18,128	$5,978,287	-$14,868
	Regulated Rate of Return	6.00%	6.00%	0.00%	6.00%	0.00%
Rate Base & Capital Expenditures	Rate Base	$99,603,703	$99,905,905	$302,202	$99,658,054	-$247,851
	Net Fixed Assets	$92,717,901	$93,171,152	$453,251	$92,962,875	-$208,277
	Working Capital Base	$91,810,703	$89,796,719	-$2,013,984	$89,269,060	-$527,659
	Working Capital Allowance	$6,885,803	$6,734,754	-$151,049	$6,695,180	-$39,574
Operating Expenses	Amortization	$3,783,956	$3,783,956	$0	$3,780,329	-$3,627
	Taxes/PILs (Grossed Up)*	$366,429	$333,286	-$33,143	$586,716	$253,430
	OM&A	$11,886,833	$11,974,633	$87,800	$11,474,633	-$500,000
Revenue Requirement	Service Revenue Requirement	$22,081,245	$22,154,030	$72,785	$21,888,965	-$265,065
	Other Revenue	$2,389,661	$2,800,114	$410,453	$2,698,600	-$101,514
	Base Revenue Requirement	$19,691,584	$19,353,916	-$337,668	$19,190,365	-$163,551
	Grossed Up Revenue Deficiency	$3,679,687	$3,511,067	-$168,620	$3,354,750	-$156,317

* The Taxes/PILs Grossed Up of $586,716 is offset through the PILs rate rider discussed in Appendix E.

Attachment K - ESA Defects 2019 Sub 16

Electrical Safety Authority

Phone: 1-877-854-0079
Fax: 905-712-7886
CSS.ContactUs@electricalsafety.on.ca

155 Matheson Blvd, West
Mississauga, Ontario, L5R 3L5

Report No. S20514158-N04-001

Continuous Safety Services
Site Visit Report

The electrical systems of the site listed below were inspected on 2019/06/27 by Electrical Inspector Alex Brodie and the findings from that inspection are identified on this report. In addition, you will also find an Outstanding Defect Report attached that outlines any electrical defects that are still in our records as uncorrected. Please advise Alex Brodie once you have corrected any defects that were found.

Customer Information	Site Information
PUC SERVICES INC SUBSTATIONS 500 2 LINE E, PO 9000 SAULT STE MARIE, ON Attn: CLAUDIO STEFANO	THIRD LN W METAL CLAD 499 THIRD LN W SAULT STE MARIE, ON Attn: JOE GENUA

Issue Date:	2019/06/27	**Inspector Name:**	Alex Brodie
Purpose of Visit:	Inspection	**Inspector Cell #:**	705-541-8075
Visit Contact:	Ed P	**Inspector Email:**	ALEX.BRODIE@ELECTRICALSAFETY.ON.CA

Recommendations

#	Risk Factor	Details	Initial if corrected
1	N/A	**Notification #:** 20514158 **Issue Date:** 2019-06-27 **Defect Status:** Outstanding **Rule Reference:** 36-304 Crushed stone layer **Defect Location:** Sub Station **Defect #:** 1 Code Rule: OESC 2018 Rule 36-304 5) & 2-030 - Where GPR study is not required as per Bulletin 36-10-*, a crushed stone ground surface covering layer must be a minimum thickness of 150 mm. Inspector Comments:	
2	N/A	**Notification #:** 20514158 **Issue Date:** 2019-06-27 **Defect Status:** Outstanding **Rule Reference:** 36-312 Grounding of metal fences **Defect Location:** Sub Station **Defect #:** 2 Code Rule: OESC 2018 Rule 36-312 4) - The tap conductor shall be connected to the fence post, the bottom tension wire, the fence fabric (for which the conductor may be woven in at least two places), the top rail, and each strand of barbed wire, with the connection to the bottom tension wire, the fence fabric, and barbed wire strands made with bolted or equivalent connectors, and with the top rail connections bonded at every joint by a jumper equivalent to No. 2/0 AWG copper. Inspector Comments:	
3	N/A	**Notification #:** 20514158 **Issue Date:** 2019-06-27 **Defect Status:** Outstanding **Rule Reference:** 36-310 Gang-operated switch ground **Defect Location:** Sub Station **Defect #:** 3 Code Rule: OESC 2018 Rule 36-310 2) b) - The gradient control mat shall be placed on a minimum of 150 mm (6") of crushed stone and be at grade level. Inspector Comments:	
4	N/A	**Notification #:** 20514158 **Issue Date:** 2019-06-27 **Defect Status:** Outstanding **Rule Reference:** 02-300 General - maintenance & operation **Defect Location:** Sub Station **Defect #:** 4 Code Rule: OESC 2018 Rule 02-300 - Inspector Comments: damaged ground at mat	
5	N/A	**Notification #:** 20514158 **Issue Date:** 2019-06-27 **Defect Status:** Outstanding **Rule Reference:** 02-202 Guarding of bare live parts **Defect Location:** Sub Station **Defect #:** 5 Code Rule: OESC 2018 Rule 02-202 - Inspector Comments: Access to Sub Station confirmed, beer can by T2	

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Continuous Safety Services
Site Visit Report

6	Risk Factor N/A	**Notification #:** 20514158 **Issue Date:** 2019-06-27 **Defect Status:** Outstanding **Rule Reference:** 36-312 Grounding of metal fences **Defect Location:** **Defect #:** 6	Initial if corrected
	Code Rule: OESC 2018 Rule 36-312 1) - Fence shall be located at least 1 m inside perimeter of the station ground electrode area. Inspector Comments: Remove trees by fence		
7	Risk Factor N/A	**Notification #:** 20514158 **Issue Date:** 2019-06-27 **Defect Status:** Outstanding **Rule Reference:** 02-300 General - maintenance & operation **Defect Location:** Sub Station **Defect #:** 7	Initial if corrected
	Code Rule: OESC 2018 Rule 02-300 - Inspector Comments: T2 leaking oil		

Thank you for giving us the opportunity to help you improve the safety of your facility. Your attention to these hazards, defects and recommendations will ensure continued safety on your premises. Should you have any questions regarding the items listed in this report, please do not hesitate to contact us.

ESA offers training workshops specifically designed to educate workers about electrical safety principles and safe work practices. Visit www.esasafe.com for a list of ESA's training workshops and course descriptions or call 1-877-854-0079

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Outstanding Defect Summary Report

The following list of defects are still outstanding from our previous inspection visit(s). These items not only represent contraventions to the Ontario Electrical Safety Code but they also expose workers and employees to an electrical safety risk. As per Rule 2-018 of the Electrical Safety Code, all defects regardless of the risk factor assigned must be corrected as soon as possible. Please notify the Electrical Inspector by email indicating which defects have been corrected. Alternatively you can initial corrections and fax this report to 905-712-7886.

Customer Information	Site Information
PUC SERVICES INC SUBSTATIONS 500 2 LINE E, PO 9000 SAULT STE MARIE, ON Attn: CLAUDIO STEFANO	THIRD LN W METAL CLAD 499 THIRD LN W SAULT STE MARIE, ON Attn: JOE GENUA

Outstanding Defects

There are currently no outstanding defects from previous visits. Please refer to the previous pages of this report to review any electrical deficiencies that were found on the most recent inspection visit.