CAMBRIDGE AND NORTH DUMFRIES HYDRO INC.
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December 16, 2014

Ms. Kirsten Walli, Board Secretary
Ontario Energy Board
2300 Yonge Street,
Suite 2700, P.O. Box 2319
Toronto, ON M4P 1E4

Dear Ms. Walli:

Re: Cambridge and North Dumfries Hydro Inc., 2015 IRM Electricity Distribution Rate Application, Responses to Interrogatories, Board File No. EB-2014-0060

Cambridge and North Dumfries Hydro Inc. is pleased to provide the enclosed responses to interrogatories received in the above noted proceeding. CND has responded in the order in which the interrogatories were received: Board staff, Energy Probe and VECC. All appendices appear following responses to VECC.

Respectfully submitted,

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RESPONSES TO BOARD STAFF INTERROGATORIES

Board Staff Interrogatories

1. Existing Tariff

Ref: Rate Generator Model - Sheet "4. Current Tariff Schedule"

Ref: IRM Application, Appendix A

A portion of Sheet 4 is reproduced below.

Service Charge	$	11.00
Rate Rider for Recovery of Stranded Meter Assets – effective until April 30, 2015	$	4.33
Rate Rider for Recovery of Forgone Revenue - effective until December 31, 2014	$	(1.31)
Rate Rider for Smart Metering Entity Charge - effective until October 31, 2018	$	0.79
Distribution Volumetric Rate	$/kWh	0.0178
Low Voltage Service Rate	$/kWh	0.0001
Rate Rider for Disposition of Global Adjustment Sub-Account (2013) - effective until April 30, 2015 Applicable only for Non-RPP Customers	$/kWh	(0.0048)
Rate Rider for Disposition of Deferral/Variance Accounts (2013) - effective until April 30, 2015	$/kWh	(0.0020)
Rate Rider for Recovery of Forgone Revenue - effective until December 31, 2014	$/kWh	0.0016

Board staff notes that for all rate classes, CND's current Tariff of Rates and Charges filed in Appendix A indicates the "effective until" date for the rate riders pertaining to Forgone Revenue as October 31, 2014, whereas Sheet 4 indicates the "effective until" date as December 31, 2014.

Board staff also notes that for all rate classes, CND's current Tariff of Rates and Charges indicates the year associated with the rate riders pertaining to Global Adjustment and Deferral/Variance Accounts as 2014, whereas Sheet 4 indicates 2013.

a. If the inputs in Sheet 4 are an error, Board staff will make the relevant corrections.

RESPONSE

CND thanks Board staff for making the relevant corrections to indicate that the rate riders pertaining to Foregone Revenues are effective until October 31, 2014 and that the rate riders pertaining to Global Adjustment and Deferral/Variance Accounts are associated with 2014, and not 2013.

2. Board-Approved Disposition 2011 – 2013

Ref: Rate Generator Model - Sheet "5. 2014 Continuity Schedule"

Board staff notes that with respect to Board–Approved dispositions in the years 2011 to 2013, for Group 1 Accounts 1550, 1551, 1580, 1584, 1586, 1588, 1589 and 1590, the following columns are unpopulated in Sheet 5:

- Columns Q and V related respectively to principal and interest – 2011
- Columns AA and AI related respectively to principal and interest – 2012
- Columns AN and AV related respectively to principal and interest – 2013

Board staff further notes that in CND's 2011 IRM Decision (EB-2010-0068) and 2013 IRM Decision (EB-2012-0111), the Board approved the disposition of balances for Group 1 accounts as indicated below. In the 2012 IRM Decision (EB-2011-0156), the Board found that no disposition was required at that time.

2011 IRM Decision (EB-2010-0068)

Account Description	Account Number	Principal Amounts A	Interest Amounts B	Total Claim C = A + B
LV Variance Account	1550	53,546	5,383	58,929
RSVA - Wholesale Market Service Charge	1580	(478,275)	(46,865)	(525,140)
RSVA - Retail Transmission Network Charge	1584	98,276	(8,233)	90,043
RSVA - Retail Transmission Connection Charge	1586	(1,079,752)	(41,520)	(1,121,272)
RSVA - Power (Excluding Global Adjustment)	1588	(1,532,834)	61,984	(1,470,850)
RSVA - Power (Global Adjustment Sub-account)	1588	7,778,468	171,365	7,949,833
Recovery of Regulatory Asset Balances	1590	0	(13,335)	(13,335)
		4,839,429	128,779	4,968,208

2013 IRM Decision (EB-2012-0111)

Account Name	Account Number	Principal Balance A	Interest Balance B	Total Claim C = A + B
LV Variance Account	1550	$127,156	-$1,345	$125,811
RSVA - Wholesale Market Service Charge	1580	-$2,763,667	-$53,812	-$2,817,479
RSVA - Retail Transmission Network Charge	1584	$2,462,040	$81,535	$2,543,575
RSVA - Retail Transmission Connection Charge	1586	$675,984	$40,640	$716,624
RSVA - Power (excluding Global Adjustment)	1588	-$141,018	$40,490	-$100,528
RSVA - Power – Global Adjustment Sub-Account	1588	$3,076,310	$64,868	$3,141,178
Total Group 1 Excluding Global Adjustment Sub-Account		**$360,495**	**$107,508**	**$468,003**
Total Group 1		**$3,436,805**	**$172,376**	**$3,609,181**

a. If the lack of inputs in Sheet 5, related to the dispositions ordered in the 2011 and 2013 IRM Decisions are an error, Board staff will make the relevant corrections.

RESPONSE

CND confirms that the lack of inputs in Sheet 5 is an error and thanks Board staff for making the relevant corrections to include dispositions ordered in the 2011 and 2013 IRM Decisions.

3. Total Claim Amount

Ref: Rate Generator Model - Sheet "5. 2014 Continuity Schedule"

Ref: Manager's Summary, Table 3, page 13

A portion of Sheet 5 is reproduced below.

Account Descriptions	Account Number	Closing Principal Balances as of Dec 31-13 Adjusted for Dispositions during 2014	Closing Interest Balances as of Dec 31-13 Adjusted for Dispositions during 2014	Projected Interest from Jan 1, 2014 to December 31, 2014 on Dec 31 -13 balance adjusted for disposition during 2014 [2]	Projected Interest from January 1, 2015 to April 30, 2015 on Dec 31 -13 balance adjusted for disposition during 2014 [3]	Total Claim
Group 1 Accounts						
LV Variance Account	1550	102,546	927	1,507	502	105,483
Smart Metering Entity Charge Variance	1551	66,924	550	984	328	68,786
RSVA - Wholesale Market Service Charge	1580	(1,025,044)	(18,015)	(15,068)	(5,023)	(1,063,150)
RSVA - Retail Transmission Network Charge	1584	(80,823)	13,429	(1,188)	(396)	(68,978)
RSVA - Retail Transmission Connection Charge	1586	(141,323)	845	(2,077)	(692)	(143,248)
RSVA - Power (excluding Global Adjustment)	1588	(1,371,483)	4,710	(20,161)	(6,720)	(1,393,654)
RSVA - Global Adjustment	1589	1,987,769	37,519	29,220	9,740	2,064,248
Recovery of Regulatory Asset Balances	1590	0	0	0		0
Disposition and Recovery/Refund of Regulatory Balances (2008)[4]	1595	0	0	0		0
Disposition and Recovery/Refund of Regulatory Balances (2009)[4]	1595	0	(4,896)	0		(4,896)
Disposition and Recovery/Refund of Regulatory Balances (2010)[4]	1595	(156,258)	160,788	0		4,530
Disposition and Recovery/Refund of Regulatory Balances (2011)[4]	1595	156,258	(155,015)	2,297	766	4,306
Disposition and Recovery/Refund of Regulatory Balances (2012)[4]	1595	0	0	0		0
RSVA - Global Adjustment	**1589**	1,987,769	37,519	29,220	9,740	2,064,248
Total Group 1 Balance excluding Account 1589 - Global Adjustment		(2,449,203)	3,323	(33,706)	(11,235)	(2,490,822)
Total Group 1 Balance		(461,434)	40,842	(4,486)	(1,495)	(426,573)

Table 3 is reproduced below.

Table 3 Deferral and Variance Accounts to be Disposed

Account Number	Account Description	Principal Balance at December 31, 2013	Carrying Charges to April 30, 2015	Total Claim
1550	LV Variance Account	$102,546	$2,937	$105,483
1551	Smart Metering Entity Charge Variance	$66,924	$1,862	$68,786
1580	RSVA - Wholesale Market Service Charge	($1,025,044)	($38,107)	($1,063,151)
1584	RSVA - Retail Transmission Network Charge	($80,823)	$11,845	($68,978)
1586	RSVA - Retail Transmission Connection Charge	($141,323)	($1,925)	($143,248)
1588	RSVA - Power (excluding Global Adjustment)	($1,371,483)	($22,171)	($1,393,654)
	Subtotal	($2,449,203)	($45,559)	($2,494,761)
1589	RSVA - Global Adjustment	$1,987,769	$76,480	$2,064,248
	Total	($461,434)	$30,921	($430,513)

Board staff notes that the total claim amount related to the total Group 1 balance in the rate generator model is a credit of $426,573, whereas the corresponding number in Table 3 is a credit of $430,513. Board staff further notes that the amount in the rate generator model is correct and the two amounts differ because the amount in Table 3 does not include the balances in Account 1595.

a. Please confirm if CND concurs with Board staff in this matter.

RESPONSE

CND concurs with Board staff in this matter and for completeness purposes, has included a revised Table 3 Deferral and Variance Accounts to be Disposed, which includes the balances in Account 1595.

Revised Table 3 Deferral and Variance Accounts to be Disposed

Account Number	Account Description	Principal Balance at December 31, 2013	Carrying Charges to April 30, 2015	Total Claim
1550	LV Variance Account	$102,546	$2,937	$105,483
1551	Smart Metering Entity Charge Variance	$66,924	$1,862	$68,786
1580	RSVA - Wholesale Market Service Charge	($1,025,044)	($38,107)	($1,063,151)
1584	RSVA - Retail Transmission Network Charge	($80,823)	$11,845	($68,978)
1586	RSVA - Retail Transmission Connection Charge	($141,323)	($1,925)	($143,248)
1588	RSVA - Power (excluding Global Adjustment)	($1,371,483)	($22,171)	($1,393,654)
	Subtotal	($2,449,203)	($45,559)	($2,494,761)
1589	RSVA - Global Adjustment	$1,987,769	$76,480	$2,064,248
1595	Disposition and Recovery/Refund of Regulatory Balances	$0	$3,940	$3,940
	Total	($461,434)	$34,861	($426,573)

4. Wholesale Market Participants ("WMP") and Class A Customers

Ref: Rate Generator Model - Sheet "6. Bill Det. For Def-Var"

Ref: Manager's Summary, Table 5, page 15

A portion of Sheet 6 is reproduced below.

Rate Class	Unit	Metered kWh	Metered kW	Billed kWh for Non-RPP Customers
RESIDENTIAL	$/kWh	400,646,088		31,090,136
GENERAL SERVICE LESS THAN 50 KW	$/kWh	155,607,417		22,469,711
GENERAL SERVICE 50 TO 999 KW	$/kW	434,548,089	1,403,590	292,059,771
GENERAL SERVICE 1,000 TO 4,999 KW	$/kW	221,369,807	526,573	221,369,807
LARGE USE	$/kW	252,967,286	508,268	207,072,349
UNMETERED SCATTERED LOAD	$/kWh	1,746,895		3,494
STREET LIGHTING	$/kW	9,594,439	25,751	9,594,439
EMBEDDED DISTRIBUTOR	$/kW	43,430,869	102,844	12,613,577
microFIT				

WMP

Chapter 3 of the Filing Requirements[1] notes that "Distributors must establish separate rate riders to recover the balances in the RSVAs from Market Participants ("MPs") who must not be allocated the RSVA account balances related to charges for which the MPs settle directly with the IESO (e.g. wholesale energy, wholesale market services)."

Board staff notes that if CND has any customers in the GS 50-999, GS 1,000-4,999 and Large Use rate classes that are WMPs, Board staff will modify CND's rate generator model in a manner such that the RSVA account balances mentioned above for the WMP subset are handled in accordance with the Filing Requirements.

[1] http://www.ontarioenergyboard.ca/oeb/_Documents/Regulatory/Filing_Reqs_Dx_Applications_ch_3.pdf pages 8 & 9

With respect to CND's customers in the three rate classes mentioned above:

a. Are any of CND's customers registered as WMPs?

RESPONSE

Yes, some of CND's customers are registered as WMPs.

b. If yes, please provide the Metered kWh and Metered kW attributable to these customers.

RESPONSE

CND used the Direct Market Participant ("DMP") data from the load forecast presented in Appendix C to CND's 2015 IRM Application to complete Sheet 6, which included such DMP data in the Large Use Rate Class only. For clarification, the load forecast in Appendix C is the load forecast approved in CND's last Cost of Service Rate Rebasing Application (EB-2013-0116).

The kWhs for the DMP in the load forecast were 45,894,937 and the kWs were 79,211, as summarized in the table below. The data for the Large Use Rate Class reflected a total of three customers: (i) two large use customers; and (ii) one DMP, who was a Large Use customer for rates purposes.

Rate Class	Metered kWh	Metered kW
Large Use	207,072,349	429,057
Direct Market Participant	45,894,937	79,211
Total per Sheet 6	252,967,286	508,268

Since CND filed its last Cost of Service Rate Rebasing Application, complete with the Load Forecast referred to above, the DMP has been reclassified as a General Service 1,000 to 4,999 customer because their average demand was less than 5,000 kW. The DMP has therefore been removed from the Large Use rate class.

At this time, CND has two customers in its Large Use customer class. The DMP is now a General Service 1,000 to 4,999 kW customer. The data shown for the General Service 1,000 to 4,999 kW customer class in sheet 6 does not include any DMP data.

Class A Customers

Chapter 3 of the Filing Requirements also note that "Distributors who serve Class A customers per O.Reg 429/04 (i.e. customers greater than 5 MW) must propose an appropriate allocation for the recovery of the global adjustment variance balance based on their settlement process with the IESO."

Board staff notes that Table 5 is consistent with the Filing Requirements. Board staff further notes that Billed kWh for Non-RPP Customers should be zero for Large Use or Class A customers.

c. Please confirm if CND concurs with Board staff in this matter, and if yes, staff Board staff will make the relevant correction.

RESPONSE

CND concurs with Board staff in this matter and confirms that the two Large Use customers are both Class A customers. There are no other Class A customers in any other class. CND thanks Board staff for making the relevant correction.

5. Tax Sharing

Ref: Rate Generator Model - Sheet "11. STS – Tax Change"

Ref: Manager's Summary, page 23

Board staff notes that Sheet 11 is unpopulated as CND's sharing of tax savings is zero. Board staff further notes that from a completeness perspective, Sheet 11 should be populated.

a. Please confirm if CND concurs with Board staff in this matter, and if yes, staff Board staff will make the relevant correction.

RESPONSE

CND concurs with Board staff in this matter and appreciates that Board staff will make the relevant correction.

6. RRR Billing Determinants

Ref: Rate Generator Model - Sheet "14. RTSR RRR Data"

Ref: IRM Application, Appendix A

A portion of Sheet 14 is reproduced below.

Rate Class	Rate Description	Unit	Non-Loss Adjusted Metered kWh	Non-Loss Adjusted Metered kW	Applicable Loss Factor
RESIDENTIAL	Retail Transmission Rate - Network Service Rate	$/kWh	384,916,688	-	1.0286
RESIDENTIAL	Retail Transmission Rate - Line and Transformation Connection Service Rate	$/kWh	384,916,688	-	1.0286
GENERAL SERVICE LESS THAN 50 KW	Retail Transmission Rate - Network Service Rate	$/kWh	156,590,626	-	1.0286
GENERAL SERVICE LESS THAN 50 KW	Retail Transmission Rate - Line and Transformation Connection Service Rate	$/kWh	156,590,626	-	1.0286
GENERAL SERVICE 50 TO 999 KW	Retail Transmission Rate - Network Service Rate	$/kW	429,293,182	1,243,381	-
GENERAL SERVICE 50 TO 999 KW	Retail Transmission Rate - Line and Transformation Connection Service Rate	$/kW	429,293,182	1,243,381	-
GENERAL SERVICE 1,000 TO 4,999 KW	Retail Transmission Rate - Network Service Rate	$/kW	234,825,352	630,469	-
GENERAL SERVICE 1,000 TO 4,999 KW	Retail Transmission Rate - Line and Transformation Connection Service Rate	$/kW	234,825,352	630,469	-
LARGE USE	Retail Transmission Rate - Network Service Rate	$/kW	232,484,435	477,382	-
LARGE USE	Retail Transmission Rate - Line and Transformation Connection Service Rate	$/kW	232,484,435	477,382	-
UNMETERED SCATTERED LOAD	Retail Transmission Rate - Network Service Rate	$/kWh	1,988,577	-	1.0286
UNMETERED SCATTERED LOAD	Retail Transmission Rate - Line and Transformation Connection Service Rate	$/kWh	1,988,577	-	1.0286
STREET LIGHTING	Retail Transmission Rate - Network Service Rate	$/kW	9,566,350	26,970	-
STREET LIGHTING	Retail Transmission Rate - Line and Transformation Connection Service Rate	$/kW	9,566,350	26,970	-
EMBEDDED DISTRIBUTOR	Retail Transmission Rate - Network Service Rate	$/kW	13,176,711	92,130	-
EMBEDDED DISTRIBUTOR	Retail Transmission Rate - Line and Transformation Connection Service Rate	$/kW	13,176,711	92,130	-

Board staff notes that per CND's most recent reported RRR billing determinants, the Non-Loss Adjusted Metered kW for the Embedded Distributor rate class is 19,938 kW, whereas Sheet 14 indicates 92,130 kW.

Board staff also notes that the applicable loss factor per CND's current Tariff of Rates and Charges filed in Appendix A is 1.0335, whereas Sheet 14 indicates 1.0286.

a. If the inputs in Sheet 14 are an error, Board staff will make the relevant corrections.

RESPONSE

CND acknowledges that the figures used in Sheet 14 as noted are not correct.

The Non-Loss Adjusted Metered kW for the Embedded Distributor rate class is 119,938 KW as per CND's most recently reported RRR billing determinants and not 19,938 KW as noted above.

The correct loss factor is 1.0335.

CND thanks Board staff for making the relevant corrections.

7. Hydro One Sub-Transmission Rate Rider 9A

Ref: Rate Generator Model - Sheet "15. RTSR – UTR & Sub-Tx"
Ref: Hydro One Networks Tariff, p.10, EB-2013-0141

A portion of Sheet 15 is reproduced below.

Hydro One Sub-Transmission Rate Rider 9A	Unit	Effective January 1, 2013	Effective January 1, 2014	Effective January 1, 2015
Rate Description		**Rate**	**Rate**	**Rate**
RSVA Transmission network – 4714 – which affects 1584	kW	$ -	$ 0.1465	$ 0.1465
RSVA Transmission connection – 4716 – which affects 1586	kW	$ -	$ 0.0667	$ 0.0667
RSVA LV – 4750 – which affects 1550	kW	$ -	$ 0.0475	$ 0.0475
RARA 1 – 2252 – which affects 1590	kW	$ -	$ 0.0419	$ 0.0419
RARA 1 – 2252 – which affects 1590 (2008)	kW	$ -	-$ 0.0270	-$ 0.0270
RARA 1 – 2252 – which affects 1590 (2009)	kW	$ -	-$ 0.0006	-$ 0.0006
Hydro One Sub-Transmission Rate Rider 9A	kW	$ -	$ 0.2750	$ 0.2750

Board staff notes that the Hydro One Sub-Transmission Rate Rider 9A is effective until December 31, 2014, and therefore should be set to zero in the "Effective January 1, 2015" column.

a. Please confirm if CND concurs with Board staff in this matter, and if yes, staff Board staff will make the relevant correction.

RESPONSE

CND concurs with Board staff in this matter that the Hydro One Sub-Transmission Rate Rider 9A is effective until December 31, 2014 and therefore should be set to zero in the "Effective January 1, 2015" column. CND thanks Board staff for making the relevant correction.

8. Lost Revenue Calculations (LRAMVA)

Ref: Manager's Summary, page 20-21 (Table 9)

CND notes that it has used the 2013 Draft Verified Results Report for OPA-Contracted Province-Wide CDM Programs as this was the most up-to-date source of results at the time it filed its application. CND further noted that it will update the LRAMVA balances when the final results are issued.

Further, CND has provided the detailed lost revenue calculations, including energy (kWh) and peak demand (kW) savings it realized in 2013 that are the result of CDM programs delivered in 2011, 2012 and 2013.

a. Please update all lost revenue calculations using the 2013 Final Verified Results. Discuss any energy (kWh) or peak demand (kW) savings amounts included in the calculation table that do not match the net incremental energy (kWh) or peak demand (kW) amounts included in CND's 2013 Final Results Report issued by the OPA.

RESPONSE

CND has updated all lost revenue calculations using the 2013 Final Verified Results and includes the Table below which reflects the final verified results.

There are no energy (kWh) or peak demand (kW) savings amounts included in the calculation table that do not match the net incremental (kWh) or peak demand (kW) amounts included in CND's CND 2013 Final Results Report issued by the OPA.

The highlighted figures in the Table below indicate those figures that have changed from the original LRAMVA submission by CND. The updated claim indicated in the Table is $282,030 which is less than $100 different from CND's original claim of $282,127. The revised claim amount does not result in any change in the LRAM rate riders, and therefore CND proposes that its original rate riders are still applicable.

The OPA's 2013 Final Verified Results are included as Appendix A to this document.

	Persistent CDM Savings in 2013 from 2011 Programs		Persisting CDM Savings in 2013 from 2012 Programs		CDM Savings in 2013 from 2013 Programs		(1) CDM Component in Load Forecast	CDM Variance for LRAMVA		(2) Rates	LRAMVA ($)	Carrying Charges	TOTAL
Residential	kWh	kW	kWh	kW	kWh	kW		kWh	kW				
Appliance Retirement	175,906		67,918		42,616		-	286,440		0.0163	4,659.40		
Appliance Exchange	2,690		6,491		18,841		-	28,022		0.0163	455.82		
Heating and cooling Incentive	670,601		428,617		489,074		-	1,588,292		0.0163	25,836.11		
Conservation Instant Coupon Booklet	179,901		13,391		73,819		-	267,111		0.0163	4,344.99		
Bi-Annual Retailer Event	281,459		256,502		164,540		-	702,501		0.0163	11,427.30		
Residential Demand Response					129		-	129		0.0163	2.10		
Home Assistance Program			11,421		458,390		-	469,811		0.0163	7,642.23		
Total	**1,310,557**		**784,340**		**1,247,409**		-	**3,342,306**			**54,368**	**1,428**	**55,796**
GS<50							-						
Direct Install Lighting	398,982		356,510		188,436		-	943,928		0.0127	11,956.42		
Total	**398,982**		**356,510**		**188,436**		-	**943,928**			**11,956**	**315**	**12,271**
GS>50-999 kW													
Retrofit annual		18,372		11,544		13,224	-		43,140	3.6775	159,631.77		
Demand Response		508		620		611	-		1,739	3.6775	6,406.23		
New Construction						720	-		720	3.6775	2,647.82		
Energy Audit				60		312	-		372	3.6775	1,368.04		
High Performance New Construction		132		12			-		144	3.6775	529.56		
Program Enabled Savings						96			96	3.6775	353.04		
Total		**19,012**		**12,236**		**14,867**	-		**46,211**		**170,936**	**4,561**	**175,497**
GS>1MW													
Retrofit annual		3,444		2,160		2,484	-		8,088	3.2035	25,909.91		
Demand response		217		266		262	-		745	3.2035	2,390.61		
Energy Manager						396	-		396	3.2035	1,268.59		
Total		**3,661**		**2,426**		**3,142**	-		**9,229**		**29,569**	**779**	**30,348**
Large													
Retrofit annual		1,152		720		828	-		2,700	2.158	5,836.86		
Process & System Upgrades						960			960	2.158	2,072.13		
Total		**1,152**		**720**		**1,788**	-		**3,660**		**7,909**	**208**	**8,117**
Total for all classes	**1,709,539**	**23,825**	**1,140,850**	**15,382**	**1,435,845**	**19,797**		**4,286,234**	**59,100**		**$274,739**	**$7,291**	**$282,030**

Notes: (1) CDM component in the 2010 load forecast is Nil.
(2) CND rates are effective May 1. The rates applied are the weighted average of two variable rates during 2013.

b. Please discuss the rationale for CND to assume 100% persistence of 2011 and 2012 energy savings in 2013. If available, please provide any supporting documentation received from the OPA related to persisting savings.

RESPONSE

As per page 15 of the OEB's 2008 Guidelines for Electricity Distributor Conservation and Demand Management dated March 28, 2008 (EB-2008-0037), persistence is defined as a measure of how long a CDM measure is kept in place by the customer. Persistence is important for all energy efficiency programs, as a lack of persistence can have very significant effects on overall net program savings estimates. On the same page, the Guidelines go on to state that 'Distributors should account for the persistence

of a CDM measure in accordance with the inputs and assumptions posted on the Board's website'.

Beginning on page 13 of the 2012 Guidelines for Electricity Distributor Conservation and Demand Management ("the Guidelines") dated April 26, 2012 (EB-2012-003) more detailed guidelines are provided regarding the Lost Revenue Adjustment Mechanism ("LRAM"). The Guidelines indicate that LRAM is intended to compensate distributors for losses of revenue due to the implementation of CDM programs. The Guidelines state that "Distributors should refer to the two tables found in Appendix A of the Guidelines for more information on what lost revenues are eligible for recovery and when LRAM applications can be made".

The first table in Appendix A is an LRAM Eligibility Table. The purpose of the table is to show what lost revenues are eligible to be recovered, based on when a distributor rebases. The Table shows that persistence exists in each year following the implementation of a CDM program. The eligibility for a claim in 2013 includes persistence from 2012 and 2011 as well as the 2013 CDM programs.

Although persist savings have not been specifically alluded to by the OPA in its Final Verified Results, CND has reproduced Table 5 from the OPA's 2013 Final Verified Results to indicate that the OPA recognizes persistence. The Net Energy Savings at the End User Level for 2011 programs are almost the exact same level for the years 2011, 2012 and 2013. The details behind Table 5 indicate that the savings are 12.937 GWh, 12.898 GWh and 12.895 GWh for the years 2011, 2012 and 2013 respectively, for a persistence of 99.699% from 2011 to 2012 and 99.675% from 2011 to 2013. The 2012 programs persist in 2013 and are similarly, almost exactly the same level. The details behind Table 5 indicate that the savings are 7.91 GWh for 2012 and 7.854 for 2013 for a persistence of 99.29%.

Table 5: Net Energy Savings at the End User Level (GWh)

Implementation Period	Annual				Cumulative
	2011	2012	2013	2014	2011-2014
2011 - Verified	12.9	12.9	12.9	12.8	51.5
2012 - Verified†	0.5	7.9	7.9	7.8	24.1
2013 - Verified†	0.0	0.8	11.0	10.8	22.5
2014					
Verified Net Cumulative Energy Savings 2011-2014:					98.2
Cambridge and North Dumfries Hydro Inc. 2011-2014 Annual CDM Energy Target:					73.7
Verified Portion of Cumulative Energy Target Achieved in 2014 (%):					133.3%

Furthermore, in CND's last Cost of Service Rate Rebasing application (EB-2013-0116) CND was required to determine the CDM impact on its load forecast. In so calculating the impacts of the CDM programs, persistence was included. As noted in CND's response to Board staff Interrogatory 9, CND confirmed that until the next rebasing, all LRAMVA calculations for 2014 and onwards will use the amounts included in the table provided in that interrogatory to offset any lost revenues from CDM programs. The amounts shown in the table reflect the impact of 2011, 2012, and 2013 programs persisting into 2014, plus 2014 programs as measured by the OPA.

9. Offsetting Load Reductions (LRAMVA)

Ref: Manager's Summary, page 21 (Table 9)

CND has not included any offsetting load reductions due to the effects of CDM being included in its load forecast. In its 2014 cost-of-service application, CND received approval of an updated load forecast that included a CDM component as outlined below.

CND's 2014 LRAMVA Allocation per Customer Class (from EB-2013-0116)									
	Residential	GS < 50 kW	GS > 50-999 kW	GS 1,000-4,999 kW	Large User	Direct Market Participant	Street Lights	Unmetered Loads	Totals
kWh	11,108,643	4,314,499	12,006,086	6,095,436	5,684,186	1,259,827	263,370	47,953	40,780,000
kW			38,780	14,499	11,778	2,174	707		67,938

a. Please confirm that CND's 2013 forecast did not include a CDM component.

RESPONSE

CND confirms that its 2013 load forecast did not include a CDM component, as the 2013 load forecast was based on the forecast prepared for CND's 2010 Cost of Service Rate Application (EB-2009-0260). The 2010 load forecast did not include a CDM component. CND's previous LRAM Variance Account recoveries, most recently in CND's Cost of Service Rate Application for rates effective May 1, 2014, did not include any offsetting load reductions due to the effects of CDM being included in the 2012 or 2011 load forecasts. The similar effects apply for 2013.

b. Please confirm that future LRAMVA calculations will use the amounts included in the table above to offset any lost revenues from CDM programs.

RESPONSE

CND confirms that until the next rebasing, all LRAMVA calculations for 2014 and onwards will use the amounts included in the table above to offset any lost revenues from CDM programs. The amounts shown in the table reflect the impact of 2011, 2012, and 2013 programs persisting into 2014, plus 2014 programs as measured by the OPA.

10. Accounting Standard (Z-factor)

Ref: Board's letter[1] dated July 17, 2012

a. Please provide the accounting standard under which CND's Z-factor claim has been filed.

RESPONSE

CND's Z-factor claim has been filed under Canadian Generally Accepted Accounting Principles.

b. Please confirm whether or not CND's Z-factor application is reflective of the capitalization policy changes as per the Board's letter "Regulatory accounting policy direction regarding changes to depreciation expense and capitalization policies in 2012 and 2013" dated July 17, 2012.

RESPONSE

CND confirms that its Z-factor application is reflective of the capitalization policy changes as per the Board's letter dated July 17, 2012.

1 http://www.ontarioenergyboard.ca/oeb/_Documents/Regulatory/Board_Ltr_Accounting_Changes_Under_CGAAP_2012_2013.pdf

11. Causation (Z-factor)

Ref: Manager's Summary: page 29

Board staff notes that based on the Board's Report on 3rd Generation Incentive Regulation for Ontario's Electricity Distributors[1] dated July 14, 2008, causation is one of the three eligibility criteria to be considered for recovery by way of a Z-factor.

a. Are the components of the total claim amount of $497,314 directly related to the Z-factor event?

RESPONSE

Yes, the components of the total claim amount of $497,314 are directly related to the Z-factor event. If the Ice Storm of 2013 had not occurred, the costs that CND has included in its Z-factor claim, would not have been incurred.

b. Is the total claim amount of $497,314 clearly outside of the base upon which rates were derived?

RESPONSE

Yes, CND asserts that the total claim amount of $497,314 is clearly outside of the base upon which rates for 2013 were derived. As noted on Pg. 29 of the Application, the underlying rates that were in effect at the time of the Ice Storm were as approved in CND's 2010 Rate Application (EB-2009-0260). While CND included a reasonable estimate of storm related costs based on prior years' experience in its 2010 Cost of Service application, a storm of this magnitude and the resulting costs of restoration were not included. In addition, only incremental costs associated with the Ice Storm were included in the amount claimed.

12. Recovery – Hydro One Networks (Z-factor)

Ref: Manager's Summary: page 26, lines 17 to 19
Ref: Manager's Summary: page 28, Table 12

Board staff notes that CND has recorded a cost recovery of $19,072 for an amount billed to Hydro One Networks based on work completed on behalf of Hydro One customers.

a. Please provide a breakdown of the $19,072 recovery amount by the cost categories (Subcontractors, Overtime Labour and Vehicles, Materials and Miscellaneous Expenses) listed in Table 12.

RESPONSE

The breakdown of the $19,072 recovery amount is shown in the table below.

Hydro One Networks Charges	
Description	Cost
Overtime Labour	$15,693
Vehicles	$2,913
Miscellaneous	$466
Total	$19,072

13. Incremental Internal Labour Costs (Z-factor)

Ref: Manager's Summary: page 26, lines 9 to 13
Ref: Manger's Summary: page 32, lines 11 to 17
Ref: Manager's Summary: page 33, Table 14

Board staff notes that CND is applying for recovery of incremental OM&A costs, which excludes labour costs incurred by CND staff during CND's regular work days.

Please note that there was no part a. to this interrogatory.

b. Please provide the method used to determine the level of incremental overtime hours worked by CND staff that are included in the Z-factor claim.

RESPONSE

CND utilizes its Enterprise Resource Planning Solution ("ERP System"), which includes a Work Management and Timesheet module, to record labour hours and labour costs by Project and Work Order. Timesheets are used to record hours worked for all employees, whether the hours are regular, overtime, vacation or other. The type of hours worked for unionized employees must be coded with the number of hours worked in order for the appropriate wage rate to be attached and applied, in accordance with CND's Collective Agreement. Non-union employees also use Timesheets to record hours of work.

In order to appropriately track the hours of work, and related labour costs, as well as third party contractor and other costs associated with the 2013 December Ice Storm, a separate Project and Work Order was established within the ERP System. Employees working on the December Ice Storm were instructed to code all overtime hours to this work order. Operations personnel (construction and maintenance personnel also coded regular time to this work order – please refer to response to part d) below. Regular scheduled hours for other departments were recorded in their respective cost centre Work Orders, which were not included in the December Ice Storm Project or Work Order.

CND's Work Management module includes the ability to sort costs by type of expenditure, including type of hours worked. Based on the overtime hours coded to the 2013 December Ice Storm Work Order, CND was able to determine the level of incremental overtime hours worked by CND staff included in the Z-factor claim.

c. Please include a description of the method for tracking overtime hours and labour rates.

RESPONSE

As indicated in the response to part b) of this Interrogatory, CND uses a Work Management and Timesheet module in its ERP System for tracking overtime hours. CND's labour rates for all employees are recorded in the ERP System. The labour rates are as per CND's Collective Agreement and the appropriate wage rate is 'attached' to the type of labour hours that are entered into the system within a Work Order, in this case, the 2013 December Ice Storm Work Order.

d. In addition to the overtime hours provided in Table 14, please also provide the regular hours by department worked by CND staff in the restoration effort.

RESPONSE

In addition to the overtime hours provided in Table 14, regular hours charged to the 2013 December Ice Storm cost work order for the Operations department totaled 748 regular hours. These hours, and related costs, were not included in the Z-Factor claim.

As noted in response to part a) of this Interrogatory, all regular hours for the other departments involved in the 2013 December Ice Storm (i.e. Customer Care, Engineering, Billing, etc.) were recorded in their respective department Work Orders and were not recorded as part of the 2013 December Ice Storm Work Order. As a result the regular hours worked by staff in these departments, that specifically relate to the 2013 December Ice Storm, are not available.

e. For additional clarity, please confirm that the Z-factor claim does not include the costs of these regular hours.

RESPONSE

CND confirms that its Z-factor claim does not include the costs of regular hours as detailed in part d) of this interrogatory.

14. External Contractors (Z-factor)

Ref: Manager's Summary: page 31, lines 11 to 15
Ref: Manager's Summary: page 32, lines 4 to 17
Ref: Manager's Summary: page 36, Table 17

Board staff notes from Table 17 that CND Hydro utilized a total of nine external contractors in the restoration effort. Board staff also notes that CND was not able to explicitly follow all of its normal purchasing policies and processes.

a. Please confirm whether or not CND utilized the services of any external contractors that would be in addition to the nine contractors listed in Table 17.

RESPONSE

CND confirms that that no external contractor services were utilized, other than the nine contractors listed in Table 17.

b. Please provide a copy of CND's procurement policies.

RESPONSE

Please see CND's procurement policy, identified as CND's Purchasing and Contacts Policy originally dated October 4, 2006 and most recently updated June 26, 2013, attached as Appendix B.

c. Please provide details about CND's deviation from its normal purchasing policies and processes including the tendering of purchases.

RESPONSE

Due to the emergency nature of the ice storm, CND deviated from the tendering of contractor services that is required as per the corporate policy Purchasing and Contracts Policy Section 5.2. Rather, the provisions of Section 5.3.3 Emergency

Purchases was invoked, which allowed for deviations from the normal purchasing policies and processes.

d. With respect to the work performed by external contractors during CND's regular work days, please clarify if the invoiced costs are based on regular labour rates or premium rates, and if the latter, please explain why.

RESPONSE

For the work performed by external contractors, the majority of the invoiced costs were based on premium rates. These rates were incurred because during the duration of the ice storm restoration efforts, the contractor crews were working on scheduled time off and on the statutory holidays of Christmas Day and Boxing Day.

e. Please confirm if CND verified the hours worked by the external contractors in the restoration effort.

RESPONSE

CND confirms that the hours worked by the external contractors in the restoration effort were verified.

f. Please confirm if CND checked how the invoiced costs for labour rates and equipment were determined by the external contractors.

RESPONSE

CND confirms that it checked how the invoiced costs for labour rates and equipment were determined by the external contractors.

15. Other Electricity Distributors (Z-factor)

Ref: Manager's Summary: page 31, lines 26 to 29
Ref: Manager's Summary: page 32, lines 1 to 3
Ref: Manager's Summary: page 28, Table 12
Ref: Utility Partners - GridSmartCity[1]

Board staff notes that CND is one of ten utility partners in GridSmartCity. Board staff also notes that through the Electrical Distributors Association ("EDA"), CND obtained a list of Local Distribution Companies ("LDC") that had crews available to assist utilities in crisis mode and CND took advantage of that opportunity.

a. Did CND reach out to GridSmartCity to seek help regarding the restoration?

RESPONSE

Yes, CND reached out to GridSmartCity members to seek help regarding the restoration. CND maintained contact with Kitchener-Wilmot Hydro, Waterloo North Hydro, Guelph Hydro, Burlington Hydro, Halton Hills Hydro and Milton Hydro throughout the ice storm outage for updates and to coordinate activities. If restoration was complete at one utility, crews were released to another utility to assist.

b. Based on the EDA's recommendation, did CND use restoration services from any LDC?

RESPONSE

Yes, CND used restoration services from two LDC's.

A. If yes, please provide:

i. The names of the LDCs.

[1] http://gridsmartcity.com/partners/utilities/

RESPONSE

The names of the LDC's are as follows:

Bluewater Power Services Corp.
St. Thomas Energy Inc.

ii. Description of the services provided by the LDCs.

RESPONSE

The LDC's provided power linepersons and trucks to assist in the restoration efforts.

iii. Details of the invoice cost from the LDCs.

RESPONSE

The invoice details are listed below.

Bluewater Power Services Corp.

90 OT Hours	$16,568
32 Heavy Truck Hours	$1,648
16 Light Truck Hours	$245
	=====
TOTAL	$18,461

St. Thomas Energy Inc.

39 OT Hours	$5,460
19.5 Large Truck Hours	$780
Materials	$716
	=====
TOTAL:	$6,956

iv. Are these costs included in Table 12 and any other cost related table provided in the application.

RESPONSE

Yes, these costs are included in Table 12 and any other cost related table provided in the application.

v. With respect to the work performed by LDCs during CND's regular work days, please clarify if the invoiced costs are based on regular labour rates or premium rates, and if the latter, please explain why.

RESPONSE

The invoiced costs are based on premium rates since the work took place outside of regular working hours (i.e. evening or on statutory holidays).

vi. Please confirm if CND verified the hours worked by the LDCs in the restoration effort.

RESPONSE

CND confirms that it verified the hours worked by the LDCs in the restoration effort.

vii. Please confirm if CND checked how the invoiced costs for labour rates and equipment were determined by the LDCs.

RESPONSE

CND did not check how the invoiced costs for labour rates and equipment were determined by the LDCs.

B. If no, please explain why not.

RESPONSE

CND does not know how the invoiced costs for labour rates and equipment were determined by the LDCs. CND checked the costs to see if they were reasonable.

16. Tree Trimming (Z-factor)

Ref: Manager's Summary

a. Please confirm whether or not CND has a tree trimming policy, and if yes:

    i. Please provide a copy of the policy.

RESPONSE

At the time of the Ice Storm, CND did not have a formally documented tree trimming policy, but rather operated under a less formal program that was entitled Forestry Contractor Specifications. These specifications detailed forestry contractor qualifications, description of work (including the four year growth period for tree trimming) and detailed pruning standards required of any forestry contractor hired by CND.

CND's Forestry Contractor Specification can be found at Appendix C.

CND's tree trimming policy, identified as CND's Vegetation Management Program was ultimately approved and issued in February 2014.

CND's Vegetation Management Program can be found at Appendix D.

    ii. Further, please confirm whether or not CND's tree trimming policy was adhered to in the period prior to the onset of the ice storm, i.e. in the duration of the prior tree trimming time cycle.

RESPONSE

CND confirms that the corporate tree trimming program was adhered to in the period prior to the onset of the ice storm.

17. Allocation of Recovery Costs (Z-factor)

Ref: Manager's Summary: page 40, Table 21

Board staff notes that Table 21 shows the recovery of ice storm Z-factor costs by way of a monthly fixed rate rider based on allocating the ice storm recovery costs to all customer classes in proportion to CND's Board approved distribution revenue resulting its 2014 cosy-of-service rate application (EB-2013-0116) and CND's actual customer counts as of December 31, 2013.

a. Please re-calculate the rate riders provided in Table 21 by using connection rather than customer counts as of December 31, 2013 for the Street Light and USL classes and maintaining customer counts for all other classes.

RESPONSE

Please see the table below in which CND has re-calculated the rate riders provided in Table 21 by using connection rather than customer counts as of December 31, 2013 for the Street Light and USL classes and maintaining customer counts for all other classes.

Customer Class	Distribution Revenue	% of Total	Allocation of Claim	Monthly Fixed Rate Rider	Number of Customers
Residential	$13,473,027	49.5%	$246,281	$0.44	46,744
GS <50 kW	$2,894,872	10.6%	$52,917	$0.94	4,702
GS >50 to 999	$6,454,976	23.7%	$117,994	$13.32	738
GS 1000 to 4999	$1,854,779	6.8%	$33,905	$117.72	24
Large User	$1,504,085	5.5%	$27,494	$763.72	3
Embedded	$194,006	0.7%	$3,546	$147.76	2
Street Lights	$777,185	2.9%	$14,207	$0.09	12,838
USL	$53,096	0.2%	$971	$0.17	484
Total	$27,206,026	100.0%	$497,314		65,535

b. Please also calculate rate riders resulting from customer/connection counts at the end of 3rd quarter 2014.

RESPONSE

Please see the table below in which CND has calculated rate riders resulting from customer/connection counts at the end of 3rd quarter 2014.

Customer Class	Distribution Revenue	% of Total	Allocation of Claim	Monthly Fixed Rate Rider	Number of Customers at September 30, 2014
Residential	$13,473,027	49.5%	$246,281	$0.44	46,989
GS <50 kW	$2,894,872	10.6%	$52,917	$0.92	4,783
GS >50 to 999	$6,454,976	23.7%	$117,994	$14.17	694
GS 1000 to 4999	$1,854,779	6.8%	$33,905	$117.72	24
Large User	$1,504,085	5.5%	$27,494	$1,145.58	2
Embedded	$194,006	0.7%	$3,546	$147.76	2
Street Lights	$777,185	2.9%	$14,207	$0.09	12,903
USL	$53,096	0.2%	$971	$0.17	481
Total	$27,206,026	100.0%	$497,314		65,878

c. Please provide estimated bill impacts based on the rate riders calculated in a) and b).

RESPONSE

The table below provides estimated bill impacts based on the rate riders calculated in part a) of this interrogatory.

Rate Class	kWh	kW	# of Connections	2014 Total Bill A	2015 Bill as Proposed B	Difference B - A = C	Bill Impact C/A
				$	$	$	%
Residential	100			28.23	24.94	(3.29)	-11.66%
Time-of-Use	250			45.60	43.06	(2.53)	-5.55%
	500			74.55	73.30	(1.26)	-1.68%
	800			111.93	112.21	0.27	0.24%
	1,000			137.74	139.03	1.29	0.93%
	1,500			202.25	206.09	3.84	1.90%
	2,000			266.76	273.15	6.39	2.39%
GS < 50 kW	1,000			143.83	136.28	(7.56)	-5.25%
Time-of-Use	2,000			267.73	265.07	(2.66)	-0.99%
	5,000			639.42	651.44	12.02	1.88%
	10,000			1,258.92	1,295.39	36.47	2.90%
	15,000			1,878.41	1,939.34	60.93	3.24%
GS 50-999 kW	20,000	60		2,489.27	2,754.81	265.54	10.67%
	40,000	100		4,720.64	5,153.13	432.50	9.16%
GS 1,000-4,999 kW	400,000	1,000		149,139.10	165,954.55	16,815.45	11.28%
	1,800,000	5,000		218,298.02	248,960.72	30,662.70	14.05%
Large Use	13,000,000	25,000		1,427,524.63	1,573,749.53	146,224.89	10.24%
USL	150		1	22.37	24.42	2.05	9.15%
Street Lighting	150	1	1	32.27	37.40	5.12	15.87%

NOTE: This Table excludes the Rate Riders for Recovery of Foregone Revenue as these Rate Riders are temporary in n

The table below provides estimated bill impacts based on the rate riders calculated in part b) of this interrogatory.

Rate Class	kWh	kW	# of Connections	2014 Total Bill A	2015 Bill as Proposed B	Difference B - A = C	Bill Impact C/A
				$	$	$	%
Residential	100			28.23	24.94	(3.29)	-11.66%
Time-of-Use	250			45.60	43.06	(2.53)	-5.55%
	500			74.55	73.30	(1.26)	-1.68%
	800			111.93	112.21	0.27	0.24%
	1,000			137.74	139.03	1.29	0.93%
	1,500			202.25	206.09	3.84	1.90%
	2,000			266.76	273.15	6.39	2.39%
GS < 50 kW	1,000			143.83	136.25	(7.58)	-5.27%
Time-of-Use	2,000			267.73	265.04	(2.68)	-1.00%
	5,000			639.42	651.41	11.99	1.88%
	10,000			1,258.92	1,295.37	36.45	2.90%
	15,000			1,878.41	1,939.32	60.91	3.24%
GS 50-999 kW	20,000	60		2,489.27	2,755.67	266.40	10.70%
	40,000	100		4,720.64	5,154.00	433.36	9.18%
GS 1,000-4,999 kW	400,000	1,000		149,139.10	165,954.55	16,815.45	11.28%
	1,800,000	5,000		218,298.02	248,960.72	30,662.70	14.05%
Large Use	13,000,000	25,000		1,427,524.63	1,574,181.03	146,656.40	10.27%
USL	150		1	22.37	24.42	2.05	9.15%
Street Lighting	150	1	1	32.27	37.40	5.12	15.87%

NOTE: This Table excludes the Rate Riders for Recovery of Foregone Revenue as these Rate Riders are temporary in n

18. Alternate Allocation of Recovery Costs (Z-factor)

Ref: Manager's Summary: page 38, lines 22-24
Ref: Manager's Summary: page 39, Table 20
Ref: Manager's Summary: page 40, lines 3-8

Board staff notes that Table 20 addresses the recovery of ice storm Z-factor costs by using customer numbers as the basis of allocation, resulting in approximately 89% of the costs being allocated to residential customers. Board staff also notes CND's preference for this allocation method over allocation in proportion to distribution revenue.

a. Please provide details regarding the nature of the distribution plant that sustained damage and the kinds of customers affected by the storm.

RESPONSE

Poles and overhead wires sustained damage in the ice storm. The accumulation of ice caused trees, limbs, power line conductors and poles to break and fall down. In some cases, the force of the ice laden trees and branches falling into the power lines caused conductors and poles to break. In other cases, the fallen ice laden trees and branches remained in contact with the intact power lines creating a short circuit which caused fuses to blow or circuit breakers to open.

Although virtually all classes of CND customers were affected to varying degrees by the ice storm, due to the rural location of most of the damage, CND had much more contact and communication with residential customers. This customer class resulted in the majority of the trouble calls and other aspects of the restoration efforts. The only identified class of customer not affected was the Large Use class, as they were not operating during the timeframe.

b. Please explain how these details support CND's preferred allocation method.

RESPONSE

Please refer to CND's response to Energy Probe Interrogatory 1, where CND acknowledges that there are primarily two methods of allocating costs related to this Z-factor claim; the method based on distribution revenue, and the method based on customer numbers. The majority of the outages described in part a) occurred in the more rural area of CND's service territory as this is where most of the vegetation exists. Because the rural area is generally populated more by residential customers than the general service customers, CND is proposing that the costs be allocated to the residential customer class accordingly. As the allocation based on distribution revenue results in less than 50% of costs allocated to the residential class, CND looked at the alternate method to more equitably allocate costs. The method based on customer numbers allocates just less than 90% of the costs to the residential class. While no method will allocate the costs exactly as the costs were incurred, CND submits that the latter method is more in alignment with the restoration efforts and the actual costs that CND incurred to complete the restoration.

19. Shareholder Contributions (Z-factor)

Ref: CND's 2014 cost-of-service rate application[1] (EB-2013-0116), exhibit 1, tab 2, schedule 1, page 1

Ref: CND's Corporate Structure[2]

Board staff notes that CND is a corporation incorporated pursuant to the *Ontario Business Corporations Act,* and is a wholly-owned subsidiary of the Cambridge and North Dumfries Energy Plus Inc. which is 100% jointly owned by the Corporation of the City of Cambridge and the Corporation of the Township of North Dumfries.

a. Are CND's shareholders, i.e. City of Cambridge and Township of North Dumfries making any contribution to the restoration cost?

    i. If not, why not?

RESPONSE

No, CND's shareholders are not making any contribution to the restoration cost.

As CND is a private corporation incorporated pursuant to the *Ontario Business Corporations Act,* there is no obligation or liability on the part of the shareholders to make any contribution to the restoration cost.

    ii. If yes, please provide details.

RESPONSE

Not applicable.

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1 http://www.rds.ontarioenergyboard.ca/webdrawer/webdrawer.dll/webdrawer/rec/411879/view/CambridgeND_CoS_administrative%20docs_EX1_20131001.PDF

2 https://www.camhydro.com/en/ourcompany/corporatestructure.asp

20. Emergency Preparedness (Z-factor)

Ref: Manager's Summary: page 31, line 5

Board staff notes that CND invoked its Emergency Plan shortly after the onset of the ice storm.

a. Please provide a copy of CND's Emergency Plan.

RESPONSE

Please see CND's Emergency Plan, identified as CND's Emergency Plan – Power Distribution System Operation, dated July, 2011, attached as Appendix E. Portions of the main document and all of the appendices to the Emergency Plan have been redacted since they contain names, personal contact information and/or other information that is not publicly released. In CND's view, the removal of these appendices does not impact the content of the Emergency Plan and such appendices are not relevant to this interrogatory response. The position of Director shown in the Emergency Plan has since been changed to Vice President/Chief Financial Officer.

b. Please comment on the degree to which CND's response to the ice storm accorded with the provisions of the plan, and explain the main reasons for any deviation from it.

RESPONSE

CND's response to the ice storm accorded with the provisions of the plan. CND did not deviate from its Emergency Plan. The first Ice Storm outages in CND's service area began on the morning of Sunday, December 22nd, 2013. At 9:30am, there were approximately 5,000 customers without power with more outage calls coming in. The Emergency Coordinator (i.e. CND's Vice President of Engineering) came into CND's System Control Centre and conferred with the System Control Operators. The large number of customers out of power, combined with the nature of the damage, resulted in an assessment that the restoration was going to last more than 16 hours and require more than twelve (12) Operations Field Personnel (OFP). Twelve Outside Field

Personnel is a threshold developed by CND based on its size to evaluate the restoration requirements. Based on Figure 1 provided on page 19 of CND's Emergency Plan, the situation necessitated activation of CND's Emergency Plan. CND's Emergency Coordinator provided the information to CND's President and CEO at 11:58am and there was agreement to activate the Emergency Plan. CND's Leadership Team (other Vice Presidents and the Chief Financial Officer) were notified at noon that the Emergency Plan was being activated. Figure 1 of CND's Emergency Plan listed these notifications. Over the next several days, CND operated under its Emergency Plan.

As per sections 1.6 and 2.3 of the Emergency Plan, individuals were assigned to fill the roles of the Emergency Response Organization. As per section 1.7, CND contacted contractors to obtain necessary additional resources and contacted suppliers to ensure that critical materials would be available. As per section 1.9.5, regular updates were provided to the media. Updates were also provided to municipal governments. CND's Call Centre extended its hours of operations. As per section 2.3.1.4, safety orientations were held with contractors. As per section 2.3.1.6, CND's Support Coordinator arranged necessary meals and lodging. CND's System Control Centre staff completed all the functions listed in section 2.3.1.8. CND's Operations Coordinators working with CND crews, contractor crews and other LDC crews completed all the functions listed in section 2.3.1.8.

At 4:30pm on December 25th, 2013, the Declaration of Emergency was ended after an assessment of the restoration status and consultation with CND's President and CEO. Further outage calls came in later and reconnects were required once customer owned equipment was repaired, however, the majority of the restoration efforts were complete.

21. Budget (Z-factor)

Ref: Manager's Summary: page 29, lines 19 to 23
Ref: Manager's Summary: page 30, lines 4 to 8
Ref: Manager's Summary: page 30, Table 13

Board staff notes from Table 13 in the application that CND's storm costs budget was over spent in 2011 and 2012. Board staff further notes that in the following year, i.e. 2013, CND's storm costs budget was over spent by 53% prior to the occurrence of the ice storm on December 21st and 22nd.

a. Please explain the basis for the storm cost budget amounts in 2010 through 2013.

RESPONSE

The storm cost budget amounts in 2010 through 2013 were based on typical wind, lightning and ice storm expenditures over a one year period.

b. Please explain the reasons for significant overspending in this budget category in certain years.

RESPONSE

The reasons for overspending in this budget category are as follows:

In 2011, CND experienced storm damage and emergency repairs due to inclement weather in April, May, June and October of that year. In addition, a tornado touched down in southeast Cambridge in August 2011 which broke down many large trees and branches causing major damage to overhead power lines.

During 2012, CND experienced a more typical year of lightning, wind and ice storms.

In 2013, CND experienced an April ice storm resulting in costs of $15,377 and a severe wind storm in July resulting in costs of $90,116. The balance of the expenditures was due to other lightning and wind storms throughout the year.

During the years that the budget for storm costs was exceeded, CND has absorbed the over expenditures.

c. Please describe whether CND has plans to alter its storm costs budgeting strategy for 2015 and onward.

RESPONSE

At this time, CND has no specific plans to significantly alter its storm costs budgeting strategy for 2015 and onward. CND will continue to track and monitor actual storm related costs compared to budget on an annual basis to determine whether future budget adjustments are required.

22. Insurance and Other Funding Sources (Z-factor)

Ref: Manager's Summary: page 28, lines 9 to 11
Board staff notes that CND states that there is no property insurance coverage available to offset the costs of restoration.

a. Did CND attempt to obtain funding to offset the costs of restoration from other sources, including but not limited to the Ontario Disaster Relief Assistance Program**1**?
    i. If yes, please provide details.
    ii. If not, why not?

RESPONSE

Yes, CND did attempt to obtain funding to offset the costs of restoration from other sources and did so specifically from Hydro One Networks. CND billed Hydro One Networks $19,072 for work completed on behalf of Hydro One customers.

With regards to insurance, CND, as is common with other utilities in the province, does not insure its distribution plant and therefore there is no possibility of reimbursement through this means. As a private corporation, CND is not eligible for funding from the Ontario Disaster Relief Assistance Program and the Ontario Ice Storm Assistance program specifically deems costs incurred by local electricity distribution companies and/or damage to the local electricity distribution network to be ineligible.

CND is not aware of any other source of funding to offset the costs of restoration, other than from CND's customers, through a Z-factor application, which CND understands is intended for this purpose.

[1] http://www.mah.gov.on.ca/Page237.aspx

23. Power Restoration (Z-factor)

Ref: Manager's Summary: page 24, lines 12 to 26

Board staff notes that CND states that approximately 30,000 of CND's customers were impacted by the storm at various times, representing almost 60% of its customer base, and at the peak of the storm, 5,500 customers, or approximately 10% of CND's customer base, were without power.

Board staff further notes that CND states that 99% of customers had full electricity restored within 48 hours.

a. Please confirm that 99% of customers had full electricity restored by December 24th, i.e. within 48 hours of December 22nd, the second day of the two-day ice storm.

RESPONSE

CND confirms that 99% of customers had full electricity restored by December 24, 2013, within 48 hours of December 22nd, the second day of the two-day ice storm.

b. Please provide the number of customers without power for each day of the ten day period commencing the first day of the ice storm, i.e. December 21st.

RESPONSE

Please see the table below indicating the number of customers without power each day between December 21st and December 30th. Please note that not all customers were out of power at the same time. In addition, the number of customers declined to zero at the end of the day on December 25th but then new outages occurred on subsequent days.

Date	Number of Customers without Power
Saturday, December 21st	0
Sunday, December 22nd	Approximately 30,000
Monday, December 23rd	1,003
Tuesday, December 24th	111
Wednesday, December 25th	15
Thursday, December 26th	2
Friday, December 27th	1
Saturday, December 28th	9
Sunday, December 29th	0
Monday, December 30th	0

24. True-up (Z-factor)

Ref: Manager's Summary

a. Please provide CND's views on the treatment of any over-or under-recoveries that may arise at the end of the 12-month cost recovery period.

RESPONSE

CND intends to have neither an over-recovery nor an under-recovery.

It is CND's intension to recover only the Board approved costs and carrying charges related to the 2013 Ice Storm. Consistent with the recent OEB decision related to Milton Hydro's Z-factor application, which was also related to the 2013 Ice Storm (EB-2014-0162), CND proposes to transfer the approved balance from Account 1572 "Extraordinary Event Costs" to a separate sub-account of Account 1595. The use of Account 1595 "Disposition and Recovery of Regulatory Balances Control Account" will allow the difference between the approved Z-factor amount and the actual amount collected from the final rate riders to be tracked and ultimately to be refunded to or recovered from customers.

RESPONSES TO ENERGY PROBE INTERROGATORIES

Energy Probe-1

Ref: Manager's Summary, Page 40

Does CND agree that allocating costs based on distribution revenue is a proxy for allocating costs based on the allocation of overall total costs to rate classes? If not, why not?

RESPONSE

CND does agree that allocating costs based on distribution revenue is a proxy for allocating costs based on the allocation of overall total costs to rate classes.

CND recognizes that allocating the costs of the Ice Storm on the basis of distribution revenue is one of the possible methods of allocating costs to the rate classes. For purposes of CND's Z-factor cost recovery application, and based on the particular set of circumstances for this event, CND has proposed that the most equitable method of allocating the costs is based upon customer numbers.

CND submitted in its application that the residential class should be allocated the majority of the Z-factor costs (as the customer numbers method accomplishes), since the outage primarily affected the residential class of customers. This is based in part upon the number of residential trouble calls compared to the number of non-residential trouble calls. As stated on page 40 of the Application, of 537 trouble calls in the first 24 hours of the storm, less than 10 were non-residential in nature. Furthermore, of a total 127 ESA inspections that emanated from the storm, 124 were residential and 3 were non-residential.

Distribution revenue is determined by rate class based on cost allocation studies. CND prepared and presented its cost allocation study that is applicable for 2013 distribution rates (the year in which the Z-factor event and subsequent costs were incurred) in 2009 as part of its Cost of Service Rate Rebasing Application for rates effective May 1, 2010 (EB-2009-0260). That Board approved cost allocation study indicated that 50.66% of CND costs should be allocated to the residential class.

CND submits that a cost allocation study is an estimation of which costs are applicable to any particular rate class. Estimates by their very nature can vary; this variation has been recognized by the Board in the setting of a range of costs by rate class under the cost allocation methodology. In the case of the residential class, that range is currently 85 – 115% of costs deemed to be residential in nature.

Furthermore, CND contends that any cost allocation study applies to the 'normal' operations of any utility.

In this particular case, CND recognizes that the circumstances are not 'normal' and that the existing cost allocation study, or even the more recent cost allocation study filed with CND's latest Cost of Service Rate Rebasing Rate Application (EB-2013-0116), do not consider the direct allocation of the costs incurred in the unique circumstances of this Z-Factor event.
CND has therefore proposed allocating the Z-Factor costs on the basis of customer numbers and not based upon distribution revenue. While CND recognizes that allocating the costs on the basis of customer numbers is not exact, it is CND's view that this basis results in a higher allocation to the customer rate class that was more directly impacted by the Ice Storm and where the restoration efforts were concentrated. .

Energy Probe-2

Ref: Manager's Summary, Page 33

Are Supervisory staff normally eligible for overtime?

RESPONSE

Please see CND's response to VECC Interrogatory 9.

Energy Probe-3

Ref: Manager's Summary, Page 30, 39 & 40

Please provide a table similar to Tables 20 and 21 that shows the allocation and rate rider calculation based on the Z-factor costs being allocated in the same manner as the storm costs shown in Table 13 in CND's latest Cost of Service Application (EB-2013-0116).

RESPONSE

Upon receiving clarification of this interrogatory, CND understands that what has been requested is the relevant customer and connection numbers and the allocation of distribution revenue from CND's most recent Cost of Service ("COS") Application (EB-2013-0116), as a means of providing an alternative to the information provided in Tables 20 and 21 as submitted in this application.

Although CND is providing the information as requested, it should be noted that the Z-factor event that is the subject of this claim occurred in 2013, during which time CND's latest COS Application (EB-2013-0116) was not applicable. The effective date of CND's latest COS Application is for rates effective May 1, 2014, well after the event occurred. The relevant COS Application for the event is the COS Application filed in 2009 for rates effective May 1, 2010 until April 30, 2014 (EB-2009-0260).

With the caveat mentioned above, CND used customer and connection numbers from the Board approved load forecast from the Draft Rate Order in CND's COS Application to calculate the Table below.

Rate Rider Calculation Based on Customer Numbers

Customer Class	Number of Customers/ Connection	% of Total	Allocation of Claim	Monthly Fixed Rate Rider
Residential	48,091	71.7%	$356,348	$0.62
GS <50 kW	4,740	7.1%	$35,123	$0.62
GS >50 to 999	773	1.2%	$5,728	$0.62
GS 1000 to 4999	27	0.0%	$200	$0.62
Large User	3	0.0%	$22	$0.62
Embedded	2	0.0%	$15	$0.62
Street Lights	12,997	19.4%	$96,306	$0.62
USL	482	0.7%	$3,572	$0.62
Total	67,115	100.0%	$497,314	

With the caveat mentioned above, CND used the distribution revenue allocation from the rate design model from the Draft Rate Order in CND's COS Application to calculate the Table below.

Rate Rider Calculation Based on Distribution Revenue

Customer Class	Distribution Revenue	% of Total	Allocation of Claim	Monthly Fixed Rate Rider	Number of Customers
Residential	$13,473,028	49.52%	$246,281	$0.43	48,091
GS <50 kW	$2,894,872	10.64%	$52,917	$0.93	4,740
GS >50 to 999	$6,454,976	23.73%	$117,994	$12.72	773
GS 1000 to 4999	$1,854,779	6.82%	$33,905	$104.64	27
Large User	$1,504,085	5.53%	$27,494	$763.72	3
Embedded	$194,006	0.71%	$3,546	$147.76	2
Street Lights	$777,185	2.86%	$14,207	$0.09	12,997
USL	$53,096	0.20%	$971	$0.17	482
Total	$27,206,027	100.00%	$497,314		67,115

Energy Probe-4

Ref: Manager's Summary, Pages 39 - 41

a) What is the basis of the customer figures by rate class shown in Tables 20 and 21?

RESPONSE

The customer figures by rate class shown in Tables 20 and 21 are those filed by CND in its December 31, 2013 RRR section 2.1.2 filing.

b) Please provide the most recent month available for the actual number of customers by rate class.

RESPONSE

Please see the table below for CND's September 30, 2014 actual number of customers by rate class, the most recent month available for the actual number of customers by rate class. Please also see CND's response to Board staff interrogatory 17 b).

Customer Class	Number of Customers/Connections as of September 30, 2014
Residential	46,989
GS <50 kW	4,783
GS >50 to 999	694
GS 1000 to 4999	24
Large User	2
Embedded	2
Street Lights	12,903
USL	481
Total	65,878

c) Does CND have a forecast of the number of customers by rate class at May 1, 2015 and April 30, 2016? If yes, please provide a table.

RESPONSE

Please see the table below for CND's forecast of the number of customers by rate class at May 1, 2015. A forecast is not presently available for April 30, 2016.

Customer Class	Forecasted Number of Customers/Connections as of May 1, 2015
Residential	47,301
GS <50 kW	4,767
GS >50 to 999	692
GS 1000 to 4999	25
Large User	2
Embedded	2
Street Lights	12,903
USL	484
Total	66,176

d) Please confirm that CND will track the revenue received through the Z-factor rate rider by rate class and at the end of the proposed clearance period, the balance in the account, by rate class, will be cleared to the customers in each of the rate classes. If this cannot be confirmed, please explain.

RESPONSE

As explained in CND's response to Board staff Interrogatory 24, it is CND's intension to recover only the Board approved costs and carrying charges related to the 2013 Ice Storm. Consistent with the recent OEB decision with respect to Milton Hydro's Z-factor application, which was also related to the 2013 Ice Storm (EB-2014-0162), CND

proposes to transfer the approved balance from Account 1572 “Extraordinary Event Costs” to a separate sub-account of Account 1595. The use of Account 1595 “Disposition and Recovery of Regulatory Balances Control Account” will allow the difference between the approved Z-factor amount and the actual amount collected from the final rate riders to be tracked and ultimately to be refunded to or recovered from customers.

RESPONSES TO VULNERABLE ENERGY CONSUMERS COALITION INTERROGATORIES

VECC-1

Ref: Application, Page 19

Preamble: CND is requesting recovery of $282,127 in LRAMVA including forecast carrying charges of $7,291 resulting from CDM activities in 2013, from 2011, 2012 and 2013 programs.

a) Please confirm CND has not recovered any of the LRAM amounts proposed for recovery in this application in a previous application.

RESPONSE

CND confirms that it has not recovered any of the LRAM amounts proposed for recovery in this application in a previous application.

b) Please provide the CDM component by customer class included in the load forecast that underpins the rates used to calculate the lost revenue in 2013.

RESPONSE

Please refer to CND's response to Board staff Interrogatory 9. a.

VECC-2

Ref 1: Application, Page 20, lines 11-13
Ref 2: Application, Page 22, Table 9 Detailed Calculation of Lost Revenue

Preamble:
At reference #1, CND provides the net energy savings for 2013 for all rate classes calculated by the OPA as 31,718,079 kWhs comprised of 2011, 2012 and 2013 programs based on the OPA's 2013 Draft Verified Results. CND indicates these amounts were used to determine the lost revenue amount of $278,853 split between all customer classes.

At reference #2, the total KWh used in the LRAMVA calculation is shown as 4,279,395.

a) Please explain the difference in kWh between reference #1 (31,718,079) and #2 (4,279,395) and compare to the kWh used in the calculation.

RESPONSE

The kWhs in reference #1 (31,718,079) are the Net Incremental Energy Savings across all customer classes as per the OPA's 2013 Draft Verified Results.

The kWhs in reference #2 (4,279,395) are the Net Incremental Energy Savings applicable only to the Residential and General Service <50 customer classes and are part of the total of 31,718,079 kWhs.

LRAM is calculated by applying the applicable distribution volumetric rate to either kWhs or kWs depending on the unit upon which distribution charges are applied for each customer class. In the Residential and General Service < 50 kW classes the applicable measure is kWhs. The other classes (General Service > 50 – 999 kW, General Service > 1 MW and the Large Use class) are billed for distribution revenue on the basis of kWs and not kWhs. CND has shown either kWhs or kWs depending on the customer class.

b) Please explain how the total kW provided in the OPA's 2013 Draft Verified Results relates to the total kWs used in Table 9 to calculate the lost revenue amount of $278,853 split between all customer classes.

RESPONSE

The method that CND used to calculate the lost revenue amount of $278,853 is consistent with the method used in its last two LRAM applications, including its most recent Cost of Service Rate Rebasing Application (EB-2013-0116) in which LRAM recoveries for 2011 and 2012 were approved.

The OPA provides both kWhs and kW savings by initiative. It is left to each individual utility to determine which customer class is affected and to what extent, by the initiatives noted by the OPA.

As a simple example, the Energy Manager initiative listed under the Industrial Program has been determined by CND to impact only the General Service > 1 MW customer class. The OPA figures for kWhs are not required for purposes of calculating the LRAM for this customer class as this customer class is billed for distribution revenue on the basis of kWs and not kWhs. The OPA figure of 33 kWs saved by this initiative in 2013 is multiplied by 12 months to arrive at a total kW saving of 396 kWs which is shown on Table 9 in the row described as 'Energy Manager' under the GS > 1MW class. This figure is then multiplied by the applicable distribution rates for this specific customer class to arrive at the lost revenue for this initiative program within this customer class of $1,268.50.

Other initiatives are not as simple because in some cases the initiatives apply for multiple years and are applicable to more than one customer class.

A more complex example may be helpful. The Retrofit initiative listed under the Business Program has been determined to impact the General Service 50 – 999 kW class to the extent of 80%, the General Service 1,000 - 4,999 kW class by 15% and the Large Use class by 5%. Using the year 2012 as an example, the OPA 2013 Draft Verified Results indicate that 1,203 kWs have been saved. CND allocates 962 kW, 180 kW and 60 kW to the classes noted above at the noted percentages. The figure of 962 kW as an example is multiplied by 12 to indicate the savings each month and the total

of 11,544 kW is shown on Table 9 in the row described as 'Retrofit annual' under the General Service 50 – 999 kW class applicable to the year 2012. This figure of 11,544 kW is then combined with the results from this initiative for this customer class for the years 2011 and 2013 and the total figure is then multiplied by the applicable rates for this specific customer class to arrive at the lost revenue for this initiative within this customer class.

Not all initiative results are considered to have occurred each month as the examples above indicate.

For example, the Demand Response 3 initiative listed under the Business Program has been determined to impact the General Service 50 – 999 kW customer class by 70% and the General Service 1,000 – 4,999 kW class by 30%. For 2011 therefore, the 180 kW shown in the OPA 2013 Draft Verified results are allocated 126 kW and 54 kW respectively. These figures are not multiplied by 12 months but are included as if they occurred only once during a year. The result of 126 kW is then combined with the Demand Response 3 initiative listed under the Industrial Program (which has been allocated in the same 70%/30% manner). The total of 544 kW saved indicated on the OPA Draft Verified Results in 2011 in the Demand Response 3 under the Industrial program has 70% or 381 kW allocated to this class. The figure of 381kW plus 126 kW equals 507 kW, the figure shown on CND's Table 9 under 2011 Programs on the Demand Response line within the General Service > 50 – 999 kW customer class. This figure of 507 kW is then combined with the results from this initiative for this customer class for the years 2012 and 2013 and the total figure is then multiplied by the applicable rates for this specific customer class to arrive at the lost revenue for this initiative program within this customer class.

c) Please provide the updated net energy kWh and kW savings for 2013 for 2011, 2012 and 2013 programs based on the OPA's 2013 Final Verified Results.

RESPONSE

As per the OPA's 2013 Final Verified Results, please see the Table below that provides the updated net energy kWh and kW saving for 2013 for 2011, 2012 and 2013 programs based on the OPS's 2013 Final Verified results.

Program Year	kWhs	kW
2011	12,936,504	3,264
2012	7,910,359	2,530
2013	10,952,449	3,211
Total for 2013	31,799,312	9,005

d) Please provide a copy of the OPA's 2013 Final Verified Results.

RESPONSE

Please see CND's response to Board staff Interrogatory 8 a.

e) Please update Table 9 to reflect the OPA's 2013 Final Verified Results.

RESPONSE

Please see CND's response to Board staff Interrogatory 8 a.

VECC-3
Ref: Application, Page 20, lines 19-22

Preamble: CND has calculated the LRAM amounts and associated carrying charges applied to the LRAMVA on the assumption that lost revenues were lost evenly and consistently throughout the year in 2013.

a) Please explain this statement and approach more fully.

RESPONSE

The OPA Results are provided to utilities on a full year, annual basis with no further details, providing no alternative than to assume that lost revenues were lost evenly and consistently throughout any year and in this particular application, the year 2013.

b) Please discuss CND's views on applying a half year rule to CDM savings in 2013 from 2013 CDM programs.

RESPONSE

The method of calculation that CND used in this application with respect to 2013 CDM programs, is consistent with the methodology used and approved in its most recent Cost of Service Rate Rebasing Application (EB-2013-0116) in which CND calculated its LRAMVA for 2011 and 2012.

CND reviewed the Guidelines for Electricity Distributor Conservation and Demand Management (EB-2012-0003) dated April 26, 2012 (the "Guidelines") and could find no reference to a half year rule for CDM savings in the area specifically devoted to the LRAM and its application. On page 12 of the Guidelines, entitled LRAM Mechanism for 2011 – 2014, it states:

> *'The Board will authorize the establishment of an LRAM variance account ("LRAMVA") to capture, at the customer rate-class level, the difference between the following:*

i. The results of actual, verified impacts of authorized CDM activities undertaken by electricity distributors between 2011 – 2014 for both Board-Approved CDM programs and OPA-Contracted Province-Wide CDM programs in relation to activities undertaken by the distributor and/or delivered for the distributor by a third party under contract (in the distributor's franchise area): and

ii. The level of CDM program activities included in the distributor's load forecast.

CND has followed the Guidelines and has used the OPA 2013 Final Verified Results to calculate its LRAMVA for 2013.

VECC-4
Ref: Application, Page 21 Table 9 Detailed Calculation of Lost Revenue

a) Please confirm that the kW savings values reported for the Demand Response 3 program are contracted values and not actual demand reductions in each year.

RESPONSE

CND confirms that the savings values reported for the Demand Response 3 (DR3) Program are contracted values and not actual measured demand reductions in each year.

b) Does CND have any record as to how much actual demand reduction was achieved in each year due to the Demand Response 3 program? If so, how much was the actual demand reduction in each year and was the demand reduction coincident with the peak interval used to establish the customers' billing demands?

RESPONSE

CND does not have any record as to how much demand reduction was actually achieved in each year, nor whether the demand reduction was coincident with the peak interval used to establish the customers' billing demands.

Under the DR3 Program, participants agree to make a firm commitment to reduce their demand during periods of peak demand when called upon to do so. Financial set-offs are applied for failure to reduce demand during an activation.

Actual participant performance during a DR3 activation event is confidential and data is not made publicly available. The expectation is that participants will meet their contractual obligation to reduce demand, thereby avoiding the financial consequences of not performing. The OPA will adjust its estimate of actual demand reductions based on past history to reflect overall performance as accurately as possible.

The OPA reports Net Peak Demand Savings in their final annual report provided to LDCs. The reductions reported by the OPA are the best data available for use in calculating the lost revenue.

CND is aware of recent OEB Decisions regarding LRAMVA claims and notes the Board comments made in the PowerStream Inc. Decision (EB-2014-0108) from page 6 as follows:

"While VECC's argument may have some merit with respect to the uncertainty of DR3 program results, the Board stands by the OPA's estimated benefits of these programs. The Board also notes that it has been consistent in accepting the OPA's analysis and

conclusions with respect to CDM results, and in the case of the DR3 programs, has awarded the full LRAMVA amount as claimed by other distributors".

Z-Factor Claim

VECC-5

Ref: Application, Page 24

Preamble: CND is applying for recovery of a total Z-Factor claim of $497,314 including carrying charges of $9,520.

a) Please confirm that all regular payroll costs and the associated truck costs are deducted from the total cost claim.

RESPONSE

CND confirms that all regular payroll costs and the associated truck costs were deducted from the total cost claim.

b) Please confirm all of the costs in the Z-Factor claim were incurred in 2013.

RESPONSE

CND confirms that not all of the costs in the Z-Factor claim were incurred in 2013. Charges incurred in the first few weeks of January 2014 related to the clean-up, totalled $10,850 for subcontractors and $1,682 for overtime labour for a total of $12,532 or less than 3% of the total costs.

c) Please confirm CND followed its corporate policies regarding employee allowances for meals and accommodations.

RESPONSE

CND confirms that its corporate policies regarding employee allowances for meals and accommodations were followed as per the Corporate Emergency Plan Section 2.3.1.6.

VECC-6

Ref: Application, Page 25

Preamble: CND indicates restoration costs incurred by CND staff during CND's regular work days (Monday Dec 23, the morning of Tuesday Dec 24, Friday Dec 27, 2013 and certain days in the following week) have not been included in the claim.

a) Please provide the actual days in the following week that have not been included in the claim.

RESPONSE

The regular hours worked in the following week that were not included in the claim were December 30th, one half day December 31st, 2013, January 2nd and 3rd, 2014.

b) Please explain why work on the afternoon of Tuesday December 24, 2013 has been included in the claim and provide the $ amount.

RESPONSE

The afternoon of Christmas Eve, December 24 each year is a Recognized Holiday for CND employees. Any work done before or after an employee's regular half day shift on that day is paid at overtime rates. The dollar amount of overtime hours worked on December 24, 2013 was $28,496.

c) Please provide the total number of hours and total $ amount of the regular hours not included in the claim.

RESPONSE

Please see CND's response to Board Staff Interrogatory 13 d.

The total regular hours worked by certain CND Operation staff in the restoration effort and recorded into the 2013 Ice Storm work order, were 748 hours, representing $39,323. Such costs were not included in the Z-Factor claim.

VECC-7

Ref: Page 36 Table 17 Total Subcontractor Costs

a) For each of the companies listed in Table 17, please provide a further breakdown of costs into the categories of labour, materials, accommodations, meals, truck and other (provide explanation).

RESPONSE

Please refer to the table below which provides the requested breakdown of costs, where available.

In some cases, the invoices provided by the subcontractor did not break the information down in the manner requested in this interrogatory. For example some subcontractors invoiced for labour and equipment at one combined rate, with no breakdown of individual labour and equipment costs and rates. In such cases, CND included the costs as labour costs.

The 'other' category represents fill and water and dumps required by Badger Daylighting Inc. to excavate the holes for the replacement poles.

Description	Dundas Power Line Ltd.	D.L. Hannon Inc.	Southwest Power Corp.	Davey Tree Expert Co. of Canada	Valard Construction LP	Bluewater Power Services Corp.	Badger Daylighting Inc.	St. Thomas Energy	Folmur Construction Ltd.	Total
Labour	$82,070	$48,208	$32,356	$41,979	$21,855	$16,568	$9,053	$5,460	$468	$258,015
Materials	$0	$0	$0	$0	$0	$0	$0	$716	$0	$716
Accommodations	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Meals	$2,040	$0	$0	$0	$0	$0	$0	$0	$0	$2,040
Truck	$22,751	$8,298	$11,772	$0	$9,610	$1,893	$200	$780	$0	$55,304
Other	$0	$0	$0	$0	$0	$0	$666	$0	$0	$666
Total	$106,861	$56,506	$44,128	$41,979	$31,465	$18,461	$9,919	$6,956	$468	$316,740

VECC-8

Ref: Page 37 Table 18 Material Costs

a) Please confirm the materials acquired were at normal rates from regular suppliers.

RESPONSE

CND confirms that the materials acquired were at normal rates from regular suppliers.

b) If not, please explain and provide a breakdown and explanation of the premium paid.

RESPONSE

Not applicable.

VECC-9

Ref: Page 33 Table 14 Total Overtime Labour and Vehicles

Preamble: CND indicates $15,105 related to overtime for supervisory staff is included in the overtime hours and costs in Table 14.

a) Please confirm the employee group for supervisory staff.

RESPONSE

The seven (7) supervisory staff that worked overtime at various times during the 2013 Ice Storm and were included in the $15,105 noted in the application, were from a variety of departments including Customer Care/Billing, Purchasing/Stores, Control Room, Operations and Station Maintenance.

CND notes that the Leadership team members (Vice-Presidents) who worked overtime during the 2013 Ice Storm were not paid for their overtime hours worked.

b) Please provide CND's policies regarding non-union and management over time and include any written policies.

RESPONSE

CND does not have a formal policy regarding non-union and management overtime. CND does however have a Management Overtime Philosophy and Intent that was developed in May 2013. The document is attached as Appendix F.

The document stipulates that –

1. **All** overtime must be reviewed and approved by the Vice President / CFO in advance of an employee working.

2. Unplanned or additional time to complete work is part of the role and responsibility of a Management employee. This time is not compensated. There is flexibility along with mutual give and take that would recognize the extra time and effort. If this time is spent to work on milestones then this is part of the stretch expectation.

3. ***Emergency Overtime – Defined as "an unexpected and sudden event that must be dealt with urgently***".

   This will be reimbursed at two times earnings if the employee is required to come into work. The rational is that employees will be working with Union personnel and should be compensated equally. All time worked will be recorded on the individual's timesheet and recorded in payroll. Overtime will be tracked and reviewed monthly

c) Please discuss how supervisory staff overtime was treated in the past 3 years.

RESPONSE

Please note the response in b) above with respect to no formal policy for payment of overtime for supervisory staff.

In the past 3 years the practice and procedure for payment of non-union and management overtime has been consistently exercised. Overtime is paid if a non-union or management employee is called out from home in an emergency where supervision or work is deemed to be required or for a planned overtime situation where a Supervisor is required. CND has typically allowed the employee to determine if they would prefer to be paid for the time spent at two times their rate or alternatively, the employee can accrue hours spent as lieu and / or flex time to be taken at a later date.

VECC-10

Ref: Page 36, Table 17 Total Subcontractor Costs

Preamble: CND indicates subcontractors charged emergency overtime rates and Statutory Holiday rates based on existing or previously established rates for both workers and equipment.

a) Please compare emergency overtime rates to Statutory Holiday rates for each applicable company.

RESPONSE

The table below compares emergency overtime rates to Statutory Holiday rates for each applicable company.

Company	Emergency Overtime Rate	Statutory Holiday Rate
Dundas Power Line Ltd.	Double Time	Double Time
D. L. Hannon Inc.	Double Time	Triple Time
Southwest Power Corporation	Double Time	Not applicable
Davey Tree Expert Co. of Canada Ltd.	Time and a Half	Double Time
Valard Construction LP	Double Time	Not applicable
Bluewater Power Services Corp.	Not applicable	Double Time
Badger Daylighting Inc.	Unit Price	Unit Price
St. Thomas Energy Inc.	Double Time	Double Time
Folmur Construction Ltd.	Unit Price	Not applicable

Note
Not applicable - indicates that the contractor did not work during this time frame.
Unit Price - indicates a standard cost for the type of work completed.

b) Please discuss how existing and previously established rates have been determined and identify the companies with existing and previously established rates.

RESPONSE

Existing and previously established rates with contractors have been determined through a tendering process that is required as per the corporate policy Purchasing and Contracts Policy Section 5.2. Companies with existing and previously established rates are Davey Tree Expert Co. of Canada Ltd. and Folmur Construction Ltd.
Since the storm covered a large area of Southern Ontario, CND's main concern was procuring contractor crews to assist in the restoration of the electrical distribution system before the contractor crews were seconded to other utilities in the area. At the initial contact with the contractors, CND's paramount concern was their availability, and contractor rates were not discussed at that time.

c) For each of the companies listed in Table 17 please provide their overtime rate (i.e. time and a half, double time, etc.)

RESPONSE

Please see the response to part a) of this interrogatory for the overtime rate (ie. time and a half, double time, etc.) for each of the companies listed in Table 17.

d) Please discuss if CND paid any other premiums to the companies in Table 17 and provide details.

RESPONSE

CND confirms that it did not pay any other premiums to the companies in Table 17.

e) Please list the companies in Table 17 that have existing contracts in place with CND to provide services.

RESPONSE

The companies in Table 17 that have existing contracts in place with CND to provide services are Davey Tree Expert Co. of Canada Ltd. and Folmur Construction Ltd.

f) Please discuss if overtime rates were charged by subcontractors for work undertaken on Monday December 23, 2013 and/or December 27-31, 2013 and provide the value of this work.

RESPONSE

CND had little choice in determining the rates charged by contractors during this timeframe, as CND required additional resources to restore power to customers. The contractors charged overtime rates for working non-regular hours, since the contractors were to be closed during the week of December 23 to 27, 2013 and the crews were on scheduled time off until their regularly scheduled work days began in January 2014.

A ‘0’ in the table below indicates that the subcontractor either did not work on that particular day or time period, or in the case of Badger Daylighting Inc., they charged their standard rate and did not charge overtime rates.

Subcontractors that charged overtime rates on Monday December 23, 2013 and/or December 27-31, 2013 and the value of this work are shown in the following table.

Company	Work performed ($) on Monday December 23, 2013	Work performed ($) on December 27-31, 2013
Dundas Power Line Ltd.	25,526	0
D. L. Hannon Inc.	0	0
Southwest Power Corporation	17,851	0
Davey Tree Expert Co. of Canada Ltd.	5,225	2,339
Valard Construction LP	0	0
Bluewater Power Services Corp.	0	0
Badger Daylighting Inc.	0	0
St. Thomas Energy Inc.	1,680	0
Folmur Construction Ltd.	0	0
Totals	50,282	2,339

VECC-11

a) Please provide CND's tree trimming cycle.

RESPONSE

CND's tree trimming cycle is a four year cycle for both the City of Cambridge and the Township of North Dumfries.

b) Please provide CND's vegetation management budget and actuals for the years 2010 to 2014 and explain any variances greater than 10%.

RESPONSE

CND's vegetation management budget and actuals for the years 2010 to 2014 are shown below, as well as the explanations for any variances greater than 10%.

Year	Budget	Actuals	Variance	Explanation
2010	418,971	313,360	-25.2%	Contractor prices for tree trimming were lower than anticipated in the budget. Fewer storm related tree problems resulted in savings in labour and trucking costs.
2011	376,918	254,435	-32.5%	Through the year there were various storm situations where CND lost contractor crews to other utilities that required assistance in restoring power to customers. Since no additional contractor crews were available due to storm work, crew time was also lost in completing work on capital projects.
2012	330,617	332,661	+0.6%	
2013	322,770	277,214	-14.1%	In this year CND experienced an ice storm in April, and a severe wind storm in July. Once again contractor tree trimming crews were sent to various electrical utilities in Southern Ontario at these times to assist in power restorations. Thus CND lost crews to these restoration efforts, and had to complete work on capital projects with fewer resources.
2014	343,089	303,071	-11.7%	CND anticipates being within a 10% variance by year end.

Appendix A

OPA's 2013 Final Verified Results

Message from the Vice President:

The OPA is pleased to provide you with the enclosed Final 2013 Verified Results Report.

2013 Report highlights:

- We have achieved 86% of our cumulative energy savings target and 48% of our annual peak demand savings target to date (Scenario 2).

  By the end of 2013, 42 LDCs have exceeded 80% of their energy target and 19 LDCs have met or exceeded their 2011-14 energy target.
- In 2013, LDCs have achieved over 600 GWh in savings, representing an increase of 20% over the 2012 net incremental energy savings results.
- The BUSINESS PROGRAM continues to generate strong interest and participation amongst business customers with significant savings results. 71% of total energy savings in 2013 came from the BUSINESS PROGRAM and its momentum continues. Also, as the program matures, we are seeing more and more studies in the PROCESS AND SYSTEMS pipeline converting to completed projects.
- Within 4 cents per kWh, Conservation programs continue to be a valuable and cost effective resource for customers across the province.

2013 has been a year of significant operational advancements centered around creating a better customer and LDC experience:

- A number of operational changes were made in 2013 to enhance processes, such as payment of LDC invoices streamlined to an average of 20 days, enhanced reporting and iCon updates to improve users' experience.
- Proactive updates to measures incentivized through saveONenergy have allowed programs to stay ahead of changing market conditions. Specifically in 2013, LEDs became popular measures in both the Consumer and Business programs.
- Technical tools also played a significant role in 2013, which included an updated Measure and Assumptions List as well as new and improved engineering worksheets for RETROFIT which allow customers to more easily access programs by building strong business cases based on latest estimates of savings potential.
- The Conservation Fund introduced the LDC Fast Track stream to support LDCs with innovative program ideas. 2013 LDC pilots included Oshawa PUC Networks Inc.'s retro-commissioning program, Toronto Hydro-Electric System Limited multi-unit demand response, and Niagara-on-the-Lake Hydro Inc.'s electric vehicles load shifting program.
- Key market sectors were also engaged in 2013 through Capability Building programs targeted at Home Builders and HVAC Installers to build conservation knowledge with these partners. Energy Efficiency Services Programs (EESPs) also provided valuable support to a variety of sectors.

The format of this report was developed in collaboration with the Reporting Working Group and is designed to help LDCs populate their 2013 Annual Reports that will be submitted to the OEB by September 30th. Any additional 2013 program activity not captured here will be reported in your Final 2014 Verified Results Report.

Please continue to monitor saveONenergy E-blasts for any further updates and should you have any other questions or comments please contact LDC.Support@powerauthority.on.ca.

We appreciate your ongoing collaboration and cooperation throughout the reporting and evaluation process. We look forward to another successful year in 2014.

Sincerely,

Andrew Pride

Table of Contents

OPA-Contracted Province-Wide CDM Programs Final Verified 2013 Results

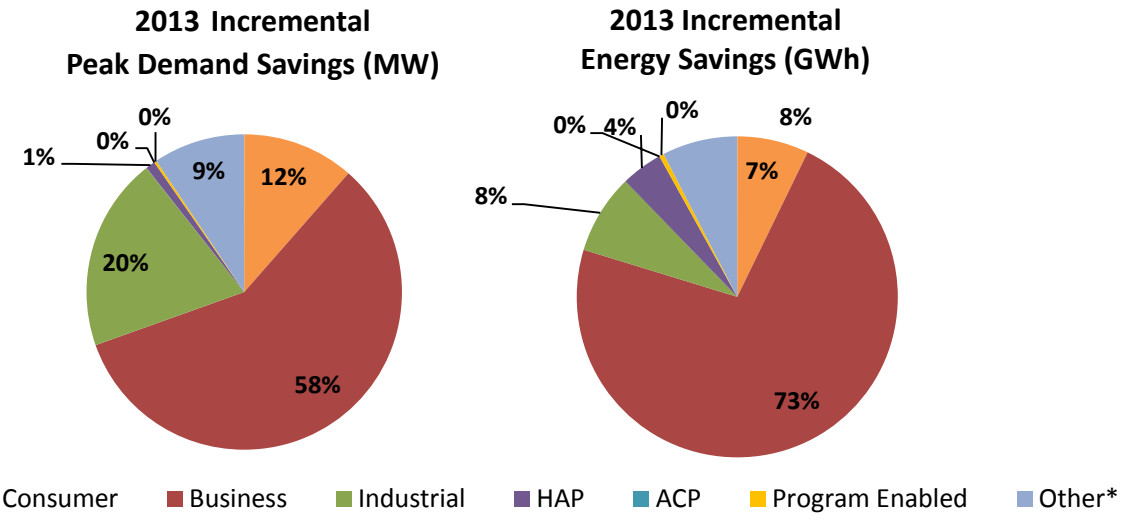
LDC: Cambridge and North Dumfries Hydro Inc.

FINAL 2013 Progress to Targets	2013 Incremental	Program-to-Date Progress to Target (Scenario 1)	Scenario 1: % of Target Achieved	Scenario 2: % of Target Achieved
Net Annual Peak Demand Savings (MW)	3.2	6.3	**35.9%**	**41.1%**
Net Energy Savings (GWh)	11.0	98.2	**133.3%**	**133.3%**

Scenario 1 = Assumes that demand response resources have a persistence of 1 year

Scenario 2 = Assumes that demand response resources remain in the LDC service territory until 2014

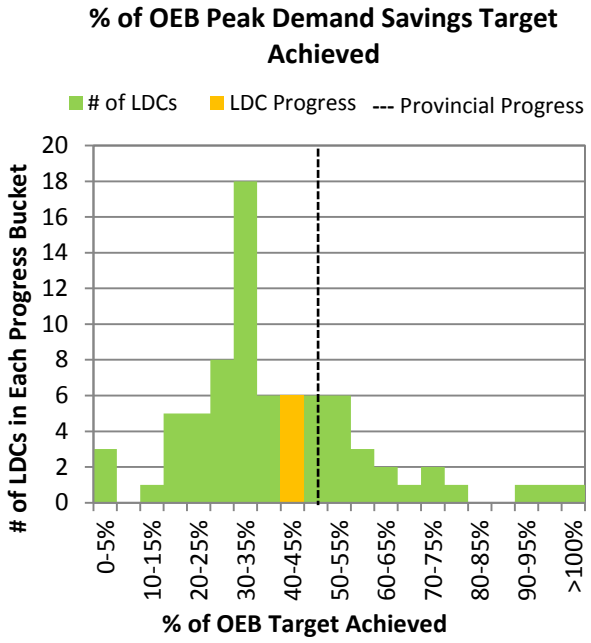
Achievement by Sector



**Other includes adjustments to previous years' results and savings from pre-2011 initiatives*

Comparison: LDC Achievement vs. LDC Community Achievement (Progress to Target)

The following graphs assume that demand response resources remain in the LDC service territory until 2014 (aligns with Scenario 2)



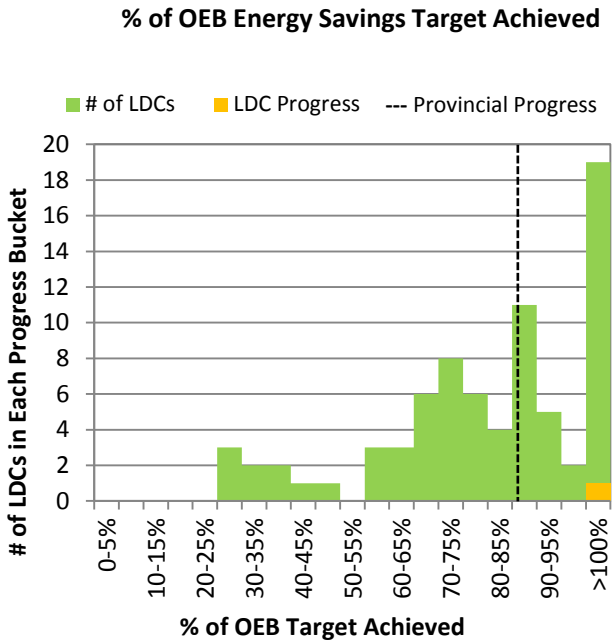


Table 1: Cambridge and North Dumfries Hydro Inc. Initiative and Program Level Net Savings by Year (Scenario 1)

Initiative	Unit	Incremental Activity (new program activity occurring within the specified reporting period)				Net Incremental Peak Demand Savings (kW) (new peak demand savings from activity within the specified reporting period)				Net Incremental Energy Savings (kWh) (new energy savings from activity within the specified reporting period)				Program-to-Date Verified Progress to Target (excludes DR)	
														2014 Net Annual Peak Demand Savings (kW)	2011-2014 Net Cumulative Energy Savings (kWh)
		2011*	2012*	2013	2014	2011	2012	2013	2014	2011	2012	2013	2014	2014	2014
Consumer Program															
Appliance Retirement	Appliances	440	175	98		24	9	6		175,906	67,918	42,616		39	992,405
Appliance Exchange	Appliances	23	25	51		2	4	11		2,690	6,491	18,841		15	66,564
HVAC Incentives	Equipment	978	1,114	1,347		359	248	285		670,601	428,617	489,074		891	4,946,402
Conservation Instant Coupon Booklet	Items	4,891	296	3,322		11	2	5		179,901	13,391	73,819		18	907,418
Bi-Annual Retailer Event	Items	9,119	10,161	9,049		16	14	11		281,459	256,502	164,540		42	2,224,422
Retailer Co-op	Items	0	0	0		0	0	0		0	0	0		0	0
Residential Demand Response	Devices	82	0	131		46	0	50		0	0	129		0	129
Residential Demand Response (IHD)	Devices	0	0	0		0	0	0		0	0	0		0	0
Residential New Construction	Homes	0	0	0		0	0	0		0	0	0		0	0
Consumer Program Total						**458**	**277**	**369**		**1,310,556**	**772,919**	**789,021**		**1,006**	**9,137,341**
Business Program															
Retrofit	Projects	23	117	146		256	1,203	1,377		1,336,743	6,206,217	7,268,169		2,807	38,367,969
Direct Install Lighting	Projects	123	108	39		158	95	54		398,982	356,510	188,436		277	2,958,535
Building Commissioning	Buildings	0	0	0		0	0	0		0	0	0		0	0
New Construction	Buildings	0	0	2		0	0	60		0	0	337,062		60	674,125
Energy Audit	Audits	0	1	3		0	5	26		0	25,176	145,352		32	366,233
Small Commercial Demand Response	Devices	1	0	1		1	0	1		0	0	1		0	1
Small Commercial Demand Response (IHD)	Devices	0	0	0		0	0	0		0	0	0		0	0
Demand Response 3	Facilities	3	3	4		180	180	346		7,018	2,621	5,215		0	14,854
Business Program Total						**595**	**1,483**	**1,864**		**1,742,744**	**6,590,523**	**7,944,236**		**3,176**	**42,381,718**
Industrial Program															
Process & System Upgrades	Projects	0	0	1		0	0	80		0	0	691,097		80	1,382,194
Monitoring & Targeting	Projects	0	0	0		0	0	0		0	0	0		0	0
Energy Manager	Projects	0	0	9		0	0	33		0	0	175,934		11	208,180
Retrofit	Projects	22	0	0		466	0	0		3,083,118	0	0		466	12,332,473
Demand Response 3	Facilities	6	7	4		544	705	525		31,908	16,979	11,952		0	60,838
Industrial Program Total						**1,009**	**705**	**637**		**3,115,026**	**16,979**	**878,983**		**557**	**13,983,684**
Home Assistance Program															
Home Assistance Program	Homes	0	14	1,041		0	1	31		0	11,421	458,390		32	948,352
Home Assistance Program Total						**0**	**1**	**31**		**0**	**11,421**	**458,390**		**32**	**948,352**
Aboriginal Program															
Home Assistance Program	Homes	0	0	0		0	0	0		0	0	0		0	0
Direct Install Lighting	Projects	0	0	0		0	0	0		0	0	0		0	0
Aboriginal Program Total						**0**	**0**	**0**		**0**	**0**	**0**		**0**	**0**
Pre-2011 Programs completed in 2011															
Electricity Retrofit Incentive Program	Projects	64	0	0		1,191	0	0		6,710,956	0	0		1,191	26,843,823
High Performance New Construction	Projects	2	0	0		11	1	0		57,223	1,049	0		12	232,038
Toronto Comprehensive	Projects	0	0	0		0	0	0		0	0	0		0	0
Multifamily Energy Efficiency Rebates	Projects	0	0	0		0	0	0		0	0	0		0	0
LDC Custom Programs	Projects	0	0	0		0	0	0		0	0	0		0	0
Pre-2011 Programs completed in 2011 Total						**1,202**	**1**	**0**		**6,768,179**	**1,049**	**0**		**1,203**	**27,075,862**
Other															
Program Enabled Savings	Projects	0	1	1		0	0	8		0	0	51,500		8	103,000
Time-of-Use Savings	Homes	0	0	0		0	0	0		0	0	0		0	0
Other Total						**0**	**0**	**8**		**0**	**0**	**51,500**		**8**	**103,000**
Adjustments to 2011 Verified Results							**63**	**0**			**517,468**	**0**		**63**	**2,069,872**
Adjustments to 2012 Verified Results								**302**				**830,319**		**302**	**2,490,957**
Energy Efficiency Total						**2,494**	**1,582**	**1,988**		**12,897,579**	**7,373,292**	**10,104,833**		**5,981**	**93,554,134**
Demand Response Total (Scenario 1)						**770**	**885**	**921**		**38,926**	**19,599**	**17,297**		**0**	**75,822**
Adjustments to Previous Years' Verified Results Total						**0**	**63**	**302**		**0**	**517,468**	**830,319**		**365**	**4,560,829**
OPA-Contracted LDC Portfolio Total (inc. Adjustments)						**3,264**	**2,530**	**3,211**		**12,936,504**	**7,910,359**	**10,952,449**		**6,346**	**98,190,785**
													Full OEB Target:	**17,680**	**73,660,000**
													% of Full OEB Target Achieved to Date (Scenario 1):	**35.9%**	**133.3%**

Activity and savings for Demand Response resources for each year represent the savings from all active facilities or devices contracted since January 1, 2011 (reported cumulatively).

*Includes adjustments after Final Reports were issued

The IHD line item on the 2013 annual report has been left blank pending a results update from evaluations; results will be updated once sufficient information is made available.

Energy Manager, Aboriginal Program and Program Enabled Savings were not independently evaluated

Table 2: Adjustments to Cambridge and North Dumfries Hydro Inc. Net Verified Results due to Variances

Initiative	Unit	Incremental Activity (new program activity occurring within the specified reporting period)				Net Incremental Peak Demand Savings (kW) (new peak demand savings from activity within the specified reporting period)				Net Incremental Energy Savings (kWh) (new energy savings from activity within the specified reporting period)			
		2011*	2012*	2013	2014	2011	2012	2013	2014	2011	2012	2013	2014
Consumer Program													
Appliance Retirement	Appliances	0	0			0	0			0	0		
Appliance Exchange	Appliances	0	0			0	0			0	0		
HVAC Incentives	Equipment	-242	42			-70	9			-130,311	18,076		
Conservation Instant Coupon Booklet	Items	79	0			0	0			2,640	0		
Bi-Annual Retailer Event	Items	784	0			1	0			20,911	0		
Retailer Co-op	Items	0	0			0	0			0	0		
Residential Demand Response	Devices	0	0			0	0			0	0		
Residential Demand Response (IHD)	Devices	0	0			0	0			0	0		
Residential New Construction	Homes	0	0			0	0			0	0		
Consumer Program Total						**-69**	**9**			**-106,759**	**18,076**		
Business Program													
Retrofit	Projects	1	13			53	142			282,442	812,243		
Direct Install Lighting	Projects	5	0			4	0			8,048	0		
Building Commissioning	Buildings	0	0			0	0			0	0		
New Construction	Buildings	0	0			0	0			0	0		
Energy Audit	Audits	0	0			0	0			0	0		
Small Commercial Demand Response	Devices	0	0			0	0			0	0		
Small Commercial Demand Response (IHD)	Devices	0	0			0	0			0	0		
Demand Response 3	Facilities	0	0			0	0			0	0		
Business Program Total						**57**	**142**			**290,490**	**812,243**		
Industrial Program													
Process & System Upgrades	Projects	0	0			0	0			0	0		
Monitoring & Targeting	Projects	0	0			0	0			0	0		
Energy Manager	Projects	0	0			0	0			0	0		
Retrofit	Projects	0	0			0	0			0	0		
Demand Response 3	Facilities	0	0			0	0			0	0		
Industrial Program Total						**0**	**0**			**0**	**0**		
Home Assistance Program													
Home Assistance Program	Homes	0	0			0	0			0	0		
Home Assistance Program Total						**0**	**0**			**0**	**0**		
Aboriginal Program													
Home Assistance Program	Homes	0	0			0	0			0	0		
Direct Install Lighting	Projects	0	0			0	0			0	0		
Aboriginal Program Total						**0**	**0**			**0**	**0**		
Pre-2011 Programs completed in 2011													
Electricity Retrofit Incentive Program	Projects	0	0			0	0			0	0		
High Performance New Construction	Projects	1	0			75	0			333,737	0		
Toronto Comprehensive	Projects	0	0			0	0			0	0		
Multifamily Energy Efficiency Rebates	Projects	0	0			0	0			0	0		
LDC Custom Programs	Projects	0	0			0	0			0	0		
Pre-2011 Programs completed in 2011 Total						**75**	**0**			**333,737**	**0**		
Other													
Program Enabled Savings	Projects	0	1			0	151			0	0		
Time-of-Use Savings	Homes	0	0			0	0			0	0		
Other Total						**0**	**151**			**0**	**0**		
Adjustments to 2011 Verified Results						**63**				**517,468**			
Adjustments to 2012 Verified Results							**302**				**830,319**		
Total Adjustments to Previous Years' Verified Results						**63**	**302**			**517,468**	**830,319**		

Activity and savings for Demand Response resources for each year represent the savings from all active facilities or devices contracted since January 1, 2011 (reported cumulatively).

The IHD line item on the 2013 annual report has been left blank pending a results update from evaluations; results will be updated once sufficient information is made available.

Adjustments to previous years' results shown in this table will not align to adjustments shown in Table 1 as the information presented above does not consider persistence of savings

Table 3: Cambridge and North Dumfries Hydro Inc. Realization Rate & NTG

Initiative	Peak Demand Savings								Energy Savings							
	Realization Rate				Net-to-Gross Ratio				Realization Rate				Net-to-Gross Ratio			
	2011	2012	2013	2014	2011	2012	2013	2014	2011	2012	2013	2014	2011	2012	2013	2014
Consumer Program																
Appliance Retirement	1.00	1.00	n/a		0.50	0.46	0.42		1.00	1.00	n/a		0.51	0.46	0.44	
Appliance Exchange	1.00	1.00	1.00		0.52	0.52	0.53		1.00	1.00	1.00		0.52	0.52	0.53	
HVAC Incentives	1.00	1.00	n/a		0.60	0.50	0.48		1.00	1.00	n/a		0.60	0.49	0.48	
Conservation Instant Coupon Booklet	1.00	1.00	1.00		1.14	1.00	1.11		1.00	1.00	1.00		1.11	1.05	1.13	
Bi-Annual Retailer Event	1.00	1.00	1.00		1.13	0.91	1.04		1.00	1.00	1.00		1.10	0.92	1.04	
Retailer Co-op	n/a	n/a	n/a		n/a	n/a	n/a		n/a	n/a	n/a		n/a	n/a	n/a	
Residential Demand Response	n/a	n/a	n/a		n/a	n/a	n/a		n/a	n/a	n/a		n/a	n/a	n/a	
Residential Demand Response (IHD)	n/a	n/a	n/a		n/a	n/a	n/a		n/a	n/a	n/a		n/a	n/a	n/a	
Residential New Construction	n/a	n/a	n/a		n/a	n/a	n/a		n/a	n/a	n/a		n/a	n/a	n/a	
Business Program																
Retrofit	0.93	0.96	0.97		0.74	0.74	0.72		1.28	1.04	1.03		0.76	0.74	0.74	
Direct Install Lighting	1.08	0.68	0.81		0.93	0.94	0.94		0.90	0.85	0.84		0.93	0.94	0.94	
Building Commissioning	n/a	n/a	n/a		n/a	n/a	n/a		n/a	n/a	n/a		n/a	n/a	n/a	
New Construction	n/a	n/a	0.58		n/a	n/a	0.54		n/a	n/a	0.92		n/a	n/a	0.54	
Energy Audit	n/a	n/a	1.02		n/a	n/a	0.66		n/a	n/a	0.97		n/a	n/a	0.66	
Small Commercial Demand Response	n/a	n/a	n/a		n/a	n/a	n/a		n/a	n/a	n/a		n/a	n/a	n/a	
Small Commercial Demand Response (IHD)	n/a	n/a	n/a		n/a	n/a	n/a		n/a	n/a	n/a		n/a	n/a	n/a	
Demand Response 3	0.76	n/a	n/a		n/a	n/a	n/a		1.00	n/a	n/a		n/a	n/a	n/a	
Industrial Program																
Process & System Upgrades	n/a	n/a	1.04		n/a	n/a	0.94		n/a	n/a	1.04		n/a	n/a	0.93	
Monitoring & Targeting	n/a	n/a	n/a		n/a	n/a	n/a		n/a	n/a	n/a		n/a	n/a	n/a	
Energy Manager	n/a	n/a	0.90		n/a	n/a	0.90		n/a	n/a	0.90		n/a	n/a	0.90	
Retrofit																
Demand Response 3	0.84	n/a	n/a		n/a	n/a	n/a		1.00	n/a	n/a		n/a	n/a	n/a	
Home Assistance Program																
Home Assistance Program	n/a	1.49	0.89		n/a	1.00	1.00		n/a	1.00	0.84		n/a	1.00	1.00	
Aboriginal Program																
Home Assistance Program	n/a	n/a	n/a		n/a	n/a	n/a		n/a	n/a	n/a		n/a	n/a	n/a	
Direct Install Lighting	n/a	n/a	n/a		n/a	n/a	n/a		n/a	n/a	n/a		n/a	n/a	n/a	
Pre-2011 Programs completed in 2011																
Electricity Retrofit Incentive Program	0.77	n/a	n/a		0.52	n/a	n/a		0.77	n/a	n/a		0.52	n/a	n/a	
High Performance New Construction	1.00	1.00	1.00		0.50	0.50	0.50		1.00	1.00	1.00		0.50	0.50	0.50	
Toronto Comprehensive	n/a	n/a	n/a		n/a	n/a	n/a		n/a	n/a	n/a		n/a	n/a	n/a	
Multifamily Energy Efficiency Rebates	n/a	n/a	n/a		n/a	n/a	n/a		n/a	n/a	n/a		n/a	n/a	n/a	
LDC Custom Programs	n/a	n/a	n/a		n/a	n/a	n/a		n/a	n/a	n/a		n/a	n/a	n/a	
Other																
Program Enabled Savings	n/a	n/a	1.00		n/a	n/a	1.00		n/a	n/a	1.00		n/a	n/a	1.00	
Time-of-Use Savings	n/a	n/a	n/a		n/a	n/a	n/a		n/a	n/a	n/a		n/a	n/a	n/a	

Energy Manager, Aboriginal Program and Program Enabled Savings were not independently evaluated

Summary Progress Towards CDM Targets

Results are attributed to target using current OPA reporting policies. Energy efficiency resources persist for the duration of the effective useful life. Any upcoming code changes are taken into account. Demand response resources persist for 1 year (Scenario 1). Please see methodology tab for more detailed information.

Table 4: Net Peak Demand Savings at the End User Level (MW) (Scenario 1)

Implementation Period	Annual			
	2011	2012	2013	2014
2011 - Verified	3.3	2.5	2.5	2.5
2012 - Verified†	0.1	2.5	1.6	1.6
2013 - Verified†	0.0	0.3	3.2	2.3
2014				
Verified Net Annual Peak Demand Savings Persisting in 2014:				6.3
Cambridge and North Dumfries Hydro Inc. 2014 Annual CDM Capacity Target:				17.7
Verified Portion of Peak Demand Savings Target Achieved in 2014 (%):				35.9%

Table 5: Net Energy Savings at the End User Level (GWh)

Implementation Period	Annual				Cumulative
	2011	2012	2013	2014	2011-2014
2011 - Verified	12.9	12.9	12.9	12.8	51.5
2012 - Verified†	0.5	7.9	7.9	7.8	24.1
2013 - Verified†	0.0	0.8	11.0	10.8	22.5
2014					
Verified Net Cumulative Energy Savings 2011-2014:					98.2
Cambridge and North Dumfries Hydro Inc. 2011-2014 Annual CDM Energy Target:					73.7
Verified Portion of Cumulative Energy Target Achieved in 2014 (%):					133.3%

†Includes adjustments to previous Years' verified results

Table 6: Province-Wide Initiatives and Program Level Net Savings by Year (Scenario 1)

Initiative	Unit	Incremental Activity (new program activity occurring within the specified reporting period)				Net Incremental Peak Demand Savings (kW) (new peak demand savings from activity within the specified reporting period)				Net Incremental Energy Savings (kWh) (new energy savings from activity within the specified reporting period)				Program-to-Date Verified Progress to Target (excludes DR)	
		2011*	2012*	2013	2014	2011	2012	2013	2014	2011	2012	2013	2014	2014 Net Annual Peak Demand Savings (kW) 2014	2011-2014 Net Cumulative Energy Savings (kWh) 2014
Consumer Program															
Appliance Retirement	Appliances	56,110	34,146	20,952		3,299	2,011	1,433		23,005,812	13,424,518	8,713,107		6,605	149,603,072
Appliance Exchange	Appliances	3,688	3,836	5,337		371	556	1,106		450,187	974,621	1,971,701		1,795	8,455,927
HVAC Incentives	Equipment	92,743	87,427	91,581		32,037	19,060	19,552		59,437,670	32,841,283	33,923,592		70,650	404,121,713
Conservation Instant Coupon Booklet	Items	567,678	30,891	346,896		1,344	230	517		21,211,537	1,398,202	7,707,573		2,091	104,455,900
Bi-Annual Retailer Event	Items	952,149	1,060,901	944,772		1,681	1,480	1,184		29,387,468	26,781,674	17,179,841		4,345	232,254,579
Retailer Co-op	Items	152	0	0		0	0	0		2,652	0	0		0	10,607
Residential Demand Response	Devices	19,550	98,388	171,733		10,947	49,038	93,076		24,870	359,408	390,303		0	774,582
Residential Demand Response (IHD)	Devices	0	49,689	133,657		0	0	0		0	0	0		0	0
Residential New Construction	Homes	26	19	86		0	2	18		743	17,152	163,690		20	381,811
Consumer Program Total						**49,681**	**72,377**	**116,886**		**133,520,941**	**75,796,859**	**70,049,807**		**85,506**	**900,058,189**
Business Program															
Retrofit	Projects	2,819	6,134	8,785		24,467	61,147	59,678		136,002,258	314,922,468	345,346,008		142,831	2,168,497,702
Direct Install Lighting	Projects	20,741	18,691	17,782		23,724	15,284	18,708		61,076,701	57,345,798	64,315,558		49,886	519,693,356
Building Commissioning	Buildings	0	0	0		0	0	0		0	0	0		0	0
New Construction	Buildings	22	69	86		123	764	1,584		411,717	1,814,721	4,959,266		2,472	17,009,564
Energy Audit	Audits	198	345	319		0	1,450	2,811		0	7,049,351	15,455,795		4,261	52,059,644
Small Commercial Demand Response	Devices	132	294	1,211		84	187	773		157	1,068	373		0	1,597
Small Commercial Demand Response (IHD)	Devices	0	0	378		0	0	0		0	0	0		0	0
Demand Response 3	Facilities	145	151	175		16,218	19,389	23,706		633,421	281,823	346,659		0	1,261,903
Business Program Total						**64,617**	**98,221**	**107,261**		**198,124,253**	**381,415,230**	**430,423,659**		**199,449**	**2,758,523,766**
Industrial Program															
Process & System Upgrades	Projects	0	0	3		0	0	294		0	0	2,603,764		294	5,207,528
Monitoring & Targeting	Projects	0	0	0		0	0	0		0	0	0		0	0
Energy Manager	Projects	0	42	205		0	1,086	3,558		0	7,372,108	21,994,263		3,194	54,888,570
Retrofit	Projects	433	0	0		4,615	0	0		28,866,840	0	0		4,613	115,462,282
Demand Response 3	Facilities	124	185	281		52,484	74,056	162,543		3,080,737	1,784,712	4,309,160		0	9,174,609
Industrial Program Total						**57,098**	**75,141**	**166,395**		**31,947,577**	**9,156,820**	**28,907,187**		**8,101**	**184,732,989**
Home Assistance Program															
Home Assistance Program	Homes	46	5,033	26,756		2	566	2,361		39,283	5,442,232	20,987,275		2,904	57,949,913
Home Assistance Program Total						**2**	**566**	**2,361**		**39,283**	**5,442,232**	**20,987,275**		**2,904**	**57,949,913**
Aboriginal Program															
Home Assistance Program	Homes	0	0	584		0	0	267		0	0	1,609,393		267	3,218,786
Direct Install Lighting	Projects	0	0	0		0	0	0		0	0	0		0	0
Aboriginal Program Total						**0**	**0**	**267**		**0**	**0**	**1,609,393**		**267**	**3,218,786**
Pre-2011 Programs completed in 2011															
Electricity Retrofit Incentive Program	Projects	2,028	0	0		21,662	0	0		121,138,219	0	0		21,662	484,552,876
High Performance New Construction	Projects	179	69	4		5,098	3,251	772		26,185,591	11,901,944	3,522,240		9,121	147,492,677
Toronto Comprehensive	Projects	577	0	0		15,805	0	0		86,964,886	0	0		15,805	347,859,545
Multifamily Energy Efficiency Rebates	Projects	110	0	0		1,981	0	0		7,595,683	0	0		1,981	30,382,733
LDC Custom Programs	Projects	8	0	0		399	0	0		1,367,170	0	0		399	5,468,679
Pre-2011 Programs completed in 2011 Total						**44,945**	**3,251**	**772**		**243,251,550**	**11,901,944**	**3,522,240**		**48,967**	**1,015,756,510**
Other															
Program Enabled Savings	Projects	14	56	13		0	2,304	3,692		0	1,188,362	4,075,382		5,996	11,715,850
Time-of-Use Savings	Homes	0	0	0		0	0	0		0	0	0		0	0
Other Total						**0**	**2,304**	**3,692**		**0**	**1,188,362**	**4,075,382**		**5,996**	**11,715,850**
Adjustments to 2011 Verified Results							**1,406**	**641**			**18,689,081**	**1,736,381**		**1,797**	**80,864,121**
Adjustments to 2012 Verified Results								**6,260**				**41,947,840**		**6,180**	**126,287,857**
Energy Efficiency Total						**136,610**	**109,191**	**117,536**		**603,144,419**	**482,474,435**	**554,528,447**		**351,190**	**4,920,743,312**
Demand Response Total (Scenario 1)						**79,733**	**142,670**	**280,099**		**3,739,185**	**2,427,011**	**5,046,495**		**0**	**11,212,691**
Adjustments to Previous Years' Verified Results Total						**0**	**1,406**	**6,901**		**0**	**18,689,081**	**43,684,221**		**7,976**	**207,151,978**
OPA-Contracted LDC Portfolio Total (inc. Adjustments)						**216,343**	**253,267**	**404,536**		**606,883,604**	**503,590,526**	**603,259,163**		**359,166**	**5,139,107,980**
													Full OEB Target:	**1,330,000**	**6,000,000,000**
													% of Full OEB Target Achieved to Date (Scenario 1):	**27.0%**	**85.7%**

Activity and savings for Demand Response resources for each year represent the savings from all active facilities or devices contracted since January 1, 2011 (reported cumulatively).

*Includes adjustments after Final Reports were issued

The IHD line item on the 2013 annual report has been left blank pending a results update from evaluations; results will be updated once sufficient information is made available.

Energy Manager, Aboriginal Program and Program Enabled Savings were not independently evaluated

Table 7: Adjustments to Province-Wide Net Verified Results due to Variances

Initiative	Unit	Incremental Activity (new program activity occurring within the specified reporting period)				Net Incremental Peak Demand Savings (kW) (new peak demand savings from activity within the specified reporting period)				Net Incremental Energy Savings (kWh) (new energy savings from activity within the specified reporting period)			
		2011*	2012*	2013	2014	2011	2012	2013	2014	2011	2012	2013	2014
Consumer Program													
Appliance Retirement	Appliances	0	0			0	0			0	0		
Appliance Exchange	Appliances	0	0			0	0			0	0		
HVAC Incentives	Equipment	-18,844	2,206			-5,271	452			-9,709,500	907,735		
Conservation Instant Coupon Booklet	Items	8,216	0			16	0			275,655	0		
Bi-Annual Retailer Event	Items	81,817	0			108	0			2,183,391	0		
Retailer Co-op	Items	0	0			0	0			0	0		
Residential Demand Response	Devices	0	0			0	0			0	0		
Residential Demand Response (IHD)	Devices	0	0			0	0			0	0		
Residential New Construction	Homes	19	0			1	0			13,767	0		
Consumer Program Total						**-5,146**	**452**			**-7,236,687**	**907,735**		
Business Program													
Retrofit	Projects	303	529			3,204	4,443			16,216,165	28,739,635		
Direct Install Lighting	Projects	444	197			501	204			1,250,388	736,541		
Building Commissioning	Buildings	0	0			0	0			0	0		
New Construction	Buildings	12	0			828	0			3,520,620	0		
Energy Audit	Audits	95	65			492	337			2,391,744	1,636,457		
Small Commercial Demand Response	Devices	0	0			0	0			0	0		
Small Commercial Demand Response (IHD)	Devices	0	0			0	0			0	0		
Demand Response 3	Facilities	0	0			0	0			0	0		
Business Program Total						**5,025**	**4,984**			**23,378,917**	**31,112,632**		
Industrial Program													
Process & System Upgrades	Projects	0	0			0	0			0	0		
Monitoring & Targeting	Projects	0	0			0	0			0	0		
Energy Manager	Projects	0	3			0	68			0	719,235		
Retrofit	Projects	0	0			0	0			0	0		
Demand Response 3	Facilities	0	0			0	0			0	0		
Industrial Program Total						**0**	**68**			**0**	**719,235**		
Home Assistance Program													
Home Assistance Program	Homes	0	0			0	0			0	0		
Home Assistance Program Total						**0**	**0**			**0**	**0**		
Aboriginal Program													
Home Assistance Program	Homes	0	0			0	0			0	0		
Direct Install Lighting	Projects	0	0			0	0			0	0		
Aboriginal Program Total						**0**	**0**			**0**	**0**		
Pre-2011 Programs completed in 2011													
Electricity Retrofit Incentive Program	Projects	12	0			138	0			545,536	0		
High Performance New Construction	Projects	34	0			1,407	0			2,065,200	0		
Toronto Comprehensive	Projects	0	0			0	0			0	0		
Multifamily Energy Efficiency Rebates	Projects	0	0			0	0			0	0		
LDC Custom Programs	Projects	0	0			0	0			0	0		
Pre-2011 Programs completed in 2011 Total						**1,545**	**0**			**2,610,736**	**0**		
Other													
Program Enabled Savings	Projects	14	40			624	824			1,673,712	9,927,473		
Time-of-Use Savings	Homes	0	0			0	0			0	0		
Other Total						**624**	**824**			**1,673,712**	**9,927,473**		
Adjustments to 2011 Verified Results						**2,047**				**20,426,678**			
Adjustments to 2012 Verified Results							**6,328**				**42,667,076**		
Adjustments to Previous Years' Verified Results Total						**2,047**	**6,328**			**20,426,678**	**42,667,076**		

Activity and savings for Demand Response resources for each year represent the savings from all active facilities or devices contracted since January 1, 2011 (reported cumulatively).

The IHD line item on the 2013 annual report has been left blank pending a results update from evaluations; results will be updated once sufficient information is made available.

Adjustments to previous years' results shown in this table will not align to adjustments shown in Table 1 as the information presented above does not consider persistence of savings

Table 8: Province-Wide Realization Rate & NTG

Initiative	Peak Demand Savings								Energy Savings							
	Realization Rate				Net-to-Gross Ratio				Realization Rate				Net-to-Gross Ratio			
	2011	2012	2013	2014	2011	2012	2013	2014	2011	2012	2013	2014	2011	2012	2013	2014
Consumer Program																
Appliance Retirement	1.00	1.00	1.00		0.51	0.46	0.42		1.00	1.00	1.00		0.46	0.47	0.44	
Appliance Exchange	1.00	1.00	1.00		0.51	0.52	0.53		1.00	1.00	1.00		0.52	0.52	0.53	
HVAC Incentives	1.00	1.00	1.00		0.60	0.50	0.48		1.00	1.00	1.00		0.50	0.49	0.48	
Conservation Instant Coupon Booklet	1.00	1.00	1.00		1.14	1.00	1.11		1.00	1.00	1.00		1.00	1.05	1.13	
Bi-Annual Retailer Event	1.00	1.00	1.00		1.12	0.91	1.04		1.00	1.00	1.00		0.91	0.92	1.04	
Retailer Co-op	1.00	n/a	n/a		0.68	n/a	n/a		n/a	n/a	n/a		n/a	n/a	n/a	
Residential Demand Response	n/a	n/a	n/a		n/a	n/a	n/a		n/a	n/a	n/a		n/a	n/a	n/a	
Residential Demand Response (IHD)	n/a	n/a	n/a		n/a	n/a	n/a		n/a	n/a	n/a		n/a	n/a	n/a	
Residential New Construction	1.00	3.65	0.78		0.41	0.49	0.63		3.65	7.17	3.09		0.49	0.49	0.63	
Business Program																
Retrofit	1.06	0.93	0.92		0.72	0.75	0.73		0.93	1.05	1.01		0.75	0.76	0.73	
Direct Install Lighting	1.08	0.69	0.82		1.08	0.94	0.94		0.69	0.85	0.84		0.94	0.94	0.94	
Building Commissioning	n/a	n/a	n/a		n/a	n/a	n/a		n/a	n/a	n/a		n/a	n/a	n/a	
New Construction	0.50	0.98	0.68		0.50	0.49	0.54		0.98	0.99	0.76		0.49	0.49	0.54	
Energy Audit	n/a	n/a	1.02		n/a	n/a	0.66		n/a	n/a	0.97		n/a	n/a	0.66	
Small Commercial Demand Response	n/a	n/a	n/a		n/a	n/a	n/a		n/a	n/a	n/a		n/a	n/a	n/a	
Small Commercial Demand Response (IHD)	n/a	n/a	n/a		n/a	n/a	n/a		n/a	n/a	n/a		n/a	n/a	n/a	
Demand Response 3	0.76	n/a	n/a		n/a	n/a	n/a		n/a	n/a	n/a		n/a	n/a	n/a	
Industrial Program																
Process & System Upgrades	n/a	n/a	0.85		n/a	n/a	0.94		n/a	n/a	0.87		n/a	n/a	0.93	
Monitoring & Targeting	n/a	n/a	n/a		n/a	n/a	n/a		n/a	n/a	n/a		n/a	n/a	n/a	
Energy Manager	n/a	1.16	0.90		n/a	0.90	0.90		1.16	1.16	0.90		0.90	0.90	0.90	
Retrofit	1.11	n/a	n/a		0.72	n/a	n/a		0.91	n/a	n/a		0.75	n/a	n/a	
Demand Response 3	0.84	n/a	n/a		n/a	n/a	n/a		n/a	n/a	n/a		n/a	n/a	n/a	
Home Assistance Program																
Home Assistance Program	1.00	0.32	0.26		0.70	1.00	1.00		0.32	0.99	0.88		1.00	1.00	1.00	
Aboriginal Program																
Home Assistance Program	n/a	n/a	0.05		n/a	n/a	1.00		n/a	n/a	0.95		n/a	n/a	1.00	
Direct Install Lighting	n/a	n/a	n/a		n/a	n/a	n/a		n/a	n/a	n/a		n/a	n/a	n/a	
Pre-2011 Programs completed in 2011																
Electricity Retrofit Incentive Program	0.80	n/a	n/a		0.54	n/a	n/a		n/a	n/a	n/a		n/a	n/a	n/a	
High Performance New Construction	1.00	1.00	1.00		0.49	0.50	0.50		1.00	1.00	1.00		0.50	0.50	0.50	
Toronto Comprehensive	1.13	n/a	n/a		0.50	n/a	n/a		n/a	n/a	n/a		n/a	n/a	n/a	
Multifamily Energy Efficiency Rebates	0.93	n/a	n/a		0.78	n/a	n/a		n/a	n/a	n/a		n/a	n/a	n/a	
LDC Custom Programs	1.00	n/a	n/a		1.00	n/a	n/a		n/a	n/a	n/a		n/a	n/a	n/a	
Other																
Program Enabled Savings	n/a	1.06	1.00		n/a	1.00	1.00		1.06	2.26	1.00		1.00	1.00	1.00	
Time-of-Use Savings	n/a	n/a	n/a		n/a	n/a	n/a		n/a	n/a	n/a		n/a	n/a	n/a	

Energy Manager, Aboriginal Program and Program Enabled Savings were not independently evaluated

Summary Provincial Progress Towards CDM Targets

Table 9: Province-Wide Net Peak Demand Savings at the End User Level (MW)

Implementation Period	Annual			
	2011	2012	2013	2014
2011	216.3	136.6	135.8	129.0
2012†	1.4	253.3	109.8	108.2
2013†	0.6	7.0	404.5	122.0
2014				
Verified Net Annual Peak Demand Savings in 2014:				**359.2**
2014 Annual CDM Capacity Target:				**1,330**
Verified Portion of Peak Demand Savings Target Achieved in 2014 (%):				**27.0%**

Table 10: Province-Wide Net Energy Savings at the End-User Level (GWh)

Implementation Period	Annual				Cumulative
	2011	2012	2013	2014	2011-2014
2011	606.9	603.0	601.0	582.3	2,393.1
2012†	18.7	503.6	498.4	492.6	1,513.3
2013†	1.7	44.4	603.3	583.4	1,232.8
2014					
Verified Net Cumulative Energy Savings 2011-2014:					**5,139.1**
2011-2014 Cumulative CDM Energy Target:					**6,000**
Verified Portion of Cumulative Energy Target Achieved in 2014 (%):					**85.7%**

†Includes adjustments to previous Years' verified results

METHODOLOGY

All results are at the end-user level (not including transmission and distribution losses)

EQUATIONS	
Prescriptive Measures and Projects	**Gross Savings = Activity * Per Unit Assumption** **Net Savings = Gross Savings * Net-to-Gross Ratio** **All savings are annualized (i.e. the savings are the same regardless of time of year a project was completed or measure installed)**
Engineered and Custom Projects	**Gross Savings = Reported Savings * Realization Rate** **Net Savings = Gross Savings * Net-to-Gross Ratio** **All savings are annualized (i.e. the savings are the same regardless of time of year a project was completed or measure installed)**
Demand Response	**Peak Demand: Gross Savings = Net Savings = contracted MW at contributor level * Provincial contracted to ex ante ratio** **Energy: Gross Savings = Net Savings = provincial ex post energy savings * LDC proportion of total provincial contracted MW** **All savings are annualized (i.e. the savings are the same regardless of the time of year a participant began offering DR)**
Adjustments to Previous Years' Verified Results	All variances from the Final Annual Results Reports from prior years will be adjusted within this report. Any variances with regards to projects counts, data lag, and calculations etc., will be made within this report. Considers the cumulative effect of energy savings.

Initiative	Attributing Savings to LDCs	Savings 'start' Date	Calculating Resource Savings
Consumer Program			
Appliance Retirement	Includes both retail and home pickup stream; Retail stream allocated based on average of 2008 & 2009 residential throughput; Home pickup stream directly attributed by postal code or customer selection.	Savings are considered to begin in the year the appliance is picked up.	Peak demand and energy savings are determined using the verified measure level per unit assumption multiplied by the uptake in the market (gross) taking into account net-to-gross factors such as free-ridership and spillover (net) at the measure level.
Appliance Exchange	When postal code information is provided by customer, results are directly attributed to the LDC. When postal code is not available, results allocated based on average of 2008 & 2009 residential throughput.	Savings are considered to begin in the year that the exchange event occurred.	
HVAC Incentives	Results directly attributed to LDC based on customer postal code.	Savings are considered to begin in the year that the installation occurred.	

Initiative	Attributing Savings to LDCs	Savings 'start' Date	Calculating Resource Savings
Conservation Instant Coupon Booklet	LDC-coded coupons directly attributed to LDC; Otherwise results are allocated based on average of 2008 & 2009 residential throughput.	Savings are considered to begin in the year in which the coupon was redeemed.	Peak demand and energy savings are determined using the verified measure level per unit assumption multiplied by the uptake in the market (gross) taking into account net-to-gross factors such as free-ridership and spillover (net) at the measure level.
Bi-Annual Retailer Event	Results are allocated based on average of 2008 & 2009 residential throughput.	Savings are considered to begin in the year in which the event occurs.	
Retailer Co-op	When postal code information is provided by the customer, results are directly attributed. If postal code information is not available, results are allocated based on average of 2008 & 2009 residential throughput.	Savings are considered to begin in the year of the home visit and installation date.	Peak demand and energy savings are determined using the verified measure level per unit assumption multiplied by the uptake in the market (gross) taking into account net-to-gross factors such as free-ridership and spillover (net) at the measure level.
Residential Demand Response	Results are directly attributed to LDC based on data provided to OPA through project completion reports and continuing participant lists.	Savings are considered to begin in the year the device was installed and/or when a customer signed a peaksaver PLUS™ participant agreement.	Peak demand savings are based on an ex ante estimate assuming a 1 in 10 weather year and represents the "insurance value" of the initiative. Energy savings are based on an ex post estimate which reflects the savings that occurred as a result of activations in the year and accounts for any “snapback” in energy consumption experienced after the event. Savings are assumed to persist for only 1 year, reflecting that savings will only occur if the resource is activated.

Initiative	Attributing Savings to LDCs	Savings 'start' Date	Calculating Resource Savings
Residential New Construction	Results are directly attributed to LDC based on LDC identified in application in the saveONenergy CRM system; Initiative was not evaluated in 2011, reported results are presented with forecast assumptions as per the business case.	Savings are considered to begin in the year of the project completion date.	Peak demand and energy savings are determined using the verified measure level per unit assumption multiplied by the uptake in the market (gross) taking into account net-to-gross factors such as free-ridership and spillover (net) at the measure level.
Business Program			
Efficiency: Equipment Replacement	Results are directly attributed to LDC based on LDC identified at the facility level in the saveONenergy CRM; Projects in the Application Status: "Post-Stage Submission" are included (excluding "Payment denied by LDC"); Please see page for Building type to Sector mapping.	Savings are considered to begin in the year of the actual project completion date on the iCON CRM system.	Peak demand and energy savings are determined by the total savings for a given project as reported in the iCON CRM system (reported). A realization rate is applied to the reported savings to ensure that these savings align with EM&V protocols and reflect the savings that were actually realized (i.e. how many light bulbs were actually installed vs. what was reported) (gross). Net savings takes into account net-to-gross factors such as free-ridership and spillover (net). Both realization rate and net-to-gross ratios can differ for energy and demand savings and depend on the mix of projects within an LDC territory (i.e. lighting or non-lighting project, engineered/custom/prescriptive track).
	Additional Note: project counts were derived by filtering out invalid statuses (e.g. Post-Project Submission - Payment denied by LDC) and only including projects with an "Actual Project Completion Date" in 2013)		

Initiative	Attributing Savings to LDCs	Savings 'start' Date	Calculating Resource Savings
Direct Installed Lighting	Results are directly attributed to LDC based on the LDC specified on the work order.	Savings are considered to begin in the year of the actual project completion date.	Peak demand and energy savings are determined using the verified measure level per unit assumptions multiplied by the uptake of each measure accounting for the realization rate for both peak demand and energy to reflect the savings that were actually realized (i.e. how many light bulbs were actually installed vs. what was reported) (gross). Net savings take into account net-to-gross factors such as free-ridership and spillover for both peak demand and energy savings at the program level (net).
Existing Building Commissioning Incentive	Results are directly attributed to LDC based on LDC identified in the application; Initiative was not evaluated, no completed projects in 2011 or 2012.	Savings are considered to begin in the year of the actual project completion date.	Peak demand and energy savings are determined by the total savings for a given project as reported (reported). A realization rate is applied to the reported savings to ensure that these savings align with EM&V protocols and reflect the savings that were actually realized (i.e. how many light bulbs were actually installed vs. what was reported) (gross). Net savings takes into account net-to-gross factors such as free-ridership and spillover (net).
New Construction and Major Renovation Incentive	Results are directly attributed to LDC based on LDC identified in the application.	Savings are considered to begin in the year of the actual project completion date.	
Energy Audit	Projects are directly attributed to LDC based on LDC identified in the application.	Savings are considered to begin in the year of the audit date.	Peak demand and energy savings are determined by the total savings resulting from an audit as reported (reported). A realization rate is applied to the reported savings to ensure that these savings align with EM&V protocols and reflect the savings that were actually realized (i.e. how many light bulbs were actually installed vs. what was reported) (gross). Net savings takes into account net-to-gross factors such as free-ridership and spillover (net).

Initiative	Attributing Savings to LDCs	Savings 'start' Date	Calculating Resource Savings
Commercial Demand Response (part of the Residential program schedule)	Results are directly attributed to LDC based on data provided to OPA through project completion reports and continuing participant lists	Savings are considered to begin in the year the device was installed and/or when a customer signed a peaksaver PLUS™ participant agreement.	Peak demand savings are based on an ex ante estimate assuming a 1 in 10 weather year and represents the "insurance value" of the initiative. Energy savings are based on an ex post estimate which reflects the savings that occurred as a result of activations in the year. Savings are assumed to persist for only 1 year, reflecting that savings will only occur if the resource is activated.
Demand Response 3 (part of the Industrial program schedule)	Results are attributed to LDCs based on the total contracted megawatts at the contributor level as of December 31st, applying the provincial ex ante to contracted ratio (ex ante estimate/contracted megawatts); Ex post energy savings are attributed to the LDC based on their proportion of the total contracted megawatts at the contributor level.	Savings are considered to begin in the year in which the contributor signed up to participate in demand response.	Peak demand savings are ex ante estimates based on the load reduction capability that can be expected for the purposes of planning. The ex ante estimates factor in both scheduled non-performances (i.e. maintenance) and historical performance. Energy savings are based on an ex post estimate which reflects the savings that actually occurred as a results of activations in the year. Savings are assumed to persist for 1 year, reflecting that savings will not occur if the resource is not activated and additional costs are incurred to activate the resource.
Industrial Program			
Process & System Upgrades	Results are directly attributed to LDC based on LDC identified in application.	Savings are considered to begin in the year in which the incentive project was completed.	Peak demand and energy savings are determined by the total savings from a given project as reported (reported). A realization rate is applied to the reported savings to ensure that these savings align with EM&V protocols and reflect the savings that were actually realized (i.e. how many light bulbs were actually installed vs. what was reported) (gross). Net savings takes into account net-to-gross factors such as free-ridership and spillover (net).

Initiative	Attributing Savings to LDCs	Savings 'start' Date	Calculating Resource Savings
Monitoring & Targeting	Results are directly attributed to LDC based on LDC identified in the application; Initiative was not evaluated, no completed projects in 2011, 2012 or 2013.	Savings are considered to begin in the year in which the incentive project was completed.	Peak demand and energy savings are determined by the total savings from a given project as reported (reported). A realization rate is applied to the reported savings to ensure that these savings align with EM&V protocols and reflect the savings that were actually realized (i.e. how many light bulbs were actually installed vs. what was reported) (gross). Net savings takes into account net-to-gross factors such as free-ridership and spillover (net).
Energy Manager	Results are directly attributed to LDC based on LDC identified in the application.	Savings are considered to begin in the year in which the project was completed by the energy manager. If no date is specified the savings will begin the year of the Quarterly Report submitted by the energy manager.	Peak demand and energy savings are determined by the total savings from a given project as reported (reported). A realization rate is applied to the reported savings to ensure that these savings align with EM&V protocols and reflect the savings that were actually realized (i.e. how many light bulbs were actually installed vs. what was reported) (gross). Net savings takes into account net-to-gross factors such as free-ridership and spillover (net).

Initiative	Attributing Savings to LDCs	Savings 'start' Date	Calculating Resource Savings
Efficiency: Equipment Replacement Incentive (part of the C&I program schedule)	Results are directly attributed to LDC based on LDC identified at the facility level in the saveONenergy CRM; Projects in the Application Status: "Post-Stage Submission" are included (excluding "Payment denied by LDC"); Please see "Reference Tables" tab for Building type to Sector mapping.	Savings are considered to begin in the year of the actual project completion date on the iCON CRM system.	Peak demand and energy savings are determined by the total savings for a given project as reported in the iCON CRM system (reported). A realization rate is applied to the reported savings to ensure that these savings align with EM&V protocols and reflect the savings that were actually realized (i.e. how many light bulbs were actually installed vs. what was reported) (gross). Net savings takes into account net-to-gross factors such as free-ridership and spillover (net). Both realization rate and net-to-gross ratios can differ for energy and demand savings and depend on the mix of projects within an LDC territory (i.e. lighting or non-lighting project, engineered/custom/prescriptive track).
Demand Response 3	Results are attributed to LDCs based on the total contracted megawatts at the contributor level as of December 31st, applying the provincial ex ante to contracted ratio (ex ante estimate/contracted megawatts); Ex post energy savings are attributed to the LDC based on their proportion of the total contracted megawatts at the contributor level.	Savings are considered to begin in the year in which the contributor signed up to participate in demand response.	Peak demand savings are ex ante estimates based on the load reduction capability that can be expected for the purposes of planning. The ex ante estimates factor in both scheduled non-performances (i.e. maintenance) and historical performance. Energy savings are based on an ex post estimate which reflects the savings that actually occurred as a results of activations in the year. Savings are assumed to persist for 1 year, reflecting that savings will not occur if the resource is not activated and additional costs are incurred to activate the resource.

Initiative	Attributing Savings to LDCs	Savings 'start' Date	Calculating Resource Savings
Home Assistance Program			
Home Assistance Program	Results are directly attributed to LDC based on LDC identified in the application.	Savings are considered to begin in the year in which the measures were installed.	Peak demand and energy savings are determined using the measure level per unit assumption multiplied by the uptake of each measure (gross), taking into account net-to-gross factors such as free-ridership and spillover (net) at the measure level.
Aboriginal Program			
Aboriginal Program	Results are directly attributed to LDC based on LDC identified in the application.	Savings are considered to begin in the year in which the measures were installed.	Peak demand and energy savings are determined using the measure level per unit assumption multiplied by the uptake of each measure (gross), taking into account net-to-gross factors such as free-ridership and spillover (net) at the measure level.

Initiative	Attributing Savings to LDCs	Savings 'start' Date	Calculating Resource Savings
Pre-2011 Programs completed in 2011			
Electricity Retrofit Incentive Program	Results are directly attributed to LDC based on LDC identified in the application; Initiative was not evaluated in 2011, 2012 or 2013 assumptions as per 2010 evaluation.	Savings are considered to begin in the year in which a project was completed.	Peak demand and energy savings are determined by the total savings from a given project as reported. A realization rate is applied to the reported savings to ensure that these savings align with EM&V protocols and reflect the savings that were actually realized (i.e. how many light bulbs were actually installed vs. what was reported) (gross). Net savings takes into account net-to-gross factors such as free-ridership and spillover (net). If energy savings are not available, an estimate is made based on the kWh to kW ratio in the provincial results from the 2010 evaluated results (http://www.powerauthority.on.ca/evaluation-measurement-and-verification/evaluation-reports).
High Performance New Construction	Results are directly attributed to LDC based on customer data provided to the OPA from Enbridge; Initiative was not evaluated in 2011, 2012 or 2013, assumptions as per 2010 evaluation.	Savings are considered to begin in the year in which a project was completed.	
Toronto Comprehensive	Program run exclusively in Toronto Hydro-Electric System Limited service territory; Initiative was not evaluated in 2011, 2012 or 2013, assumptions as per 2010 evaluation.		

Initiative	Attributing Savings to LDCs	Savings 'start' Date	Calculating Resource Savings
Multifamily Energy Efficiency Rebates	Results are directly attributed to LDC based on LDC identified in the application; Initiative was not evaluated in 2011, 2012 or 2013, assumptions as per 2010 evaluation.	Savings are considered to begin in the year in which a project was completed.	Peak demand and energy savings are determined by the total savings from a given project as reported (reported). A realization rate is applied to the reported savings to ensure that these savings align with EM&V protocols and reflect the savings that were actually realized (i.e. how many light bulbs were actually installed vs. what was reported) (gross). Net savings takes into account net-to-gross factors such as free-ridership and spillover (net). If energy savings are not available, an estimate is made based on the kWh to kW ratio in the provincial results from the 2010 evaluated results (http://www.powerauthority.on.ca/evaluation-measurement-and-verification/evaluation-reports).
Data Centre Incentive Program	Program run exclusively in PowerStream Inc. service territory; Initiative was not evaluated in 2011, assumptions as per 2009 evaluation.		
EnWin Green Suites	Program run exclusively in ENWIN Utilities Ltd. service territory; Initiative was not evaluated in 2011 or 2012, assumptions as per 2010 evaluation.		

Retrofit Sector (C&I vs. Industrial Mapping)	
Building Type	**Sector**
Agribusiness - Cattle Farm	C&I
Agribusiness - Dairy Farm	C&I
Agribusiness - Greenhouse	C&I
Agribusiness - Other	C&I
Agribusiness - Other,Mixed-Use - Office/Retail	C&I
Agribusiness - Other,Office,Retail,Warehouse	C&I
Agribusiness - Other,Office,Warehouse	C&I
Agribusiness - Poultry	C&I
Agribusiness - Poultry,Hospitality - Motel	C&I
Agribusiness - Swine	C&I
Convenience Store	C&I
Education - College / Trade School	C&I
Education - College / Trade School,Multi-Residential - Condominium	C&I
Education - College / Trade School,Multi-Residential - Rental Apartment	C&I
Education - College / Trade School,Retail	C&I
Education - Primary School	C&I
Education - Primary School,Education - Secondary School	C&I
Education - Primary School,Multi-Residential - Rental Apartment	C&I
Education - Primary School,Not-for-Profit	C&I
Education - Secondary School	C&I
Education - University	C&I
Education - University,Office	C&I
Hospital/Healthcare - Clinic	C&I
Hospital/Healthcare - Clinic,Hospital/Healthcare - Long-term Care,Hospital/Healthcare - Medical Building	C&I
Hospital/Healthcare - Clinic,Industrial	C&I
Hospital/Healthcare - Clinic,Retail	C&I
Hospital/Healthcare - Long-term Care	C&I
Hospital/Healthcare - Long-term Care,Hospital/Healthcare - Medical Building	C&I
Hospital/Healthcare - Medical Building	C&I
Hospital/Healthcare - Medical Building,Mixed-Use - Office/Retail	C&I
Hospital/Healthcare - Medical Building,Mixed-Use - Office/Retail,Office	C&I
Hospitality - Hotel	C&I
Hospitality - Hotel,Restaurant - Dining	C&I
Hospitality - Motel	C&I
Industrial	Industrial
Mixed-Use - Office/Retail	C&I
Mixed-Use - Office/Retail,Industrial	Industrial
Mixed-Use - Office/Retail,Mixed-Use - Other	C&I
Mixed-Use - Office/Retail,Mixed-Use - Other,Not-for-Profit,Warehouse	C&I
Mixed-Use - Office/Retail,Mixed-Use - Residential/Retail	C&I
Mixed-Use - Office/Retail,Office,Restaurant - Dining,Restaurant - Quick Serve,Retail,Warehouse	C&I

Mixed-Use - Office/Retail,Office,Warehouse	C&I
Mixed-Use - Office/Retail,Retail	C&I
Mixed-Use - Office/Retail,Warehouse	C&I
Mixed-Use - Office/Retail,Warehouse,Industrial	Industrial
Mixed-Use - Other	C&I
Mixed-Use - Other,Industrial	Industrial
Mixed-Use - Other,Not-for-Profit,Office	C&I
Mixed-Use - Other,Office	C&I
Mixed-Use - Other,Other: Please specify	C&I
Mixed-Use - Other,Retail,Warehouse	C&I
Mixed-Use - Other,Warehouse	C&I
Mixed-Use - Residential/Retail	C&I
Mixed-Use - Residential/Retail,Multi-Residential - Condominium	C&I
Mixed-Use - Residential/Retail,Multi-Residential - Rental Apartment	C&I
Mixed-Use - Residential/Retail,Retail	C&I
Multi-Residential - Condominium	C&I
Multi-Residential - Condominium,Multi-Residential - Rental Apartment	C&I
Multi-Residential - Condominium,Other: Please specify	C&I
Multi-Residential - Rental Apartment	C&I
Multi-Residential - Rental Apartment,Multi-Residential - Social Housing Provider,Not-for-Profit	C&I
Multi-Residential - Rental Apartment,Not-for-Profit	C&I
Multi-Residential - Rental Apartment,Warehouse	C&I
Multi-Residential - Social Housing Provider	C&I
Multi-Residential - Social Housing Provider,Industrial	C&I
Multi-Residential - Social Housing Provider,Not-for-Profit	C&I
Not-for-Profit	C&I
Not-for-Profit,Office	C&I
Not-for-Profit,Other: Please specify	C&I
Not-for-Profit,Warehouse	C&I
Office	C&I
Office,Industrial	Industrial
Office,Other: Please specify	C&I
Office,Other: Please specify,Warehouse	C&I
Office,Restaurant - Dining	C&I
Office,Restaurant - Dining,Industrial	Industrial
Office,Retail	C&I
Office,Retail,Industrial	C&I
Office,Retail,Warehouse	C&I
Office,Warehouse	C&I
Office,Warehouse,Industrial	Industrial
Other: Please specify	C&I
Other: Please specify,Industrial	Industrial
Other: Please specify,Retail	C&I
Other: Please specify,Warehouse	C&I
Restaurant - Dining	C&I
Restaurant - Dining,Retail	C&I

Restaurant - Quick Serve	C&I
Restaurant - Quick Serve,Retail	C&I
Retail	C&I
Retail,Industrial	Industrial
Retail,Warehouse	C&I
Warehouse	C&I
Warehouse,Industrial	Industrial

Consumer Program Allocation Methodology

Results can be allocated based on average of 2008 & 2009 residential throughput for each LDC (below) when additional information is not available. Source: OEB Yearbook Data 2008 & 2009

Local Distribution Company	Allocation
Algoma Power Inc.	0.2%
Atikokan Hydro Inc.	0.0%
Attawapiskat Power Corporation	0.0%
Bluewater Power Distribution Corporation	0.6%
Brant County Power Inc.	0.2%
Brantford Power Inc.	0.7%
Burlington Hydro Inc.	1.4%
Cambridge and North Dumfries Hydro Inc.	1.0%
Canadian Niagara Power Inc.	0.5%
Centre Wellington Hydro Ltd.	0.1%
Chapleau Public Utilities Corporation	0.0%
COLLUS Power Corporation	0.3%
Cooperative Hydro Embrun Inc.	0.0%
E.L.K. Energy Inc.	0.2%
Enersource Hydro Mississauga Inc.	3.9%
ENTEGRUS	0.6%
ENWIN Utilities Ltd.	1.6%
Erie Thames Powerlines Corporation	0.4%
Espanola Regional Hydro Distribution Corporation	0.1%
Essex Powerlines Corporation	0.7%
Festival Hydro Inc.	0.3%
Fort Albany Power Corporation	0.0%
Fort Frances Power Corporation	0.1%
Greater Sudbury Hydro Inc.	1.0%
Grimsby Power Inc.	0.2%
Guelph Hydro Electric Systems Inc.	0.9%
Haldimand County Hydro Inc.	0.4%
Halton Hills Hydro Inc.	0.5%
Hearst Power Distribution Company Limited	0.1%
Horizon Utilities Corporation	4.0%
Hydro 2000 Inc.	0.0%
Hydro Hawkesbury Inc.	0.1%
Hydro One Brampton Networks Inc.	2.8%
Hydro One Networks Inc.	30.0%

Hydro Ottawa Limited	5.6%
Innisfil Hydro Distribution Systems Limited	0.4%
Kashechewan Power Corporation	0.0%
Kenora Hydro Electric Corporation Ltd.	0.1%
Kingston Hydro Corporation	0.5%
Kitchener-Wilmot Hydro Inc.	1.6%
Lakefront Utilities Inc.	0.2%
Lakeland Power Distribution Ltd.	0.2%
London Hydro Inc.	2.7%
Middlesex Power Distribution Corporation	0.1%
Midland Power Utility Corporation	0.1%
Milton Hydro Distribution Inc.	0.6%
Newmarket - Tay Power Distribution Ltd.	0.7%
Niagara Peninsula Energy Inc.	1.0%
Niagara-on-the-Lake Hydro Inc.	0.2%
Norfolk Power Distribution Inc.	0.3%
North Bay Hydro Distribution Limited	0.5%
Northern Ontario Wires Inc.	0.1%
Oakville Hydro Electricity Distribution Inc.	1.5%
Orangeville Hydro Limited	0.2%
Orillia Power Distribution Corporation	0.3%
Oshawa PUC Networks Inc.	1.2%
Ottawa River Power Corporation	0.2%
Parry Sound Power Corporation	0.1%
Peterborough Distribution Incorporated	0.7%
PowerStream Inc.	6.6%
PUC Distribution Inc.	0.9%
Renfrew Hydro Inc.	0.1%
Rideau St. Lawrence Distribution Inc.	0.1%
Sioux Lookout Hydro Inc.	0.1%
St. Thomas Energy Inc.	0.3%
Thunder Bay Hydro Electricity Distribution Inc.	0.9%
Tillsonburg Hydro Inc.	0.1%
Toronto Hydro-Electric System Limited	12.8%
Veridian Connections Inc.	2.4%
Wasaga Distribution Inc.	0.2%
Waterloo North Hydro Inc.	1.0%
Welland Hydro-Electric System Corp.	0.4%
Wellington North Power Inc.	0.1%
West Coast Huron Energy Inc.	0.1%
Westario Power Inc.	0.5%
Whitby Hydro Electric Corporation	0.9%
Woodstock Hydro Services Inc.	0.3%

Reporting Glossary

Annual: the peak demand or energy savings that occur in a given year (includes resource savings from new program activity in a given year and resource savings persisting from previous years).

Cumulative Energy Savings: represents the sum of the annual energy savings that accrue over a defined period (in the context of this report the defined period is 2011 - 2014). This concept does not apply to peak demand savings.

End-User Level: resource savings in this report are measured at the customer level as opposed to the generator level (the difference being line losses).

Free-ridership: the percentage of participants who would have implemented the program measure or practice in the absence of the program.

Incremental: the new resource savings attributable to activity procured in a particular reporting period based on when the savings are considered to 'start'.

Initiative: a Conservation & Demand Management offering focusing on a particular opportunity or customer end-use (i.e. Retrofit, Fridge & Freezer Pickup).

Net-to-Gross Ratio: The ratio of net savings to gross savings, which takes into account factors such as free-ridership and spillover

Net Energy Savings (MWh): energy savings attributable to conservation and demand management activities net of free-riders, etc.

Net Peak Demand Savings (MW): peak demand savings attributable to conservation and demand management activities net of free-riders, etc.

Program: a group of initiatives that target a particular market sector (e.g. Consumer, Industrial).

Realization Rate: A comparison of observed or measured (evaluated) information to original reported savings which is used to adjust the gross savings estimates.

Settlement Account: the grouping of demand response facilities (contributors) into one contractual agreement

Spillover: Reductions in energy consumption and/or demand caused by the presence of the energy efficiency program, beyond the program-related gross savings of the participants. There can be participant and/or non-participant spillover.

Unit: for a specific initiative the relevant type of activity acquired in the market place (i.e. appliances picked up, projects completed, coupons redeemed).

Table 11: Cambridge and North Dumfries Hydro Inc. Initiative and Program Level Gross Savings by Year

Initiative	Unit	Gross Incremental Peak Demand Savings (kW) (new peak demand savings from activity within the specified reporting period)				Gross Incremental Energy Savings (kWh) (new energy savings from activity within the specified reporting period)			
		2011	2012	2013	2014	2011	2012	2013	2014
Consumer Program									
Appliance Retirement**	Appliances	50	9	14		364,466	67,918	90,231	
Appliance Exchange**	Appliances	4	4	20		5,219	6,491	35,798	
HVAC Incentives	Equipment	596	497	587		1,121,468	872,613	1,024,559	
Conservation Instant Coupon Booklet	Items	10	2	4		163,353	12,699	65,532	
Bi-Annual Retailer Event	Items	14	16	11		257,628	279,875	157,467	
Retailer Co-op	Items	0	0	0		0	0	0	
Residential Demand Response	Devices	46	0	50		0	0	129	
Residential Demand Response (IHD)	Devices	0	0	0		0	0	0	
Residential New Construction	Homes	0	0	0		0	0	0	
Consumer Program Total		**720**	**528**	**686**		**1,912,135**	**1,239,595**	**1,373,715**	
Business Program									
Retrofit	Projects	347	1,569	1,927		1,750,908	7,838,649	9,917,602	
Direct Install Lighting	Projects	148	127	57		429,688	428,469	199,642	
Building Commissioning	Buildings	0	0	0		0	0	0	
New Construction	Buildings	0	0	112		0	0	624,190	
Energy Audit	Audits	0	5	40		0	25,176	219,932	
Small Commercial Demand Response	Devices	1	0	1		0	0	1	
Small Commercial Demand Response (IHD)	Devices	0	0	0		0	0	0	
Demand Response 3	Facilities	180	180	346		7,018	2,621	5,215	
Business Program Total		**676**	**1,882**	**2,482**		**2,187,614**	**8,294,914**	**10,966,582**	
Industrial Program									
Process & System Upgrades	Projects	0	0	85		0	0	743,115	
Monitoring & Targeting	Projects	0	0	0		0	0	0	
Energy Manager	Projects	0	0	37		0	0	195,483	
Retrofit	Projects	634	0	0		4,045,237	0	0	
Demand Response 3	Facilities	544	705	525		31,908	16,979	11,952	
Industrial Program Total		**1,177**	**705**	**646**		**4,077,144**	**16,979**	**950,549**	
Home Assistance Program									
Home Assistance Program	Homes	0	0	31		0	11,367	458,390	
Home Assistance Program Total		**0**	**0**	**31**		**0**	**11,367**	**458,390**	
Aboriginal Program									
Home Assistance Program	Homes	0	0	0		0	0	0	
Direct Install Lighting	Projects	0	0	0		0	0	0	
Aboriginal Program Total		**0**	**0**	**0**		**0**	**0**	**0**	
Pre-2011 Programs completed in 2011									
Electricity Retrofit Incentive Program	Projects	2,288	0	0		12,898,238	0	0	
High Performance New Construction	Projects	22	2	0		114,446	2,097	0	
Toronto Comprehensive	Projects	0	0	0		0	0	0	
Multifamily Energy Efficiency Rebates	Projects	0	0	0		0	0	0	
LDC Custom Programs	Projects	0	0	0		0	0	0	
Pre-2011 Programs completed in 2011 Total		**2,310**	**2**	**0**		**13,012,685**	**2,097**	**0**	
Other									
Program Enabled Savings	Projects	0	0	8		0	0	51,500	
Time-of-Use Savings	Homes	0	0	0		0	0	0	
Other Total		**0**	**0**	**8**		**0**	**0**	**51,500**	
Adjustments to 2011 Verified Results		**0**	**143**	**0**		**0**	**927,060**	**0**	
Adjustments to 2012 Verified Results		**0**	**0**	**388**		**0**	**0**	**1,209,703**	
Energy Efficiency Total		**4,113**	**2,232**	**2,932**		**21,150,652**	**9,545,353**	**13,783,439**	
Demand Response Total		**770**	**885**	**921**		**38,926**	**19,599**	**17,297**	
Adjustments to Previous Years' Verified Results Total		**0**	**143**	**388**		**0**	**927,060**	**1,209,703**	
OPA-Contracted LDC Portfolio Total (inc. Adjustments)		**4,883**	**3,260**	**4,241**		**21,189,578**	**10,492,012**	**15,010,440**	

Activity and savings for Demand Response resources for each year represent the savings from all active facilities or devices contracted since January 1, 2011 (reported cumulatively).

The IHD line item on the 2013 annual report has been left blank pending a results update from evaluations; results will be updated once sufficient information is made available.

Adjustments to previous years' results shown in this table will not align to adjustments shown in Table 1 as the information presented above does not consider persistence of savings

Gross results are presented for informational purposes only and are not considered official 2013 Final Verified Results

**Net results substituted for gross results due to unavailability of data

Table 12: Adjustments to Cambridge and North Dumfries Hydro Inc. Gross Verified Results due to Variances

Initiative	Unit	Gross Incremental Peak Demand Savings (kW) (new peak demand savings from activity within the specified reporting period)				Gross Incremental Energy Savings (kWh) (new energy savings from activity within the specified reporting period)			
		2011	2012	2013	2014	2011	2012	2013	2014
Consumer Program									
Appliance Retirement	Appliances	0	0			0	0		
Appliance Exchange	Appliances	0	0			0	0		
HVAC Incentives	Equipment	-116	21			-218,104	36,839		
Conservation Instant Coupon Booklet	Items	0	0			2,452	0		
Bi-Annual Retailer Event	Items	1	0			22,733	0		
Retailer Co-op	Items	0	0			0	0		
Residential Demand Response	Devices	0	0			0	0		
Residential Demand Response (IHD)	Devices	0	0			0	0		
Residential New Construction	Homes	0	0			0	0		
Consumer Program Total		**-115**	**21**			**-192,919**	**36,839**		
Business Program									
Retrofit	Projects	82	216			434,577	1,172,864		
Direct Install Lighting	Projects	4	0			8,667	0		
Building Commissioning	Buildings	0	0			0	0		
New Construction	Buildings	0	0			0	0		
Energy Audit	Audits	0	0			0	0		
Small Commercial Demand Response	Devices	0	0			0	0		
Small Commercial Demand Response (IHD)	Devices	0	0			0	0		
Demand Response 3	Facilities	0	0			0	0		
Business Program Total		**86**	**216**			**443,244**	**1,172,864**		
Industrial Program									
Process & System Upgrades	Projects	0	0			0	0		
Monitoring & Targeting	Projects	0	0			0	0		
Energy Manager	Projects	0	0			0	0		
Retrofit	Projects	0	0			0	0		
Demand Response 3	Facilities	0	0			0	0		
Industrial Program Total		**0**	**0**			**0**	**0**		
Home Assistance Program									
Home Assistance Program	Homes	0	0			0	0		
Home Assistance Program Total		**0**	**0**			**0**	**0**		
Aboriginal Program									
Home Assistance Program	Homes	0	0			0	0		
Direct Install Lighting	Projects	0	0			0	0		
Aboriginal Program Total									
Pre-2011 Programs completed in 2011									
Electricity Retrofit Incentive Program	Projects	0	0			0	0		
High Performance New Construction	Projects	172	0			676,736	0		
Toronto Comprehensive	Projects	0	0			0	0		
Multifamily Energy Efficiency Rebates	Projects	0	0			0	0		
LDC Custom Programs	Projects	0	0			0	0		
Pre-2011 Programs completed in 2011 Total		**172**	**0**			**676,736**	**0**		
Other									
Program Enabled Savings	Projects	0	151			0	0		
Time-of-Use Savings	Homes	0	0			0	0		
Other Total		**0**	**151**			**0**	**0**		
Adjustments to 2011 Verified Results		**143**				**927,060**			
Adjustments to 2012 Verified Results			**388**				**1,209,703**		
Total Adjustments to Previous Years' Verified Results		**143**	**388**			**927,060**	**1,209,703**		

Activity and savings for Demand Response resources for each year represent the savings from all active facilities or devices contracted since January 1, 2011 (reported cumulatively).

The IHD line item on the 2013 annual report has been left blank pending a results update from evaluations; results will be updated once sufficient information is made available.

Gross results are presented for informational purposes only and are not considered official 2013 Final Verified Results

Table 13: Province-Wide Initiatives and Program Level Gross Savings by Year

Initiative	Unit	Gross Incremental Peak Demand Savings (kW) (new peak demand savings from activity within the specified reporting period)				Gross Incremental Energy Savings (kWh) (new energy savings from activity within the specified reporting period)			
		2011	2012	2013	2014	2011	2012	2013	2014
Consumer Program									
Appliance Retirement**	Appliances	6,750	2,011	3,151		45,971,627	13,424,518	18,616,239	
Appliance Exchange**	Appliances	719	556	2,101		873,531	974,621	3,746,106	
HVAC Incentives	Equipment	53,209	38,346	40,418		99,413,430	66,929,213	71,225,037	
Conservation Instant Coupon Booklet	Items	1,184	231	464		19,192,453	1,325,898	6,842,244	
Bi-Annual Retailer Event	Items	1,504	1,622	1,142		26,899,265	29,222,072	16,441,329	
Retailer Co-op	Items	0	0	0		3,917	0	0	
Residential Demand Response	Devices	10,390	49,038	93,076		23,597	359,408	390,303	
Residential Demand Response (IHD)	Devices	0	0	0		0	0	0	
Residential New Construction	Homes	0	1	29		1,813	4,884	259,826	
Consumer Program Total		**73,757**	**91,805**	**140,380**		**192,379,633**	**112,240,615**	**117,521,084**	
Business Program									
Retrofit	Projects	34,201	78,965	82,896		184,070,265	387,817,248	478,410,896	
Direct Install Lighting	Projects	22,155	20,469	19,807		65,777,197	68,896,046	68,140,249	
Building Commissioning	Buildings	0	0	0		0	0	0	
New Construction	Buildings	247	1,596	2,934		823,434	3,755,869	9,183,826	
Energy Audit	Audits	0	1,450	4,283		0	7,049,351	23,386,108	
Small Commercial Demand Response	Devices	55	187	773		131	1,068	373	
Small Commercial Demand Response (IHD)	Devices	0	0	0		0	0	0	
Demand Response 3	Facilities	21,390	19,389	23,706		633,421	281,823	346,659	
Business Program Total		**78,048**	**122,056**	**134,399**		**251,304,448**	**467,801,406**	**579,468,111**	
Industrial Program									
Process & System Upgrades	Projects	0	0	313		0	0	2,799,746	
Monitoring & Targeting	Projects	0	0	0		0	0	0	
Energy Manager	Projects	0	1,034	3,953		0	7,067,535	24,438,070	
Retrofit	Projects	6,372	0	0		38,412,408	0	0	
Demand Response 3	Facilities	176,180	74,056	162,543		4,243,958	1,784,712	4,309,160	
Industrial Program Total		**182,552**	**75,090**	**166,809**		**42,656,366**	**8,852,247**	**31,546,976**	
Home Assistance Program									
Home Assistance Program	Homes	4	1,777	2,361		56,119	5,524,230	20,987,275	
Home Assistance Program Total		**4**	**1,777**	**2,361**		**56,119**	**5,524,230**	**20,987,275**	
Aboriginal Program									
Home Assistance Program	Homes	0	0	267		0	0	1,609,393	
Direct Install Lighting	Projects	0	0	0		0	0	0	
Aboriginal Program Total		**0**	**0**	**267**		**0**	**0**	**1,609,393**	
Pre-2011 Programs completed in 2011									
Electricity Retrofit Incentive Program	Projects	40,418	0	0		223,956,390	0	0	
High Performance New Construction	Projects	10,197	6,501	772		52,371,183	23,803,888	3,522,240	
Toronto Comprehensive	Projects	33,467	0	0		174,070,574	0	0	
Multifamily Energy Efficiency Rebates	Projects	2,553	0	0		9,774,792	0	0	
LDC Custom Programs	Projects	534	0	0		649,140	0	0	
Pre-2011 Programs completed in 2011 Total		**87,169**	**6,501**	**772**		**460,822,079**	**23,803,888**	**3,522,240**	
Other									
Program Enabled Savings	Projects	0	2,177	3,692		0	525,011	4,075,382	
Time-of-Use Savings	Homes	0	0	0		0	0	0	
Other Total		**0**	**2,177**	**3,692**		**0**	**525,011**	**4,075,382**	
Adjustments to 2011 Verified Results			**13,266**	**645**			**48,705,294**	**1,744,645**	
Adjustments to 2012 Verified Results				**8,707**				**55,101,043**	
Energy Efficiency Total		**213,515**	**156,735**	**168,583**		**942,317,539**	**616,320,385**	**753,683,966**	
Demand Response Total		**208,015**	**142,670**	**280,099**		**4,901,107**	**2,427,011**	**5,046,495**	
Adjustments to Previous Years' Verified Results Total		**0**	**13,266**	**9,352**		**0**	**48,705,294**	**56,845,688**	
OPA-Contracted LDC Portfolio Total (inc. Adjustments)		**421,530**	**312,671**	**458,033**		**947,218,646**	**667,452,690**	**815,576,149**	

Activity and savings for Demand Response resources for each year represent the savings from all active facilities or devices contracted since January 1, 2011 (reported cumulatively).

The IHD line item on the 2013 annual report has been left blank pending a results update from evaluations; results will be updated once sufficient information is

Adjustments to previous years' results shown in this table will not align to adjustments shown in Table 1 as the information presented above does not consider persistence of savings

Gross results are presented for informational purposes only and are not considered official 2013 Final Verified Results

**Net results substituted for gross results due to unavailability of data

Table 14: Adjustments to Province-Wide Gross Verified Results due to Variances

Initiative	Unit	Gross Incremental Peak Demand Savings (kW) (new peak demand savings from activity within the specified reporting period)				Gross Incremental Energy Savings (kWh) (new energy savings from activity within the specified reporting period)			
		2011	2012	2013	2014	2011	2012	2013	2014
Consumer Program									
Appliance Retirement	Appliances	0	0			0	0		
Appliance Exchange	Appliances	0	0			0	0		
HVAC Incentives	Equipment	-8,762	1,036			-16,245,279	1,854,833		
Conservation Instant Coupon Booklet	Items	15	0			255,975	0		
Bi-Annual Retailer Event	Items	117	0			2,373,616	0		
Retailer Co-op	Items	0	0			0	0		
Residential Demand Response	Devices	0	0			0	0		
Residential Demand Response (IHD)	Devices	0	0			0	0		
Residential New Construction	Homes	0	0			328,256	0		
Consumer Program Total		**-8,630**	**1,036**			**-13,287,430**	**1,854,833**		
Business Program									
Retrofit	Projects	4,504	6,218			22,046,931	40,101,273		
Direct Install Lighting	Projects	541	217			1,346,618	781,858		
Building Commissioning	Buildings	0	0			0	0		
New Construction	Buildings	3,243	0			11,323,593	0		
Energy Audit	Audits	492	337			2,391,744	1,636,457		
Small Commercial Demand Response	Devices	0	0			0	0		
Small Commercial Demand Response (IHD)	Devices	0	0			0	0		
Demand Response 3	Facilities	0	0			0	0		
Business Program Total		**8,780**	**6,771**			**37,108,886**	**42,519,588**		
Industrial Program									
Process & System Upgrades	Projects	0	0			0	0		
Monitoring & Targeting	Projects	0	0			0	0		
Energy Manager	Projects	0	75			0	799,151		
Retrofit	Projects	0	0			0	0		
Demand Response 3	Facilities	0	0			0	0		
Industrial Program Total		**0**	**75**			**0**	**799,151**		
Home Assistance Program									
Home Assistance Program	Homes	0	0			0	0		
Home Assistance Program Total		**0**	**0**			**0**	**0**		
Aboriginal Program									
Home Assistance Program	Homes	0	0			0	0		
Direct Install Lighting	Projects	0	0			0	0		
Aboriginal Program Total		**0**	**0**			**0**	**0**		
Pre-2011 Programs completed in 2011									
Electricity Retrofit Incentive Program	Projects	266	0			1,049,108	0		
High Performance New Construction	Projects	12,872	0			23,905,663	0		
Toronto Comprehensive	Projects	0	0			0	0		
Multifamily Energy Efficiency Rebates	Projects	0	0			0	0		
LDC Custom Programs	Projects	0	0			0	0		
Pre-2011 Programs completed in 2011 Total		**13,137**	**0**			**24,954,771**	**0**		
Other									
Program Enabled Savings	Projects	624	824			1,673,712	9,927,473		
Time-of-Use Savings	Homes	0	0			0	0		
Other Total		**624**	**824**			**1,673,712**	**9,927,473**		
Adjustments to 2011 Verified Results		**13,911**				**50,449,939**			
Adjustments to 2012 Verified Results			**8,707**				**55,101,043**		
Adjustments to Previous Years' Verified Results Total		**13,911**	**8,707**			**50,449,939**	**55,101,043**		

Activity and savings for Demand Response resources for each year represent the savings from all active facilities or devices contracted since January 1, 2011 (reported cumulatively).

The IHD line item on the 2013 annual report has been left blank pending a results update from evaluations; results will be updated once sufficient information is made available.

Gross results are presented for informational purposes only and are not considered official 2013 Final Verified Results

Appendix B

Purchasing and Contracts Policy

1.0 PURPOSE AND SCOPE

This policy outlines the guidelines and procedures that will be used by Cambridge and North Dumfries Hydro Inc. (the "Company") and its affiliate companies to purchase equipment, materials, supplies, and services required by our Company. The Purchasing Department has primary responsibility for procurement. Any employee or agent acting on behalf of the Company that engages in or supports the purchase or goods or services for use by the Company must follow the procedures outlined in this document.

2.0 GOVERNING PRINCIPLES

Goods and services shall be purchased with proper authorization and on the basis of quality, service, and price, while considering key environmental and social benefits over the entire life-cycle of the product or service including:

- Complies with the latest environmental, health and safety legislation, where applicable;
- Reduces waste and/or conserve natural resources;
- Can be recycled or re-used;
- Produced from recycled materials; and
- Product has a long service-life, can be economically and effectively repaired, refurbished or upgraded.

The Company will maintain an open and competitive process with respect to the purchase of goods and services. The Company reserves the right to purchase from a singularly approved vendor as outlined in Section 5.2.5.

3.0 PURCHASING DEPARTMENT RESPONSIBILITIES

The Purchasing Department shall provide and be held responsible for providing the following services necessary to ensure that the Company's purchasing objectives are met:

- Procure supplies, services, materials and equipment of specified quality and quantity at the best price, using recognized methods in securing competitive prices;

- Issue most Company-related invitations to tenders and obtain quotations. No formal negotiations with potential suppliers should be carried out without at least informing the Purchasing Department.

  From time to time, vendors or suppliers may be contacted to provide materials or services that are deemed confidential and these transactions need not be disclosed to the Purchasing Department upon approval by a VP, the Chief Financial Officer ("CFO"), or President and CEO.

- To group, correlate and unify, so far as possible, requirements of the various departments and, by standardization, to reduce the kinds of goods used to the smallest number based upon the needs of the various departments affected. This program shall be an on-going joint enterprise among the various departments.

- Estimates of requirements for future periods of time shall be collected to determine the quantities of goods, which should be contracted for in advance of actual current need.

- Assist in providing estimates of cost for budgeting and project study documents.

- All pricing, deliveries, terms and conditions, etc. should be left to the purchasing group. Engineering, Information Systems and Leadership Team may, of necessity, contact suppliers and sales representatives for technical information and similar type needs.

- A copy of all correspondence affecting purchasing, or a purchase order or product supply or approval between the using department and the suppliers should be forwarded to purchasing. Purchasing will obtain suppliers' catalogues and arrange demonstrations upon request.

    - Departments who wish to arrange demonstrations for their department's specialized needs may check with Purchasing for the appropriate contact person at the supplier. Purchasing should be advised as to the time and place of the demonstration as others may be interested.

- To visit suppliers, when necessary, to create goodwill and/or to expedite deliveries.

- Source potential suppliers, interview sales representatives, inform all applicable departments of the information received regarding new or existing materials, equipment, processes and techniques, and retain data on file for reference.

- Complete the purchase transaction by ensuring that all purchases follow the requisition approval process and a purchase order is issued with each order in excess of $500. Purchasing will follow-up and/or expediting to ensure deliveries and schedules are met.

- Operate and maintain a stores warehouse and maintain inventory levels consistent with the needs and schedules of the various departments.

4.0 AUTHORIZATION

4.1 Cheque Requisitions

Cheque requisition approval limits are based on the individual signing authority indicated in the Purchasing Requisition section.

The President and CEO or CFO has the authority to approve cheque requisitions for the following expenditures: corporate tax remittances, including HST, income taxes, and property taxes; payroll related remittances, including statutory deductions, OMERS, EHT, and group insurance, and investments.

4.2 Inventory Requisitions

All issues from the stockroom must occur in conjunction with the properly completed material requisition form. Stores personnel are responsible for ensuring that the material issued matches to the material requisition form.

Contractors and/or Sub-contractors must sign material requisition forms to acknowledge receipt and/or return of project materials. Stores Personnel must obtain signatures “before” the requisition forms are forwarded to Purchasing for processing.

4.3 Personal Expense Reports

Employee expense reports will be approved by the employee’s direct supervisor. This approval will indicate that authorization was given for the expenses claimed and that Company policy has been complied with. Expense reports containing travel expenses are to be approved by the Vice President, CFO, or President and CEO in accordance with Policy COR-004 Travel Expenses.

Expense reports for the President & CEO or Member of the Board of Director’s must be authorized by the Board Chair or Vice Chair.

Employee expense reports in excess of $25 will be paid through payroll direct deposit; expense reports less than $25 will be paid through the petty cash fund.

4.4 Petty Cash Payments

Petty cash vouchers must be approved by supervisory staff prior to payment by a custodian of a petty cash fund. Approval limits must follow the guidelines set in the Requisitioning Authority and Personal Expense Reports sections of this policy. Payments from the petty cash fund for expenses or cash purchases are limited to $200.

4.5 Purchasing Requisitions

4.5.1 Requisition Process:

Requisitions must be completed for most type of purchases except in the area of blanket purchase orders or inventory restocking requirements. Requisitions are required to be completed prior to the purchase or the goods or service, and prior to the commencement of the work (if possible) for items such as surveying, sub-contracting for field projects, major vehicle repairs, etc.

Annually, Purchasing will establish authorized vendors for items such as sod, automotive parts, building supplies, etc. Employees will then be able to purchase items (pick up) subject to their requisition dollar limit.

All low voltage non-distribution type equipment (i.e. power tools, battery chargers, and extension cords) purchased on behalf of the Company and not approved by the Engineering Department shall meet the requirements of the Electrical Safety Code (ESC). Equipment must be approved to Canadian standards. The CSA mark or a “C” outside the Entela, ETL, FM, MET signifies this, OMNI, TUV America, TUV Rheinland and UL marks. See ESC Bulletin 2-7-22 for more information. All items shall be checked upon receipt to ensure compliance with the above.

Any purchase requisitions for safety related goods and services (e.g. P.P.E., gas detectors, ‘ergonomic’ chairs, ladders etc.) must be approved by the requisitioning department Vice-President with input from the Department Supervisors and the Safety and Training Supervisor and/or the Joint Health and Safety Committee (“JHSC”) to ensure that the goods or services meet all the requirements and standards specified in applicable regulations, legislation and/or standards documentation. Please refer to Appendix I for further details regarding the procedure to be followed.

4.5.2 Approval

It is the responsibility of the requisitioner to prepare/enter the requisition and provide all pertinent information, including general ledger account coding, department, project/work order reference, and references to drawings/specifications, if applicable. The requisitioner is also responsible to acquire the necessary approvals

4.5 Purchasing Requisitions (Continued)

4.5.2 Approval

4.5.2.1 All goods and services, excluding inventory and consulting services

All Purchase Requisitions, excluding inventory and consulting services, are to be approved based on the following authority limits:

Position	Authority Limits Budgeted Operating and Capital Expenses	Authority Limits Non-budgeted Operating and Capital Expenses
Sub-Foreperson	<= $500	Nil
Executive Assistant	<= $1,000	Nil
Supervisor/Manager	<= $5,000	Nil
Director	>= $5,000 and <= $25,000	Nil
Vice President	Up to $75,000; Up to $100,000 with CFO	<= $10,000
Chief Financial Officer	<= $100,000	Up to $25,000 jointly with another Vice President; Up to $50,000 jointly with CEO
President and CEO	> $100,000 and <= $1MM	>= $10,000 and <= $100,000
Board Chair	> $1MM	>= $100,000 and <= $1MM
Board of Directors	> $1MM	> $1MM

4.5.2.2 Inventory

All inventory related Purchase Requisitions, except for inventory purchases required to maintain approved minimum inventory levels, are to be approved based on the following authority limits:

Position	Authority Limits - Inventory
Supervisor/Manager	<= $25,000
Director	> $25,000 and <= $50,000
Vice President	<= $100,000
Chief Financial Officer	<= $100,000; Up to $250,000 jointly with the President and CEO
President and CEO	> $100,000 <= $1MM
Board Chair	> $1MM

4.5 Purchasing Requisitions (Continued)

4.5.2 Approval (Continued)

4.5.2.3 Consulting Services

Only Vice Presidents, CFO, and CEO may authorize consulting service expenditures, in accordance with the following authority limits:

Position	Authority Limits - Consulting
Vice President	<= $10,000
Chief Financial Officer	<= $10,000
President and CEO	> $10,000 and <= $50,000
Board	> $50,000

4.5.2.4 Delegation of Authority

The President and CEO is authorized to delegate approval authority to an employee in accordance with the approval limits set out in this policy. The President and CEO or the Board Chair is authorized to delegate the approval authority of the President and CEO to the Chief Financial Officer in the case of an emergency, extended absence, or vacation.

5.0 PURCHASING AND TENDERING PRACTICES

5.1 General

All purchasing activities will be conducted through the Purchasing Department to ensure cost effective procurement of goods and services in a timely manner. Purchase orders must be issued for all purchases in excess of $500. Purchase requisitions are to be prepared by the department requisitioning the goods or services and approved in accordance with the authority limits outlined in Section 4.0.

Purchase orders will be prepared by the Purchasing Department from the authorized purchase requisitions and sent to the appropriate supplier.

5.0 PURCHASING AND TENDERING PRACTICES (Continued)

5.2 Purchasing Process

The following purchasing process shall be applied to the purchase of goods and services with corresponding monetary limits and authorization levels:

$ Expenditure Limit	Purchasing Process
$10,000 or less	Informal Purchasing Method – Verbal or written quotation.
>$10,000 <= $50,000	Written Quotations – 3 or more suppliers.
> $50,000	Request for Tender/Proposal

The determination of the dollar limits, reflect the actual purchase or, in the case of on-going purchase commitments, the estimated annual expenditure would apply.

5.2.1 Informal Purchasing Methods

The informal purchasing methods will be used for smaller value goods and services that are used on a regular basis. The Supervisor of Purchasing will obtain offers from suppliers verbally or in writing. With assistance from and in agreement with the requisitioning department, an official purchase order will be issued to the lowest bidder meeting the specifications.

5.2.2 Verbal or Written Quotations

The Supervisor of Purchasing will obtain three competitive quotations (by fax, telephone or email), if possible. A record of quotation must be maintained. With assistance from and in agreement with the requisitioning department, an official purchase order will be issued to the successful bidder based upon price, specifications, and in accordance with the governing principles.

5.2.3 Request for Tender/Proposal

A formal Request for Tender (“RFT”) or Request for Proposal (“RFP”) will be issued for all purchases in excess of $50,000. The RFT or RFP will provide complete scope of work, specifications, and evaluation criteria.

All specifications shall be reasonable, clear, without ambiguity, and shall be designed to allow submission of tenders and quotations by the maximum number of responsible vendors. The requisitioning department shall be responsible for the technical accuracy of the specifications. Any correspondence arising should include both the requisitioning department and the Purchasing Department, to maintain full co-ordination. Sufficient drawings and instructions should accompany each request for tender.

5.2 Purchasing Process (Continued)

5.2.3 Request for Tender/Proposal (Continued)

The Supervisor of Purchasing is responsible for ensuring that all components of the tender are included in the package, and that sufficient bidding time is allowed and, further, that all qualified bidders have an opportunity to submit a tender.

The Supervisor of Purchasing will invite sealed tenders, or advertise for sealed tenders, and request sealed documents be addressed to the Company by the deadline and time. Any tender received after the deadline will not be accepted, except in unusual circumstances, and will be returned unopened to the supplier. The sealed tenders will be opened by the Purchasing Department with the requisitioning department present.

The Supervisor of Purchasing and the Vice President of the Department shall reach agreement on the recommendation of award. Where the total value of the RFP exceeds the approval limits as outlined in Section 4.5.2, or in the event a recommendation cannot be reached, a purchasing report is to be prepared for approval by the President and CEO.

In all cases, the Company reserves the right not to issue a Purchase Order following the purchase processes outlined in Section 5.2.1, 5.2.2, and 5.2.3.

5.2.4 Negotiating Prices

In special cases where negotiation will result in better prices or better deliveries, the Supervisor of Purchasing will have the authority to do so after consultation with and under the direction of the appropriate Vice President.

5.2.5 Singularly Approved Vendor

On singularly approved material and equipment and items of standardization, the Supervisor of Purchasing may purchase these items without competition when the price is considered fair, under proper evaluation. Singularly approved contractor situations may occur when other related business transactions require the use of that contractor without competitive tenders. The pricing will be reviewed by Engineering and Purchasing to ensure that the pricing is appropriate, fair and reasonable.

5.2 Purchasing Process (Continued)

5.2.6 Prequalification of Contractors

Where pre-qualified contractors form the bidders list, it will be the responsibility of the Engineering Department to conduct pre-qualification. The Supervisor of Purchasing will have the right to submit names of contractors for consideration of pre-qualification.

Any additions, deletions, or any other changes should be reported at once to the Supervisor of Purchasing for tendering information.

5.2.7 Computer Equipment and Software

Departments requiring the acquisition of computer equipment and software shall contact the Information Systems ("IS") Department for instruction, research, assistance in system configuration, and approval. The IS Department shall prepare the appropriate specifications for use in obtaining competitive pricing.

5.2.8 Revealing of Prices

Prices will only be revealed to those who tendered a competitive quote. The price revealed will be the total price only of the bids received.

5.3 Purchase Order Approval Levels

All Purchase Orders are to be approved based upon the following authority limits:

5.3.1 Inventory Items

The Purchasing Supervisor is authorized to approve a Purchase Order for inventory items up to the amount of $100,000 to an individual vendor. A Purchase Order shall not be split into two separate Purchase Orders to avoid going to the next level for approval. The Vice President of Operations, or the Vice President of Engineering, or the Chief Financial Officer, or the President must approve Purchase Orders in excess of $100,000 for inventory items.

Inventory levels are to be maintained at the lowest possible level to reduce stock on hand, yet still meet the needs of the Corporation to have material on hand when required. On an annual basis, the Supervisor, Purchasing and Stores is to prepare an inventory listing of recommended Minimum and Maximum levels. The inventory listing is to be reviewed and approved by the Vice President, Operations, the Vice President, Engineering, and Chief Financial Officer.

5.3 Purchase Order Approval Levels (Continued)

5.3.2 Non-Inventory Items

The Purchasing Supervisor is authorized to approve a Purchase Order for non-inventory items up to the amount of $50,000 to an individual vendor. A Purchase Order shall not be split into two separate Purchase Orders to avoid going to the next level for approval. The Vice President of Operations, or the Vice President of Engineering, or the Chief Financial Officer, or the President must approve Purchase Orders in excess of $50,000 for non-inventory items, providing that they have not originated or approved the requisition.

5.3.3 Emergency Purchase

Due to extra-ordinary and emergency circumstances, purchasing policies and procedures may be difficult to adhere to. An emergency shall be defined as any situation which, if not corrected immediately, would result in a hazard to persons or property, create improper working conditions, could result in damage to buildings or facilities, would result in a violation of law, statute or ordinance established by government regulation, or any other fashion, if not acted upon, would be seriously detrimental to the interest of the Company or its customers.

The President and CEO, CFO, or any Vice President may authorize any expenditure in the case of an emergency. The President and CEO should be consulted, as soon as practical, on all emergency purchases that exceed the approval limits as outlined in this policy.

If an emergency purchase is made during non-business hours, all supporting documentation must be forwarded to the appropriate approval authority the next business day, in order that a Purchase Order, if required, may be issued to the vendor. All special situations or deviations from policy should be documented on the paperwork.

6.0 CONTRACTS

6.1. Contracts for Goods and Services

All contracts for the purchase of goods and services, including equipment maintenance agreements, will be approved based on the following:

Position	Authority Limits - Contracts
Vice President	<= $75,000
Chief Financial Officer	<= $100,000
President and CEO	> $100,000 and <= $1MM
Board Chair	> $1MM

The value of the contract, for purposes of the authority limits, will be based on the actual amount of the contract over the term of the contract.

6.2 Agreements

Any one of the Chair, Vice-Chair or Chief Financial Officer, along with the President & CEO, or in his absence the designate where applicable, be authorized to sign and affix the Corporate Seal to all agreements on behalf of the Company.

Agreements would include, but are not limited to the following:

- Subdivision Agreements
- Easements
- Railway Crossings
- Joint Trench and Pole Attachment Agreements
- Property Sales and Purchase Agreements

7.0 PURCHASING CARDS

7.1 General

Use of Purchase Cards ("P-Card") is encouraged for small purchases in order to reduce the number of cheques which are issued.

P-Cards will be issued to employees based upon a recommendation and approval by the department Vice President. Requests for P-Cards should be forwarded to the CFO. The CFO will be responsible for authorizing the request, in accordance with the terms of the Company's credit agreements.

The P-Card is not be used for any non-business related expenditures. Employees who receive a P-Card will be required to sign a Corporate Credit Card Assignment Form.

7.2 Process

All purchases using the P-Card are to be supported by invoices and/or receipts. Receipts are to be forwarded to Accounting (Attention: Accounts Payable) and should include the proper account coding, including cost centre, general ledger, and project number, if applicable.

7.3 Approvals

The monthly P-Card statement is to be approved by the Department management based upon the authority limits outlined in Section 4.0.

Appendix C

Forestry Contract Specifications

SPECIFICATIONS

CONTRACTOR QUALIFICATIONS

1. The Contractor must be a member of E&USA. (IHSA) Please supply member number.

2. The contractor must supply references.

3. **All personnel must meet trade qualifications of current legislation.**

4. A Certified Arborist on site would be advantageous.

DESCRIPTION OF WORK

The following is a summary of the work to be done under this tender:

1. Trim and/or remove all trees and underbrush in and around our overhead plant in the manner described below, in order to maintain proper clearances from our overhead lines. **Clearances must accommodate a four (4) year growth period.** If necessary for appearance, the trimming may be required to be for a longer growth period.

2. Trimming Practices will be in accordance with Cambridge & North Dumfries Hydro Inc.'s specifications which are included in this package.

3. Trimming will be in accordance with ANSI A300 Standards.

PRUNING STANDARDS

1. Natural target pruning to branch collar.

2. Drop crotch pruning of upper crowns to tip back from conductors.

3. Lower skirts and lateral branches to be trimmed back and shaped.

4. Limbs to be directionally pruned away from conductors.

5. Where trees are being topped or pruned, the remaining lateral branches should be at least 1/3 the diameter of the parent limb.

6. Good tree maintenance shall be practiced by corrective pruning, the removal of stubs, dead wood and the correction of faulty cuts.

7. Stiffen all limbs or main stems of trees, that could sag or fall into conductors when weighted with snow or ice. Directionally prune the crown of trees away from conductors.

8. All dead or diseased limbs which, under normal wind conditions, could strike or fall into conductors or electrical apparatus shall be removed.

9. Any limb over utility lines, structures, etc. that cannot be handled or lowered safely by hand will be carefully roped and lowered by hand.

10. Cuts should be made carefully at the correct location, leaving a smooth surface with no jagged or torn bark. (chain saws are not to be used for pruning and pruning equipment must be maintained in a sharp condition)

11. Maintain ½ of foliage on individual limbs to distribute weight for health of limbs and to reduce water sprouting. (no “lion tailing”)

12. Remove low vigor branches and water sprouts, crowded or crossed limbs which could fall and contact conductors or electrical apparatus.

13. Contractors shall remove limbs as may be necessary for the maintenance of tree symmetry.

14. All vines and vegetation is to be removed off CND Hydro Inc. structures.

15. Where the entire tree has been pruned for shape, the same will continue when clearing for energized conductors. (This means the shole tree, not just around energized conductors).

16. Trees damaged or trimmed improperly or which die due to improper pruning practices, the contractor is to make restitution to the customer.

17. Any nuisance trees such as trees topped repeatedly over the years are to be removed at ground level if the customer requests.

18. When spruce, pines and cedars are topped – lateral branches are to be shortened to maintain conical shape.

19. Dangerous trees and trees leaning towards conductors are to be trimmed or removed so as to prevent them from contacting conductors or electrical apparatus, should they fall. Danger trees including dead, decayed, water sprouts, Cambrian canker, visible root rot. In some locations, the entire tree will need to be removed. (See Forestry Sub-Foreperson for clarification).

20. Under brush/trees above 3’ (feet) in height to be removed at ground level e.g. along railway, roadway, across fields and river crossings. Compatible species would be exempt. (See Forestry Sub- Foreperson for clarification).

21. No **“hangers”** will be left in any pruned tree when leaving the site.

22. Please refer to attached reference sheets for proper pruning practices.

23. Contractor to ensure entire line (primary & secondary) I trimmed before moving to new location and work area to be left in or near original condition.

24. Where any brush is left, permission must first be obtained from the landowner in writing. Any such brush must be piled neatly at the edge of right-of-way or at owner’s discretion.

25. Contractor is to ensure all work permits are obtained (e.g. City of Cambridge, Highway Occupancy Permit and Regional Work Permit).

26. All trees to be trimmed in/around streetlights to ensure proper illumination.

27. Lower skirts to be trimmed to ensure proper illumination of streets.

Appendix D

Vegetation Management Policy

CAMBRIDGE AND NORTH DUMFRIES HYDRO INC. PROCEDURES	PROCEDURE #	OPS-118
	DATE ISSUED	February 2014
VEGETATION MANAGEMENT PROGRAM	DATE REVISED	
	PAGE NO.	1 of 6
APPROVED BY: VICE-PRESIDENT, OPERATIONS	SIGNATURE:	

Purpose:

Cambridge and North Dumfries Hydro Inc. (CND) must manage vegetation around power lines for several reasons. Vegetation is one of the leading causes of outages on its overhead distribution systems. The power outages lead to increased costs, decreased revenues, and dissatisfied customers. Moreover, tree and power line conflicts and downed power lines pose serious safety issues for both utility employees and customers.

There are also issues regarding wild fires caused by tree and power line conflicts. These types of fires can create serious liability issues for CND. Also, the current Ontario Regulation 22/04 (Electrical Distribution Safety) regarding vegetation around power lines have made compliance a primary reason to manage vegetation. This document briefly describes the Cambridge and North Dumfries Hydro Inc.'s Vegetation Management Program in order to mitigate risk and ensure power reliability.

Scope:

This Vegetation Management Program (VMP) applies to all CND-managed Distribution lines in Cambridge and The Township of North Dumfries. A distribution line carries high-voltage electricity (16 kV to 27.6 kV) over long distances from distribution stations and delivers to consumers, where the voltage is reduced for delivery to residential, commercial and industrial customers.

For operational purposes, CNDHI divides the Service Territory into four Tree Trimming Areas for the 4-year cycle. This Standard applies across all Operations, and includes all employees and contractors working on company projects and within the company service area.

Definitions:

Competent Person: one qualified by knowledge, training and experience to performed assigned work

Constructor: Means a person who undertakes a project for an owner and includes an owner who undertakes all or part of a project by himself or by more than one employer.

Employer: Means a person who employs one or more workers or contracts for the services of one or more workers and includes a contractor or subcontractor who performs work or supplies services and a contractor or subcontractor who undertakes with an owner, constructor, contractor or subcontractor to perform work or supply services.

Supervisor: Means a person who has charge of a workplace or authority over a worker.

Worker: Means a person who performs work or supplies services for monetary compensation.

A Hazard Tree: is a tree that is defective, has an imminent potential to fall, and is likely to hit or damage a person or target (CNDHI line or electrical equipment) when it falls. A danger tree is a tree close to powerlines, which is tall enough, or will be tall enough within five years, that it could pose a danger to the lines if it fails.

Key Components of the CNDHI Vegetation Management Program

1. A professional, qualified team:

   - Supervisor, Project Management

The company has a full time Supervisor, Project Management who directly reports to the Vice-President of Operations Department. Among other duties of this position are: a) Direct and lead any contractor construction crews in the field, you are responsible for electrical system crews and tree trimming crews b) Ensure each member of crew is in full compliance with Health and Safety Legislation by promoting and utilizing approved methods and procedures in their daily duties, c) Perform site visits to crews and contractors in accordance with corporate policy and procedural guidelines.

   - Competent Contractors

With its existing Contractor Management Program, and following the current bidding process, CNDHI ensures to hire tree trimming contractors that could deliver their services with competence and professionalism. CNDHI ensures that these contractors possess many years of experience, good knowledge and skills in the field of tree trimming and that their staffs are highly qualified, and work in a fast, efficient and friendly manner. These contractors are fully licensed and insured and with good safety records.

The Operations Department has the overall authority and support to design, administer and direct the CNDHI Vegetation Management Program.

The other key components of the CNDHI Vegetation Management Program are: a) Consistent application of proper arboricultural and integrated vegetation management (IVM) best management practices; b) Accessible, responsive work record and management system; c) Regular performance and compliance auditing; and d) Appropriate funding.

Responsibility:

Management's primary role is to ensure that the program receives the proper staffing, financial resources and leadership support required to fully and effectively carry out the program to achieve the company's tree and vegetation management goals and objectives.

1. Senior leadership is responsible to ensure that this Program is applied at all operations.
2. Operations leadership/managers/supervisors and contractors are responsible to ensure that the Program is implemented and maintained at their operations.
3. Employees are responsible to follow this program/standard on a daily basis and must continually assess the risk.

Supervisor, Project Management:

1. Organize, plan trimming program
2. Supervise contractor performance
3. Monitor budget and breakdown including recording of information
4. Customer contact by phone and on site
5. Survey Rebuild Areas for estimating costs for Engineering Dept. customer contact for trimming/tree removal and replacement, availability of contractors, organizing and plan time table for completion.
6. Compile list and prepare contract for routine trimming cycle, nuisance tree removal/ replacement program, hot spots. This includes map preparation on computer and manually.
7. Survey private pole lines, trouble report
8. Conduct Orientation and Site Meetings with contractors (Refer to Appendix A: Contractor Orientation Form)
9. Emergency work trouble shooting

Supervisor, Purchasing

1. Prepare tender documents for tree trimming projects and ensure contractors submit all documentation required for the project. (Refer to Appendix B- Sample of Tender Document)
2. Keep all tender documents on file.

Supervisor, Safety and Training

1. Evaluate safety-related documents submitted by tree trimming project bidders. Submit completed evaluation to the Supervisor, Project Management.
2. Randomly conduct site visit to observe tree trimmers/contractors' unsafe act/condition in the field.

Manager, Corporate Communication

1. Post and maintain in the company website safety- related tips/guidelines on tree trimming.
2. Maintain good public relations. Response to customer queries and informs customers and target audiences that CNDHI tree and vegetation management program is professionally managed and technically correct.

General Procedures:

1. A job plan shall be prepared and discussed, agreed to and documented by contractor employees and/or CNDHI employees on the job site. This job plan shall include all known and potential hazards associated with the tree trimming task at hand, as well as barriers to be employed to eliminate, control or minimize those hazards.

2. Contractor employees/CNDHI employees should be aware of the following relevant standards and best management practices related to utility arboriculture and utility vegetation management:
   -Tree worker safety – ANSI Standard Z133: “Tree Worker Safety Standards”
   -Pruning of Trees – ANSI Standard A300: “Pruning Standard (Part 1)
   -Integrated Vegetation Management – ANSI Standard A300: “Integrated Vegetation Management (Part7)
   -Tree Risk Assessment – ANSI Standard A300: “Tree Risk Assessment (Part 9)

3. Contractor employees/CNDHI employees should be aware of the following relevant “Electrical Utility Safety Rules” (EUSR):
   -Rule 101 – Employer’s Management of rules
   -Rule 107 – Job Planning
   -Rule 111 – Emergency Response Plan
   -Rule 112 – Rescue Operations
   -Rule 118 – Establishment of Hold-offs
   -Rule 129 – Safe Limits of Approach
   -Rule 130 – Items in Direct Contact with Energized Apparatus
   -Rule 134 – Inspection, Testing and Selection of Live line Tools, protective Equipment and Aerial Devices
   -Rule 135 Rubber Glove Work

4. CNDHI crew should never climb a tree to complete the task of pruning trees. The line clearing should be done from a bucket truck. The System Control Operator shall contact appropriate forestry contractor to complete the tree climbing work.

5. Hazard trees can pose a threat to the electric system. High-risk tress shall be removed before they fall and affect customer service and safety. Some of the things to look for when identifying hazard trees include: regrowth from topping, line clearance or other pruning branches, b) electrical lines adjacent to the tree, c) damaged, broken or partly attached branches, d) weakness, such as an open cavity in trunk or branch , e) dead or dying branch, f) odd growth such as branches arising at one point on the trunk, g) decay and rot present in old wounds h) recent change in grade, soil level or other construction.

   In case the tree will be removed and replaced, the Supervisor of Project Management will inform in writing the homeowner and property owner. (Please refer to Appendix C- Tree Replacement Program Sample Letter and Appendix D - Tree Planting Spec.).

6. The company vegetation management team shall prune the lines within its territory in a four-year cycle (Area I, Area II, Area III and Area IV) as shown the geographic MAP. Pruning should be conducted just before re-growth comes in contact with the electrical distribution system. Although trimming by area is done, if a critical section of a particular circuit is affected by outages, the tree trimming shall be done in said areas to reduce experience of tree-related outages.

7. The following guidelines produced by the Electrical Safety Authority (ESA) have to be followed: a) Homeowner Safety Checklist, b) Planting around or under Power lines and Electrical Equipment Guidelines c) Trimming Trees around Power lines.

8. Spring Patrols: The spring patrol occurs between March and June each year. The purpose is to verify and collect information to plan the coming year's vegetation management programs, and to refine work plans.

9. Fall Patrols: The fall patrol, if needed, occurs between September and December each year. It provides an update of site conditions after the summer's vegetation management program. It is also used to develop the annual plan for the upcoming year.

Appendix:

Appendix A Contractor Orientation Form
Appendix B Tree Replacement Program Sample Letter
Appendix C Tree Planting Spec.
Appendix D Patrol /Monitoring Form
Appendix E ESA Tree Planting and Trimming Safety
http://www.esasafe.com/assets/files/esaeds/pdf/dib/DIB-03-12-Tree-Trimming-Tree-Planting-Around-Powerlines-Guidelines.pdf

Revision History

Version	Date	Description	Author
1.0	February 2014	Original	S. Go
2.0			

Appendix E

Emergency Plan

CAMBRIDGE AND NORTH DUMFRIES HYDRO INC.

CAMBRIDGE AND NORTH DUMFRIES HYDRO INC.

Emergency Plan

Power Distribution System Operation

Table of Contents

i) Executive Summary

An emergency plan provides for a planned, effective response to events having an effect on the reliability and security of the power distribution system. This document focuses on contingencies that result in power outages to Cambridge and North Dumfries Hydro Inc. (CNDHI) customers and events having an adverse effect on the safe and secure operation of the power distribution system.

This document takes into account information from documents such as CNDHI policies and procedures, the MEA Guide to Utility Emergency Planning, and IESO requirements.

Key emergency preparedness goals include preservation of human life, reduction of property damage, and minimization of business down time. Events such as the ice storm of 1998 and previous widespread rotating blackouts have been considered during the preparation of this plan. Environmental emergencies such as PCB spills or fires have also been addressed.

Close co-ordination with various authorities during all stages of an emergency is of utmost importance. Key elements in a utility emergency plan include:

1) Incident avoidance
2) Definition and recognition of an emergency
3) Internal and external communications
4) Organizational and resource considerations
5) Plan administration

The possibility of an incident producing an emergency situation can be reduced through the application of appropriate system design, equipment specifications, planned system maintenance, and utility operating practices. With these items successfully incorporated, emergency situations can be defined and proper measures can be taken to react to any given situation. Communication with internal utility staff, external contractors, customers, municipal staff, and other emergency organizations is defined. CNDHI has identified an Emergency Coordinator and assigned specific duties to all departments and personnel during an emergency.

Sections of the emergency plan should be tested through a drill exercise at least annually. The entire plan should be exercised at least once every three years. Telephone numbers and contact names found in the appendices of this document will be updated regularly. Since exercises and drills are actual tests of the plan, suggestions and revisions that are identified shall be incorporated into the plan as necessary.

This emergency plan shall be reviewed at least annually or as required. After review, CNDHI shall submit certification to the IESO confirming that the review has not required any change or submit to the IESO a revised version of this emergency plan together with a statement identifying such amendments. On an annual basis, CNDHI must file IESO Form 1608 certifying the annual review and testing of this emergency plan.

CNDHI can be contacted 24 hours per day, 7 days per week, 365 days per year at 519-621-3530. In the event of an emergency, the IESO may contact CNDHI at 519-621-3530, ext. [redacted] (during regular hours) or 519-[redacted] (after regular hours) to reach the SCC. The SCC will then contact the Engineering Supervisor, Distribution and the Emergency Coordinator.

ii) Definitions and Applicable Standards

The following definitions of acronyms and terms apply to this document:

CNDHI:	Cambridge and North Dumfries Hydro Incorporated
CIS:	Customer Information System
GIS:	Geographic Information System
IESO:	Independent Electricity System Operator
OFP:	Operations Field Personnel
OTO:	Order to Operate
EDA:	Electricity Distributors Association (previously Municipal Electric Association (MEA)
MOE:	Ontario Ministry of the Environment
PCB:	Polychlorinated Biphenyls
SCADA:	Supervisory Control and Data Acquisition
SCC:	System Control Center
SCO:	System Control Operator
TAS:	CNDHI Telephone Answering Service
TS:	Transformer Station
UPS:	Uninterruptible Power Supply

Applicable Standards and legislation that were considered in the development of this plan include:

- The Electricity Act – 1998, Section 39
- Distribution System Loss of Supply Guide to Contingency Planning – MEA September, 1995
- MEA Guide to Utility Emergency Planning – April, 2000
- Guidelines for Preparing a Bulk Electric System Contingency Planning Manual – MEA – December 1993
- IESO Ontario Electricity Emergency Plan – Issue 3.0, May 26, 2005
- MOE and Environment Canada PCB Regulations
- IMO (now IESO) Market Participant Emergency Planning Guidelines – Issue 1.0, June 2, 200

1. Emergency Planning

1.1 Emergency Coordinator

1.1.1 Designate

The Emergency Coordinator for CNDHI shall be the Director of Engineering backed up by the Director of Operations. The planning and emergency response roles of the Emergency Coordinator are defined in subsequent sections.

1.1.2 Planning Duties

The responsibilities of the Emergency Coordinator with respect to planning include the development, implementation, testing, and maintenance of the Emergency Plan. The Emergency Coordinator has the authority to delegate some or all of these responsibilities to other members of the Planning Committee.

1.2 Planning Committee

The Planning Committee shall consist of the following CNDHI staff positions:

- Construction and Maintenance Supervisor
- Underground Construction and Maintenance Supervisor
- Engineering Supervisor - Distribution
- Director of Operations
- Director of Engineering
- Director of Customer Information Services and Conservation
- Director of Customer Care and Public Relations
- Safety and Training Supervisor

The Planning Committee members shall work with the Emergency Coordinator to develop, test, implement, and maintain the Emergency Plan.

1.3 Risk Assessment

1.3.1 Hydro One

CNDHI is supplied by Hydro One. CNDHI then distributes the power to roughly 48,000 customers located in the City of Cambridge and the Township of North Dumfries. Hydro One provides power to CNDHI via two 230 kV radial tap circuits originating at Middleport TS and Detweiler TS (see electrical supply map on the following page). The peak CNDHI load exceeds 320 MW and the system demand peak occurs during the summer months.

Hydro One owns and operates Galt TS located at Franklin Blvd and Athlone Road, and Preston TS located at Hespeler Road and Hwy 401. These stations supply power via a total of 20 (27.6 kV) feeders to the CNDHI power distribution system. A small portion of load located in the Southwest corner of the CNDHI service territory is supplied by another Hydro One station – Wolverton DS. In addition to the above, 3 CNDHI municipal substations transform 27.6 kV to 4 kV for lower voltage power distribution in some areas. In the event of an emergency, regular contact would be established and maintained between Hydro One and the CNDHI SCC.

CNDHI owned and operated MTS#1 is located at 499 Conestoga Blvd just North of Bishop Street. This station supplies power and a total of 8 (27.6 kV) feeders.

Refer to Appendix "K" for a copy of the Transmission Connection Agreement between Hydro One and CNDHI.

1.3.2 Power Outages

For the purposes of this document, events affecting the supply of electricity to CNDHI customers shall fall under one of two categories:

1) Contingency – least severe, and
2) Emergency – most severe

A contingency is defined as any unforeseen event. For the purposes of this document, any event having an impact on the electrical supply to the customers of CNDHI shall be considered a contingency.

Contingencies are classified into three priorities:

Priority 1: An event that involves a prolonged outage to a Hospital, 28kV feeder lockout (typically > 1,000 customers), loss of a station, or loss of more than 5MW.

Priority 2: An event that involves an 8kV or 4kV feeder lockout or loss of 1-5MW (typically 250 to 1,000 customers).

Priority 3: Any other outage or a loss of up to 1 MW of load.

An emergency is defined as a Priority 1 contingency that requires more than 12 OFP's to restore and where restoration work is projected to last more than 16 hours, or any event that has an adverse impact on the safe, secure, and reliable operation of the CNDHI power distribution system.

Priority 3 contingencies happen on a fairly regular basis. These types of outages have a relatively small impact on the supply to CNDHI customers. Priority 1 and 2 outages do not happen very often (typically less than 5 per month), however, the impact on the power distribution system is more widespread. A single feeder lockout can result in an outage to as many as 4,400 customers. A station bus outage can affect up to 17,000 customers. Although outages of this magnitude are extremely rare, the potential for this type of outage does exist. Events that may not be classed as Priority 1 contingencies but could have an adverse impact on power distribution operation include 230kV outages on both CNDHI supply lines, Hydro One initiated rotating blackouts, or the emergency evacuation of CNDHI offices due to fire or other reasons.

Following are some causes of contingencies or unscheduled outages:

a) Weather
b) Equipment failure
c) Animal contact
d) Tree contact
e) Vehicle accident
f) Loss of supply (Hydro One)

1.3.3 Priority Load

1.3.3.1 Load Restoration

Work begins based on set priorities. The initial step is to repair transmission lines to distribution substations because those lines carry power from generating stations to large numbers of customers over wide areas. When those repairs are complete, power is restored to critical

community services including hospitals, wells, sewage treatment plants, police and fire departments and nursing homes. Work is then begun to restore power to the greatest number of customers in the shortest possible time. Power is restored systematically to neighborhoods, industries and businesses and followed by small groups of customers and single residences.

CNDHI has one hospital and it is normally supplied by the feeder [redacted] originating from Galt TS. During widespread outage restoration, this feeder shall take priority over others so that a normal supply to the hospital can be maintained, if possible, throughout the emergency situation. The next priority would be to restore as many customers as quickly as possible via automated 27.6 kV switching. Feeders supplying municipal substations serve the most customers and should be restored before other 27.6 kV load is picked up. Finally, 8 kV and 4 kV load should be restored.

1.3.3.2 Load Shedding

CNDHI currently has no means to significantly reduce its overall system demand load other than to drop load. In the event that we are asked to shed load, heavily loaded feeders supplying medium to low numbers of customers shall be considered first. In all cases, the 65M19 feeder supplying the Hospital shall be the last feeder considered for load shedding.

In all cases, for load restoration and shedding, the SCO shall have the final say as to which feeders have priority and how the load is restored or dropped. Individual circumstances may dictate a different approach than that noted above.

1.3.4 Failure of Critical Equipment

Computer systems run the telephone system, SCADA system, customer information system (CIS), and the geographic information system (GIS). Except for some scheduled backup procedures, all critical systems are available on a 24/7 basis. The probability of a failure of one of these systems is low. These systems are fed from a UPS and generator system for continued operation during a loss of the external power supply.

In the event of a failure of the SCADA system, remotely operable devices can be operated locally via local operations field crews. Also, stations can be manually inspected and operated when necessary by stations or operations staff. In the event of a failure of the telephone system, there is a backup independent telephone line available to the SCC. In the event of a failure of the CIS or GIS systems, the SCO would rely on

previous information and paper maps for other information immediately with critical electronic information restored from taped backups within 48 hours, if necessary.

1.3.5 Fire

In the event of a fire in the SCC, items including the SCADA system and all paper operating maps would be destroyed. The radio communication system would still be operational through the use of battery operated portable radio units. Most operating maps are in electronic form and stored in a location physically separate from the SCC, however, some effort and field verification would be required to reproduce information that exists in the SCC such as switch open/close status and real-time power distribution system conditions.

Other systems are also backed up regularly and these backups are stored off site. In the event that the building at 1500 Bishop Street becomes uninhabitable, these backups can be used to reproduce critical systems at another location.

1.4 PCBs

All substation transformers and most distribution transformers in the CNDHI power distribution system are classified as non-PCB (<50ppm). Transformers manufactured in 1982 or earlier may contain PCBs. In the event of a spill if there is any question, tests for PCB's are carried out immediately. Under provincial legislation, CNDHI is a registered storage facility for PCB contaminated oil. The storage facility is located at 1500 Bishop Street just South of the main office building in the equipment and material storage yard. The provincial registration for the storage facility is ON0322101.

In the event of a oil spill or fire, CNDHI Procedure #OPS-100 shall apply. This procedure can be found in the CNDHI Polices and Procedures Manual or on CNDHI's intranet. The procedure outlines reporting requirements and contains contact information.

1.5 External Organizations

The development of this emergency plan includes several external emergency organizations. These include:

- The City of Cambridge
- The Township of North Dumfries
- The Regional Municipality of Waterloo

- Hydro One
- Emergency Measures Ontario
- Independent Electricity System Operator
- Preparedness Information Exchange
- Risk Assessment and Natural Hazards
- Canadian Center for Emergency Preparedness

Chapter E9 of the Revised Statutes of Ontario, 1990 is the Emergency Management and Civil Protection Act. This Act provides provincial authority to municipalities to establish and implement their Emergency Plans. Also included are some specific requirements to be met in the preparation of the Emergency Plans. The City of Cambridge is responsible at the municipal level for emergency preparedness. City of Cambridge By Law # 82-90 provides the legal requirement for the provision of a municipal emergency plan. The Region of Waterloo depends on its own procedures, the Regional Emergency Plan and the Plans of each municipality within the Region to meet its emergency preparedness requirements.

CNDHI is referenced in the City of Cambridge Emergency Plan. A copy of the City's Emergency Plan can be downloaded at http://www.city.cambridge.on.ca/relatedDocs/Emergency%20Response%20Plan%20-%20Website%20Copy%202008.pdf
A printed copy is available from CNDHI's Engineering Supervisor, Distribution. Part I - Section 10.2 defines the Co-ordinating Group working in support of the Community Control Group. CNDHI is listed as part of the Co-ordinating Group. When required by the Community Control Group, members of the Co-ordinating Group will be called upon for assistance.

CNDHI is referenced in the Region of Waterloo Emergency Plan as one of the hydro companies. A copy of the Region's Emergency Plan can be downloaded at www.wrem.ca/en/emergencyplans/index.asp. A printed copy is available from CNDHI's Engineering Supervisor, Distribution. A representative from either Kitchener-Wilmot Hydro, Waterloo North Hydro or Cambridge and North Dumfries Hydro will be the "Hydro Coordinator" and be a member of the Regional Emergency Control Group. The Hydro Coordinator will be responsible for:

(a) Ensuring the notification of appropriate President(s) of affected Hydro Company(s).
(b) Liaising with the affected Hydro Company(s).
(c) Liaising with Hydro One respecting the bulk supply (transmission) to the Waterloo Region area.
(d) Notifying critical organizations (eg. hospitals) or companies of outages.
(e) Discontinuing services to any consumer where this is considered in the interest of public safety.
(f) Co-ordinating with the other members of the Regional Emergency

Control Group in establishing priorities for the restoration of services.

(g) Maintaining/restoring services on a priority basis where necessary and practical (eg. Evacuation Centres) as determined by the Regional Emergency Control Group.
(h) Making arrangements for required additional staff and supplies to restore the electrical distribution system.
(i) Liaising the Electrical Safety Authority for inspections for restoration of electrical services.
(j) Assisting the Emergency Site Manager as appointed by the Emergency Control Group in fulfilling his/her responsibilities when required.
(k) Maintain a log outlining communications and actions taken as well as participating in a debriefing, assisting the Manager of Emergency Measures in the preparation of a report on the emergency.

If an emergency is declared by the City or the Region and CNDHI assistance is required, the CNDHI Engineering Supervisor, Distribution shall be notified immediately. If the situation might be classified as an emergency by CNDHI, the Emergency Coordinator shall also be notified and procedures outlined in this document shall apply.

In the case where an emergency is declared by CNDHI first, the SCC shall request assistance as necessary from various external organizations.

See Appendix 'D' – External Emergency Organization List for a complete listing of external emergency response organizations.

1.6 Emergency Response Organization

The roles and responsibilities of CNDHI staff shall be allocated to best suit emergency conditions. Table 1 identifies specific personnel titles to be implemented in an emergency situation. Each emergency personnel designation includes a regular CNDHI position and a backup position in the event that the person in the regular position is away during the declaration of an emergency.

See Appendix 'A' – CNDHI Contacts and Cell Phone Lists for CNDHI personnel contact information.

Table 1. – Emergency Personnel Designation

Emergency Personnel Designation	**CNDHI Regular Position**	**CNDHI Backup Position**
Emergency Coordinator	Director of Engineering	Director of Operations
System Coordinator	Engineering Supervisor - Distribution	Director of Customer Information Services and Conservation
System Dispatcher	System Control Operator	System Control Operator
Operations Coordinator	Construction and Maintenance Supervisor	Underground Construction and Maintenance Supervisor
Support Staff Coordinator	Engineering Services Supervisor	Metering Supervisor
Communications Coordinator	Director of Customer Care and Public Relations	Director of Human Resources
Telephone Center Supervisor	Customer Care Supervisor	Director of Customer Care and Public Relations
Safety Coordinator	Safety and Training Supervisor	Construction Projects Supervisor

1.7 *Resources*

CNDHI regularly employs contractors in its day-to-day activities. Overhead, underground, and stations contractors are available in the event that CNDHI forces are not adequate to perform restoration work due to severe power system outages. A listing of Contractors who can be available in the event of an emergency is provided in Appendix 'G' – Contractors and External Utilities.

Material supply is of great importance during any large-scale power outage restoration project. Some large distributors (i.e. Grafton) also carry stock of critical materials. Appendix 'F' – Material Suppliers provides a complete list of material suppliers.

1.8 *Mutual Assistance Plan*

A mutual assistance plan has been developed to make dealings with neighboring utilities planned and consistent.

See Appendix 'B' – Mutual Assistance Plan for the complete plan and its participants.

1.9 *Communications*

1.9.1 *CNDHI Contacts*

Contact information for CNDHI employees is provided in Appendix 'A'. Contact information for external organizations is provided in Appendix 'D'. This information shall be updated on a regular basis. Internal telephone numbers, cell phone / pager numbers, and after hours contact information has been provided where available.

1.9.2 *Telephone System*

The CNDNI phone system is a Mitel 3300 ICP PBX. The system is configured with a 23 channel PRI (Inbound/Outbound Digital Phone Lines) and an 8 Port Voice mail system

Phone numbers are divided into 3 Areas. There is a maximum of 10 lines into the reception area and the main number is (519) 621-3530. Also, 8 lines go directly into our ACD queuing system. The number is (519) 621-3484. A backdoor number linked directly into our voicemail system exists as well. This number is (519) 621-8405. This method of splitting the

number of phone lines allows individuals to choose whether to talk to a live person or bypass the receptionist.

The phone switch has a UPS backup system in case of Power failure so as long as the Phone System is operating calls are answered, through live operators during the day in Mode 'A', the SCC in Mode 'B', and YTS answering service in Mode 'C'. See Section 2.1.1 for Mode definitions.

In Mode 'C' all calls are forwarded to the CNDHI telephone answering service. TAS Operators forward no power calls to the on-call OFP. The TAS can also be utilized when more calls come in than can be answered by CNDHI staff at any given time.

1.9.3 Radio System

Communication between the SCC and field personnel is primarily done via a [redacted] MHz dedicated radio system. This system operates with a base station located at [redacted] A radio repeater is located [redacted] Mobile radios are located in all CNDHI vehicles and portable radios are available for contractor's or other staff's use. Specific radio frequency specifications are as follows:

	Transmit MHz	Receive MHz
Base Station and Mobiles (F1) (via repeater)	[redacted]	[redacted]
Repeater (F1)	[redacted]	[redacted]
Base Station and Mobiles (F2) direct [Talk Around Channel]	[redacted]	[redacted]
Base Station and Mobiles (F3) direct [Line Stringing Channel]	[redacted]	[redacted]
Mobile to Mobile (F4)	[redacted]	[redacted]

Backup for the power supply to the radio base station in the SCC is provided via a UPS and diesel generator. The fuel level for the generator shall be checked immediately upon a loss of power to determine the first re-fuelling cycle and regular re-fuelling of the generator shall be done every 12 hours thereafter.

The radio repeater site's has a power supply that can be backed up by a portable generator. The portable generator would need to be connected by [redacted] or contractors.

In the event of a failure of the backup systems, communication between the SCC and OFP can be accomplished via cell phones as required. A list of Operations and other staff c/w cell phone numbers is included in Appendix 'A'.

1.9.4 Internet

CNDHI has an internet web site: www.camhydro.com. Customers can log on to this site 24 hours a day to get information about CNDHI. This site is updated periodically. At the present time, in the event of an emergency, this site would not be utilized to notify customers of the status of the emergency situation. The feasibility of utilizing the internet as a tool to notify customers of emergency situations or power outages will be reviewed regularly.

1.9.5 Media

CNDHI is in regular contact with the media through local newspapers, radio and television stations. Media contacts shall be contacted in the event of an emergency. The Director of Customer Care and Public Relations shall be responsible for co-ordination and contact with the media.

See Appendix 'E' – Media Information for contact details.

1.10 SCADA System

CNDHI upgraded its SCADA system in 1998. The Advanced Control Systems master station is located in the SCC. The system provides for monitoring of the telemetry and status of CNDHI owned and operated MTS#1 and all 27.6 kV feeders that supply CNDHI via Preston TS and Galt TS both owned and operated by Hydro One. The system also provides for monitoring and control of 52 field installed automated switches. This monitoring and control enables the SCO, in many cases, to quickly determine the location of a fault and begin the required switching to restore power to customers affected by the outage within minutes after the outage has occurred.

Stations communicate via [redacted] Automated switches communicate via [redacted] system.

The power supply to the SCADA system master station is backed up via a UPS and generator. Field installed devices and stations contain battery backup systems to enable operation of field installed equipment during power outages.

In the event of a prolonged power outage and a failure of the associated backup systems, all field devices can be checked and operated locally by the appropriate OFP or Stations personnel as necessary.

2 Emergency Response

2.1 Activation

Activation of the Emergency Plan involves several stages of contingency event analysis. Figure 1 illustrates the process that shall be adhered to in evaluating a contingency, allowing for notification, and determining if the event has the potential to become an emergency.

2.1.1 CNDHI Operating Modes

CNDHI has several operating modes that affect response to an emergency situation. Response is affected by staffing in the SCC and general office hours of operation:

Mode 'A' (SCC staffed, office staffed) –
Monday to Friday 8:30am – 4:30pm
(except Statutory Holidays)

Mode 'B' (SCC staffed, office closed) –
Monday to Friday 6:00am-8:30am
and 4:30pm-9:30pm
(except Statutory Holidays)

Mode 'C' (SCC not staffed, office closed)
Monday to Friday 9:30pm-6:00am
plus Saturday, Sunday
and Statutory Holidays

2.2 Notification

Before an emergency can be declared, the following information about the contingency event shall be collected:

1) Location(s) of the outage
2) Approximate load lost and number of customers affected
3) Priority customers affected (See Appendix 'C')
4) Approximate expected outage duration

The SCO in conjunction with the Engineering Supervisor - Distribution and the Emergency Coordinator shall determine if an event is to be classified as an emergency.

If the outage meets the criteria described in Section 1.3 – Risk Assessment, then an emergency shall be declared. In all Modes of operation, the Emergency Coordinator shall first notify the Directors and President providing the basic information about the outage and advise them that an emergency is about to be declared.

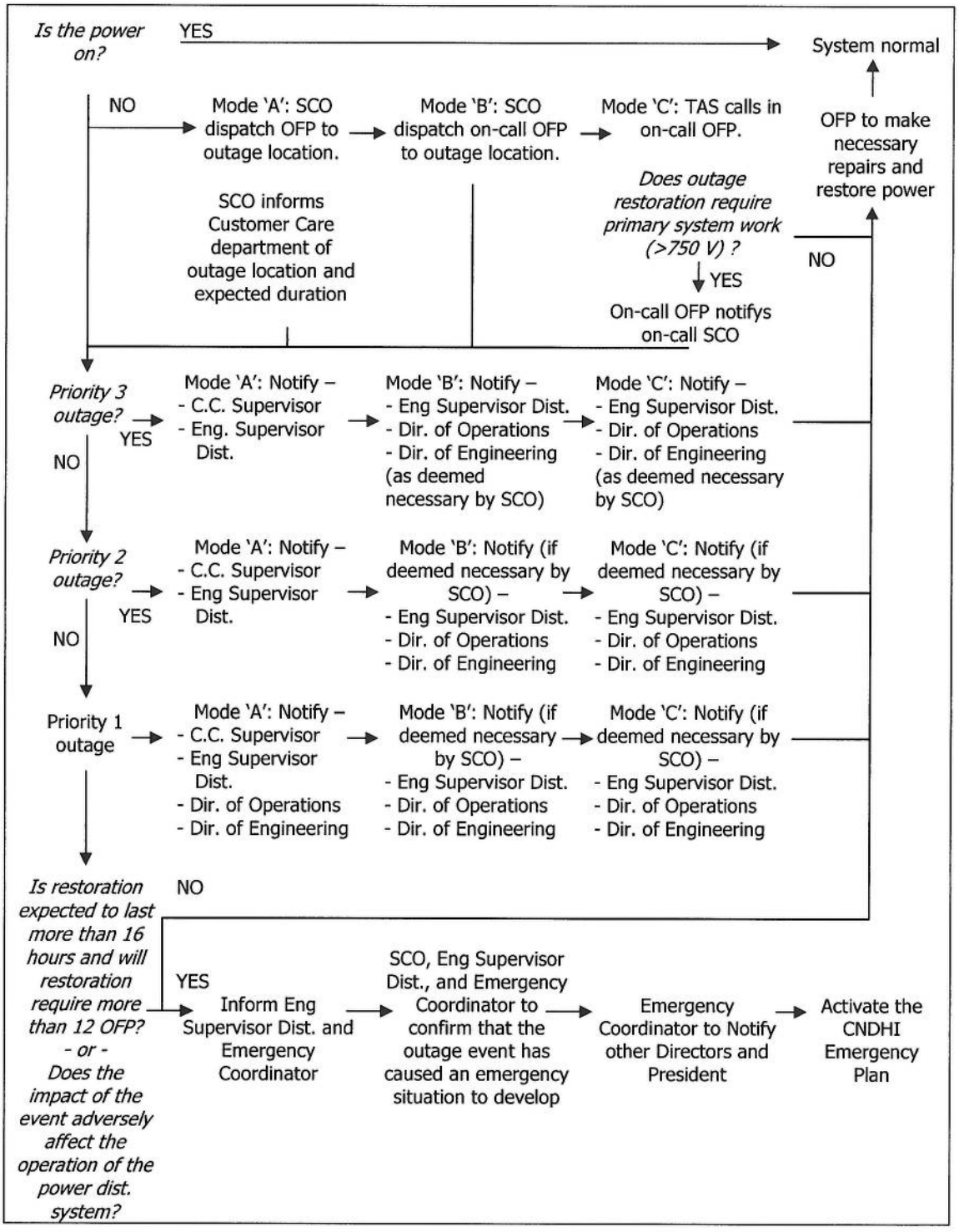
Next, if not already done, the Emergency Coordinator shall contact the System Coordinator, System Dispatcher, Operations Coordinator, Support Staff Coordinator, Communications Coordinator, Telephone Centre Supervisor, and Safety Coordinator who will in turn contact their respective support staff members and who will report to the designated emergency operations center (See Section 2.4).

The Emergency Coordinator shall also co-ordinate the advance notification to any external organizations that may need to be involved. This includes major suppliers, priority customers, contractors, and Mutual Assistance utilities.

If an emergency is declared by an outside body such as the City of Cambridge, the SCC will typically be notified by the Cambridge Fire Dept. See Section 1.5 – External Organizations for details.

Any or all of the above tasks may be delegated to other key emergency response personnel.

Figure 1. – Emergency Response Activation and Notification



2.3 *Emergency Operations*

2.3.1 *Emergency Organization*

Figure 2 summarizes the hierarchical set-up of key emergency response personnel and provides summary responsibilities for each role. Key emergency response roles include: Emergency Coordinator, Communications Coordinator, Safety Coordinator, System Coordinator, Telephone Center Supervisor, Support Staff Coordinator, System Dispatcher, and Operations Coordinator.

Duties assigned to each emergency role may be delegated or re-assigned to other CNDHI personnel as deemed appropriate by the Emergency Coordinator or the person assigned to the associated emergency role.

2.3.1.1 *Emergency Coordinator*

The Emergency Coordinator is responsible for overseeing the response to the emergency situation. This role includes declaring that an emergency is occurring, gaining a general overview of the situation, assessment of the overall operations, the definition of high level priorities, and declaring the termination of the emergency. Any or all related tasks may be delegated by the Emergency Coordinator to other key emergency response roles.

2.3.1.2 *Communications Coordinator*

The Communications Coordinator shall be responsible for ensuring that external media organizations are regularly kept up to date with respect to the status of the emergency.

2.3.1.3 *Telephone Center Supervisor*

The Telephone Center Supervisor shall be responsible for the co-ordination of the following tasks:

1) Answering of Customer Calls
2) Determining if the customer has any specific emergency or special concerns
3) Sorting no power calls by area
4) Advising customers of outage nature and expected duration
5) Customer power billing and record changes
6) Sorting claims calls by area

The Telephone Center Supervisor shall also be responsible for regularly propagating pertinent outage information only to the System Dispatcher.

Claims information shall be collected and forwarded to the Accounting department whenever possible.

2.3.1.4 Safety Coordinator

The Safety Coordinator shall be responsible for all safety-related issues during an emergency. Safety related assistance shall be provided to all personnel working in the field.

Contractors and Mutual Assistance utility staff shall be provided with a safety orientation before any restoration work is completed on the CNDHI power distribution system. The Safety Coordinator shall keep records including date and time of orientations and attendance for each session.

2.3.1.5 System Coordinator

The System Coordinator shall provide liaison between the SCC, Safety Coordinator, and Communications Coordinator. Supply feeders shall be prioritized and priority customers shall be contacted.

The System Coordinator shall also co-ordinate response to special requests from critical customers. Assistance may be required for any failure of the radio communication system or the SCADA system. The System Coordinator shall assist field crews in troubleshooting these systems and co-ordinate the effective repair as priorities dictate.

2.3.1.6 Support Staff Coordinator

Engineering support, material availability, inspection co-ordination, and other field staff support shall be the responsibility of the Support Staff Coordinator.

Engineering department staff shall issue specific work orders if required. Normal costs shall be covered by maintenance standing work orders. Specific cost tracking shall be done via the use of 19C work orders. Accounting shall track costs and invoice as appropriate. Questions to be answered by Engineering staff before extensive restoration work is carried out include:

1) Do we put back what was there in the same configuration?
2) Do we re-insulate for higher voltages?
3) Do we need to build temporary lines to permit more extensive reconstruction?
4) Do we need to consider a new alignment?
5) Do we pull the old pole and plant the new pole in its place or do we need to place the new pole adjacent to the old?

Note: All work must be done in accordance with ESA Ontario Regulation 22/04.

The Purchasing and Stores Supervisor shall arrange for the pick up and delivery of materials required at job sites (pole line hardware, transformers, meters, etc.) and ensure that adequate materials exist in stores. The Purchasing and Stores Supervisor shall work with the Support Staff Coordinator to ensure that materials do not run out. Required materials shall be obtained from suppliers, manufacturers, other neighboring utilities, Hydro One, and contractors.

Where required, surveying and mapping technicians shall provide stakeouts of new poles and anchor locations. Also, staff shall prepare prints as required and collect field notes so that all changes to the system are duly recorded. Also, support staff shall provide for the acquisition of emergency temporary easements for guys or other equipment and arrange for the necessary permits from the City of Cambridge, the Region of Waterloo, Township of North Dumfries, or the Ministry of Transportation.

The Operations Coordinator shall notify the Support Staff Coordinator of requirements associated with meals and lodging for field personnel. The Support Staff Coordinator shall provide for the required response. Food orders require advance notice. It is necessary to plan ahead. Cash amounts can be provided by the Accounting department. Appendix 'J' – 24 Hour Food/Hotel/Fuel Locations provides the necessary information.

2.3.1.7 System Dispatcher

System Control Operators or other designated personnel, who are familiar with the distribution system, switching procedures and CNDHI operating procedures will staff the SCC. They will direct and document all switching operations, and work to safely, effectively, and quickly restore power to all customers affected. Switching will be carried out initially to minimize the impact of the outage. Field crews shall be directed to outage locations by priority. The System Dispatcher shall provide other necessary operating support as required.

The System Dispatcher shall also act as a liaison with other disaster agencies such as Police, Fire, Public Works, etc.

2.3.1.8 Operations Coordinator

The Operations Coordinator shall expedite the safe restoration of the power distribution system. Items such as locates, required tree trimming or line clearing, fleet issues, and contractors providing supplementary

assistance shall be resolved and co-ordinated by the Operations Coordinator.

The Operations Coordinator will review with on-site Forepersons/Sub-Forepersons, the nature and sequence that repairs are to take place. He will review points of isolation and the location of all temporary grounds placed, with the System Dispatcher. It is assumed that material shortages may occur, and with that in mind, material should be reused as much as possible. Pole holes should be excavated using vacuum excavation, wherever possible. This will reduce the risk to underground facilities, if locating services are not available.

Where temporary repairs have been completed, records shall be kept to facilitate future permanent repairs. If feasible, major tree cutting, clearing, and removals will be carried out by tree trimming contractors.

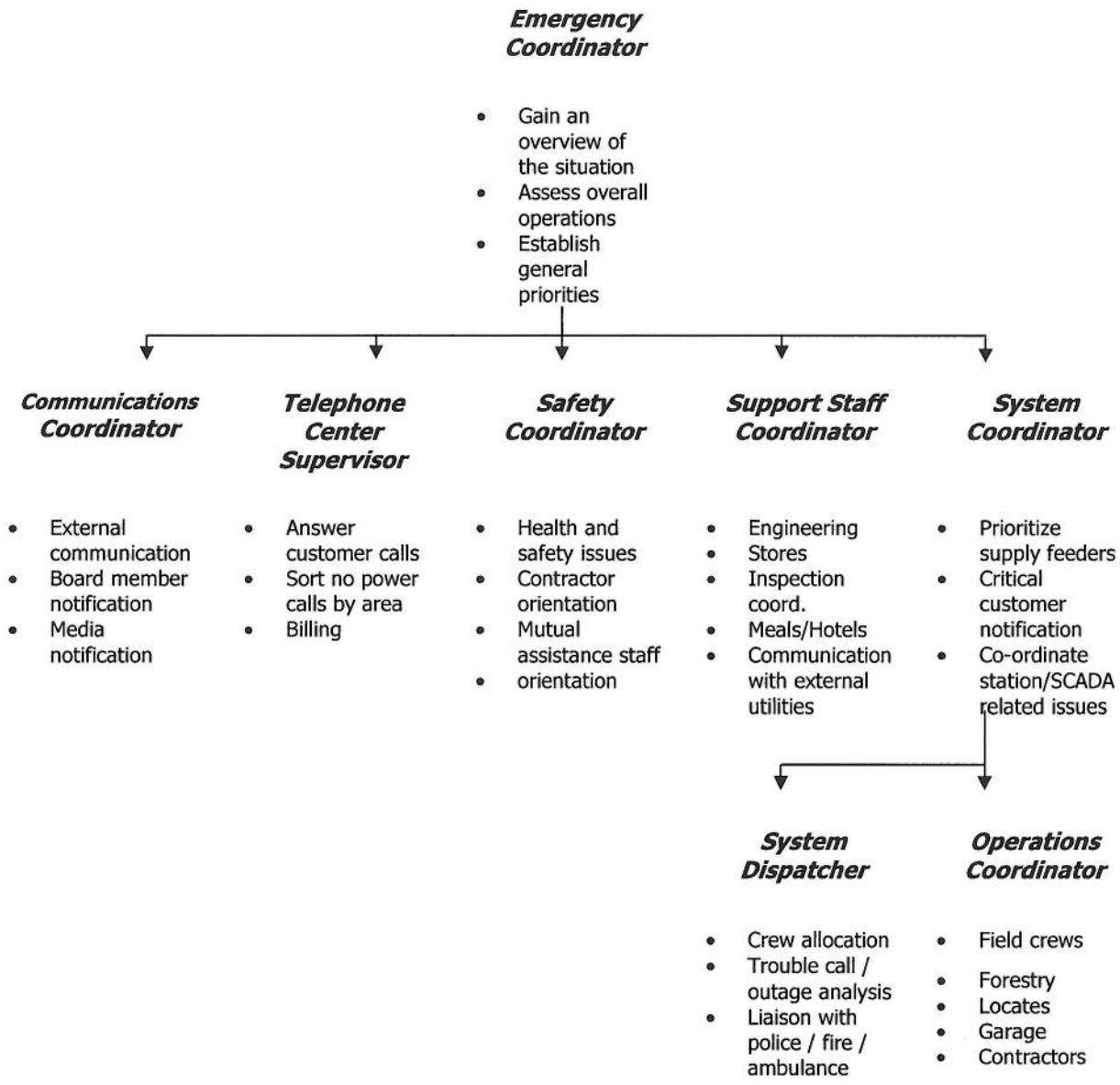
The Operations Coordinator shall also facilitate the supply of emergency lighting in conjunction with portable generators if necessary. Vehicle maintenance shall also be co-ordinated with Garage staff to reduce the risk of an unplanned breakdown.

If additional vehicles are required, the supervisor in charge of the fleet, or his alternate, will make the necessary arrangements. Fuelling of CNDHI and foreign vehicles at the CNDHI Garage location shall be co-ordinated with available Stores staff. In the event that fuelling cannot be carried out at 1500 Bishop Street, Appendix 'J' provides a list of 24 hour fuel center locations.

Appendix 'I'– CNDHI Fleet Equipment provides a list of vehicles that are available.

The Operations Coordinator shall also notify the Support Staff Coordinator of requirements associated with meals and lodging for field personnel. Food orders require advance notice. It is necessary to plan ahead. Cash amounts can be readily available through the Accounting department.

Figure 2. – Emergency Response Organization Hierarchy



2.3.2 Caring for Employees' Families

It is recognized that CNDHI employees have substantial commitments to their families, especially during the course of a major emergency or disaster. In order for employees to be able to respond to CNDHI's needs during a declared emergency or disaster, the President of CNDHI, or his alternate will appoint a Family Emergency Coordinator, as required. The Family Emergency Coordinator will arrange for appropriate assistance for employees' families, as required, such as:

1) Lodging and food; if their home is damaged
2) Transportation to a place of safety (possibly the Office or other appropriate location)
3) Medical care
4) Communications arrangements, etc.

2.3.3 Damage Assessment

Damage assessment is something that occurs even before an event is considered an emergency. Items considered previously include: location of the outage, load lost, number of customers affected, and outage duration.

To accurately assess the amount of damage, the following items also need to be considered:

1) Potential number of downed secondary services
2) Number and type of failed transformers
3) Number of downed poles and spans
4) Potential blown fuse locations
5) Potential underground problem locations
6) Potential station problem locations

2.3.4 Mobilization

Once a preliminary damage assessment is completed, outage locations can be prioritized and crews can be dispatched to the highest priority outage locations first.

After hours, 20 minutes is the required response time for response by the first on-call operations person. If restoration of the outage requires primary switching, the first on-call OFP shall call in the on-call SCO. Required response time by the on-call SCO is 20 minutes also. Travel time to the outage location must be provided for.

During working hours, response can be immediate depending on the outage location and field crew's work sites.

Prior to any significant outage response, trucks must be fuelled, fully stocked, and circle checked. Operations crews shall report to the Emergency Operations Center to obtain all relevant information about the outage before moving out.

2.3.5 Field Personnel Support

Support for Operations line staff will be provided where possible by office staff: Supervisory, Engineering, and Customer Care Field Staff shall assist field personnel. If regular field personnel get busy and are not able to respond to all new trouble calls the first level of troubleshooting for a new outage could be done by other technical staff. This includes feeder patrols, checking for open power fuses, and checking voltage at secondary customer locations.

2.3.6 External Agencies

Co-ordinate communications with other affected utilities: Bell Canada, Rogers Cable TV, Atria, Ministry of Transportation, City Works Department, Union Gas, etc. Appendix 'G – Contractors and External Utilities provides contact information for other utilities that may be affected by the outage or restoration work. Contractor information is also provided in the event that contract services would be required.

Several emergency response organizations are available for assistance as required. Appendix 'D' – External Emergency Organization List provides some details of these types of organizations.

2.3.7 Status Reporting

Reports stating the status of the outage shall be periodically completed and distributed to the Communications Coordinator via the System Coordinator.

A separate report shall be completed for each outage location. Information to be included in the reports include:

Location of the outage, outage start time, number of customers affected, and expected outage duration.

2.4 *Emergency Operations Center*

The designated Emergency Operations Center shall be the SCC and the Engineering Boardroom. Where possible, the Engineering Boardroom shall be utilized for the transfer of information between the SCC and other departments to minimize disruption in the SCC.

The SCC is equipped with a UPS supply and an emergency stand-by generator. The UPS is located in the room adjacent to the SCC and the generator is located above the electrical room in the Garage area.

In the event that the Emergency Operations Center cannot be utilized, then an alternate location shall be found. The MTS#1 located at 499 Conestoga Blvd shall be utilized as an operations center in the event that the regular building cannot be used. Limited space is available at MTS#1.

If neither location can be used due to a more wide spread condition or evacuation, then a suitable alternate site shall be selected in conjunction with the Cambridge Fire department.

2.5 *Property and Equipment*

In addition to the CNDHI service center located at 1500 Bishop Street, CNDHI owns several properties throughout the City of Cambridge. Most of these properties are substation locations. Some of them are vacant. Locations with fences or locked enclosures could be used to temporarily store materials or vehicles in the event of an emergency. A complete list of property locations can be found in Appendix 'H' – Substation (property) Locations. See Appendix 'I' for a complete listing of vehicles in the CNDHI fleet.

2.6 *Termination of the Emergency*

When power is restored to all customers and the power distribution system is no longer vulnerable to widespread outages, the Emergency Coordinator may declare that the emergency situation is over.

Upon termination of the emergency condition, the Emergency Coordinator shall notify all key emergency response staff including the Communications Coordinator, the Safety Coordinator, and the System Coordinator. Thereafter, the appropriate emergency response personnel shall notify all internal and external personnel of the termination of the emergency.

3. Administration

Review

Sections of the emergency plan shall be tested through a drill exercise at least annually. The entire plan shall be exercised at least once every three years. Telephone numbers and contact names found in the appendices of this document are to be updated regularly.

Since exercises and drills are actual tests of the plan, suggestions and revisions that are identified shall be incorporated into the plan as necessary.

Audits and Assessments

Audits and re-evaluation of the Emergency Plan shall occur at least annually. Audits shall include updates of all appendices, and modifications to the emergency plan as required. Modifications may be required as a result of suggested improvements due to an emergency situation or through regular drills and exercises.

On an annual basis, CNDHI must file IESO Form 1608 certifying the annual review and testing of the Emergency Plan.

Training

Upon implementation of this procedure, training will be provided to all management, supervisory and key personnel. Annually, as part of the plan audit and assessment, the need for new or refresher training will be reviewed.

Drills and Exercises

Upon plan implementation, an emergency situation will be simulated and all emergency plan participants shall participate in an initial drill. Exercises shall be performed at least annually and in conjunction with refresher training and plan re-evaluation.

Corrective Action

Sections of the emergency plan should be tested through a drill exercise at least annually. The entire plan should be exercised at least once every three years. Telephone numbers and contact names found in the appendices of this

document will be updated regularly. Since exercises and drills are actual tests of the plan, suggestions and revisions that are identified shall be incorporated into the plan as necessary.

Appendix F

Management Overtime Philosophy and Intent

M. Jane Hale-McDonald
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CAMBRIDGE AND NORTH DUMFRIES HYDRO INC.

MEMORANDUM

DATE: May 13, 2013

TO: Leadership Team

FROM: M. Jane Hale-McDonald
Vice President, Human Resources

RE: Management Overtime Philosophy and Intent

In Ontario Management is excluded from the requirement to pay overtime as per the Employment Standards Act. There is no legal right to overtime pay and no right to compensation for extra hours worked. (The ESA does state that where eligible, employees who are *scheduled for* hours worked over 44 hours in a week employees they are eligible for time and one half.)

Over the past few months we have been struggling with trying to identify what we should do on a consistent basis for our Supervisory staff. We have approached other Utilities to see what best practices are and believe that the following recommendations represent a realistic approach for our Management Team.

1. **All** overtime must be reviewed and approved by the Vice President / CFO in advance of an employee working.

2. Unplanned or additional time to complete work is part of the role and responsibility of a Management employee. This time is not compensated. There is flexibility along with mutual give and take that would recognize the extra time and effort. If this time is spent to work on milestones then this is part of the stretch expectation.

3. ***Emergency Overtime – Defined as "an unexpected and sudden event that must be dealt with urgently***".

   This will be reimbursed at two times earnings if the employee is required to come into work. The rational is that employees will be working with Union personnel and should be compensated equally. All time worked will be recorded on the individual's timesheet and recorded in Payroll. Overtime will be tracked and reviewed monthly.

M. Jane Hale-McDonald,
Vice President, Human Resources