



Ontario Energy Board

2007 EDR SMART METER RATE CALCULATION MODEL

Sheet 1 Utility Information Sheet

Legend:	Input Cell	Pull-Down Menu Option	Output Cell
	From Another Sheet	To The 2007 IRM Model	To Another Sheet

Please note that this model uses MACROS. Before starting, please ensure that macros have been enabled.

Name of LDC: Guelph Hydro Electric Systems Inc.

Licence Number: ED-2002-0565

Smart Meter Grouping: Active

IRM 2007 EB Number: EB-2007-0534

EDR 2006 RP Number: RP-2005-0020

EDR 2006 EB Number: EB-2005-0372

Date of Submission: February 9, 2007

Revision: 0

Version: 1.0

Contact Information

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Please Note: In the event of an inconsistency between this model and any element of the January 2007 "Report of the Board on 2nd Generation Incentive Regulation of Ontario's Electricity Distributors - Addendum for Smart Metering Rates", the Report governs.

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Guelph Hydro Electric Systems Inc.

EB-2007-0534

Friday, February 09, 2007

Sheet 2. Smart Meter Capital Cost and Operational Expense Data

Smart Meter Unit Installation Plan: (From Smart Meter Plan filed December 15, 2006)

	2006	2007	2008	2009	2010	Total
assume calendar year installation						
Planned number of Residential smart meters to be installed	-	8,500	16,000	16,000	-	40,500
Planned number of General Service Less Than 50 kW smart meters	-	-	-	-	4,500	4,500
Planned Meter Installation (Residential and Less Than 50 kW only)	-	8,500	16,000	16,000	4,500	45,000
Planned Meter Installation Completed before January 1, 2008		8,500				

Smart Meter Unit Cost

	Per Unit	
Smart Meter Unit Cost	\$ 143.00	A
<i>Enter the invoiced cost per smart meter purchased Please provide details in Manager's Summary</i>		
Smart Meter Other Unit Cost	\$ 10.00	B
<i>Enter the invoiced other costs per smart meter unit purchased Please provide details in Manager's Summary</i>		
Smart Meter Installation Cost per Unit	\$ 22.00	C
<i>Enter the time and material cost per smart meter unit installed Please provide details in Manager's Summary</i>		
Smart Meter Other Cost per Unit	\$ 3.00	D
<i>Enter the other cost per smart meter unit installed Please provide details in Manager's Summary</i>		
Total Unit cost per Smart Meter	\$ 178.00	E = A + B + C + D

3. LDC Assumptions and Data

AMI Capital Cost

	2006	2007	2008	2009	2010	Total	
AMI Computer Hardware Costs	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	F
<i>Enter the estimated capital costs for AMI related Computer Hardware Please provide details in Manager's Summary</i>							
AMI Computer Software Costs	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	G
<i>Enter the estimated capital costs for AMI related Computer Software Please provide details in Manager's Summary</i>							
Total AMI Capital Cost	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	H = F + G

Other Capital Cost

	2006	2007	2008	2009	2010	Total	
Other Computer Hardware Costs	\$ -	\$ 128,800	\$ -	\$ 64,800	\$ -	\$ 193,600	I
<i>Enter the estimated capital costs for other related Computer Hardware Please provide details in Manager's Summary</i>							
Other Computer Software Costs	\$ -	\$ 240,400	\$ -	\$ -	\$ -	\$ 240,400	J
<i>Enter the estimated capital costs for other related Computer Software Please provide details in Manager's Summary</i>							
Total Other Capital Cost	\$ -	\$ 369,200	\$ -	\$ 64,800	\$ -	\$ 434,000	K = I + J

Incremental AMI Operational Expenses

	2006	2007	2008	2009	2010	Total	
Incremental AMI O&M Expenses	\$ -	\$ 122,360	\$ 156,920	\$ 191,480	\$ 201,200	\$ 671,960	L
<i>Enter the estimated incremental AMI related O&M expenses Please provide details in Manager's Summary</i>							
Incremental AMI Admin Expenses	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	M
<i>Enter the estimated incremental AMI related Admin expenses Please provide details in Manager's Summary</i>							
Total Incremental AMI Operation Expenses	\$ -	\$ 122,360	\$ 156,920	\$ 191,480	\$ 201,200	\$ 671,960	N = L + M

Incremental Other Operational Expenses

	2006	2007	2008	2009	2010	Total	
Incremental Other O&M Expenses	\$ -	\$ 16,000	\$ 32,000	\$ 32,000	\$ 32,000	\$ 112,000	O
<i>Enter the estimated incremental Other related O&M expenses Please provide details in Manager's Summary</i>							
Incremental Other Admin Expenses	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	P
<i>Enter the estimated incremental Other related Admin expenses Please provide details in Manager's Summary</i>							
Total Incremental Other Operation Expenses	\$ -	\$ 16,000	\$ 32,000	\$ 32,000	\$ 32,000	\$ 112,000	Q = O + P

AMI - Advanced Metering Infrastructure

Other - Cost or expenses not AMI but does not include stranded assets



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Sheet 3. LDC Assumptions and Data

Assumptions:

1. Planned meter installations occur evenly through the year.
2. Year assumed January to December
3. Amortization is straight line and has half year rule applied in first year

2006 EDR Data Information

Deemed Debt (from 2006 EDR Sheet "3-2 COST OF CAPITAL (Input)" Cell C 18)

Deemed Equity (from 2006 EDR Sheet "3-2 COST OF CAPITAL (Input)" Cell C 19)

Weighted Debt Rate (from 2006 EDR Sheet "3-2 COST OF CAPITAL (Input)" Cell C 25)

Proposed ROE (from 2006 EDR Sheet "3-2 COST OF CAPITAL (Input)" Cell E 32)

50% 4. Smart Meter Rate Calc

50% 4. Smart Meter Rate Calc

6.25% 4. Smart Meter Rate Calc

9.00% 4. Smart Meter Rate Calc

7.63%

Weighted Average Cost of Capital

2006 EDR Total Metered Customers

Sum of Residential, General Service, and Large User

from 2006 EDR Sheet "7-1 ALLOCATION - Base Rev. Req." Cells H16 thru H93

44,555 4. Smart Meter Rate Calc

2006 EDR Tax Rate

Corporate Income Tax Rate

(from 2006 PILs Sheet "Test Year PILs, Tax Provision" Cell D 14)

36.12% 5. PILs

Capital Data:

Smart meter including installation (\$178 times Planned Meters Installed)

Computer Hardware Costs 2. Smart Meter Data; AMI (F) plus Other (I)

Computer Software Costs 2. Smart Meter Data; AMI (G) plus Other (J)

Total Computer Costs 2. Smart Meter Data; AMI (H) plus Other (K)

	2006	2007	2008	2009	2010	Total
\$	-	\$ 1,513,000	\$ 2,848,000	\$ 2,848,000	\$ 801,000	\$ 8,010,000
\$	-	\$ 128,800	\$ -	\$ 64,800	\$ -	\$ 193,600
\$	-	\$ 240,400	\$ -	\$ -	\$ -	\$ 240,400
\$	-	\$ 1,882,200	\$ 2,848,000	\$ 2,912,800	\$ 801,000	\$ 8,444,000

6. SM Avg Net Fixed Assets & UCC

LDC Amortization Policy:

Smart Meter Amortization Rate Enter Amortization Policy

Computer Hardware Amortization Rate Enter Amortization Policy

Computer Software Amortization Rate Enter Amortization Policy

15 Years 6. SM Avg Net Fixed Assets & UCC

5 Years 6. SM Avg Net Fixed Assets & UCC

3 Years 6. SM Avg Net Fixed Assets & UCC

Operating Expense Data:

Incremental O&M Expenses 2. Smart Meter Data; AMI (L) plus Other (O)

Incremental Admin Expenses 2. Smart Meter Data; AMI (M) plus Other (P)

Total Incremental Operating Expense 2. Smart Meter Data; AMI (N) plus Other (Q)

	2006	2007	2008	2009	2010	Total
\$	-	\$ 138,360	\$ 188,920	\$ 223,480	\$ 233,200	\$ 783,960
\$	-	\$ -	\$ -	\$ -	\$ -	\$ -
\$	-	\$ 138,360	\$ 188,920	\$ 223,480	\$ 233,200	\$ 783,960

4. Smart Meter Rate Calc

Per Meter Cost Split:

Smart meter including installation

Computer Hardware Costs

Computer Software Costs

Smart meter incremental operating expenses

Total Smart Meter Capital Costs per meter

	Per Meter	Installed	Investment	% of Invest
\$	178.00	45,000	\$ 8,010,000	87%
\$	4.30	45,000	\$ 193,600	0%
\$	5.34	45,000	\$ 240,400	0%
\$	17.42	45,000	\$ 783,960	0%
\$	205.07		\$ 9,227,960	87%



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Sheet 4. Smart Meter Rate Calc

Smart Meter Rate Calculation

Average Asset Values

Net Fixed Assets Smart Meters (6. SM Avg Net Fixed Assets & UCC)

Net Fixed Assets Computer Hardware (6. SM Avg Net Fixed Assets & UCC)

Net Fixed Assets Computer Software (6. SM Avg Net Fixed Assets & UCC)

Total Net Fixed Assets

2007	
\$	731,283
\$	57,960
\$	100,167
\$	889,410

A

Working Capital

Operation Expense

15 % Working Capital

\$	138,360
\$	20,754
\$	20,754

B

Smart Meters included in Rate Base

\$ 910,164

C = A + B

Return on Rate Base

Deemed Debt (3. LDC Assumptions and Data)

Deemed Equity (3. LDC Assumptions and Data)

50.0%	\$	455,082
50.0%	\$	455,082
	\$	910,164

D = C * Deemed Debt

E = C * Deemed Equity

Weighted Debt Rate (3. LDC Assumptions and Data)

Proposed ROE (3. LDC Assumptions and Data)

6.3%	\$	28,443
9.0%	\$	40,957

F = D * Weighted Debt Rate

G = E * Proposed ROE

Return on Rate Base

\$ 69,400

H = F + G

Operating Expenses

Incremental Operating Expenses (3. LDC Assumptions and Data)

\$ 138,360

I

Amortization Expenses

Amortization Expenses - Smart Meters (6. SM Avg Net Fixed Assets & UCC)

Amortization Expenses - Computer Hardware (6. SM Avg Net Fixed Assets & UCC)

Amortization Expenses - Computer Software (6. SM Avg Net Fixed Assets & UCC)

\$	50,433
\$	12,880
\$	40,067

Total Amortization Expenses

\$ 103,380 ^{5. PILs}

J

Revenue Requirement Before PILs

\$ 311,140

K = H + I + J

Calculation of Taxable Income

Incremental Operating Expenses

Depreciation Expenses

Interest Expense

-\$	138,360
-\$	103,380
-\$	28,443

I

J

F

Taxable Income For PILs

\$ 40,957 ^{5. PILs}

L = K - I - J - F

Grossed up PILs (5. PILs)

\$ 5,759

M

Revenue Requirement Before PILs

Grossed up PILs (5. PILs)

\$	311,140
\$	5,759

K

M

Revenue Requirement for Smart Meters

\$ 316,899

N = K + M

2007 Smart Meter Rate Adder

Revenue Requirement for Smart Meters

2006 EDR Total Metered Customers (3. LDC Assumptions and Data)

Annualized amount required per metered customer

Number of months in year

\$	316,899
\$	44,555
\$	7.11
	12
\$	0.59

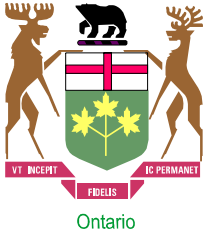
O = 2006 EDR Total Metered Customers

P = N / O

Q

R = P / Q

Enter this amount in the 2007 IRM Model sheet "4. 2006 Smart Meter Information" in cells F 17 thru F 32 (as required)



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Sheet 5. PILs

PILs Calculation

INCOME TAX

Net Income (4. Smart Meter Rate Calc)	\$ 40,957
Amortization (4. Smart Meter Rate Calc)	\$ 103,380
CCA - Class 47 (8%) Smart Meters (6. SM Avg Net Fixed Assets &UCC)	-\$ 60,520
CCA - Class 45 (45%) Computers (6. SM Avg Net Fixed Assets &UCC)	-\$ 83,070
Change in taxable income	\$ 747
Tax Rate (3. LDC Assumptions and Data)	36.12%
Income Taxes Payable	\$ 270

ONTARIO CAPITAL TAX

Smart Meters (6. SM Avg Net Fixed Assets &UCC)	\$ 1,462,567
Computer Hardware (6. SM Avg Net Fixed Assets &UCC)	\$ 115,920
Computer Software (6. SM Avg Net Fixed Assets &UCC)	\$ 200,333
Rate Base	\$ 1,778,820
Less: Exemption	\$ -
Deemed Taxable Capital	\$ 1,778,820
Ontario Capital Tax Rate	0.300%
Net Amount (Taxable Capital x Rate)	\$ 5,336

Gross Up

	PILs Payable	Gross Up	Grossed Up PILs
Change in Income Taxes Payable	\$ 270	36.12%	\$ 423
Change in OCT	\$ 5,336		\$ 5,336
PIL's	\$ 5,606		\$ 5,759

4. Smart Meter Rate Calc



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Sheet 6. SM Avg Net Fixed Assets &UCC

Smart Meter Average Net Fixed Assets

Net Fixed Assets - Smart Meters

	2006	2007
Opening Capital Investment	\$ -	\$ -
Capital Investment Year 1 (3. LDC Assumptions and Data)	\$ -	
Capital Investment Year 2 (3. LDC Assumptions and Data)		\$ 1,513,000
Closing Capital Investment	\$ -	\$ 1,513,000
Opening Accumulated Amortization	\$ -	\$ -
Amortization Year 1 (15 Years Straight Line)	\$ -	\$ -
Amortization Year 2 (15 Years Straight Line)		\$ 50,433
Closing Accumulated Amortization	\$ -	\$ 50,433
Opening Net Fixed Assets	\$ -	\$ -
Closing Net Fixed Assets	\$ -	\$ 1,462,567 ^{5. PILs}
Average Net Fixed Assets	\$ -	\$ 731,283 ^{4. Smart Meter Rate Calc}

Net Fixed Assets - Computer Hardware

	2006	2007
Opening Capital Investment	\$ -	\$ -
Capital Investment Year 1 (3. LDC Assumptions and Data)	\$ -	
Capital Investment Year 2 (3. LDC Assumptions and Data)		\$ 128,800
Closing Capital Investment	\$ -	\$ 128,800
Opening Accumulated Amortization	\$ -	\$ -
Amortization Year 1 (5 Years Straight Line)	\$ -	\$ -
Amortization Year 2 (5 Years Straight Line)		\$ 12,880
Closing Accumulated Amortization	\$ -	\$ 12,880
Opening Net Fixed Assets	\$ -	\$ -
Closing Net Fixed Assets	\$ -	\$ 115,920 ^{5. PILs}
Average Net Fixed Assets	\$ -	\$ 57,960 ^{4. Smart Meter Rate Calc}

Net Fixed Assets - Computer Software

	2006	2007
Opening Capital Investment	\$ -	\$ -
Capital Investment Year 1 (3. LDC Assumptions and Data)	\$ -	
Capital Investment Year 2 (3. LDC Assumptions and Data)		\$ 240,400
Closing Capital Investment	\$ -	\$ 240,400
Opening Accumulated Amortization	\$ -	\$ -
Amortization Year 1 (3 Years Straight Line)	\$ -	\$ -
Amortization Year 2 (3 Years Straight Line)		\$ 40,067
Closing Accumulated Amortization	\$ -	\$ 40,067
Opening Net Fixed Assets	\$ -	\$ -
Closing Net Fixed Assets	\$ -	\$ 200,333 ^{5. PILs}
Average Net Fixed Assets	\$ -	\$ 100,167 ^{4. Smart Meter Rate Calc}

For PILs Calculation

UCC - Smart Meters

CCA Class 47 (8%)	2006	2007
Opening UCC	\$ -	\$ -
Capital Additions	\$ -	\$ 1,513,000
UCC Before Half Year Rule	\$ -	\$ 1,513,000
Half Year Rule (1/2 Additions - Disposals)	\$ -	\$ 756,500
Reduced UCC	\$ -	\$ 756,500
CCA Rate Class 47	8%	8%
CCA	\$ -	\$ 60,520 ^{5. PILs}
Closing UCC	\$ -	\$ 1,452,480

UCC - Computer Equipment

CCA Class 45 (45%)	2006	2007
Opening UCC	\$ -	\$ -
Capital Additions Hardware	\$ -	\$ 128,800
Capital Additions Software	\$ -	\$ 240,400
UCC Before Half Year Rule	\$ -	\$ 369,200
Half Year Rule (1/2 Additions - Disposals)	\$ -	\$ 184,600
Reduced UCC	\$ -	\$ 184,600
CCA Rate Class 45	45%	45%
CCA	\$ -	\$ 83,070 ^{5. PILs}
Closing UCC	\$ -	\$ 286,130