

**Ontario Energy  
Board**

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**Commission de l'énergie  
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**BY E-MAIL**

August 15, 2008

John Grotheer  
Cambridge and North Dumfries Hydro Inc.  
1500 Bishop Street  
P.O. Box 1060  
Cambridge ON N1R 5X6

Dear Mr. Grotheer:

**Re: Cambridge and North Dumfries Hydro Inc.  
2008 Incentive Regulation Mechanism (2008 IRM) Rate Application –  
Low Voltage Rates - Board File Number EB-2007-0900**

The Board has issued its Decision and Order in the above proceeding and a copy is enclosed herewith.

Yours truly

*Original signed by*

Kirsten Walli  
Board Secretary

cc: Mr. Glen MacDonald, Hydro One Networks, Inc.  
Mr. René Gatien, Waterloo North Hydro Inc.



**EB-2007-0900**

**IN THE MATTER OF** the *Ontario Energy Board Act*,  
1998, S.O. 1998, c.15 (Schedule B);

**AND IN THE MATTER OF** an application by Cambridge  
and North Dumfries Hydro Inc. for an order or orders  
approving or fixing just and reasonable distribution rates  
and other charges, to be effective May 1, 2008.

**BEFORE:** Paul Vlahos  
Presiding Member

Paul Sommerville  
Member

## **DECISION AND ORDER**

### **Background**

Cambridge and North Dumfries Hydro Inc. ("C&NDHI" or the "Applicant") is a licensed distributor of electricity. On November 6, 2007, C&NDHI filed an application with the Ontario Energy Board (the "Board") for an order or orders approving or fixing just and reasonable rates for the distribution of electricity and other charges, to be effective May 1, 2008.

C&NDHI is one of over 80 electricity distributors in Ontario that are regulated by the Board. In 2006, the Board announced the establishment of a multi-year electricity

distribution rate-setting plan for the years 2007-2010. As part of the plan, C&NDHI was one of the electricity distributors to have its rates adjusted for 2008 on the basis of the 2<sup>nd</sup> Generation Incentive Rate Mechanism (“IRM”) process.

In its application for 2008 distribution rates, C&NDHI proposed, among other things, to change the monthly rates associated with the delivery of Low Voltage services to embedded distributors for what it states are errors arising from its 2006 EDR application (RP-2005-0020/EB-2005-0343).

C&NDHI is a host distributor to each of Waterloo North Hydro (“Waterloo North”) and Hydro One Networks (“Hydro One”). The embedded distributors are only partially embedded to C&NDHI, which transports electricity below 50 kV (“Low Voltage” or “LV”) to each of the embedded distributors to enable them to serve part of their respective customers and load.

C&NDHI has existing approved LV rates, and in its application for 2008 distribution rates proposed LV rates as shown in the following table.

Embedded Distributor	Existing Board-approved LV rate	Proposed LV Rate
Hydro One Networks	\$0.0706 / kW	\$2.60 / kW
Waterloo North Hydro	\$0.2018 / kW	\$0.90 / kW

In its Decision issued on March 25, 2008, the Board approved C&NDHI’s application for 2008 distribution rates with the exception of the proposed Low Voltage charges. In this regard, the Board stated the following:

As the Board needs to better understand this [Low Voltage charges] issue, in the interest of implementing the 2008 distribution rates as of May 1, 2008 the Board has decided that it will deal with this part of the application at a later time. A procedural order will be issued in due course. Cambridge and North Dumfries

Hydro Inc.'s existing rates for Embedded Distributors are hereby declared interim as of May 1, 2008.

The Board directed that C&NDHI file with the Board a proposed Tariff of Rates and Charges within seven days of the March 25, 2008 Decision. C&NDHI provided the Board with a proposed Tariff of Rates and Charges and the supporting rate model (spreadsheet) which was approved, and appended to the Board's Rate Order dated April 18, 2008.

By way of procedural order dated June 11, 2008,, the Board provided for a technical conference to be convened to address the LV charges issue, involving the Applicant, the embedded distributors (Hydro One, Waterloo North), and Board staff. The purpose of the technical conference was to allow parties and the Board to better understand the issues and C&NDHI's proposal for the calculation of LV rates. To assist the parties at the technical conference Board staff prepared an Issues List based on its understanding of the issues related to C&NDHI's LV rates proposal. The issues included the following:

1. What errors in the C&NDHI's LV rates were established as part of C&NDHI's 2006 EDR application, for which C&NDHI is seeking correction?
2. Are the proposed costs for providing LV services to Waterloo North and to Hydro One appropriate?
3. What is the appropriate rate design for C&NDHI's LV charges?
4. If the utility did not estimate the cost recovery based on a 2008 rate year, should C &NDHI's proposed rates be updated to reflect 2008 test year data?
5. How should any adjustment to LV charges be implemented?

The Board also expressed its expectation that the technical conference would result in an agreed upon statement of facts or similar agreement on the technical aspects which would be presented to the Board and which would serve as the basis for a subsequent hearing before the Board on this matter.

The technical conference was held on July 9, 2008 with representatives from C&NDHI, Waterloo North and Hydro One and Board staff in attendance. At the end of the technical conference the parties agreed to prepare an Agreed Statement of Facts (“ASF”).

On July 29, 2008 C&NDHI filed an ASF and copies of the proposed methodology and resulting rate levels for LV charges (one for Waterloo North and one for Hydro One). The ASF and proposed methodology are attached hereto as Appendix “A”.

### **Board Findings**

The Board has reviewed the Agreed Statement of Facts and the Proposed Embedded Distribution Low Voltage Charges as calculated in Schedule 10-7 for each of Waterloo North and Hydro One. The Board accepts the methodology and the calculated rates set out therein, which are based on the corrected 2006 LV rates and updated to reflect subsequent IRM adjustments.

The Board finds that the proposed LV rates are to be effective as of the date of issuance of this Decision and Order.

The Board has revised the tariff schedule previously filed by C&NDHI to reflect the proposed LV rates of \$0.59/kW applicable to Waterloo North and \$0.55/kW applicable to Hydro One and changed the Effective Date to the date of this Decision. All of the other elements of the tariff schedule have been confirmed to match with the current Board-approved rates. Attached hereto as Appendix “B” is a copy of the revised Tariff Schedule.

### **THE BOARD ORDERS THAT:**

1. The Tariff of Rates and Charges set out in Appendix “B” of this Decision and

Order is approved, effective August 15, 2008, for electricity consumed or estimated to have been consumed on and after the effective date.

2. The Tariff of Rates and Charges set out in Appendix "B" of this Decision and Order supersedes all previous distribution rate schedules approved by the Board for C&NDHI and is final in all respects.
3. C&NDHI shall notify its affected customers of the rate changes no later than the first bill reflecting the new rates.

**Dated** at Toronto, August 15, 2008

**ONTARIO ENERGY BOARD**

*Original signed by*

Kirsten Walli  
Board Secretary

**APPENDIX “A”**

**AGREED STATEMENT OF FACTS**

**CAMBRIDGE AND NORTH DUMFRIES HYDRO INC.  
EB-2007-0900**

## **AGREED STATEMENT OF FACTS**

### **Cambridge and North Dumfries Hydro Inc. – Low Voltage Charges EB-2007-0900**

This document constitutes the Agreed Statement of Facts (“ASF”) of Cambridge and North Dumfries Hydro Inc. (“C&NDHI”) and of Hydro One Networks (“Hydro One”) and Waterloo North Hydro (“Waterloo”) in the consideration of just and reasonable Low Voltage charges for 2008, and the methodology underlying the proposed rates. This issue arose in C&NDHI’s application for 2008 electricity distribution rates considered under Board file number EB-2007-0900. The ASF, the proposed methodology and the proposed rates represent the outcomes of a technical conference held on July 9, 2008 between the parties above and Board staff, as directed in Procedural Order No. 1.

The Technical conference was transcribed. The following summarizes the discussion of the issue, and the parties joint proposal on a resolution of this matter.

### **History**

#### **2006 EDR**

Cambridge and North Dumfries Hydro Inc. (“C&NDHI”) used Schedule 10-7 of the 2006 Electricity Distribution Rate Handbook in its 2006 EDR application to propose LV rates for each of Hydro One Networks (“Hydro One”) and Waterloo North Hydro (“Waterloo”). The rates were \$0.0716/kW for Hydro One and \$0.20/kW for Waterloo.

#### **2008 EDR (IRM)**

As part of its 2008 EDR application under the 2<sup>nd</sup> Generation IRM plan, C&NDHI filed a proposal for corrected LV rates, as it had discovered errors in the inputs used in the 2006 application. C&NDHI made the following corrections:

- Corrected the error in 2006 by not dividing the costs to be recovered by twelve. This meant that rates were calculated by correctly dividing annual costs by annual demand.
- Corrected the 2006 proposals by reversing the Waterloo and Hydro One demand numbers (which were erroneously switched in the 2006 application)

There was some discussion of some further errors or deficiencies in the revised approach:

- Due to an error in the formula, the return on assets uses the ROE. This error was worked around in the 2006 EDR application by substituting the weighted average cost of capital in place of the ROE.
- The load on the lines, which was also swapped in 2006 was corrected.
- The approach does not take into account the share of energy on the line delivered to the embedded distributor.
- There is no reflection of grossed-up taxes or PILs.

The proposal in the 2008 IRM application was \$0.90/kW for Waterloo and \$2.60/kW for Hydro One.

### ***Issues***

The Schedule 10-7 methodology, as reflected in the spreadsheet, used only distance as an allocator of costs to the LV lines. Demand was only used as the charge determinant. The methodology assigned all costs to the embedded distributor, even though C&NDHI has other direct (retail) customers served from each line. (In technical parlance, each of C&NDHI's LV lines is a shared line.)

The parties proposed a revision to Schedule 10-7 that would address the errors in the earlier schedule. The revised schedule:

- Calculates the cost of capital based on the deemed capital structure and approved or deemed ROE and debt rates.
- Reflects both the percentage of km of line and the percentage of load on the LV line for delivering energy to the embedded distributor. This better reflects the costs that should be borne by the embedded distributor.

The proposal is a closer approximation to a cost of service to determine the revenue requirement that should be recoverable from the LV customers. The approach is not an exact cost of service model, but should give a reasonable and practical approach for determining costs. All parties agreed that the methodology is to try to determine the costs that should be recoverable from the embedded distributor(s) and to avoid any subsidization with the host distributor's other (retail) customers. Addition of an approach to incorporate taxes/PILs (grossed-up) would be a refinement that would give a better proxy of the revenue requirement to be recovered from the embedded distributor(s) through LV rates. A simplified tax/PILs calculation approach, with the 2008 IRM model as one starting point was suggested. The applicants agreed to look into the refinements.

The proposal also allows for primary feeders and distribution stations to also be factored into the determination of the revenue requirement. The allocation for the capital-related and operating and ancillary costs for these would be allocated based on the percentage of load; there is no line-length consideration. These are not applicable in this case, but the parties felt that this approach, if accepted

by the Board, could also be applicable for determining LV rates for other host-embedded distributor situations.

In addition to the accounts currently used for direct costs, the parties propose that certain other accounts be included:

- Account 1980 – Supervisory System (SCADA) (capital)
- Account 5160 – Maintenance of Line Transformers (expense)
- Account 5035 – Overhead Distribution Transformers Operations (expense)
- Account 5055 – Underground Distribution Transformers (expense)
- Account 1850 – Line Transformers (capital)

The proposed revised Schedule 10-7 includes an allowance for working capital. The proposal only included operating expenses for determining the working capital allowance, but did not include a cost of power component. This matter was discussed. C&NDHI noted that, where the embedded distributor is a market participant (and billed directly by the IESO), there is no working capital requirement of that for the host distributor for the energy and wholesale market service charges, however, transmission network and connection charges are borne by the host distributor, and thus should be included in the working capital calculation. However, where the embedded distributor is not a market participant, there may be a lag between when the host distributor is billed for power delivered by the LV system and when it recovers amounts from the embedded distributor. There was also some discussion that, in the overall cost allocation model, the revenue requirement, including the working capital allowance based on controllable expenses plus cost of power, is allocated to and recovered from all customers, including any embedded distributors.

C&NDHI proposed that there should be an allowance for administrative overhead. In its original 2006 EDR application, C&NDHI had used a factor of 12% to represent administrative overhead. The Board approved the LV rates using that factor in 2006 EDR. No party in the technical conference opposed this.

Hydro One discussed its approach to determining LV rates, as it has many embedded distributors and other “direct” customers. Its approach calculates rates on a more “postage stamp” approach, but considers that the methodology is consistent with the revised approach proposed in the technical conference.

C&NDHI’s proposal was to propose new “corrected” 2006 rates, which are based on 2004 historical data. However, C&NDHI’s application is for 2008 rates. There was discussion of two options for updating the rates to be more current with 2008:

- Calculate the corrected 2006 LV rates per the new schedule, and then apply subsequent IRM adjustments to may adjustments to the LV rates has been done for distribution rates for other distributors; or

- Use forecast or most recent historical (e.g. 2007) data to calculate more current LV rates.

There was some discussion of these approaches. C&NDHI has indicated its preference for the former approach. This approach has also been used recently in rate applications for Welland Hydro, EnWin and PUC to make adjustments to 2006 rates and then apply the 2007 adjustment. The latter approach may be more practical in some circumstances and is one step. However, both approaches are reasonable and could be used based on circumstances.

The proposed approach gives LV rates in the range of \$0.50/kW. These rates are before adjustments discussed above, and refinements may alter slightly the proposed rates. This is within the range of LV rates that have been approved by the Board in other applications.

**Waterloo Border**  
**Waterloo North Hydro**  
**EB-2007-0900**

	1	2	3	4	5	6
Asset Class		Total annual OM&A costs of asset class providing LV services (\$)	Original cost of asset class providing LV services	Accumulative amortization on asset class providing LV services	Annual amortization on asset class providing LV services	NBY of asset class providing LV services
Distribution Stations	PP	B	C	D	E	
Transformer Stations	QQ	G	H	I	J	
Low Voltage Lines	RR	L	M	N	O	
		\$1,893,724	\$43,132,918	\$17,508,524	\$1,726,547	\$25,624,394

Asset Class		7		8		9		10		11
		Share of facilities		Share of facilities		Share of facilities		Share of facilities		
		kW or kVA	kW or kVA	kW or kVA	kW or kVA	kW or kVA	kW or kVA	kW or kVA	percent	
		Total line length or station capacity in asset class (KM)		Line length providing LV services (KM)		Annual billed total demand on station/line providing LV services (kW or kVA)		Annual billed Embedded Distributor demand on station/line providing LV services (kW or kVA)		Utilization factor
Distribution Stations					AA	-	BB	-	(Col 10/Col 9)	0.00%
Transformer Stations					CC	-	DD	-	(Col 10/Col 9)	0.00%
Low Voltage lines	GG	727	HH	8.4		121,536	FF	76,261	(Col 8/Col 7) * (Col 10/Col 9)	0.73%

	12	12 (a)	13	14	15	15 (a)	16
	\$	\$	\$	\$	\$	\$	\$/kW or \$/kVA
Asset Class							
	Return on assets used to provide LV Services	PILS	Annual Amortization of assets used to provide LV Services	OM & A costs (with burden) associated with assets used to provide LV Services	Total annual cost associated with assets used to provide LV Services	Total annual cost associated with assets used to provide LV Services + 2007 & 2008 IRM Adjustments	Monthly kW Rate associated with the delivery of LV Services
Distribution Stations	-	(AB*Col 11)	D*Col 11	-	SUM	-	
Transformer Stations	-	(AH*S*Col 11)	I*Col 11	-	SUM	-	
Low Voltage Lines	14,118	(AN*S*Col 11)	N*Col 11	12,518	RR*Col 11	44,629	45,211

45,211	\$	0.59
[Sum Col 15 (a)]		[Sum Col 15 (a)]
		Col 10 FF

**EB-2007-0900 Cambridge & North Dumfries Hydro Inc. *Proposed* Embedded Distribution Low Voltage Charges Inputs - *Waterloo North Hydro Inc.***

		Input cells
		Calculated Cells
		percent
Distributor debt rate (deemed)	P	6.01%
Distributor return on equity before tax (utilized in formula)	Q	9.00%
Distributor tax rate (current tax rate)	R	33.50%
Weighted Average Cost of Capital (WACC)	S	7.51%
Equity Portion of WACC	XX	4.50%
Deemed debt share	T	50.00%
Deemed equity share	U	50.00%
Working Capital Allowance Percentage	V	15%
Administrative Burden Percentage (applicable to all asset classes and OM&A only)	OO	12%
Rates charged for calculation of Energy Sales for Working Capital Allowance		
Commodity (per kWh)	[Most recent (April 08) Board Approved RPP Rate]	TT \$ 0.0545
Wholesale Market Service Charge (WMS) (per kWh)	(Current LDC Retail Rate of Applicable Rate Class)	UU \$ 0.0062
Transmission Network (per kW)	(Current LDC Retail Rate of Applicable Rate Class)	VV \$ 1.6160
Transmission Connection (per kW)	(Current LDC Retail Rate of Applicable Rate Class)	WW \$ 1.6452
2007 IRM Adjustment - Sheet 8, Cell D12	IPI - X	AO 0.9%
2008 IRM Adjustment (before Tax Adjustment) - Sheet 7, Cells D12 + E12	IPI - X - K	AP 0.4%

Distribution Stations	USoA Accts		\$
Total annual OM&A costs of asset class providing LV services	5005****, 5010*****5012*, 5016, 5017, 5105****, 5110*, 5114	A	
OM&A with Administration Burden	((A * (1 + OO) = PP))	PP	-
Original cost of asset class providing LV services	1805*, 1806*, 1808*, 1820	B	
Accumulative amortization on asset class providing LV services	2105***	C	
Annual amortization on asset class providing LV services	5705***	D	
NBV of asset class providing LV services	(B - C = E)	E	-
Annual Billed Demand (kW or kVA) Total on Distribution Stations		AA	-
Annual Billed Demand (kW or kVA) of Embedded Distributor on Distribution Stations		BB	-
Annual Energy (kWh) of Embedded Distributor on Distribution Stations (if applicable)	***** With losses	SS	-
<b><u>Rate Base - Distribution Stations</u></b>			
NBV of assets	(= E)	W	-
<u>Working Capital Allowance</u> :			
OM&A Costs with Administration Burden	(= PP)		-
<u>Power Supply Expenses</u> :			
Energy Sales (if applicable)	(SS x TT)		-
WMS (if applicable)	(SS x UU)		-
Transmission Network	(BB x VV)		-
Transmission Connection	(BB x WW)		-
Working Capital		X	-
Working Capital Allowance	(X x V = X1)	X1	-
Rate Base	(W + X1 = Y)	Y	-
<b><u>PILs Calculation</u></b>			
Target Net Income before consideration of PILS	(Y x XX)	YY	-
Target Net Income before consideration of PILS times tax rate = PILS Provision	(YY x R)	ZZ	-
PILS Provision Grossed Up - <u>before</u> application of Utilization Factor	(ZZ / (1 - R))	AB	-

**EB-2007-0900 Cambridge & North Dumfries Hydro Inc. *Proposed* Embedded Distribution Low Voltage Charges Inputs - *Waterloo North Hydro Inc.***

<b>Transformer Stations (TS)</b>		<b>USoA Accts</b>		<b>\$</b>
Total annual OM&A costs of asset class providing LV services		5005****, 5010****, 5012 **, 5014, 5015, 5105****, 5110**, 5112	<b>F</b>	
OM&A with Administration Burden		((F * (1 + OO) = QQ))	<b>QQ</b>	-
Original cost of asset class providing LV services		1805**, 1806**, 1808**, 1815, 1825	<b>G</b>	
Accumulative amortization on asset class providing LV services		2105***	<b>H</b>	
Annual amortization on asset class providing LV services		5705***	<b>I</b>	
NBV of asset class providing LV services		(G - H = J)	<b>J</b>	-
Annual Billed Demand (kW or kVA) Total on Transformer Stations			<b>CC</b>	-
Annual Billed Demand (kW or kVA) of Embedded Distributor on Transformer Stations			<b>DD</b>	-
Annual Energy (kWh) of Embedded Distributor on Transformer Stations (if applicable)	*****	With losses	<b>AC</b>	-
<b><u>Rate Base - Transformer Stations</u></b>				
NBV of assets		(= J )	<b>Z</b>	-
<u>Working Capital Allowance:</u>				
OM&A Costs with Administration Burden		(= QQ )		-
<u>Power Supply Expenses:</u>				
Energy Sales (if applicable)		(AC x TT)		-
WMS (if applicable)		(AC x UU)		-
Transmission Network		(DD X VV)		-
Transmission Connection		(DD X WW)		-
Working Capital			<b>AD</b>	-
Working Capital Allowance		(AD x V = AD1)	<b>AD1</b>	-
Rate Base		(AD1 + Z = AE)	<b>AE</b>	-
<b><u>PILs Calculation</u></b>				
Target Net Income before consideration of PILS		(AE x XX)	<b>AF</b>	-
Target Net Income before consideration of PILS times tax rate = PILs Provision		(AF x R)	<b>AG</b>	-
PILs Provision Grossed Up - <u>before</u> application of Utilization Factor		(AG / (1 - R))	<b>AH</b>	-

<b>Low Voltage Lines</b>		<b>USoA Accts</b>		<b>\$</b>
Total annual OM&A costs of asset class providing LV services	Ovhd	5020, 5025, 5030, 5095, 5005****, 5010****, 5120, 5125, 5135, 5035****, 5160****, 5105****	<b>K</b>	1,690,825
	UG	5040, 5045, 5050, 5090		
		5145, 5150, 5055****		
OM&A with Administration Burden		((K * (1 + OO) = RR))	<b>RR</b>	1,893,724
Original cost of asset class providing LV services	Ovhd	1830, 1835, 1850, 1980	<b>L</b>	43,132,918
	UG	1840, 1845		
Accumulative amortization on asset class providing LV services		2105***	<b>M</b>	17,508,524
Annual amortization on asset class providing LV services		5705***	<b>N</b>	1,726,547
NBV of asset class providing LV services		(L - M = O)	<b>O</b>	25,624,394
Annual Billed Demand (kW or kVA) Total on Low Voltage Lines			<b>EE</b>	121,536
Annual Billed Demand (kW or kVA) of Embedded Distributor on Low Voltage Lines			<b>FF</b>	76,261
Annual Energy (kWh) of Embedded Distributor on Low Voltage Lines (if applicable)	*****	With losses	<b>AI</b>	-
Total Line Length (KM) of System (overhead and/or underground as applicable)			<b>GG</b>	727
Total Line Length (KM) to provide LV Services			<b>HH</b>	8.4
<b><u>Rate Base - Low Voltage Lines</u></b>				
NBV of assets		(= O )	<b>LL</b>	25,624,394
<u>Working Capital Allowance:</u>				
OM&A Costs with Administration Burden		(= RR )		1,893,724
<u>Power Supply Expenses:</u>				
Energy Sales (if applicable)		(AI x TT)		-
WMS (if applicable)		(AI x UU)		-
Transmission Network		(FF X VV)		123,238
Transmission Connection		(FF X WW)		125,465
Working Capital			<b>AJ</b>	2,142,426
Working Capital Allowance		(AJ x V = AJ1)	<b>AJ1</b>	321,364
Rate Base		(AJ1 + LL = AK)	<b>AK</b>	25,945,758
<b><u>PILs Calculation</u></b>				
Target Net Income before consideration of PILS		(AK x XX)	<b>AL</b>	1,167,559
Target Net Income before consideration of PILS times tax rate = PILs Provision		(AL x R)	<b>AM</b>	391,132
PILs Provision Grossed Up - <u>before</u> application of Utilization Factor		(AM / (1 - R))	<b>AN</b>	588,169

- \* - reallocate TS building and other building costs where necessary  
 \*\* - amounts re-allocated from Station Buildings & Fixtures expense (if applicable)

**EB-2007-0900 Cambridge & North Dumfries Hydro Inc. *Proposed* Embedded Distribution Low Voltage Charges Inputs - *Waterloo North Hydro Inc.***

- \*\*\* - will need to record portion attributable to the assets providing the LV services
- \*\*\*\* - if any portion of the account is applicable
- \*\*\*\*\* - applicable only if i) Host Distributor pays IESO for Commodity and WMS Charges for energy consumed by the Embedded Distributor and  
ii) recommended methodology is applied by a Host LDC for each Embedded customer, if deriving individual customer rates;  
or, for all Embedded customers as a group, if developing a pooled rate

Proposed Embedded Distribution Low Voltage Charges - Hydro One Networks Inc.

(Note all cells are referenced, no direct input in this sheet)

Sheffield Hydro One EB-2007-0900

1	2	3	4	5	6
Asset Class	Total annual OM&A costs of asset class providing LV services (\$)	Original cost of asset class providing LV services	Accumulative amortization on asset class providing LV services	Annual amortization on asset class providing LV services	NBV of asset class providing LV services
Distribution Stations	PP	B	C	D	E
Transformer Stations	QQ	G	H	I	J
Low Voltage lines	RR	L	M	N	O
	\$1,893,724	\$43,132,918	\$17,508,524	\$1,726,547	\$25,624,394

	7	8	9	10	11
Asset Class	Total line length or station capacity in asset class (KM)	Line length providing LV services (KM)	Annual billed total demand on station/line providing LV services (kW or kVA)	Annual billed Embedded Distributor demand on station/line providing LV services (kW or kVA)	Utilization factor
Distribution Stations		AA	-	-	(Col 10/Col 9) 0.00%
Transformer Stations		CC	-	-	(Col 10/Col 9) 0.00%
Low Voltage lines	GG	HH	727	27,005	(Col 8/Col 7) * (Col 10/Col 9) 0.24%

	12	12 (a)	13	14	15	16
Asset Class	Return on assets used to provide LV Services	PILs	Annual Amortization on assets used to provide LV Services	OM & A costs (with burden) associated with assets used to provide LV Services	Total annual cost associated with assets used to provide LV Services	Monthly kW Rate associated with the delivery of LV Services
Distribution Stations	(Y*S*Col 11)	(AB*Col 11)	-	PP*Col 11	-	(((Col 15*(1+AO)))*(1+AP))
Transformer Stations	(AE*S*Col 11)	(AH*Col 11)	-	I*Col 11	-	(((Col 15*(1+AO)))*(1+AP))
Low Voltage lines	(AK*S*Col 11)	(AN*Col 11)	4,677	1,413	14,794	14,987

14,987	\$	0.55
[Sum Col 15 (a)]		[Sum Col 15 (e)]
		Col 10 FF)

**EB-2007-0900 Cambridge & North Dumfries Hydro Inc. *Proposed* Embedded Distribution Low Voltage Charges Inputs - *Hydro One Networks Inc.***

		Input cells
		Calculated Cells
		percent
Distributor debt rate (deemed)	P	6.01%
Distributor return on equity before tax (utilized in formula)	Q	9.00%
Distributor tax rate (current tax rate)	R	33.50%
Weighted Average Cost of Capital (WACC)	S	7.51%
Equity Portion of WACC	XX	4.50%
Deemed debt share	T	50.00%
Deemed equity share	U	50.00%
Working Capital Allowance Percentage	V	15%
Administrative Burden Percentage (applicable to all asset classes and OM&A only)	OO	12%
Rates charged for calculation of Energy Sales for Working Capital Allowance		
Commodity (per kWh)	TT	\$ 0.0545
Wholesale Market Service Charge (WMS) (per kWh)	UU	\$ 0.0062
Transmission Network (per kW)	VV	\$ 1.7054
Transmission Connection (per kW)	WW	\$ 1.6162
2007 IRM Adjustment - Sheet 8, Cell D12	IPI - X	AO 0.9%
2008 IRM Adjustment (before Tax Adjustment) - Sheet 7, Cells D12 + E12	IPI - X - K	AP 0.4%

Distribution Stations	USoA Accts		\$
Total annual OM&A costs of asset class providing LV services	5005****, 5010*****5012*, 5016, 5017, 5105****, 5110*, 5114	A	
OM&A with Administration Burden	((A * (1 + OO) = PP))	PP	-
Original cost of asset class providing LV services	1805*, 1806*, 1808*, 1820	B	
Accumulative amortization on asset class providing LV services	2105***	C	
Annual amortization on asset class providing LV services	5705***	D	
NBV of asset class providing LV services	(B - C = E)	E	-
Annual Billed Demand (kW or kVA) Total on Distribution Stations		AA	-
Annual Billed Demand (kW or kVA) of Embedded Distributor on Distribution Stations		BB	-
Annual Energy (kWh) of Embedded Distributor on Distribution Stations (if applicable)	***** With losses	SS	-
<b><u>Rate Base - Distribution Stations</u></b>			
NBV of assets	(= E)	W	-
<u>Working Capital Allowance:</u>			
OM&A Costs with Administration Burden	(= PP)		-
<u>Power Supply Expenses:</u>			
Energy Sales (if applicable)	(SS x TT)		-
WMS (if applicable)	(SS x UU)		-
Transmission Network	(BB x VV)		-
Transmission Connection	(BB x WW)		-
Working Capital		X	-
Working Capital Allowance	(X x V = X1)	X1	-
Rate Base	(W + X1 = Y)	Y	-
<b><u>PILs Calculation</u></b>			
Target Net Income before consideration of PILS	(Y x XX)	YY	-
Target Net Income before consideration of PILS times tax rate = PILs Provision	(YY x R)	ZZ	-
PILs Provision Grossed Up - <u>before</u> application of Utilization Factor	(ZZ / (1 - R))	AB	-

**EB-2007-0900 Cambridge & North Dumfries Hydro Inc. *Proposed* Embedded Distribution Low Voltage Charges Inputs - *Hydro One Networks Inc.***

<b>Transformer Stations (TS)</b>		<b>USoA Accts</b>		<b>\$</b>
Total annual OM&A costs of asset class providing LV services		5005****, 5010****, 5012 **, 5014, 5015, 5105****, 5110**, 5112	F	
OM&A with Administration Burden		((F * (1 + OO) = QQ))	QQ	-
Original cost of asset class providing LV services		1805**, 1806**, 1808**, 1815, 1825	G	
Accumulative amortization on asset class providing LV services		2105***	H	
Annual amortization on asset class providing LV services		5705***	I	
NBV of asset class providing LV services		(G - H = J)	J	-
Annual Billed Demand (kW or kVA) Total on Transformer Stations			CC	-
Annual Billed Demand (kW or kVA) of Embedded Distributor on Transformer Stations			DD	-
Annual Energy (kWh) of Embedded Distributor on Transformer Stations (if applicable)	*****	With losses	AC	-
<b><u>Rate Base - Transformer Stations</u></b>				
NBV of assets		(= J)	Z	-
<u>Working Capital Allowance</u> :				
OM&A Costs with Administration Burden		(= QQ)		-
<b><u>Power Supply Expenses:</u></b>				
Energy Sales (if applicable)		(AC x TT)		-
WMS (if applicable)		(AC x UU)		-
Transmission Network		(DD X VV)		-
Transmission Connection		(DD X WW)		-
Working Capital			AD	-
Working Capital Allowance		(AD x V = AD1)	AD1	-
Rate Base		(AD1 + Z = AE)	AE	-
<b><u>PILs Calculation</u></b>				
Target Net Income before consideration of PILS		(AE x XX)	AF	-
Target Net Income before consideration of PILS times tax rate = PILs Provision		(AF x R)	AG	-
PILs Provision Grossed Up - <b>before</b> application of Utilization Factor		(AG / (1 - R))	AH	-

<b>Low Voltage Lines</b>		<b>USoA Accts</b>		<b>\$</b>
Total annual OM&A costs of asset class providing LV services	Ovhd	5020, 5025, 5030, 5095, 5005****, 5010****, 5120, 5125, 5135, 5035****, 5160****, 5105****	K	1,690,825
	UG	5040, 5045, 5050, 5090		
		5145, 5150, 5055****		
OM&A with Administration Burden		((K * (1 + OO) = RR))	RR	1,893,724
Original cost of asset class providing LV services	Ovhd	1830, 1835, 1850, 1980	L	43,132,918
	UG	1840, 1845		
Accumulative amortization on asset class providing LV services		2105***	M	17,508,524
Annual amortization on asset class providing LV services		5705***	N	1,726,547
NBV of asset class providing LV services		(L - M = O)	O	25,624,394
Annual Billed Demand (kW or kVA) Total on Low Voltage Lines			EE	132,868
Annual Billed Demand (kW or kVA) of Embedded Distributor on Low Voltage Lines			FF	27,005
Annual Energy (kWh) of Embedded Distributor on Low Voltage Lines (if applicable)	*****	With losses	AI	-
Total Line Length (KM) of System (overhead and/or underground as applicable)			GG	727
Total Line Length (KM) to provide LV Services			HH	8.6
<b><u>Rate Base - Low Voltage Lines</u></b>				
NBV of assets		(= O)	LL	25,624,394
<u>Working Capital Allowance</u> :				
OM&A Costs with Administration Burden		(= RR)		1,893,724
<b><u>Power Supply Expenses:</u></b>				
Energy Sales (if applicable)		(AI x TT)		-
WMS (if applicable)		(AI x UU)		-
Transmission Network		(FF X VV)		46,054
Transmission Connection		(FF X WW)		43,645
Working Capital			AJ	1,983,424
Working Capital Allowance		(AJ x V = AJ1)	AJ1	297,514
Rate Base		(AJ1 + LL = AK)	AK	25,921,907
<b><u>PILs Calculation</u></b>				
Target Net Income before consideration of PILS		(AK x XX)	AL	1,166,486
Target Net Income before consideration of PILS times tax rate = PILs Provision		(AL x R)	AM	390,773
PILs Provision Grossed Up - <b>before</b> application of Utilization Factor		(AM / (1 - R))	AN	587,628

\* - reallocate TS building and other building costs where necessary

\*\* - amounts re-allocated from Station Buildings &amp; Fixtures expense (if applicable)

**EB-2007-0900 Cambridge & North Dumfries Hydro Inc. *Proposed* Embedded Distribution Low Voltage Charges Inputs - *Hydro One Networks Inc.***

- \*\*\* - will need to record portion attributable to the assets providing the LV services
- \*\*\*\* - if any portion of the account is applicable
- \*\*\*\*\* - applicable only if i) Host Distributor pays IESO for Commodity and WMS Charges for energy consumed by the Embedded Distributor and  
ii) recommended methodology is applied by a Host LDC for each Embedded customer, if deriving individual customer rates;  
or, for all Embedded customers as a group, if developing a pooled rate

**APPENDIX “B”**

**TARIFF OF RATES AND CHARGES**

**CAMBRIDGE AND NORTH DUMFRIES HYDRO INC.  
EB-2007-0900**

# **Cambridge and North Dumfries Hydro Inc.**

## **TARIFF OF RATES AND CHARGES**

### **Effective August 15, 2008**

**This schedule supersedes and replaces all previously approved schedules of Rates, Charges and Loss Factors**

EB-2007-0900

#### **APPLICATION**

- The application of these rates and charges shall be in accordance with the Licence of the Distributor and any Codes, Guidelines or Orders of the Board, and amendments thereto as approved by the Board, which may be applicable to the administration of this schedule.
- No rates and charges for the distribution of electricity and charges to meet the costs of any work or service done or furnished for the purpose of the distribution of electricity shall be made except as permitted by this schedule, unless required by the Distributor's Licence or a Code, Guideline or Order of the Board, and amendments thereto as approved by the Board, or as specified herein.
- This schedule does not contain any rates and charges relating to the electricity commodity (e.g. the Regulated Price Plan).

#### **EFFECTIVE DATES**

**DISTRIBUTION RATES** – August 15, 2008 for all consumption or deemed consumption services used on or after that date.  
**SPECIFIC SERVICE CHARGES** – August 15, 2008 for all charges incurred by customers on or after that date.  
**RETAIL SERVICE CHARGES** – August 15, 2008 for all charges incurred by retailers or customers on or after that date.  
**LOSS FACTOR ADJUSTMENT** – August 15, 2008 unless the distributor is not capable of prorating changed loss factors jointly with distribution rates. In that case, the revised loss factors will be implemented upon the first subsequent billing for each billing cycle.

#### **SERVICE CLASSIFICATIONS**

##### **Residential**

Residential refers to the supply of electrical energy to detached, semi-detached, and row-housing units (freehold or condominium). This classification typically refers to an account taking electricity at 750 volts or less where electricity is used exclusively in a separate metered living accommodation. Customers shall be residing in single-dwelling units that consist of a detached house or one unit of a semi-detached, duplex, triplex or quadruplex house, with a residential zoning. Separate metered dwellings within a town house complex, condominium, or apartment building also qualify as residential customers.

##### **General Service**

General Service refers to the supply of electrical energy to business customers, to bulk-metered residential buildings and to combined residential and business or residential and agricultural buildings. Apartment buildings that are bulk metered will be billed at the appropriate General Service rate.

##### **General Service Less than 50 kW**

This classification refers to a non residential account taking electricity at 750 volts or less whose average monthly peak demand is less than, or is forecast to be less than, 50 kW.

##### **General Service 50 to 999 kW**

This classification refers to a non-residential account whose monthly average peak demand is equal to or greater than, or is forecast to be equal to or greater than, 50 kW but less than 1,000 kW.

##### **General Service 1,000 to 4,999 kW**

This classification refers to a non-residential account whose monthly average peak demand is equal to or greater than, or is forecast to be equal to or greater than, 1,000 kW but less than 5,000 kW.

##### **Large Use**

This classification refers to an account whose average monthly average peak demand is equal to or greater than, or is forecast to be equal to or greater than, 5,000 kW.

##### **Unmetered Scattered Load**

This classification refers to an account taking electricity at 750 volts or less whose average monthly average peak demand is less than, or is forecast to be less than, 50 kW and the consumption is unmetered. Such connections include cable TV power packs, bus shelters, telephone booths, traffic lights, railway crossings, etc. The customer will provide detailed manufacturer information/documentation with regard to electrical demand/consumption of the proposed unmetered load.

# Cambridge and North Dumfries Hydro Inc.

## TARIFF OF RATES AND CHARGES

### Effective August 15, 2008

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#### **Street Lighting**

This classification refers to an account for roadway lighting with a Municipality, Regional Municipality, Ministry of Transportation and private roadway lighting operation, controlled by photo cells. The consumption for these customers will be based on the calculated connected load times the required lighting times established in the approved OEB street lighting load shape template.

#### **Embedded Distributor**

This classification applies to an electricity distributor licensed by the Board, that is provided electricity by means of this distributor's facilities.

## **MONTHLY RATES AND CHARGES**

### **Residential**

Service Charge	\$	9.00
Distribution Volumetric Rate	\$/kWh	0.0142
Retail Transmission Rate – Network Service Rate	\$/kWh	0.0039
Retail Transmission Rate – Line and Transformation Connection Service Rate	\$/kWh	0.0036
Wholesale Market Service Rate	\$/kWh	0.0052
Rural Rate Protection Charge	\$/kWh	0.0010
Standard Supply Service – Administrative Charge (if applicable)	\$	0.25

### **General Service Less Than 50 kW**

Service Charge	\$	12.55
Distribution Volumetric Rate	\$/kWh	0.0131
Retail Transmission Rate – Network Service Rate	\$/kWh	0.0035
Retail Transmission Rate – Line and Transformation Connection Service Rate	\$/kWh	0.0033
Wholesale Market Service Rate	\$/kWh	0.0052
Rural Rate Protection Charge	\$/kWh	0.0010
Standard Supply Service – Administrative Charge (if applicable)	\$	0.25

### **General Service 50 to 999 kW**

Service Charge	\$	99.51
Distribution Volumetric Rate	\$/kW	3.3617
Retail Transmission Rate – Network Service Rate	\$/kW	2.2454
Retail Transmission Rate – Line and Transformation Connection Service Rate	\$/kW	2.0593
Wholesale Market Service Rate	\$/kWh	0.0052
Rural Rate Protection Charge	\$/kWh	0.0010
Standard Supply Service – Administrative Charge (if applicable)	\$	0.25

### **General Service 1,000 to 4,999 kW**

Service Charge	\$	787.90
Distribution Volumetric Rate	\$/kW	2.8522
Retail Transmission Rate – Network Service Rate	\$/kW	1.7054
Retail Transmission Rate – Line and Transformation Connection Service Rate	\$/kW	1.6162
Wholesale Market Service Rate	\$/kWh	0.0052
Rural Rate Protection Charge	\$/kWh	0.0010
Standard Supply Service – Administrative Charge (if applicable)	\$	0.25

# Cambridge and North Dumfries Hydro Inc.

## TARIFF OF RATES AND CHARGES

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**Large Use**

Service Charge	\$	4,385.25
Distribution Volumetric Rate	\$/kW	1.8342
Retail Transmission Rate – Network Service Rate	\$/kW	1.6160
Retail Transmission Rate – Line and Transformation Connection Service Rate	\$/kW	1.6452
Wholesale Market Service Rate	\$/kWh	0.0052
Rural Rate Protection Charge	\$/kWh	0.0010
Standard Supply Service – Administrative Charge (if applicable)	\$	0.25

**Unmetered Scattered Load**

Service Charge (per connection)	\$	6.13
Distribution Volumetric Rate	\$/kWh	0.0131
Retail Transmission Rate – Network Service Rate	\$/kWh	0.0035
Retail Transmission Rate – Line and Transformation Connection Service Rate	\$/kWh	0.0033
Wholesale Market Service Rate	\$/kWh	0.0052
Rural Rate Protection Charge	\$/kWh	0.0010
Standard Supply Service – Administrative Charge (if applicable)	\$	0.25

**Street Lighting**

Service Charge (per connection)	\$	0.27
Distribution Volumetric Rate	\$/kW	1.7238
Retail Transmission Rate – Network Service Rate	\$/kW	1.1283
Retail Transmission Rate – Line and Transformation Connection Service Rate	\$/kW	1.0349
Wholesale Market Service Rate	\$/kWh	0.0052
Rural Rate Protection Charge	\$/kWh	0.0010
Standard Supply Service – Administrative Charge (if applicable)	\$	0.25

**Embedded Distributor**

Monthly Distribution Wheeling Service Rate – Waterloo North Hydro	\$/kW	0.59
Monthly Distribution Wheeling Service Rate – Hydro One Networks	\$/kW	0.55

**Specific Service Charges**

Customer Administration		
Arrears certificate	\$	15.00
Statement of Account	\$	15.00
Pulling post dated cheques	\$	15.00
Duplicate Invoices for previous billing	\$	15.00
Request for other billing information	\$	15.00
Easement Letter	\$	15.00
Income tax letter	\$	15.00
Notification charge	\$	15.00
Account history	\$	15.00
Credit reference/credit check (plus credit agency costs)	\$	15.00
Returned Cheque (plus bank charges)	\$	15.00
Charge to certify cheque	\$	15.00
Legal letter charge	\$	15.00
Account set up charge/change of occupancy charge (plus credit agency costs if applicable)	\$	30.00
Special meter reads	\$	30.00
Meter dispute charge plus Measurement Canada fees (if meter found correct)	\$	30.00

# Cambridge and North Dumfries Hydro Inc.

## TARIFF OF RATES AND CHARGES

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Non-Payment of Account		
Late Payment - per month	%	1.50
Late Payment - per annum	%	19.56
Collection of account charge – no disconnection	\$	30.00
Collection of account charge – no disconnection after regular hours	\$	165.00
Disconnect/Reconnect at meter – during regular hours	\$	65.00
Disconnect/Reconnect at meter – after regular hours	\$	185.00
Disconnect/Reconnect at pole – during regular hours	\$	185.00
Disconnect/Reconnect at pole – after regular hours	\$	415.00
Install/Remove load control device – during regular hours	\$	65.00
Install/Remove load control device – after regular hours	\$	185.00
Service call – customer-owned equipment	\$	30.00
Service call – after regular hours	\$	165.00
Specific Charge for Access to the Power Poles – per pole/year	\$	22.35
Allowances		
Transformer Allowance for Ownership - per kW of billing demand/month	\$/kW	(0.60)
Primary Metering Allowance for transformer losses – applied to measured demand and energy	%	(1.00)

#### Retail Service Charges (if applicable)

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

One-time charge, per retailer, to establish the service agreement between the distributor and the retailer	\$	100.00
Monthly Fixed Charge, per retailer	\$	20.00
Monthly Variable Charge, per customer, per retailer	\$/cust.	0.50
Distributor-consolidated billing charge, per customer, per retailer	\$/cust.	0.30
Retailer-consolidated billing credit, per customer, per retailer	\$/cust.	(0.30)
Service Transaction Requests (STR)		
Request fee, per request, applied to the requesting party	\$	0.25
Processing fee, per request, applied to the requesting party	\$	0.50
Request for customer information as outlined in Section 10.6.3 and Chapter 11 of the Retail Settlement Code directly to retailers and customers, if not delivered electronically through the Electronic Business Transaction (EBT) system, applied to the requesting party		
Up to twice a year		no charge
More than twice a year, per request (plus incremental delivery costs)	\$	2.00

#### LOSS FACTORS

Total Loss Factor – Secondary Metered Customer < 5,000 kW	1.0419
Total Loss Factor – Secondary Metered Customer > 5,000 kW	1.0153
Total Loss Factor – Primary Metered Customer < 5,000 kW	1.0315
Total Loss Factor – Primary Metered Customer > 5,000 kW	1.0052