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Northern Ontario Wires Inc.  
Filed: 26 August, 2016  
EB-2016-0096  
Exhibit 7

## **Exhibit 7:**

# **COST ALLOCATION**



Northern Ontario Wires Inc.  
Filed: 26 August, 2016  
EB-2016-0096  
Exhibit 7  
Tab 1

Exhibit 7: Cost Allocation

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## **Tab 1 (of 2): Cost Allocation Study**



## OVERVIEW OF COST ALLOCATION

NOW Inc. retained Elenchus to undertake a Cost Allocation Study using the Ontario Energy Board's ("the Board") approved model. Please find the report prepared by Elenchus for the 2017 Test Year as Attachment 1 to this schedule (E7/T1/S1/Att1). The relevant input and output sheets of the cost allocation model are filed under E7/T1/S1/A2.

NOW Inc. maintains close ties with the municipalities it serves. The municipalities are regularly engaged in discussion around rates, rate making, as well as revenue pressures experienced by the LDC. The conversion to LED lighting was performed with a clear understanding of impacts on rates and street lighting costs.

NOW Inc. has consulted its unmetered customers and made updates to the forecasts used as inputs to its cost allocation and rate design accordingly.

NOW Inc. has requested data to be used in updating load profile information, but is unable to update all rate classes at this time. Therefore, Hydro One CAIF load profiles used in the 2013 Cost of Service application have been used again for all rate classes.

In order to update load profiles at the next cost of service, NOW Inc. is in the process of validating usability of sample data it has obtained for a few customers. Further, NOW Inc. will need to identify the proportion of customers still on mechanical meters for which hourly data is not available to determine if the smart and interval metered customers will be sufficient to create a representative profile for every class.

In order to arrive at weighting factors for the billing and collecting, NOW Inc. examined identifiable costs incurred in preparing and issuing bills, recording payment, and collecting in order to arrive at a cost per bill for each rate class. Weighting factors were calculated as costs relative to Residential which was assigned a weight of 1.0.



1

2 The Services weighting factor was developed using engineering estimates of the  
3 average cost to install a service connection to each rate class.

4

5 Please see the Elenchus report at Attachment 1 which documents the Cost Allocation  
6 methodology.



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Northern Ontario Wires Inc.

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Exhibit 7

Tab 1

Schedule 1

Attachment 1

# Northern Ontario Wires 2017 Cost Allocation

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A Report Prepared by  
Elenchus Research Associates Inc.

On Behalf of  
NOW Inc.

12/08/2016

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## 1 INTRODUCTION

Northern Ontario Wires Inc. (“NOW Inc.”) has prepared its 2017 EDR Application as a cost of service rate application based on a forward test year. The relevant filing requirements for this Application are set out in Chapter 2 of the July 14, 2016 update to the document entitled *Ontario Energy Board, Filing Requirements for Electricity Distribution Rate Applications* (“Filing Requirements”).

Section 2.7 of the Filing Requirements sets out the expectations of the Board with respect to Exhibit 7: Cost Allocation. The Filing Requirements on page 50 state:

*A completed cost allocation study using the OEB-approved methodology or a comparable model must be filed. This filing must reflect future loads and costs and be supported by appropriate explanations and live Microsoft Excel spreadsheets. The most current update of the model is available on the OEB's web site. Sheets 11 and 12 of the RRWF must also be completed.*<sup>1</sup>

NOW Inc. asked Elenchus Research Associated (Elenchus)<sup>2</sup> to assist it by preparing an appropriate cost allocation study for its 2017 Cost of Service rate application.

In addressing the cost allocation issues, Elenchus was guided by the Filing Requirements, the November 28, 2007 *Report of the Board, Application of Cost Allocation for Electricity Distributors* (EB-2007-0667) (“CA Application Report”) which “sets out the Board’s policies in relation to specific cost allocation matters for electricity distributors”<sup>3</sup> and the March 31, 2011 *Report of the Board, Review of Electricity Distribution Cost Allocation Policy* (EB-2010-0219) (“CA Review Report”) in which the Board narrowed some revenue to cost ratio ranges, and committed to further consultations on unmetered and standby loads, as well as the Board’s decisions in various electricity distributor cost of service proceedings that addressed relevant issues.

### 1.1 PURPOSE OF THE COST ALLOCATION STUDY

In the context of a cost of service rate application based on 2017 forward test years, the primary purpose of the cost allocation study (“CA Study”) is to determine the proportions of a distributor’s total revenue requirement that are the “responsibility” of each rate class.

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<sup>1</sup> *Ontario Energy Board, Filing Requirements for Electricity Distribution Rate Applications* (July 14, 2016), p. 50.

<sup>2</sup> John Todd, President of Elenchus Research Associates, was the lead consultant for the development and implementation of the methodology used by NOW Inc. and documented in this report. John Todd’s curriculum vitae is available at [www.elenchus.ca](http://www.elenchus.ca).

<sup>3</sup> Ontario Energy Board, *Report of the Board, Application of Cost Allocation for Electricity Distributors* (EB-2007-0667), November 28, 2007, page 1.

In addition, cost allocation studies provide revenue to cost ratios for each customer class that can be examined to ensure that they generally fall within the Board-specified ranges (or move toward those ranges where appropriate to mitigate rate impacts) and generally are not moving away from 100%.

Conceptually, NOW Inc.'s prospective year CA Study for the 2017 test year is based on an allocation of the 2017 test year costs (i.e., the 2017 forecast revenue requirement) to the various customer classes using allocators that are based on the forecast class loads (kW and kWh) by class, customer counts, etc. By definition, this approach will result in a total revenue to cost ratio at proposed rates of 100%.

## **1.2 NOW Inc.'s 2013 COST ALLOCATION**

The last cost allocation study filed by NOW Inc. was in 2012 in Proceeding EB-2012-0153, was based on the v3.0 Cost Allocation Model. The 2017 models were performed in accordance with the internal documentation in the v 3.4 Cost Allocation Model (CA Model).

NOW Inc.'s 2013 CA Study was prepared in accordance with the Filing Requirements, the November 28, 2007 *Report of the Board, Application of Cost Allocation for Electricity Distributors* (EB-2007-0667) ("CA Application Report") which "sets out the Board's policies in relation to specific cost allocation matters for electricity distributors"<sup>4</sup> and the March 31, 2011 *Report of the Board, Review of Electricity Distribution Cost Allocation Policy* (EB-2010-0219) ("CA Review Report").

## **1.3 STRUCTURE OF THE REPORT**

The remainder of this report is divided into four additional sections. Section 2 provides an overview of the NOW Inc. CA Study, explaining the model run included in the study, as well as the load and cost information used for the run. Section 3 explains the methodology used to develop the 2017 NOW Inc. models by documenting each step taken in completing the model. Section 4 summarizes the results of the NOW Inc. CA Study, showing the class revenue requirements and revenue to cost ratios generated by the CA model. Section 5 shows the fixed charge unit costs per month and the fixed charge boundary values as calculated in the cost allocation model for 2017.

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<sup>4</sup> Ontario Energy Board, *Report of the Board, Application of Cost Allocation for Electricity Distributors* (EB-2007-0667), November 28, 2007, page 1.

## **2 OVERVIEW OF THE NOW INC. 2017 CA STUDY**

### **2.1 MODEL RUN INCLUDED IN THE NOW INC. COST ALLOCATION STUDY**

Section 2.7.3 of the updated Filing Requirements specifies that the third table (in Appendix 2-P), "...includes the following information for each class" that should be provided based on:

- *The previously approved ratios most recently implemented by the distributor;*
- *The ratios that would result from the most recent approved distribution rates and the distributor's forecast of billing quantities in the test year, prorated upwards or downwards (as applicable) to match the revenue requirement, and expressed as ratios with the class revenue requirements derived in the updated cost allocation model*
- *The ratios that are proposed for the test year*

For clarity, the following designations are used.

- NOW-2013: The NOW Inc. 2013 revenue to cost ratios.
- NOW-2017: The version 3.4 CA Model with 2017 loads, costs, and revenues.

### **2.2 LOAD AND CUSTOMER INFORMATION**

The updated Filing Requirements specify that "Distributors should make best efforts to update all classes' load profiles using the most recent available data, particularly from smart and/or interval meters." and "If a distributor is not able to update its load profiles at this time, an explanation should be provided and the distributor should confirm that it intends to put plans in place to update its load profiles next time a cost allocation model is filed." (Section 2.7.1, p. 50)

The NOW Inc. 2017 models have been prepared using the following load and load profile information:

- Annual Loads (kW and kWh, as appropriate) and customer counts: The 2017 load forecast and customer counts by class being used by NOW Inc. in its application were also used for the 2017 CA models.
- Hourly load profile: The hourly load profiles prepared by Hydro One for the 2006 CAIF were used for all classes.

The hourly load profiles provided by Hydro One for all of the classes for the 2006 model were used in the 2017 models for the following reasons.

1. NOW Inc. does not have the required smart meter and interval meter data to use at this time. They have obtained sample data from their data providers for a few customers. This data is being validated for suitability in creating new load profiles. Once an acceptable data set is obtained, this data will be collected for use in the next Cost of Service rate application.
2. Since the last rebasing two customer classes have experienced significant changes. The GS > 50 lost a significant mill customer. That customer was subsequently replaced by another mill operator with approximately the same usage at the same site. The Street Light class has experienced a significant reduction due to the LED conversion – however, the profile is expected to be relatively unchanged. The Residential and GS < 50 rate classes have experienced remarkable stability since the last rebasing application. Therefore, it is assumed that the load profiles would be relatively stable as compared to other LDCs where the customer composition could be changing.

## **2.3 COST INFORMATION**

As noted earlier, the Filing Requirements mandate that the cost allocation models be prepared on the basis of prospective test year information. In the case of NOW Inc., the financial information for the forecast years has been prepared at the USoA level. NOW Inc. Cost Allocation Study Methodology.

# **3 2017 NOW INC. CA MODEL**

## **3.1.1 HOURLY LOAD PROFILE (HONI FILE)**

For the NOW Inc. CAIF, HONI provided data files with three worksheets that were to be used as input to the 2006 CAIF:

- Data Summary: actual and weather normalized monthly kWh by class, disaggregated by weather sensitive and non-weather sensitive load for relevant classes.
- Hourly Load Shape by Class: GWh by class for each hour in 2004.
- Input to Cost Allocation Model: The 1CP, 4CP, 12CP, 1NCP, 4NCP, 12NCP allocators are derived from the hourly load profiles.

The NOW Inc. hourly load shapes derived by Hydro One for the 2006 CAIF were not updated. However, the demand allocators derived by Hydro One for the 2006 CAIF were revised to reflect changes in the relative loads for the classes from 2004 to 2017. This was done by scaling the hourly load profiles of each class on the Hourly Load Shape by Class worksheet of the HONI file to levels consistent with the 2017 load forecast years while maintaining the hourly load shapes.

### **3.1.2 DEMAND ALLOCATORS (HONI FILE)**

The demand allocators used in the NOW Inc.-2017 CA models were derived using the same methodology as Hydro One used for the 2006 file; however, they were re-determined using the forecast 2017 hourly load profiles resulting from the preceding step. Using the 2017 hourly load profiles by class, the 12 monthly coincident and non-coincident peaks for the rate classes were determined on the Hourly Load Shape by Rate Class worksheet. The allocators were then derived as follows.

- The 1, 4 and 12 NCP values for each class were calculated by selecting the peak in the year (1 NCP), summing the four highest monthly peaks (4 NCP) and summing the 12 monthly peaks for each class (12 NCP), respectively.
- The total 1, 4 and 12 NCP values are the totals of the corresponding class NCP values.
- The 1, 4 and 12 CP values for each class were derived by identifying the hour in each month when the coincident peak occurred and then selecting the peak in the year (1 CP), adding the demands during the four highest coincident peak hours (4 CP) and summing the demand for each class during the 12 monthly coincident peak hours (12 CP), respectively.
- The total 1, 4 and 12 CP values are the totals of the corresponding class CP values, which are the values used to identify the relevant coincident peak hours.

### **3.1.3 2017 DEMAND DATA (NOW INC.-2017 MODELS)**

The demand allocators derived in the updated Hydro One file as described in the preceding section were input at the appropriate cells at sheet I8 Demand Data of the 2017 NOW Inc. CA Models. However, the Line Transformer and Secondary 1NCP, 4NCP and 12NCP values for GS > 50 to 1499, GS > 1500 to 4999, and Large User customer classes are not equal to the full class NCP values since not all customers in

these customer classes use these facilities. The Line Transformer and Secondary 1NCP, 4NCP and 12NCP values were therefore determined from the full load data NCP values using the ratio of values in the 2006 CA Model.

## 4 SUMMARY OF REVENUE TO COST RATIOS

The class revenue-to-cost ratios as determined in the NOW Inc. cost allocation models are shown in Table 7, below.

**Table 7: Revenue to Cost Ratios**

Customer Class	NOW-2013	NOW-2017 Status Quo Rates	Board Target Range
	%	%	
Residential	103.42	96.91	85-115
GS < 50 kW	109.43	115.70	80-120
GS > 50 kW	86.90	104.91	80-120
Street Light	70.00	122.71	80-120
USL	94.70	83.35	80-120
Total	100.00	100.00	

The NOW Inc.-2017 ratios (at Status Quo rates) reflect the impact of changes in throughput by class as well as changes in costs from 2012 through the 2017 forecast test years.

Table 8 presents the revenue responsibility (i.e., allocation of the total revenue requirement to the rate classes) in each of the models. This revenue responsibility is presented in both dollar and percentage terms.

**Table 8: Revenue Responsibility by Rate Class**

Customer Class	NOW-2013		NOW-2017	
	\$	%	\$	%
Residential	2,028,244	63.58	2,633,435	68.71
GS < 50 kW	548,177	17.18	634,343	16.55
GS > 50 kW	365,214	11.45	339,161	8.85
Street Light	242,772	7.61	218,784	5.71
USL	5,603	0.18	6,763	0.18
Total	3,189,950	100.00	3,832,486	100.00



## 5 FIXED CHARGE RATES

The NOW Inc. cost allocation model produced the following customer unit cost per month values:

**Table 9: 2017 Customer Unit Cost per Month**

Customer Class	Avoided Cost	Directly Related	Minimum System with PLCC Adjustment
Residential	\$10.67	\$13.82	\$32.81
GS < 50 kW	\$12.19	\$16.28	\$40.12
GS > 50 kW	\$2.82	\$30.10	\$40.59
Street Light	\$2.81	\$3.60	\$10.80
USL	\$3.31	\$4.28	\$20.66

In accordance with Board policy,<sup>5</sup> the following boundary values would apply for the fixed monthly service charge:

**Table 10: 2017 Fixed Charge Boundary Values**

Customer Class	Cost Allocation		Existing Rate	Boundary Values	
	Low	High		Minimum	Maximum
Residential	\$10.67	\$32.81	\$24.25	\$10.67	\$32.81
GS < 50 kW	\$12.19	\$40.12	\$28.27	\$12.19	\$40.12
GS > 50 kW	\$2.82	\$40.59	\$191.60	\$2.82	\$191.60
Street Light	\$2.81	\$10.80	\$6.79	\$2.81	\$10.80
USL	\$3.31	\$20.66	\$14.73	\$3.31	\$20.66

<sup>5</sup> Ontario Energy Board, *Report of the Board, Application of Cost Allocation for Electricity Distributors* (EB-2007-0667), November 28, 2007, pages 12-13



Ontario Energy Board

# 2017 Cost Allocation Model

EB-2016-0096

## Sheet I6.1 Revenue Worksheet - Initial Application

Total kWhs from Load Forecast	117,554,891
-------------------------------	-------------

Total kW from Load Forecast	168,107
-----------------------------	---------

Deficiency/sufficiency ( RRWF 8. cell F51)	- 543,318
--	-----------

Miscellaneous Revenue (RRWF 5. cell F48)	268,918
--	---------

	ID	Total	1	2	3	7	9
			Residential	GS <50	GS>50-Regular	Street Light	Unmetered Scattered Load
<b>Billing Data</b>							
Forecast kWh	CEN	117,554,891	40,704,801	19,740,824	56,387,438	556,610	165,218
Forecast kW	CDEM	168,107			166,531	1,576	
Forecast kW, included in CDEM, of customers receiving line transformer allowance		76,667			76,667		

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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	<b>CEN EWMP</b>	117,554,891	40,704,801	19,740,824	56,387,438	556,610	165,218
Existing Monthly Charge			\$24.25	\$28.27	\$191.60	\$6.79	\$14.73
Existing Distribution kWh Rate			\$0.0123	\$0.0158			\$0.0161
Existing Distribution kW Rate					\$0.9177	\$8.0054	
Existing TOA Rate					\$0.60		
Additional Charges							
Distribution Revenue from Rates		\$3,066,250	\$2,018,525	\$577,869	\$316,069	\$147,061	\$6,725
Transformer Ownership Allowance		\$46,000	\$0	\$0	\$46,000	\$0	\$0
Net Class Revenue	<b>CREV</b>	\$3,020,249	\$2,018,525	\$577,869	\$270,068	\$147,061	\$6,725



# 2017 Cost Allocation Model

EB-2016-0096

## Sheet I6.2 Customer Data Worksheet - Initial Application

			1	2	3	7	9
	ID	Total	Residential	GS <50	GS>50-Regular	Street Light	Unmetered Scattered Load
<b>Billing Data</b>							
Bad Debt 3 Year Historical Average	BDHA	\$60,770	\$31,184	\$29,586	\$0	\$0	\$0
Late Payment 3 Year Historical Average	LPHA	\$97,121	\$48,748	\$27,981	\$20,392		
Number of Bills	CNB	72,948	62,592	9,408.00	852.00	36.00	60.00
Number of Devices	CDEV					1,650	
Number of Connections (Unmetered)	CCON	1,673				1,650	23
Total Number of Customers	CCA	6,079	5,216	784	71	3	5
Bulk Customer Base	CCB	6,079	5,216	784	71	3	5
Primary Customer Base	CCP	6,145	5,216	784	71	69	5
Line Transformer Customer Base	CCLT	6,074	5,216	784		69	5
Secondary Customer Base	CCS	6,008	5,216	784		3	5
Weighted - Services	CWCS	7,830	5,216	941	-	1,650	23
Weighted Meter -Capital	CWMC	966,176	711,945	211,446	42,785	-	-
Weighted Meter Reading	CWMR	91,602	62,784	18,501	10,317	-	-
Weighted Bills	CWNB	72,895	62,592	9,408	846	20	29

### Bad Debt Data

Historic Year:	2012	81,278	31,467	49,811			
Historic Year:	2013	52,277	34,527	17,750			
Historic Year:	2014	48,755	27,557	21,198			
Three-year average		60,770	31,184	29,586	-	-	-

# 2017 Cost Allocation Model

EB-2016-0096

## Sheet I8 Demand Data Worksheet - Initial Application

This is an input sheet for demand allocators.

CP TEST RESULTS	12 CP
NCP TEST RESULTS	4 NCP

Co-incident Peak	Indicator
1 CP	CP 1
4 CP	CP 4
12 CP	CP 12

Non-co-incident Peak	Indicator
1 NCP	NCP 1
4 NCP	NCP 4
12 NCP	NCP 12

		1	2	3	7	9
Customer Classes		Residential	GS <50	GS>50-Regular	Street Light	Unmetered Scattered Load
<b>CO-INCIDENT PEAK</b>						
<b>1 CP</b>						
Transformation CP	TCP1	21,173	10,221	3,168	7,636	129
Bulk Delivery CP	BCP1	21,173	10,221	3,168	7,636	129
Total Sytem CP	DCP1	21,173	10,221	3,168	7,636	129
<b>4 CP</b>						
Transformation CP	TCP4	81,682	35,491	13,097	32,609	409
Bulk Delivery CP	BCP4	81,682	35,491	13,097	32,609	409
Total Sytem CP	DCP4	81,682	35,491	13,097	32,609	409
<b>12 CP</b>						
Transformation CP	TCP12	215,255	78,316	37,352	98,952	409
Bulk Delivery CP	BCP12	215,255	78,316	37,352	98,952	409
Total Sytem CP	DCP12	215,255	78,316	37,352	98,952	409
<b>NON CO_INCIDENT PEAK</b>						
<b>1 NCP</b>						
Classification NCP from Load Data Provider	DNCP1	25,256	11,575	4,240	9,292	129
Primary NCP	PNCP1	25,256	11,575	4,240	9,292	129
Line Transformer NCP	LTNCP1	15,964	11,575	4,240		129
Secondary NCP	SNCP1	15,964	11,575	4,240		129
<b>4 NCP</b>						
Classification NCP from Load Data Provider	DNCP4	92,511	38,914	16,421	36,582	517
Primary NCP	PNCP4	92,511	38,914	16,421	36,582	517
Line Transformer NCP	LTNCP4	55,929	38,914	16,421		517
Secondary NCP	SNCP4	55,929	38,914	16,421		517
<b>12 NCP</b>						
Classification NCP from Load Data Provider	DNCP12	235,896	85,397	43,833	104,890	1,550
Primary NCP	PNCP12	235,896	85,397	43,833	104,890	1,550
Line Transformer NCP	LTNCP12	131,006	85,397	43,833		1,550
Secondary NCP	SNCP12	131,006	85,397	43,833		1,550

# 2017 Cost Allocation Model

EB-2016-0096

## Sheet O1 Revenue to Cost Summary Worksheet - Initial Application

**Instructions:**

Please see the first tab in this workbook for detailed instructions

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

			1	2	3	7	9
Rate Base Assets		Total	Residential	GS <50	GS>50-Regular	Street Light	Unmetered Scattered Load
crev	Distribution Revenue at Existing Rates	\$3,020,249	\$2,018,525	\$577,869	\$270,068	\$147,061	\$6,725
mi	Miscellaneous Revenue (mi)	\$268,918	\$170,421	\$52,124	\$37,174	\$8,835	\$364
Miscellaneous Revenue Input equals Output							
Total Revenue at Existing Rates		\$3,289,167	\$2,188,946	\$629,994	\$307,243	\$155,896	\$7,089
Factor required to recover deficiency (1 + D)		1.1799					
Distribution Revenue at Status Quo Rates		\$3,563,567	\$2,381,641	\$681,823	\$318,652	\$173,516	\$7,935
Miscellaneous Revenue (mi)		\$268,918	\$170,421	\$52,124	\$37,174	\$8,835	\$364
Total Revenue at Status Quo Rates		\$3,832,485	\$2,552,061	\$733,947	\$355,826	\$182,352	\$8,299
Expenses							
di	Distribution Costs (di)	\$1,222,851	\$807,270	\$196,501	\$128,264	\$87,890	\$2,925
cu	Customer Related Costs (cu)	\$1,036,968	\$778,150	\$170,273	\$31,437	\$56,136	\$972
ad	General and Administration (ad)	\$648,087	\$452,266	\$105,659	\$48,770	\$40,264	\$1,128
dep	Depreciation and Amortization (dep)	\$439,680	\$284,178	\$77,900	\$60,712	\$16,102	\$787
INPUT	PLs (INPUT)	\$16,330	\$10,475	\$2,843	\$2,363	\$617	\$32
INT	Interest	\$183,080	\$117,433	\$31,874	\$26,493	\$6,919	\$361
Total Expenses		\$3,546,996	\$2,449,772	\$585,050	\$298,039	\$207,930	\$6,206
Direct Allocation		\$0	\$0	\$0	\$0	\$0	\$0
NI	Allocated Net Income (NI)	\$285,489	\$183,120	\$49,702	\$41,313	\$10,790	\$564
Revenue Requirement (includes NI)		\$3,832,485	\$2,632,892	\$634,753	\$339,352	\$218,720	\$6,769
Revenue Requirement Input equals Output							
Rate Base Calculation							
Net Assets							
dp	Distribution Plant - Gross	\$6,284,211	\$4,036,486	\$1,099,128	\$901,607	\$234,898	\$12,093
gp	General Plant - Gross	\$2,212,588	\$1,419,215	\$385,202	\$320,180	\$83,623	\$4,367
accum dep	Accumulated Depreciation	(\$2,147,471)	(\$1,383,067)	(\$378,938)	(\$302,985)	(\$78,553)	(\$3,928)
co	Capital Contribution	\$0	\$0	\$0	\$0	\$0	\$0
Total Net Plant		\$6,349,328	\$4,072,634	\$1,105,392	\$918,801	\$239,969	\$12,533
Directly Allocated Net Fixed Assets		\$0	\$0	\$0	\$0	\$0	\$0
COP	Cost of Power (COP)	\$15,984,891	\$5,564,714	\$2,682,200	\$7,640,173	\$75,418	\$22,386
OM&A Expenses		\$2,907,906	\$2,037,686	\$472,433	\$208,471	\$184,291	\$5,025
Directly Allocated Expenses		\$0	\$0	\$0	\$0	\$0	\$0
Subtotal		\$18,892,797	\$7,602,400	\$3,154,634	\$7,848,644	\$259,708	\$27,411
Working Capital		\$1,416,960	\$570,180	\$236,598	\$588,648	\$19,478	\$2,056
Total Rate Base		\$7,766,288	\$4,642,814	\$1,341,989	\$1,507,450	\$259,447	\$14,589
Rate Base Input equals Output							
Equity Component of Rate Base		\$3,106,515	\$1,857,125	\$536,796	\$602,980	\$103,779	\$5,835
Net Income on Allocated Assets		\$285,489	\$102,290	\$148,897	\$57,787	(\$25,578)	\$2,093
Net Income on Direct Allocation Assets		\$0	\$0	\$0	\$0	\$0	\$0
Net Income		\$285,489	\$102,290	\$148,897	\$57,787	(\$25,578)	\$2,093

# 2017 Cost Allocation Model

EB-2016-0096

## Sheet O1 Revenue to Cost Summary Worksheet - Initial Application

**Instructions:**  
Please see the first tab in this workbook for detailed instructions

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

Rate Base  
Assets

#### RATIOS ANALYSIS

REVENUE TO EXPENSES STATUS QUO%

EXISTING REVENUE MINUS ALLOCATED COSTS

STATUS QUO REVENUE MINUS ALLOCATED COSTS

RETURN ON EQUITY COMPONENT OF RATE BASE

	1	2	3	7	9
Total	Residential	GS <50	GS>50-Regular	Street Light	Unmetered Scattered Load
REVENUE TO EXPENSES STATUS QUO%	96.93%	115.63%	104.85%	83.37%	122.60%
EXISTING REVENUE MINUS ALLOCATED COSTS	(\$443,946)	(\$4,759)	(\$32,109)	(\$62,823)	\$320
Deficiency Input equals Output					
STATUS QUO REVENUE MINUS ALLOCATED COSTS	(\$80,831)	\$99,195	\$16,474	(\$36,368)	\$1,530
RETURN ON EQUITY COMPONENT OF RATE BASE	5.51%	27.74%	9.58%	-24.65%	35.87%



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# 2017 Cost Allocation Model

EB-2016-0096

## Sheet O2 Monthly Fixed Charge Min. & Max. Worksheet - Initial Application

Output sheet showing minimum and maximum level for  
Monthly Fixed Charge

### Summary

Customer Unit Cost per month - Avoided Cost

Customer Unit Cost per month - Directly Related

Customer Unit Cost per month - Minimum System  
with PLCC Adjustment

Existing Approved Fixed Charge

1	2	3	7	9
Residential	GS <50	GS>50-Regular	Street Light	Unmetered Scattered Load
\$10.67	\$12.19	\$18.34	\$2.81	\$3.31
\$13.82	\$16.28	\$30.12	\$3.60	\$4.28
\$32.80	\$40.17	\$40.61	\$10.80	\$20.68
\$24.25	\$28.27	\$191.60	\$6.79	\$14.73





Northern Ontario Wires Inc.  
Filed: 26 August, 2016  
EB-2016-0096  
Exhibit 7  
Tab 2

Exhibit 7: Cost Allocation

---

## **Tab 2 (of 2): Class Revenue Requirements**



## CLASS REVENUE REQUIREMENTS

With the exception of the Unmetered Scattered Load class, all rate classes remained within the policy ranges. Please see the RRWF Sheet 11, included as Attachment 1 to this schedule.

### **Street Lighting**

The street lighting experienced declines to both revenue and allocated costs. As a result of the changes introduced in the OEB's June 12, 2015 letter, the street lighting class now has a SLAF of 23.8 for Primary and Line Transformer. Secondary costs remain at the 1:1 ratio of lights to connections.

At the same time, Street Lighting revenue has decreased as a result of the LED conversion.

The result is a modest increase in Revenue to Cost ratio from 70.00% to 83.37%. As a result, street light remains in the target range.

### **Revenue to Cost Adjustments**

The Unmetered Scattered Load rate class added 5 connections, and due to the changing customer composition, now has a Status Quo (1+d) revenue to cost ratio of 122.60%. In order to reduce this ratio to the ceiling of 120%, the proposed rate revenue for the rate class was reduced by \$183 from \$7,935 to \$7,759. This amount is proposed to be recovered by an across the board increase to the two rate classes below 100% Revenue to Cost, Residential and Street Lighting. Please see RRWF Sheet 11 for details.



Ontario Energy Board

# Revenue Requirement Workform (RRWF) for 2017 Filers

## Cost Allocation and Rate Design

This spreadsheet replaces **Appendix 2-P** and provides a summary of the results from the Cost Allocation spreadsheet, and is used in the determination of the class revenue requirement and, hence, ultimately, the determination of rates from customers in all classes to recover the revenue requirement.

Stage in Application Process: *Initial Application*

### A) Allocated Costs

Name of Customer Class <sup>(3)</sup>	Costs Allocated from Previous Study <sup>(1)</sup>	%	Allocated Class Revenue Requirement <sup>(1)</sup>	%
From Sheet 10. Load Forecast				
(7A)				
1 Residential	\$ 2,028,244	63.58%	\$ 2,632,892	68.70%
2 GS < 50	\$ 548,117	17.18%	\$ 634,753	16.56%
3 GS > 50	\$ 365,214	11.45%	\$ 339,352	8.85%
4 Unmetered Scattered Load	\$ 5,603	0.18%	\$ 6,769	0.18%
5 Street Lighting	\$ 242,772	7.61%	\$ 218,720	5.71%
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
<b>Total</b>	<b>\$ 3,189,950</b>	<b>100.00%</b>	<b>\$ 3,832,486</b>	<b>100.00%</b>
Service Revenue Requirement (from Sheet 9)			<b>\$ 3,832,485.11</b>	

- (1) Class Allocated Revenue Requirement, from Sheet O-1, Revenue to Cost || RR, row 40, from the Cost Allocation Study in this application. This excludes costs in deferral and variance accounts. For Embedded Distributors, Account 4750 - Low Voltage (LV) Costs are also excluded.
- (2) Host Distributors - Provide information on any embedded distributor(s) as a separate class, if applicable. If embedded distributors are billed in a General Service class, include the allocated costs and revenues of the embedded distributor(s) in the applicable class, and also complete Appendix 2-Q.
- (3) Customer Classes - If these differ from those in place in the previous cost allocation study, modify the customer classes to match the proposal in the current application as closely as possible.

**B) Calculated Class Revenues**

Name of Customer Class		Load Forecast (LF) X current approved rates (7B)	LF X current approved rates X (1+d) (7C)	LF X Proposed Rates (7D)	Miscellaneous Revenues (7E)
1	Residential	\$ 2,018,525	\$ 2,381,641	\$ 2,381,807	\$ 170,421
2	GS < 50	\$ 577,869	\$ 681,824	\$ 681,824	\$ 52,124
3	GS > 50	\$ 270,068	\$ 318,652	\$ 318,652	\$ 37,174
4	Unmetered Scattered Load	\$ 6,725	\$ 7,935	\$ 7,759	\$ 364
5	Street Lighting	\$ 147,061	\$ 173,516	\$ 173,525	\$ 8,835
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17					
18					
19					
20					
<b>Total</b>		\$ 3,020,248	\$ 3,563,568	\$ 3,563,567	\$ 268,918

- (4) In columns 7B to 7D, LF means Load Forecast of Annual Billing Quantities (i.e., customers or connections, as applicable X 12 months, and kWh, kW or kVA as applicable. Revenue quantities should be net of the Transformer Ownership Allowance for applicable customer classes. Exclude revenues from rate adders and rate riders.
- (5) Columns 7C and 7D - Column Total should equal the Base Revenue Requirement for each.
- (6) Column 7C - The OEB-issued cost allocation model calculates "1+d" on worksheet O-1, cell C22. "d" is defined as Revenue Deficiency/Revenue at Current Rates.
- (7) Column 7E - If using the OEB-issued cost allocation model, enter Miscellaneous Revenues as it appears on worksheet O-1, row 19,

C) **Rebalancing Revenue-to-Cost Ratios**

	Name of Customer Class	Previously Approved Ratios	Status Quo Ratios	Proposed Ratios	Policy Range
		Most Recent Year:	(7C + 7E) / (7A)	(7D + 7E) / (7A)	
		2015			
		%	%	%	%
1	Residential	103.42%	96.93%	96.94%	85 - 115
2	GS < 50	109.43%	115.63%	115.63%	80 - 120
3	GS > 50	86.90%	104.85%	104.85%	80 - 120
4	Unmetered Scattered Load	94.70%	122.60%	120.00%	80 - 120
5	Street Lighting	70.00%	83.37%	83.38%	80 - 120
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- (8) Previously Approved Revenue-to-Cost (R/C) Ratios - For most applicants, the most recent year would be the third year (at the latest) of the Price Cap IR period. For example, if the applicant, rebased in 2012 with further adjustments to move within the range over two years, the Most Recent Year would be 2015. However, the ratios in 2015 would be equal to those after the adjustment in 2014.
- (9) Status Quo Ratios - The OEB-issued cost allocation model provides the Status Quo Ratios on Worksheet O-1. The Status Quo means "Before Rebalancing".
- (10) Ratios shown in red are outside of the allowed range. Applies to both Tables C and D.

(D) **Proposed Revenue-to-Cost Ratios** <sup>(11)</sup>

Name of Customer Class		Proposed Revenue-to-Cost Ratio			Policy Range
		Test Year	Price Cap IR Period		
		2017	2018	2019	
1	Residential	96.94%	96.94%	96.94%	85 - 115
2	GS < 50	115.63%	115.63%	115.63%	80 - 120
3	GS > 50	104.85%	104.85%	104.85%	80 - 120
4	Unmetered Scattered Load	120.00%	120.00%	120.00%	80 - 120
5	Street Lighting	83.38%	83.38%	83.38%	80 - 120
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(11) The applicant should complete Table D if it is applying for approval of a revenue-to-cost ratio in 2017 that is outside of the OEB's policy range for any customer class. Table D will show that the distributor is likely to enter into the 2018 and 2019 Price Cap IR models, as necessary. For 2018 and 2019, enter the planned revenue-to-cost ratios that will be "Change" or "No Change" in 2017 (in the current Revenue/Cost Ratio Adjustment Workform, Worksheet C1.1 'Decision - Cost Revenue Adjustment, column d), and enter TBD for class(es) that will be entered as 'Rebalance'.