

**EXHIBIT 7**  
**COST ALLOCATION**

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**LIST OF ATTACHMENTS**

- Attachment16\_2020RRWF\_BHI\_10302020
- Attachment19\_2021\_Cost\_Allocation\_Model\_v1.0\_BHI\_10302020
- Attachment20\_Load\_Profile\_Derivation\_BHI\_10302020

1 **EXHIBIT 7 – COST ALLOCATION**

2 **7.0 OVERVIEW**

3 This Exhibit 7 includes information on cost allocation study requirements, class revenue  
4 requirements and Revenue-to-Cost Ratios (“R-C Ratios”) in accordance with Section 2.7 of the  
5 Chapter 2 Filing Requirements.<sup>1</sup>

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<sup>1</sup> OEB Filing Requirements for Electricity Distribution Rate Applications – 2020 Edition for 2021 Rate Applications, Chapter 2 Cost of Service, May 14, 2020

1 **7.1 COST ALLOCATION STUDY REQUIREMENTS**

2 BHI engaged Elenchus Research Associates (“Elenchus”) to assist in completing a Cost  
3 Allocation Study for the 2021 Test Year using the OEB-approved model. The completed model  
4 is filed as live Excel file Attachment19\_2021\_Cost\_Allocation\_Model\_v1.0\_BHI\_10302020 (the  
5 “Cost Allocation Model”) and a hard copy of input sheets I-6 and I-8, and output sheets O-1 and  
6 O-2 (first page only) are filed as Appendix A in this Exhibit 7. BHI confirms that the cost  
7 allocation model is consistent with the test year load forecast.

8

9 BHI has completed its cost allocation model in accordance with the OEB’s cost allocation  
10 polices in its reports of November 28, 2007 *Report of the Board on Application of Cost*  
11 *Allocation for Electricity Distributors*<sup>2</sup> and March 31, 2011 *Review of Electricity Distribution Cost*  
12 *Allocation Policy*<sup>3</sup> (“the Cost Allocation Reports”).

13

14 BHI has also completed Tabs “11. Cost Allocation” and “13. Rate Design” of the OEB’s  
15 Revenue Requirement Workform filed as Attachment16\_2020RRWF\_BHI\_10302020 (“RRWF”).  
16 BHI completed its transition to fully fixed rates for its residential rate class in 2019 and as such  
17 Tab “12 .New Rate Design Policy for Residential Customers.” is not applicable.

18 **Load Profiles**

19 In a letter dated June 12, 2015<sup>4</sup>, the OEB stated that it expected distributors to be mindful of  
20 material changes to load profiles and to propose updates in their respective cost of service  
21 applications when warranted. In its last Cost of Service application EB-2013-0115, BHI used the  
22 load profiles provided by Hydro One in its cost allocation model. The Hydro One profiles were  
23 based on 2004 data, and consumption patterns have changed since then due to factors such as  
24 technology, macroeconomic changes, conservation programs and time of use pricing.

25

26 BHI has updated the load profiles for all rate classes. Load profiles were derived using weather-  
27 normalized 2018 hourly load data; adjustments were made to align the 2018 load profiles with

---

<sup>2</sup> EB-2007-0667

<sup>3</sup> EB-2010-0219

<sup>4</sup> EB-2012-0083, Review of Cost Allocation Policy for Unmetered Loads, Issuance of New Cost Allocation Policy for Street Lighting Rate Class

1 the proposed 2021 Load Forecast (i.e., consumption forecast). The weather-normalization  
2 process involves three steps:

3

- 4 a) Derive weather profile of a typical year;
- 5 b) Derive the impact of heating degree days (“HDD”) and cooling degree days (“CDD”) on  
6 hourly load; and
- 7 c) Adjust actual load to typical load with the degree day impacts.

8

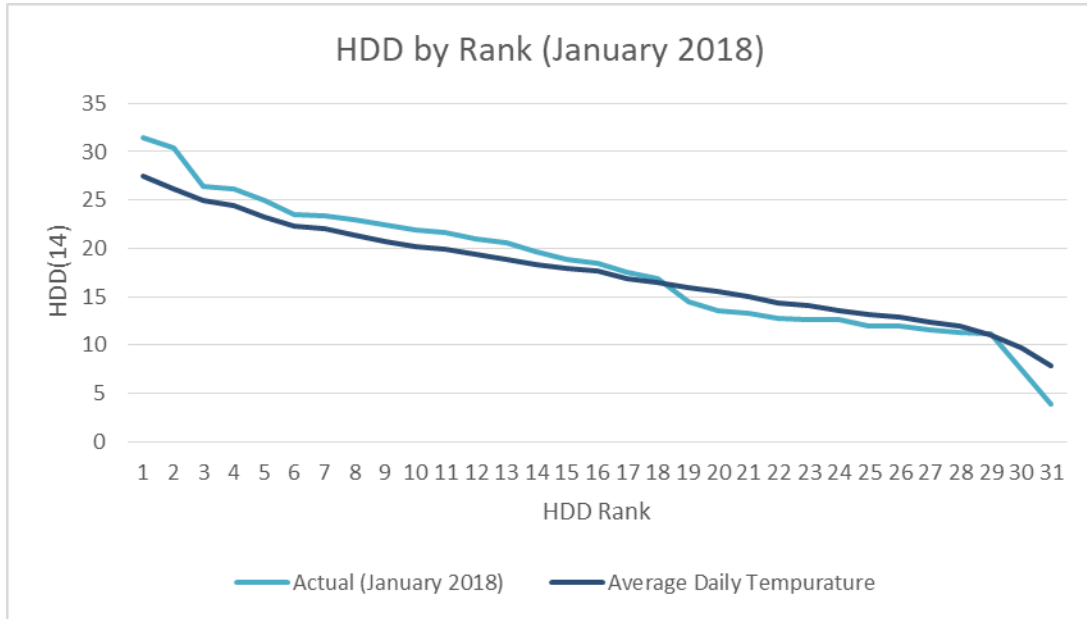
### 9 **Derivation of Daily Temperatures**

10 The weather profile of a typical year in the City of Burlington is calculated using average daily  
11 temperatures from 2009 to 2018. Average daily temperatures are defined as the average  
12 highest to lowest daily temperatures within a month (i.e., average of the coldest January day in  
13 each January from 2009 to 2018), rather than average temperatures on a specific calendar date  
14 (i.e., the average temperature on each January 1st). This process maintains the shape of the  
15 load profiles by determining typical monthly peaks and lows without smoothing those peaks.

16

17 Average daily temperatures are derived by first ranking each day in each month from 2009 to  
18 2018 from highest to lowest by HDD as measured at Environment Canada’s Burlington Piers  
19 Weather Station. HDDs and CDDs rely on the same base values as the proposed load forecast  
20 for each class instead of the default 18°C. HDD and CDD base values are discussed in further  
21 detail in Exhibit 3. The average HDDs among equivalently ranked days within a given month are  
22 then used as the average HDD for that ranked day in that month. For example, the days in  
23 January 2009 are ranked from 1 to 31 by HDD and this is repeated for each year from 2010 to  
24 2018. The average HDD of the January days ranked 1 is calculated to provide the typical  
25 highest HDD day in January. All days in January ranked 1 are assigned this calculated average  
26 HDD. This process is repeated for the January days ranked 2 to 31. BHI provides an example of  
27 average daily temperatures from 2009 to 2018 and actual temperatures in January 2018 ranked  
28 from 1 to 31 in Figure 1 below.

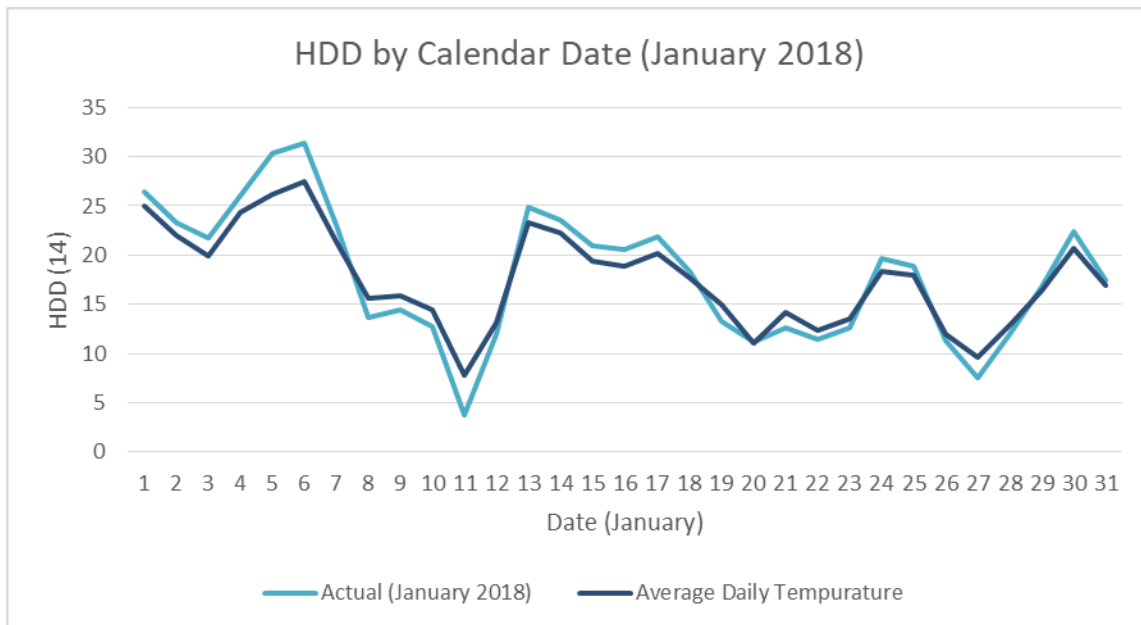
1 **Figure 1 – 10-Year Average HDD and January 2018 HDD by Rank**



2  
3

4 Average daily temperatures reflect the January normal-weather profile in the City of Burlington.  
 5 Figure 2 below displays the same information by calendar date using the average and actual  
 6 temperatures associated with each ranked day.

7 **Figure 2 – 10-Year Average HDD and January 2018 HDD by Calendar Date**



8

1 Typical daily CDDs are determined by the same ranking and averaging methodology described  
2 above, using average daily CDD data from 2009 to 2018.

### 3 **Impact of HDD and CDD on Hourly Load**

4 The impact of HDDs and CDDs on hourly load is calculated with a regression of three years of  
5 actual hourly loads (2016 to 2018) on daily HDDs and CDDs. The regression results provide the  
6 estimated impact of a change in degree days on load.

7

8 Temperatures impact load differently depending on the time of the day and consequently HDD  
9 and CDD variables are converted to interaction variables between degree days and the hour of  
10 the day. There are 24 variables for each of HDD and CDD, equal to the actual degree days in  
11 the corresponding hour, and 0 in all other hours. A set of 24 binary variables, equal to 1 in the  
12 corresponding hour and 0 in all other hours, are also included.<sup>5</sup> The resulting coefficients reflect  
13 the impact of one HDD or CDD that considers different impacts depending on the hour of the  
14 day.

### 15 **Adjust Actual Load to Typical Load**

16 Actual 2018 hourly load is adjusted by calculating the difference between actual daily  
17 temperatures and the corresponding ranked typical daily temperature (as identified in Figure 2)  
18 and applying the regression coefficient to the difference.

19

20 After 2018 weather-normalized demand is derived for each hour, the load in each hour is  
21 adjusted by the same factor such that the sum of hourly loads is equal to the proposed 2021  
22 Load Forecast (i.e., consumption forecast).

23

24 Table 1 below provides the calculations used to adjust actual January 1, 2018 weather variables  
25 to typical weather for the Residential class.

---

<sup>5</sup> There are a total of 72 independent variables; however each observation has a maximum of three variables with non-zero values. The values are 0 in each hour other than the HDD, CDD, and binary hour variables that correspond to the hour of the observation. This regression is equivalent to 24 regressions, one for each hour of the day.



1 **Table 1 – January 1 Hour 1 Residential Example**

Normal Weather								
Date	Hour	Temp °C	HDD	HDD Rank	Average HDD at Rank	CDD	CDD Rank	Average CDD at Rank
		A	B = 14° - A	C	D	E	F	G
01-Jan	Hour 1	-12.4°C	26.4	3	25	0	29	0

Impact of Normal Weather on Load							
Date	Hour	2018 Load (kW)	HDD Diff.	HDD1 Coef.	CDD Diff.	CDD1 Coef.	2018 Normal Load (kW)
		H	I = D-B	J	K = G-E	L	M = H + (I * J) + (K * L)
01-Jan	Hour 1	67,537	-1.4	737.5	0	3,569.90	66,504

Adjustment to 2021 Forecast						
Date	Hour	2018 Normal Load (kW)	Sum of 2018 Normal Loads	2021 Forecast Consumption	2018 - 2021 Load Adj.	2021 Normal Load (kW)
		M	N	O	P = O / N	Q = M * P
01-Jan	Hour 1	66,504	509,714,297	529,231,270	1.03829	69,051

2

3 The HDD at base 14°C on January 1<sup>st</sup>, 2018 was 26.4 HDD, which was the third highest HDD in  
 4 the month. The third highest January HDD in each year from 2009 to 2018 was, on average, 25  
 5 HDD. The difference, -1.4 HDD, is multiplied by the “HDD Hour 1” coefficient of 737.5 from the  
 6 load profile regression to produce the -1,033 kW adjustment. This adjustment is applied to  
 7 actual load in the first hour of January 1, 2018 (67,537 kW) to reach the weather-normalized  
 8 load (66,504 kW). The 2021 residential load forecast is 3.8% higher than the sum of 2018  
 9 weather-normalized hourly loads and as such, the January 1, 2021 weather-normalized demand  
 10 increases to 69,051 kW.

11

12 GS<50 kW and GS>50 kW load profiles are derived by the same methodology. The Street Light  
 13 class is not weather sensitive and as such its loads are not weather-normalized. The Unmetered  
 14 Scattered Load (“USL”) hourly load was assumed to have a constant load. After load profiles  
 15 are derived for all classes, total system and class-specific peaks within each month are  
 16 compiled to produce Coincident Peak (“CP”) and Non-Coincident Peak (“NCP”) figures used in  
 17 Tab “I8 Demand Data” of the OEB’s Cost Allocation Model. BHI provides a model illustrating  
 18 how demand data was derived as Attachment20\_Load\_Profile\_Derivation\_BHI\_10302020. This  
 19 model provides detailed calculations for the Residential load profile, however, derivations for the

1 other classes and historic weather data has been removed to reduce the size of the model. The  
2 figures referenced in the example above are highlighted in the model.

### 3 **Weighting Factors**

4 In Section 2.6.4 of the OEB's March 31, 2011 Cost Allocation Report, the OEB stated that  
5 "*default weighting factors should be utilized only in exceptional circumstances*". Distributors are  
6 therefore now expected to develop their own weighting factors. As such, BHI has developed its  
7 own weighting factors as outlined below.

### 8 **Services (Account 1855)**

9 To determine the service weighting factor used for each customer class, BHI calculated the cost  
10 of installing a typical service for each customer class. This cost included only amounts recorded  
11 in Account 1855 and excluded transformers and metering. Weighting factors were determined  
12 by assigning the residential rate class a factor of one (1) as required. The weighting factors for  
13 all other rate classes were determined relative to the residential rate class. Table 2 below  
14 identifies the services weighting factors. There is no factor assigned to the GS>50 kW class as  
15 service is supplied via a padmount transformer, not wires or cables.

16 **Table 2 – Services Weighting Factors**

Rate Class	Service Weighting Factor
Residential	1.00
GS<50 kW	2.18
GS>50 kW	0.00
Street Lights	0.03
Unmetered Scattered Load	0.30

### 18 **Billing and Collecting**

19 To calculate the billing and collecting weighting factors, BHI determined the billing and collecting  
20 costs directly attributable to each rate class. The remaining non-directly attributable costs were  
21 allocated to each rate class. Weighting factors were determined by assigning the residential rate  
22 class a factor of one (1) as required. The weighting factors for all other rate classes were  
23 determined relative to the residential rate class. BHI provides the billing and collecting weighting  
24 factors in Table 3 below.

1 **Table 3 – Billing and Collecting Weighting Factors**

Rate Class	Billing and Collecting Weighting Factor
Residential	1.00
GS<50 kW	1.62
GS>50 kW	10.82
Street Lights	0.61
Unmetered Scattered Load	0.82

3 **Meter Capital**

4 BHI determined the meter reading weighting factors using a four-step process as follows and as  
 5 provided in Tab “17.1 Meter Capital” of the Cost Allocation Model:

- 6 i. Determined the number of meters by type for each rate class (e.g., customers within the  
 7 residential rate class can use one of four types of meters: Single Phase 200 Amp,  
 8 Central Meter , Network Meter, and Smart Suite Meter);
- 9 ii. Determined the installation cost for each type of meter;
- 10 iii. Calculated the total meter installation cost for each rate class by summing the product of  
 11 the installation cost and number of meters by meter type; and
- 12 iv. Calculated the average meter cost for each rate class and assigned a weighting factor  
 13 for each rate class relative to the average residential cost.

14  
 15 BHI provides the meter capital weighting factors in Table 4 below.

16 **Table 4 – Meter Capital Weighting Factors**

Rate Class	Meter Capital Weighting Factor
Residential	1.00
GS<50 kW	4.05
GS>50 kW	15.98

17

1 **Meter Reading**

2 To calculate the meter reading weighting factors, BHI determined the meter reading costs  
3 directly attributable to each type of meter within each rate class. All residential and GS<50 kW  
4 customers have a smart meter. Approximately 3% of BHI's residential customers have a smart  
5 suite meter which costs approximately 2.7 times as much to read as a non-suite meter.  
6 Approximately 50% of BHI's GS>50 kW customers have an interval meter which costs  
7 significantly more to read than a smart meter. BHI provides the meter reading weighting factors  
8 in Table 5 below.

9 **Table 5 – Meter Reading Weighting Factors**

Rate Class	Meter Reading Weighting Factor
Residential	1.00
GS<50 kW	0.95
GS>50 kW	14.94

10

11 **7.1.1 Specific Customer Class(es)**

12 The OEB has provided policy guidance on cost allocation matters for specific customer classes  
13 (i) Large General Service and Large Use Classes and (ii) Embedded Distributor Class.

14 **7.1.1.1 Large General Service and Large Use Classes**

15 The treatment of the Transformer Ownership Allowance has been revised in the current version  
16 of the cost allocation model, as compared to the version that BHI used in its previous rebasing  
17 application. BHI confirms that it is using the OEB's 2021 Cost Allocation Model – Version 1.0  
18 which incorporates the current treatment of the Transformer Ownership Allowance.

19 **7.1.1.2 Embedded Distributor Class**

20 BHI confirms that it is not a host utility or an embedded distributor and it does not have partially  
21 embedded distributor exists. As such, BHI is not required to complete OEB Appendix 2-Q.

22 **7.1.1.3 Unmetered Loads (Including Street Lighting)**

23 On June 12, 2015 the OEB released their Issuance of New Cost Allocation Policy for Street  
24 Lighting Rate Class, outlining a new cost allocation policy for the street lighting rate class. A

1 new “street lighting adjustment factor” is to be used to allocate costs to the street lighting rate  
2 class for primary and line transformer assets. The “street lighting adjustment factor” replaced  
3 the “number of connections” allocator. The OEB updated their cost allocation model dated to  
4 incorporate the street lighting adjustment factor. BHI implemented these changes in its cost  
5 allocation model for this Application.

6

7 BHI communicates with its unmetered load customers, including Street Lighting customers, to  
8 assist them in understanding the regulatory context in which distributors operate and how it  
9 affects unmetered load customers. This communication takes place on an ongoing basis and is  
10 not driven by the rate application process, but regular business practice. That being said, BHI  
11 notified its unmetered load customers of this Application via a communication on October 5,  
12 2020. A sample letter is filed as Appendix B.

#### 13 **7.1.1.4 MicroFIT Class**

14 BHI has not included microFIT as a separate class in the cost allocation model beginning in  
15 2017. BHI intends to continue to use the OEB-established generic rate.

#### 16 **7.1.1.5 Standby Rates**

17 BHI does not currently have a standby charge and is not applying for one in this Application.

#### 18 **7.1.2 New Customer Class(es)**

19 BHI is not proposing any changes to the composition of its existing customer classes, nor is it  
20 proposing to eliminate or add any customer classes.

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#### 18 **7.1.2 New Customer Class(es)**

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20 proposing to eliminate or add any customer classes.

1 **7.2 CLASS REVENUE REQUIREMENTS**

2 BHI provides its cost allocation information in Tab “11.Cost\_Allocation” of the RRWF. This  
 3 information is consistent with the information provided in Tables 6-10 below.

4  
 5 Table 6 below identifies the revenue by class and R-C Ratios that would apply if all rates  
 6 were changed by a uniform percentage; with a comparison to the R-C Ratios that will result  
 7 from BHI’s proposed rates. The proposed adjustments are discussed in further detail in  
 8 Section 7.3 below.

9  
 10 **Table 6 – 2021 Test Year Class Service Revenue Requirements and R-C Ratios**

Rate Class	Status Quo (Prior to Rebalancing)		Proposed Rates (After Rebalancing)		Increase/(Decrease) vs. Status Quo	
	Revenue \$	R-C Ratio	2021 Cost Allocation Study (EB- 2020-0007)	R-C Ratio	Revenue \$	R-C Ratio
Residential	\$23,251,883	100.80%	\$23,251,883	100.80%	\$0	0.00%
GS<50 kW	\$4,941,451	108.85%	\$4,941,451	108.85%	\$0	0.00%
GS>50 kW	\$8,648,627	92.19%	\$8,748,262	93.25%	\$99,635	1.06%
Street Lighting	\$243,370	154.24%	\$189,343	120.00%	(\$54,028)	(34.24%)
Unmetered Scattered Load (USL)	\$135,640	180.79%	\$90,032	120.00%	(\$45,607)	(60.79%)
<b>Total</b>	<b>\$37,220,971</b>		<b>\$37,220,971</b>		<b>\$0</b>	

11  
 12  
 13 BHI provides three revenue scenarios by rate class in Table 7 below as follows: (i) the 2021  
 14 load forecast quantities at existing rates; (ii) the 2021 load forecast at proposed rates, prior to  
 15 any adjustment to R-C Ratios; and (iii) the 2021 load forecast at proposed rates, after the  
 16 adjustment to R-C Ratios (i.e., the 2021 proposed class revenues in this Application). The table  
 17 also identified the allocation of miscellaneous revenue to the rate classes, which is an output  
 18 from the Cost Allocation Model; and the service revenue requirement by rate class

1 **Table 7 – 2021 Test Year Class Revenue Requirements**

Rate Class	2021 Load Forecast @ 2020 Rates	2012 Load Forecast @ 2021 Proposed Rates		Miscellaneous Revenues	2021 Service Revenue Requirement After Rebalancing
		Before Rebalancing	After Rebalancing		
Residential	\$19,741,165	\$22,177,594	\$22,177,594	\$1,074,288	\$23,251,883
GS<50 kW	\$4,228,441	\$4,750,309	\$4,750,309	\$191,141	\$4,941,451
GS>50 kW	\$7,331,962	\$8,236,863	\$8,336,498	\$411,764	\$8,748,262
Street Lighting	\$207,849	\$233,501	\$179,474	\$9,869	\$189,343
Unmetered Scattered Load (USL)	\$117,157	\$131,616	\$86,009	\$4,024	\$90,032
<b>Total</b>	<b>\$31,626,573</b>	<b>\$35,529,884</b>	<b>\$35,529,884</b>	<b>\$1,691,087</b>	<b>\$37,220,971</b>

2



### 7.3 REVENUE-TO-COST RATIOS

The results of a cost allocation study are typically presented in the form of R-C Ratios which are identified by rate class and are calculated as the distribution revenue collected by rate class divided by the costs allocated to that rate class.

The OEB has established ranges for R-C Ratios. The range of acceptable R-C Ratios for all rate classes with the exception of Street Lighting is identified in Section 2.9.4 of the March 31, 2011 Cost Allocation Report. The OEB narrowed the R-C Ratio policy range for the street lighting rate class from 70-120% to 80-120% in its letter of June 12, 2015<sup>6</sup>, consistent with views expressed in the December 19, 2013 *Report of the Board on Review of the Board's Cost Allocation Policy for Unmetered Loads*. These R-C Ratios are provided in Table 8 below for ease of reference.

**Table 8 – OEB Ranges for Revenue to Cost Ratios**

Rate Class	OEB Target	
	Min	Max
Residential	85%	115%
GS<50 kW	80%	120%
GS>50 kW	80%	120%
Street Lighting	80%	120%
Unmetered Scattered Load (USL)	80%	120%

A R-C Ratio lower than the OEB's floor for that rate class indicates the rate classification is under-contributing and is being subsidized by other classes of customers. A R-C Ratio greater than the OEB's ceiling indicates the rate classification is over-contributing and is subsidizing other classes of customers.

BHI is proposing to re-align its R-C Ratios by adjusting the R-C Ratios for those rate classes that are outside of the OEB's Policy Range to the upper or lower end of the range as applicable, and allocating the associated revenue shortfall to the remaining rate classes.

---

<sup>6</sup> EB-2012-0383, OEB Letter re: Review of Cost Allocation Policy for Unmetered Loads Issuance of New Cost Allocation Policy for Street Lighting Rate Class

1 Table 9 below summarizes the following R-C Ratios:

2

- 3 • The previously approved R-C Ratios in BHI's last Cost of Service application (EB-2013-
- 4 0115);
- 5 • The R-C Ratios that would result from the most recent approved distribution rates and
- 6 the BHI's forecast of billing quantities in the 2021 Test Year, prorated upwards to match
- 7 its proposed revenue requirement, and expressed as R-C Ratios with the class revenue
- 8 requirements derived in the Cost Allocation Model; and
- 9 • The R-C Ratios that are proposed for the 2021 Test Year.

10 **Table 9 – Rebalancing Revenue to Cost Ratios**

Rate Class	Revenue to Cost Ratios			
	2014 Cost of Service	Status Quo	2021 Test Tear	Policy Range
Residential	105.00%	100.80%	100.80%	85-115%
GS<50 kW	100.00%	108.85%	108.85%	80-120%
GS>50 kW	89.41%	92.19%	93.25%	80-120%
Street Lighting	95.96%	154.24%	120.00%	80-120%
Unmetered Scattered Load (USL)	119.96%	180.79%	120.00%	80-120%

11

12

13 BHI's calculations in the Cost Allocation Model result in the R-C Ratios for the Street Lighting

14 Class and USL being above the OEB-approved ceiling of 120%. BHI adjusted the revenue for

15 these classes to decrease the R-C Ratios to 120% in the 2021 Test Year. This resulted in a

16 shortfall in proposed revenue collected of (\$99,635) which BHI allocated to the GS>50 kW rate

17 class, which was the only rate class with a R-C Ratio of less than 100%. The R-C Ratio for the

18 GS>50 kW rate class increased by 1.06% as compared to the status quo as identified in Table 6

19 above. BHI is not proposing to continue to rebalance rates after the 2021 Test Year.

1 **Table 10 – Impact of Rebalancing Revenue**

Rate Class	Base Revenue Requirement		
	Before Rebalancing	After Rebalancing	Increase/ (Decrease)
Residential	\$22,177,594	\$22,177,594	\$0
GS<50 kW	\$4,750,309	\$4,750,309	\$0
GS>50 kW	\$8,236,863	\$8,336,498	\$99,635
Street Lighting	\$233,501	\$179,474	(\$54,028)
Unmetered Scattered Load (USL)	\$131,616	\$86,009	(\$45,607)
<b>Total</b>	<b>\$35,529,884</b>	<b>\$35,529,884</b>	<b>\$0</b>

2

## **APPENDICES**

## **Appendix A – Cost Allocation Model**

**EB-2020-0007**

**Sheet I6.1 Revenue Worksheet - Initial Model Preparation**

Total kWhs from Load Forecast	1,530,341,252
-------------------------------	---------------

Total kWhs from Load Forecast	2,283,473
-------------------------------	-----------

Deficiency/sufficiency ( RRWF 8. cell F51)	3,903,311
--	-----------

Miscellaneous Revenue (RRWF 5. cell F48)	1,691,087
--	-----------

	ID	Total	1	2	5	7	9
			Residential	GS <50	GS >50-Intermediate	Street Light	Unmetered Scattered Load
<b>Billing Data</b>							
Forecast kWh	CEN	1,530,341,252	529,231,270	167,003,174	825,433,794	5,569,644	3,103,371
Forecast kW	CDEM	2,283,473			2,267,945	15,528	
Forecast kW, included in CDEM, of customers receiving line transformer allowance		857,816			857,816		
Optional - Forecast kWh, included in CEN, from customers that receive a line transformation allowance on a kWh basis. In most cases this will not be applicable and will be left blank.		-					
KWh excluding KWh from Wholesale Market Participants	CEN EWMP	1,530,341,252	529,231,270	167,003,174	825,433,794	5,569,644	3,103,371
Existing Monthly Charge			\$26.51	\$27.06	\$63.44	\$0.65	\$9.73
Existing Distribution kWh Rate				\$0.0145			\$0.0169
Existing Distribution kW Rate					\$3.1231	\$4.7037	
Existing TOA Rate					\$0.60		
Additional Charges							
Distribution Revenue from Rates		\$32,141,262	\$19,741,165	\$4,228,441	\$7,846,651	\$207,849	\$117,157
Transformer Ownership Allowance		\$514,689	\$0	\$0	\$514,689	\$0	\$0
Net Class Revenue	CREV	\$31,626,573	\$19,741,165	\$4,228,441	\$7,331,962	\$207,849	\$117,157

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**Sheet I6.2 Customer Data Worksheet - Initial Model Preparation**

			1	2	5	7	9
	ID	Total	Residential	GS <50	GS >50-Intermediate	Street Light	Unmetered Scattered Load
<b>Billing Data</b>							
Bad Debt 3 Year Historical Average	BDHA	\$278,510	\$105,733	\$50,342	\$122,435	\$0	\$0
Late Payment 3 Year Historical Average	LPHA	\$199,940	\$99,112	\$28,491	\$72,161	\$117	\$60
Number of Bills	CNB	9,015,158	744,669	66,774	12,037	36	288
Number of Devices	CDEV					17,283	554
Number of Connections (Unmetered)	CCON	2,283				1,728	554
Total Number of Customers	CCA	68,650	62,056	5,564	1,003	3	24
Bulk Customer Base	CCB	68,650	62,056	5,564	1,003	3	24
Primary Customer Base	CCP	69,207	62,056	5,564	1,003	560	24
Line Transformer Customer Base	CCLT	69,059	62,056	5,514	905	560	24
Secondary Customer Base	CCS	68,497	62,056	5,514	900	3	24
Weighted - Services	CWCS	74,289	62,056	12,014	-	52	167
Weighted Meter -Capital	CWMC	22,883,527	14,238,686	4,968,347	3,676,493	-	-
Weighted Meter Reading	CWMR	86,619	65,292	5,564	15,762	-	-
Weighted Bills	CWNB	983,125	744,669	107,899	130,300	22	236

**Bad Debt Data**

Historic Year:	2017	203,269	130,784	57,472	15,013		
Historic Year:	2018	469,922	89,631	51,666	328,625		
Historic Year:	2019	162,339	96,786	41,887	23,667		
Three-year average		278,510	105,733	50,342	122,435	-	-

**Street Lighting Adjustment Factors**

NCP Test Results	4 NCP
------------------	-------

Class	Primary Asset Data		Line Transformer Asset Data	
	Customers/ Devices	4 NCP	Customers/ Devices	4 NCP
Residential	62,056	610,208	62,056	610,208
Street Light	17,283	5,508	17,283	5,508

Street Lighting Adjustment Factors	
Primary	30.8555
Line Transformer	30.8555

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**Sheet 18 Demand Data Worksheet - Initial Model Preparation**

This is an input sheet for demand allocators.

<b>CP TEST RESULTS</b>	<b>4 CP</b>
<b>NCP TEST RESULTS</b>	<b>4 NCP</b>

<b>Co-incident Peak</b>	<b>Indicator</b>
1 CP	CP 1
4 CP	CP 4
12 CP	CP 12

<b>Non-co-incident Peak</b>	<b>Indicator</b>
1 NCP	NCP 1
4 NCP	NCP 4
12 NCP	NCP 12

Customer Classes	Total	1	2	5	7	9
		Residential	GS <50	GS >50-Intermediate	Street Light	Unmetered Scattered Load
		CP Sanity Check	Pass	Pass	Pass	Check 12CP
<b>CO-INCIDENT PEAK</b>						
<b>1 CP</b>						
Transformation CP TCP1	321,755	140,933	39,493	141,073	-	255
Bulk Delivery CP BCP1	321,755	140,933	39,493	141,073	-	255
Total Sytem CP DCP1	321,755	140,933	39,493	141,073	-	255
<b>4 CP</b>						
Transformation CP TCP4	1,240,629	538,921	145,521	555,150	-	1,038
Bulk Delivery CP BCP4	1,240,629	538,921	145,521	555,150	-	1,038
Total Sytem CP DCP4	1,240,629	538,921	145,521	555,150	-	1,038
<b>12 CP</b>						
Transformation CP TCP12	3,041,557	1,213,802	351,390	1,467,687	5,549	3,129
Bulk Delivery CP BCP12	3,041,557	1,213,802	351,390	1,467,687	5,549	3,129
Total Sytem CP DCP12	3,041,557	1,213,802	351,390	1,467,687	5,549	3,129
<b>NON CO_INCIDENT PEAK</b>						
	<b>NCP Sanity Check</b>	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>
<b>1 NCP</b>						
Classification NCP from Load Data Provider DNCP1	351,711	162,109	39,721	148,151	1,448	282
Primary NCP PNCP1	351,711	162,109	39,721	148,151	1,448	282
Line Transformer NCP LTNCP1	293,183	162,109	39,119	90,225	1,448	282
Secondary NCP SNCP1	292,768	162,109	39,119	89,810	1,448	282
<b>4 NCP</b>						
Classification NCP from Load Data Provider DNCP4	1,356,181	610,208	152,854	586,539	5,508	1,073
Primary NCP PNCP4	1,356,181	610,208	152,854	586,539	5,508	1,073
Line Transformer NCP LTNCP4	1,124,533	610,208	150,537	357,208	5,508	1,073
Secondary NCP SNCP4	1,122,891	610,208	150,537	355,566	5,508	1,073
<b>12 NCP</b>						
Classification NCP from Load Data Provider DNCP12	3,374,515	1,389,058	387,177	1,579,627	15,523	3,129
Primary NCP PNCP12	3,374,515	1,389,058	387,177	1,579,627	15,523	3,129
Line Transformer NCP LTNCP12	2,751,027	1,389,058	381,308	962,009	15,523	3,129
Secondary NCP SNCP12	2,746,604	1,389,058	381,308	957,586	15,523	3,129



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**Sheet 01 Revenue to Cost Summary Worksheet - Initial Model Preparation**

**Instructions:**

Please see the first tab in this workbook for detailed instructions

**Class Revenue, Cost Analysis, and Return on Rate Base**

		Rate Base					
		Total	1 Residential	2 GS <50	5 GS >50- Intermediate	7 Street Light	9 Unmetered Scattered Load
<b>Assets</b>							
crev	Distribution Revenue at Existing Rates	\$31,626,573	\$19,741,165	\$4,228,441	\$7,331,962	\$207,849	\$117,157
mi	Miscellaneous Revenue (mi)	\$1,691,087	\$1,074,288	\$191,141	\$411,764	\$9,869	\$4,024
		Miscellaneous Revenue Input equals Output					
<b>Total Revenue at Existing Rates</b>		<b>\$33,317,660</b>	<b>\$20,815,453</b>	<b>\$4,419,582</b>	<b>\$7,743,726</b>	<b>\$217,718</b>	<b>\$121,180</b>
Factor required to recover deficiency (1 + D)		1.1234					
Distribution Revenue at Status Quo Rates		\$35,529,884	\$22,177,594	\$4,750,309	\$8,236,863	\$233,501	\$131,616
Miscellaneous Revenue (mi)		\$1,691,087	\$1,074,288	\$191,141	\$411,764	\$9,869	\$4,024
<b>Total Revenue at Status Quo Rates</b>		<b>\$37,220,971</b>	<b>\$23,251,883</b>	<b>\$4,941,451</b>	<b>\$8,648,627</b>	<b>\$243,370</b>	<b>\$135,640</b>
<b>Expenses</b>							
di	Distribution Costs (di)	\$9,903,026	\$5,750,991	\$1,156,111	\$2,930,315	\$44,297	\$21,312
cu	Customer Related Costs (cu)	\$3,934,682	\$2,874,663	\$478,325	\$568,625	\$9,460	\$3,610
ad	General and Administration (ad)	\$8,001,858	\$4,986,061	\$947,165	\$2,022,386	\$31,547	\$14,698
dep	Depreciation and Amortization (dep)	\$6,883,779	\$4,214,451	\$913,294	\$1,710,804	\$30,484	\$14,746
INPUT	PIIs (INPUT)	\$457,175	\$281,949	\$56,202	\$115,652	\$2,259	\$1,112
INT	Interest	\$2,976,954	\$1,835,949	\$365,969	\$753,085	\$14,713	\$7,238
<b>Total Expenses</b>		<b>\$32,157,473</b>	<b>\$19,944,063</b>	<b>\$3,917,066</b>	<b>\$8,100,868</b>	<b>\$132,761</b>	<b>\$62,716</b>
<b>Direct Allocation</b>		<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
NI	Allocated Net Income (NI)	\$5,063,498	\$3,122,763	\$622,476	\$1,280,922	\$25,025	\$12,311
<b>Revenue Requirement (includes NI)</b>		<b>\$37,220,971</b>	<b>\$23,066,826</b>	<b>\$4,539,542</b>	<b>\$9,381,790</b>	<b>\$157,786</b>	<b>\$75,027</b>
		Revenue Requirement Input equals Output					
<b>Rate Base Calculation</b>							
<b>Net Assets</b>							
dp	Distribution Plant - Gross	\$343,897,494	\$214,084,588	\$42,789,804	\$84,568,652	\$1,629,111	\$825,339
gp	General Plant - Gross	\$45,188,396	\$28,357,783	\$5,512,333	\$10,982,661	\$221,554	\$114,064
accum dep	Accumulated Depreciation	(\$177,210,289)	(\$109,131,994)	(\$22,437,613)	(\$44,421,764)	(\$815,727)	(\$403,191)
co	Capital Contribution	(\$79,295,101)	(\$51,353,288)	(\$9,582,693)	(\$17,766,520)	(\$380,388)	(\$212,212)
<b>Total Net Plant</b>		<b>\$132,580,500</b>	<b>\$81,957,090</b>	<b>\$16,281,831</b>	<b>\$33,363,029</b>	<b>\$654,550</b>	<b>\$323,999</b>
<b>Directly Allocated Net Fixed Assets</b>		<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
COP	Cost of Power (COP)	\$191,444,505	\$66,470,930	\$20,879,554	\$103,011,654	\$695,075	\$387,291
OM&A Expenses		\$21,839,565	\$13,611,714	\$2,581,601	\$5,521,327	\$85,304	\$39,620
Directly Allocated Expenses		\$0	\$0	\$0	\$0	\$0	\$0
<b>Subtotal</b>		<b>\$213,284,070</b>	<b>\$80,082,645</b>	<b>\$23,461,155</b>	<b>\$108,532,981</b>	<b>\$780,379</b>	<b>\$426,911</b>
<b>Working Capital</b>		<b>\$15,996,305</b>	<b>\$6,006,198</b>	<b>\$1,759,587</b>	<b>\$8,139,974</b>	<b>\$58,528</b>	<b>\$32,018</b>
<b>Total Rate Base</b>		<b>\$148,576,805</b>	<b>\$87,963,288</b>	<b>\$18,041,418</b>	<b>\$41,503,003</b>	<b>\$713,078</b>	<b>\$356,018</b>
		Rate Base Input equals Output					
<b>Equity Component of Rate Base</b>		<b>\$59,430,722</b>	<b>\$35,185,315</b>	<b>\$7,216,567</b>	<b>\$16,601,201</b>	<b>\$285,231</b>	<b>\$142,407</b>
<b>Net Income on Allocated Assets</b>		<b>\$5,063,498</b>	<b>\$3,307,820</b>	<b>\$1,024,385</b>	<b>\$547,759</b>	<b>\$110,610</b>	<b>\$72,924</b>
<b>Net Income on Direct Allocation Assets</b>		<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
<b>Net Income</b>		<b>\$5,063,498</b>	<b>\$3,307,820</b>	<b>\$1,024,385</b>	<b>\$547,759</b>	<b>\$110,610</b>	<b>\$72,924</b>
<b>RATIOS ANALYSIS</b>							
<b>REVENUE TO EXPENSES STATUS QUO%</b>		<b>100.00%</b>	<b>100.80%</b>	<b>108.85%</b>	<b>92.19%</b>	<b>154.24%</b>	<b>180.79%</b>
<b>EXISTING REVENUE MINUS ALLOCATED COSTS</b>		<b>(\$3,903,311)</b>	<b>(\$2,251,373)</b>	<b>(\$119,960)</b>	<b>(\$1,638,064)</b>	<b>\$59,932</b>	<b>\$46,153</b>
		Deficiency Input equals Output					
<b>STATUS QUO REVENUE MINUS ALLOCATED COSTS</b>		<b>(\$0)</b>	<b>\$185,056</b>	<b>\$401,909</b>	<b>(\$733,163)</b>	<b>\$85,585</b>	<b>\$60,613</b>
<b>RETURN ON EQUITY COMPONENT OF RATE BASE</b>		<b>8.52%</b>	<b>9.40%</b>	<b>14.19%</b>	<b>3.30%</b>	<b>38.78%</b>	<b>51.21%</b>

**EB-2020-0007**

**Sheet 02 Monthly Fixed Charge Min. & Max. Worksheet - Initial Model Preparation**

Output sheet showing minimum and maximum level for Monthly Fixed Charge

**Summary**

	1	2	5	7	9
	Residential	GS <50	GS >50-Intermediate	Street Light	Unmetered Scattered Load
Customer Unit Cost per month - Avoided Cost	\$3.98	\$9.56	\$41.83	\$0.44	\$0.49
Customer Unit Cost per month - Directly Related	\$5.86	\$13.31	\$62.47	\$0.71	\$0.79
Customer Unit Cost per month - Minimum System with PLCC Adjustment	\$18.22	\$31.68	\$95.17	\$3.97	\$8.70
Existing Approved Fixed Charge	\$26.51	\$27.06	\$63.44	\$0.65	\$9.73

**Information to be Used to Allocate PILs, ROD, ROE and A&G**

	Total	1 Residential	2 GS <50	5 GS >50-Intermediate	7 Street Light	9 Unmetered Scattered Load
General Plant - Gross Assets	\$45,188,396	\$28,357,783	\$5,512,333	\$10,982,661	\$221,554	\$114,064
General Plant - Accumulated Depreciation	(\$27,454,816)	(\$17,229,152)	(\$3,349,092)	(\$6,672,663)	(\$134,608)	(\$69,301)
General Plant - Net Fixed Assets	\$17,733,579	\$11,128,631	\$2,163,241	\$4,309,998	\$86,946	\$44,763
General Plant - Depreciation	\$2,148,730	\$1,348,426	\$262,114	\$522,231	\$10,535	\$5,424
<b>Total Net Fixed Assets Excluding General Plant</b>	<b>\$114,846,920</b>	<b>\$70,828,459</b>	<b>\$14,118,590</b>	<b>\$29,053,031</b>	<b>\$567,604</b>	<b>\$279,237</b>
<b>Total Administration and General Expense</b>	<b>\$8,001,858</b>	<b>\$4,986,061</b>	<b>\$947,165</b>	<b>\$2,022,386</b>	<b>\$31,547</b>	<b>\$14,698</b>
<b>Total O&amp;M</b>	<b>\$13,837,708</b>	<b>\$8,625,653</b>	<b>\$1,634,435</b>	<b>\$3,498,941</b>	<b>\$53,757</b>	<b>\$24,922</b>

## **Appendix B – Sample Letter to Unmetered Load Customers**



Burlington **hydro** inc.



**Account Number(s):** [Redacted]

October 5, 2020

Dear Customer,

**Re: Burlington Hydro Inc. - 2021 Electricity Distribution Rates**

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This letter is to advise you that Burlington Hydro Inc. (“BHI”) is preparing a Cost of Service Application to the Ontario Energy Board to update its distribution rates as of May 1, 2021. This application will include comprehensive updates on BHI’s cost to provide service to its customers and on the electricity loads on BHI’s distribution system. As a part of its Cost of Service Application, BHI will submit a Cost Allocation study which incorporates the cost to serve each customer class and supports the proposed rates.

As an unmetered scattered load customer, your monthly bill is based on an estimate of your electricity consumption, determined by the number and wattage of your devices and the estimated amount of time they are in use each month.

A Cost of Service Application and Cost Allocation study are filed approximately every five years. BHI’s Application (OEB Case #EB-2020-0007) will be posted publicly and available for review on the OEB’s website in November 2020.

Please contact our billing department with any questions or concerns at [waterbilling@burlingtonhydro.com](mailto:waterbilling@burlingtonhydro.com).

Thank you.

1340 Brant Street, Burlington, ON · L7R 3Z7 [burlingtonhydro.com](http://burlingtonhydro.com) 905-332-1851



Partner since 2009