ONTARIO ENERGY BOARD

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 Toronto Hydro-Electric System Limited for an order approving just and reasonable rates and other charges for electricity distribution to be effective May 1, 2010

Production Brief of the Smart Sub-Metering Working Group ("SSMWG")

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PRODUCTION BRIEF OF SMART SUB-METERING WORKING GROUP ("SSMWG")

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TAB 1

ONTARIO ENERGY BOARD

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AND IN THE MATTER OF an application by Toronto Hydro-Electric System Limited for an order approving just and reasonable rates and other charges for electricity distribution to be effective May 1, 2010

Pre-filed Evidence of the Smart Sub-Metering Working Group

SUMMARY

1. The Toronto Hydro-Electric System Limited ('THESL') has made application before the Ontario Energy Board ('OEB') in respect of its 2010 Electricity Distribution Rate Application ('Application'). In that Application, THESL has provided information regarding its historic and projected costs with regard to its offering so-called 'suite metering' as a service for condominiums. THESL has also provided information through its answers to a series of interrogatories to the Smart Sub-metering Working Group ('SSMWG') and other intervenors. Based on the information in that Application and THESL's answers interrogatories, it appears that THESL's provision of smart suite metering service is being cross-subsidized by rate payers that do not receive such service. As such, THESL's rate design is not in keeping with generally accepted regulatory principles. I provide evidence of the degree to which the revenues from the provision of this service fail to fully cover the costs of such services resulting in a

cross-subsidization from THESL's regulated business to a competitively offered service in a series of tables at the end of this statement.

2. Some cross-subsidization within a rate class is inevitable. However, cross-subsidizing services that can be provided by competitive service providers can harm the competitive market. While I have not quantified the degree to which such cross-subsidization is likely to preempt other parties from offering the metering service or estimate the magnitude of the long-term harm to the market, it is a general principle of utility regulation that utilities are prohibited from using cross-subsidization as a means to enhance their position in a competitive market. If THESL wishes to offer suite meter service, I would recommend that it consider following the example of U.S. utilities that have chosen to participate in competitive markets and set up an affiliate that operates at arm's length from THESL.

3. My statement is organized as follows. I discuss some of the general principles that guide cost allocation and rate design. I then discuss the issue of utilities participating in competitive markets and some of the principles that guide their participation. I then provide an analysis of the data in the Application and the interrogatories that provide evidence of cross-subsidization.

COST ALLOCATION AND RATE DESIGN

4. The principles of rate design have largely been codified by James C. Bonbright in his classic Principles of Public Utility Rates[1]. One of the most fundamental

[1] Bonbright, James C. Principles of Public Utility Rates (New York: Columbia University Press, 1961)

principles of assessing the reasonableness of utility rates is the standard of cost of service. As Bonbright notes, "one standard of reasonable rates can fairly be said to outrank all others in the importance attached to it by experts and by public opinion alike – the standard of cost of service". As he further notes, "A cost standard of rate making has been most generally accepted in the regulation of the levels of rates charged by private utility companies. But even more significant is the widespread adherence to cost, or to some approximation of cost, as a basis of rate making under public ownership. Thus, the great Hydro-Electric Power Commission of Ontario purports to apply the principle of 'service at cost' in its charges for wholesale power supplied to the various municipal distribution systems of the province."[2]

5. By using 'cost of service' as the basis for rates is meant that the rates that utilities charge for the services they provide should hew as closely as possible to the costs incurred for providing the services. This is also known as the standard of cost causation. For example, when fuel is classified as an energy-related cost, that cost is the cost incurred by the utility to provide for the energy consumed by its customers. The cost causation principle is also applied to the methods for allocating costs among customers. For example, the allocation of fuel costs among users on the basis of each user's relative share of total kilowatt-hours is done so because fuel is a variable cost primarily caused by the total kilowatt-hours produced and consumed. Thus the user that uses more would pay a larger portion of the total energy cost than the user that uses less.

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2 Op. cit., pp. 67-68.

6. According to Bonbright, there are at least three economic rationales for this standard. The first is the consumer rationing function. Under the principle of consumer sovereignty, consumers should be free to consume whatever they wish of a particular good, so long as they compensate the producers of the service for the costs of producing the services. When the rates of a service are set at less than the cost of providing that service, either some form of rationing may be required or the service will be supplied in wasteful amounts. Secondly, setting rates at costs (including the return on and of capital) also provides the incentives to the company to supply the services at the amount demanded. If rates are set too high, the company has the incentive to provide more of the service than is efficient. Thirdly, there is the income distribution function of rates. A purchaser of a utility service gives up the opportunity to purchase other goods with equivalent costs. These three rationales are known under the rubrics of consumption efficiency, production efficiency, and distributive efficiency.[3]

7. A fourth rationale that comes into play in the particular situation of the smart suite meters is the impact on the competitive provision of such services by other suppliers. Although discounting the price of services in competitive market is a reasonable strategy, such discounting would drive down the market price for providing that service. In a market where all competitors are non-regulated, driving down the market price of a particular service would reduce the profitability, at least temporarily. Thus, a competitive entity undertakes such a strategy with great caution. However, a regulated utility may use the mechanism of cross-subsidization from its regulated services to the

[3] Op. cit., pp. 69-71.

competitively supplied market service and maintain its level of profitability despite reducing the price of the competitively supplied service.

8. Such behavior by a utility is troublesome because the utility can damage the competitive market. In such situation, non-regulated competitors may exit the market, reducing, and possibly eliminating competition and the potential positive attributes associated with competitive markets, such as efficiency in production, innovation in service or product design. Even if the utility may not mean to harm the market, by providing what it sees as a value-added service at a discounted price, it could block competition and place substantial stress on the market.

9. The issue of cross-subsidization is significant enough that the National Association of Regulatory Utility Commissioners ('NARUC') issued a 'Resolution Regarding Cost Allocation Guidelines for the Energy Industry' in July of 1999[4]. The specific focus of that resolution is to reduce the potential of regulated utilities to carry on undue burden by the utility's attempt to compete in non-regulated markets. Indeed, the resolution's appendix on cost allocation principles begins with "To the maximum extent practicable, in consideration of administrative costs, costs should be collected and classified on a direct basis for each asset, service or product provided."[5] It continues with "The general method for charging indirect costs should be on a fully allocated cost basis." To the extent that THESL fails to fully recover its costs associated with converting

[4] See http://www.sec.gov/rules/proposed/s70501/ramsay1.htm
[5] Ibid., Appendix A

condominiums from bulk meters to suite meters in the direct charges for those conversions, it would place a significant burden on its other customers, either in terms of additional allocated costs or reduced services.

10. From the information gathered through THESL's answers to interrogatories, it appears that THESL does not collect payments from the condominium customers that it converts or from new condominium developers. In its promotional material that THESL provided to SSMWG's Interrogatory #6, THESL indicated that "We supply and install our Smart Meter system at no cost to the condominium or suite owners." Further, in the same materials, THESL suggests that it would provide superior service at lower costs because it is regulated. This rationale suggests that THESL is subsidizing the suite meter costs through the charges that it collects from its other customers. If this is indeed the case, THESL's action is a violation of any reasonable cost of service standard with regard to the behavior of a regulated monopoly participating in a competitive market. For regulated monopolies such as utilities, it is required that the regulated entity should either offer its services on an equal footing as other non-regulated and competitive entities in the market or its services should be regulated. THESL should not participate in a competitive market while relying on regulated cost recovery simultaneously.

11. The most common solution to the difficulty that arises from a utility entering a competitive market is to create an unregulated affiliate entity which operates at arm's length from the utility. That entity would have separate accounting systems, management structure, information and financial management systems,

but could be owned by the utility. The unregulated entity would be free to offer services in the competitive market, but regulated by competition authorities, not the Ontario Energy Board ('OEB'). The OEB would become involved only in circumstances in which a code of conduct had been violated by THESL with regard to its interactions with its non-regulated affiliate.

ESTIMATED REVENUE SUFFICIENCY/(DEFICIENCY)

12. Based on the information provided by THESL in its rate filing and its responses to various interrogatories, I prepared an analysis to compare the increase in capital costs and costs associated with operation, maintenance and administration ("OM&A") of suite meters to the increase in revenues associated with the installed suite meters (after netting the reduction in commercial revenues from bulk-metered customers).

13. To perform the revenue sufficiency analysis, I rely primarily on public data from THESL's 2010 Electricity Distribution Rate Application which it filed before the Ontario Energy Board on August 29, 2009. I also rely on information contained in THESL's responses to interrogatories in this proceeding.

14. I performed two groups of analyses. The first analysis examines only the incremental revenue sufficiency/(deficiency) arising from THESL's projected additions to its suite metering program for 2010 alone. The second analysis examines the cumulative revenue sufficiency/(deficiency) from the suite meter program for the period 2007 through the projected rate year.

15. My incremental analysis for 2010 contains two main scenarios, each with high and low meter cost assumptions. For ease of reference, I have named these cases High Cost 1 and 2, and Low Cost 1 and 2. The cases labeled as '1' calculate revenue sufficiency/(deficiency) for new residential building suite meters only; the cases labeled '2' calculate revenue sufficiency/(deficiency) for bulk-converted residential suite meters.

16. The high end of my cost assumption for each suite-meter is $747. It is derived by dividing the total 2007-2010 external capital costs related to suite metering ($6.4 million) by the total 2007-2010 installed suite meters (8,564). The data for this computation were provided by THESL's responses to SSMWG's Interrogatories #1 and #3. On the lower cost end, I have assumed a $444 cost per suite-meter. This cost is derived by dividing the THESL's total 2010 capital cost related to suite metering ($2.4 million) by the number of 2010 forecasted installed suite meters (5,600).[6]

17. The results show that THESL's incremental revenue deficiency for 2010 is in the range between $96,000 to about $308,000.[C] I have assumed that 1419 bulk meters converted to suite meters in the analysis below[7]. Table 1 below presents my results

[6] The source of these numbers is THESL's Exhibit D1, Tab 8, Schedule 7, Page 3.
[7] This number is calculated as the delta of cumulative bulk meter conversions from 2009 to 2010, which is presented in response to SSMWG Interrogatory Response 1A

Table 1
2010 Revenue Deficiencies By Case

	Residential Revenue Derived From	Suite Meter Unit Cost	
		High	Low
		[A]	[B]
[1]	New	(190,287)	(95,608)
[2]	Bulk	(307,630)	(246,030)

18. I have also performed a similar analysis for the cumulative revenue deficiency for beginning in 2007 through the projected 2010. My cumulative analysis contains two main scenarios, each with high and low meter cost assumptions. For ease of reference, I have named these cases High Cost 3 and 4, and Low Cost 3 and 4. The cases labeled as '3' calculate revenue sufficiency/(deficiency) for new residential building suite meters only; the cases labeled '4' calculate revenue sufficiency/(deficiency) for bulk-converted residential suite meters.

19. I follow similar assumptions as above, with the high end of the cost assumption for meters at $747 per meter and the low end at $444 per meter, based on the same rationale as above.

20. The results show that THESL's cumulative revenue deficiency for 2007 and projected through 2010 is in the range between $215,000 to about $635,000.[C] Table 2 below presents my results

Table 2
Cumulative 2007-2010 Revenue Deficiencies By Case

	Residential Revenue Derived From	Suite Meter Unit Cost	
		High	Low
		[A]	[B]
[3]	New	(435,707)	(214,544)
[4]	Bulk	(634,802)	(511,404)

21. Whether viewed from an incremental standpoint for 2010 or viewed cumulatively, it appears that THESL is not recovering sufficient revenues from its suite metered customers to offset the increased capital and OM&A expenditures associated with the installation and operation of the suite meters. Thus, it appears that THESL is cross-subsidizing its suite meter program through revenues from other customers.

Workpaper-Assumptions

		Source
Working Capital Allowance	14.1%	Exhibit J1, Tab 2, Schedule 7, Page 1
Debt	60%	Exhibit J1, Tab 2, Schedule 2, Page 1
Return on Debt	5.32%	Exhibit J1, Tab 2, Schedule 2, Page 1
Equity	40%	Exhibit J1, Tab 2, Schedule 2, Page 1
Return on Equity	8.01%	Exhibit J1, Tab 2, Schedule 2, Page 1
Cost of Capital	6.39%	Exhibit J1, Tab 2, Schedule 2, Page 1
Number of Revenue Generating Suite Meters in 2010	3600	Response to SSMWG #2
Number of Installed Suite Meters in 2010	5400	Exhibit D1, Tab 8, Schedule 7, Page 3
Total Cost of 5,400 Suite Meters	$2,400,000	Exhibit D1, Tab 8, Schedule 7, Page 3
Total 2007-2010 External Capital Costs Related to Suite Metering	$6,400,000	Response to SSMWG #3
Total 2007-2010 Installed Suite Meters	8,564	Response to SSMWG #1
Number of Smart Meter Converted from Bulk Meters in 2010	1419	Response to SSMWG #1
Number of Smart Meter Converted from Bulk Meters in 2007-2010	3010	Response to SSMWG #1
Unit Costs		
HIGH	$747	$6,400,000 / 8,564
LOW	$444	$2,400,000 / 5,400
HIGH Depreciated New	$686	Exhibit 1: Workpaper-New Meters
LOW Depreciated New	$408	Exhibit 1: Workpaper-New Meters
HIGH Depreciated Bulk	$706	Exhibit 2: Workpaper-Bulk Converted Meters
LOW Depreciated Bulk	$420	Exhibit 2: Workpaper-Bulk Converted Meters
OM&A cost "related" to suite-metering in 2010	$300,000	Response to SSMWG #5
OM&A cost "related" to suite-metering in 2007-2010	$713,667	$300,000 x (8,564 cumulative meters /3,600 revenue generating meters installed in 2010)
Average O&M Cost for Rate Class 1 (Residential) for 2010 Test Year	$190	Exhibit D1, Tab 8, Schedule 3-2, Page 3
Administration Cost in 2009	10.57%	Exhibit D1, Tab 8, Schedule 3-2, Page 2
OM&A per residential customer	$210.41	
Amortization	6.70%	Response to SSMWG #5
2010 Payment in Lieu of Taxes	23,400,000	Exhibit H1, Tab 1, Schedule 1, Page 6
Utility Income Before Taxes	84,000,000	Exhibit J1, Tab 2, Schedule 5, Page 1
PILs	27.86%	PIL/ Utility Income Before Taxes
Residential Monthly Customer Charge	18.82	Exhibit M1, Tab 2, Schedule 2, Page 2 (service charge + smart meter rate rider)
Residential Monthly Variable Distribution ($ / kWh)	0.01684	Exhibit M1, Tab 2, Schedule 2, Page 2
Average Residential kWh per Month	450	Exhibit R1, Tab 3, Schedule 5, Page 1
General Service Less Than 50 kW Monthly Variable Distribution ($ / kWh)	0.02399	Exhibit M1, Tab 2, Schedule 2, Page 2
Peak Demand (kW) per Residential Customer Served Under GS	2	Assumption
Number of Months	12	

Attachment: Case 1A
Cost and Revenue Associated with Toronto Hydro's 2010 Proposed Suite Metering
Case 1A: New Meters, High Unit Cost

Line	Item	Amount	Calculation
[1]	Number of Installed Revenue Generating Suite Meters	2,181	
[2]	Unit Cost	747	
[3]	Total Capital Cost	$1,629,893	[1] x [2]
[4]	Working Capital Allowance		
[5]	Operation Expense	$640,664	[15]
[6]	Working Capital Allowance 14.1%	$90,334	[5] x 14.1%
[7]	Suite Metering Rate Base	$1,720,226	[3] + [6]
[8]	Return on Rate Base		
[9]	Debt 60% @ 5.32%	$54,910	[7] x 0.6 x 5.32%
[10]	Equity 40% @ 8.01%	$55,116	[7] x 0.4 x 8.01%
[11]	Return on Rate Base	$110,026	[9] + [10]
[12]	Operation Expense		
[13]	Incremental Operating Expenses	$181,750	$300,000 x (2181 / 3600)
[14]	OM&A $210 / customer	$458,914	$210 x 2181
[15]	OM&A	$640,664	[13] + [14]
[16]	Amortization	$109,203	[3] x 6.7%
[17]	Total Operating Expenses	$749,867	[15] + [16]
[18]	Revenue Requirement Before PILs	$859,893	[11] + [17]
[19]	Payment in Lieu of Taxes @ 27.86 %	$21,282	([10] / (1-PILs)) - [10]
[20]	Suite Meter Revenue Requirement	$881,175	[18] + [19]
[21]	Residential Revenues (Proposed 2010 Rates)		
[22]	Number of Installed Smart Meters	2,181	
[23]	Yearly Customer Charge @ $18.82 / mo.	$492,557	[22] x $18.82 x 12
[24]	Variable Distribution @ 1.684 cents/kWh	$198,331	[22] x 450 kWh x 1.684 cents/kWh x 12
[25]	Forgone Commercial Revenues (Proposed 2010 Rates for GS < 50 kW Class)		
[26]	Variable Distribution @ $0.02399/kWh	0	0.02399 $/KWh x 450 KWh x 12 x 0
[27]	Total Revenue	$690,888	[23] + [24] + [26]
[28]	**Annual Suite Meter Program Sufficiency/(Deficiency)**	**(190,287)**	[27] - [20]

Attachment: Case 1B
Cost and Revenue Associated with Toronto Hydro's 2010 Proposed Suite Metering
Case 1B: New Meters, Low Unit Cost

Line	Item	Amount	Calculation
[1]	Number of Installed Revenue Generating Suite Meters	2,181	
[2]	Unit Cost	444	
[3]	Total Capital Cost	$969,333	[1] x [2]
[4]	Working Capital Allowance		
[5]	Operation Expense	$640,664	[15]
[6]	Working Capital Allowance 14.1%	$90,334	[5] x 14.1%
[7]	Suite Metering Rate Base	$1,059,667	[3] + [6]
[8]	Return on Rate Base		
[9]	Debt 60% @ 5.32%	$33,825	[7] x 0.6 x 5.32%
[10]	Equity 40% @ 8.01%	$33,952	[7] x 0.4 x 8.01%
[11]	Return on Rate Base	$67,776	[9] + [10]
[12]	Operation Expense		
[13]	Incremental Operating Expenses	$181,750	$300,000 x (2181 / 3600)
[14]	OM&A $210 / customer	$458,914	$210 x 2181
[15]	OM&A	$640,664	[13] + [14]
[16]	Amortization	$64,945	[3] x 6.7%
[17]	Total Operating Expenses	$705,610	[15] + [16]
[18]	Revenue Requirement Before PILs	$773,386	[11] + [17]
[19]	Payment in Lieu of Taxes @ 27.86 %	$13,110	([10] / (1-PILs)) - [10]
[20]	Suite Meter Revenue Requirement	$786,496	[18] + [19]
[21]	Residential Revenues (Proposed 2010 Rates)		
[22]	Number of Installed Smart Meters	2,181	
[23]	Yearly Customer Charge @ $18.82 / mo.	$492,557	[22] x $18.82 x 12
[24]	Variable Distribution @ 1.684 cents/kWh	$198,331	[22] x 450 kWh x 1.684 cents/kWh x 12
[25]	Forgone Commercial Revenues (Proposed 2010 Rates for GS < 50 kW Class)		
[26]	Variable Distribution @ $0.02399/kWh	0	0.02399 $/KWh x 450 KWh x 12 x 0
[27]	Total Revenue	$690,888	[23] + [24] + [26]
[28]	**Annual Suite Meter Program Sufficiency/(Deficiency)**	**(95,608)**	[27] - [20]

Attachment: Case 2A
Cost and Revenue Associated with Toronto Hydro's 2010 Proposed Suite Metering
Case 2A: Converted, High Unit Cost

Line	Item	Amount	Calculation
[1]	Number of Installed Revenue Generating Suite Meters	1,419	
[2]	Unit Cost	747	
[3]	Total Capital Cost	$1,060,439	[1] x [2]
[4]	Working Capital Allowance		
[5]	Operation Expense	$416,828	[15]
[6]	Working Capital Allowance 14.1%	$58,773	[5] x 14.1%
[7]	Suite Metering Rate Base	$1,119,212	[3] + [6]
[8]	Return on Rate Base		
[9]	Debt 60% @ 5.32%	$35,725	[7] x 0.6 x 5.32%
[10]	Equity 40% @ 8.01%	$35,860	[7] x 0.4 x 8.01%
[11]	Return on Rate Base	$71,585	[9] + [10]
[12]	Operation Expense		
[13]	Incremental Operating Expenses	$118,250	$300,000 x (1419 / 3600)
[14]	OM&A $210 / customer	$298,578	$210 x 1419
[15]	OM&A	$416,828	[13] + [14]
[16]	Amortization	$71,049	[3] x 6.7%
[17]	Total Operating Expenses	$487,878	[15] + [16]
[18]	Revenue Requirement Before PILs	$559,463	[11] + [17]
[19]	Payment in Lieu of Taxes @ 27.86 %	$13,847	([10] / (1-PILs)) - [10]
[20]	Suite Meter Revenue Requirement	$573,309	[18] + [19]
[21]	Residential Revenues (Proposed 2010 Rates)		
[22]	Number of Installed Smart Meters	1,419	
[23]	Yearly Customer Charge @ $18.82 / mo.	$320,467	[22] x $18.82 x 12
[24]	Variable Distribution @ 1.684 cents/kWh	$129,038	[22] x 450 kWh x 1.684 cents/kWh x 12
[25]	Forgone Commercial Revenues (Proposed 2010 Rates for GS < 50 kW Class)		
[26]	Variable Distribution @ $0.02399/kWh	(183,826)	0.02399 $/KWh x 450 KWh x 12 x 1419
[27]	Total Revenue	$265,679	[23] + [24] + [26]
[28]	**Annual Suite Meter Program Sufficiency/(Deficiency)**	**(307,630)**	[27] - [20]

Attachment: Case 2B
Cost and Revenue Associated with Toronto Hydro's 2010 Proposed Suite Metering
Case 2B: Converted, Low Unit Cost

Line	Item	Amount	Calculation
[1]	Number of Installed Revenue Generating Suite Meters	1,419	
[2]	Unit Cost	444	
[3]	Total Capital Cost	$630,667	[1] x [2]
[4]	Working Capital Allowance		
[5]	Operation Expense	$416,828	[15]
[6]	Working Capital Allowance 14.1%	$58,773	[5] x 14.1%
[7]	Suite Metering Rate Base	$689,439	[3] + [6]
[8]	Return on Rate Base		
[9]	Debt 60% @ 5.32%	$22,007	[7] x 0.6 x 5.32%
[10]	Equity 40% @ 8.01%	$22,090	[7] x 0.4 x 8.01%
[11]	Return on Rate Base	$44,097	[9] + [10]
[12]	Operation Expense		
[13]	Incremental Operating Expenses	$118,250	$300,000 x (1419 / 3600)
[14]	OM&A $210 / customer	$298,578	$210 x 1419
[15]	OM&A	$416,828	[13] + [14]
[16]	Amortization	$42,255	[3] x 6.7%
[17]	Total Operating Expenses	$459,083	[15] + [16]
[18]	Revenue Requirement Before PILs	$503,180	[11] + [17]
[19]	Payment in Lieu of Taxes @ 27.86 %	$8,530	([10] / (1-PILs)) - [10]
[20]	Suite Meter Revenue Requirement	$511,709	[18] + [19]
[21]	Residential Revenues (Proposed 2010 Rates)		
[22]	Number of Installed Smart Meters	1,419	
[23]	Yearly Customer Charge @ $18.82 / mo.	$320,467	[22] x $18.82 x 12
[24]	Variable Distribution @ 1.684 cents/kWh	$129,038	[22] x 450 kWh x 1.684 cents/kWh x 12
[25]	Forgone Commercial Revenues (Proposed 2010 Rates for GS < 50 kW Class)		
[26]	Variable Distribution @ $0.02399/kWh	(183,826)	0.02399 $/KWh x 450 KWh x 12 x 1419
[27]	Total Revenue	$265,679	[23] + [24] + [26]
[28]	**Annual Suite Meter Program Sufficiency/(Deficiency)**	**(246,030)**	[27] - [20]

Attachment: Case 3A
Cumulative Cost and Revenue Associated with Toronto Hydro's 2007-2010 Proposed Suite Metering
Case 3A: Cumulative, New Meters, High Unit Cost

Line	Item	Amount	Calculation
[1]	Cumulative Depreciated Capital Cost	$3,809,656	See Exhibit 1
[2]	Working Capital Allowance		
[3]	Operation Expense	$1,631,477	[13]
[4]	Working Capital Allowance 14.1%	$230,038	[3] x 14.1%
[5]	Suite Metering Rate Base	$4,039,694	[1] + [4]
[6]	Return on Rate Base		
[7]	Debt 60% @ 5.32%	$128,947	[5] x 0.6 x 5.32%
[8]	Equity 40% @ 8.01%	$129,432	[5] x 0.4 x 8.01%
[9]	Return on Rate Base	$258,379	[7] + [8]
[10]	Operation Expense		
[11]	Incremental Operating Expenses	$462,833	$713,667 x (5554 / 8564)
[12]	OM&A $210 / customer	$1,168,643	$210 x 5554
[13]	OM&A	$1,631,477	[11] + [12]
[14]	Amortization	$255,247	[1] x 6.7%
[15]	Total Operating Expenses	$1,886,724	[13] + [14]
[16]	Revenue Requirement Before PILs	$2,145,102	[9] + [15]
[17]	Payment in Lieu of Taxes @ 27.86 %	$49,979	([8] / (1-PILs)) - [8]
[18]	Suite Meter Revenue Requirement	$2,195,081	[16] + [17]
[19]	Residential Revenues (Proposed 2010 Rates)		
[20]	Number of Installed Smart Meters	5,554	
[21]	Yearly Customer Charge @ $18.82 / mo.	$1,254,315	[20] x $18.82 x 12
[22]	Variable Distribution @ 1.684 cents/kWh	$505,059	[20] x 450 kWh x 1.684 cents/kWh x 12
[23]	Forgone Commercial Revenues (Proposed 2010 Rates for GS < 50 kW Class)		
[24]	Variable Distribution @ $0.02399/kWh	0	0.02399 $/KWh x 450 KWh x 12 x 0
[25]	Total Revenue	$1,759,374	[21] + [22] + [24]
[26]	**Annual Suite Meter Program Sufficiency/(Deficiency)**	**(435,707)**	[25] - [18]

Attachment: Case 3B
Cumulative Cost and Revenue Associated with Toronto Hydro's 2007-2010 Proposed Suite Metering
Case 3B: Cumulative, New Meters, Low Unit Cost

Line	Item	Amount	Calculation
[1]	Cumulative Depreciated Capital Cost	$2,266,640	See Exhibit 1
[2]	Working Capital Allowance		
[3]	Operation Expense	$1,631,477	[13]
[4]	Working Capital Allowance 14.1%	$230,038	[3] x 14.1%
[5]	Suite Metering Rate Base	$2,496,679	[1] + [4]
[6]	Return on Rate Base		
[7]	Debt 60% @ 5.32%	$79,694	[5] x 0.6 x 5.32%
[8]	Equity 40% @ 8.01%	$79,994	[5] x 0.4 x 8.01%
[9]	Return on Rate Base	$159,688	[7] + [8]
[10]	Operation Expense		
[11]	Incremental Operating Expenses	$462,833	$713,667 x (5554 / 8564)
[12]	OM&A $210 / customer	$1,168,643	$210 x 5554
[13]	OM&A	$1,631,477	[11] + [12]
[14]	Amortization	$151,865	[1] x 6.7%
[15]	Total Operating Expenses	$1,783,342	[13] + [14]
[16]	Revenue Requirement Before PILs	$1,943,029	[9] + [15]
[17]	Payment in Lieu of Taxes @ 27.86 %	$30,889	([8] / (1-PILs)) - [8]
[18]	Suite Meter Revenue Requirement	$1,973,918	[16] + [17]
[19]	Residential Revenues (Proposed 2010 Rates)		
[20]	Number of Installed Smart Meters	5,554	
[21]	Yearly Customer Charge @ $18.82 / mo.	$1,254,315	[20] x $18.82 x 12
[22]	Variable Distribution @ 1.684 cents/kWh	$505,059	[20] x 450 kWh x 1.684 cents/kWh x 12
[23]	Forgone Commercial Revenues (Proposed 2010 Rates for GS < 50 kW Class)		
[24]	Variable Distribution @ $0.02399/kWh	0	0.02399 $/KWh x 450 KWh x 12 x 0
[25]	Total Revenue	$1,759,374	[21] + [22] + [24]
[26]	**Annual Suite Meter Program Sufficiency/(Deficiency)**	**(214,544)**	[25] - [18]

Attachment: Case 4A
Cumulative Cost and Revenue Associated with Toronto Hydro's 2007-2010 Proposed Suite Metering
Case 4A: Cumulative, Converted, High Unit Cost

Line	Item	Amount	Calculation
[1]	Cumulative Depreciated Capital Cost	$2,125,600	See Exhibit 2
[2]	Working Capital Allowance		
[3]	Operation Expense	$884,182	[13]
[4]	Working Capital Allowance 14.1%	$124,670	[3] x 14.1%
[5]	Suite Metering Rate Base	$2,250,269	[1] + [4]
[6]	Return on Rate Base		
[7]	Debt 60% @ 5.32%	$71,829	[5] x 0.6 x 5.32%
[8]	Equity 40% @ 8.01%	$72,099	[5] x 0.4 x 8.01%
[9]	Return on Rate Base	$143,927	[7] + [8]
[10]	Operation Expense		
[11]	Incremental Operating Expenses	$250,833	$713,667 x (3010 / 8564)
[12]	OM&A $210 / customer	$633,348	$210 x 3010
[13]	OM&A	$884,182	[11] + [12]
[14]	Amortization	$142,415	[1] x 6.7%
[15]	Total Operating Expenses	$1,026,597	[13] + [14]
[16]	Revenue Requirement Before PILs	$1,170,524	[9] + [15]
[17]	Payment in Lieu of Taxes @ 27.86 %	$27,840	([8] / (1-PILs)) - [8]
[18]	Suite Meter Revenue Requirement	$1,198,364	[16] + [17]
[19]	Residential Revenues (Proposed 2010 Rates)		
[20]	Number of Installed Smart Meters	3,010	
[21]	Yearly Customer Charge @ $18.82 / mo.	$679,778	[20] x $18.82 x 12
[22]	Variable Distribution @ 1.684 cents/kWh	$273,717	[20] x 450 kWh x 1.684 cents/kWh x 12
[23]	Forgone Commercial Revenues (Proposed 2010 Rates for GS < 50 kW Class)		
[24]	Variable Distribution @ $0.02399/kWh	(389,933)	0.02399 $/KWh x 450 KWh x 12 x 3010
[25]	Total Revenue	$563,562	[21] + [22] + [24]
[26]	**Annual Suite Meter Program Sufficiency/(Deficiency)**	**(634,802)**	[25] - [18]

Attachment: Case 4B
Cumulative Cost and Revenue Associated with Toronto Hydro's 2007-2010 Proposed Suite Metering
Case 4B: Cumulative, Converted, Low Unit Cost

Line	Item	Amount	Calculation
[1]	Cumulative Depreciated Capital Cost	$1,264,673	See Exhibit 2
[2]	Working Capital Allowance		
[3]	Operation Expense	$884,182	[13]
[4]	Working Capital Allowance 14.1%	$124,670	[3] x 14.1%
[5]	Suite Metering Rate Base	$1,389,343	[1] + [4]
[6]	Return on Rate Base		
[7]	Debt 60% @ 5.32%	$44,348	[5] x 0.6 x 5.32%
[8]	Equity 40% @ 8.01%	$44,515	[5] x 0.4 x 8.01%
[9]	Return on Rate Base	$88,862	[7] + [8]
[10]	Operation Expense		
[11]	Incremental Operating Expenses	$250,833	$713,667 x (3010 / 8564)
[12]	OM&A $210 / customer	$633,348	$210 x 3010
[13]	OM&A	$884,182	[11] + [12]
[14]	Amortization	$84,733	[1] x 6.7%
[15]	Total Operating Expenses	$968,915	[13] + [14]
[16]	Revenue Requirement Before PILs	$1,057,777	[9] + [15]
[17]	Payment in Lieu of Taxes @ 27.86 %	$17,189	([8] / (1-PILs)) - [8]
[18]	Suite Meter Revenue Requirement	$1,074,966	[16] + [17]
[19]	Residential Revenues (Proposed 2010 Rates)		
[20]	Number of Installed Smart Meters	3,010	
[21]	Yearly Customer Charge @ $18.82 / mo.	$679,778	[20] x $18.82 x 12
[22]	Variable Distribution @ 1.684 cents/kWh	$273,717	[20] x 450 kWh x 1.684 cents/kWh x 12
[23]	Forgone Commercial Revenues (Proposed 2010 Rates for GS < 50 kW Class)		
[24]	Variable Distribution @ $0.02399/kWh	(389,933)	0.02399 $/KWh x 450 KWh x 12 x 3010
[25]	Total Revenue	$563,562	[21] + [22] + [24]
[26]	**Annual Suite Meter Program Sufficiency/(Deficiency)**	**(511,404)**	[25] - [18]

Exhibit 1: New Suite Meters Installed By Year

		@ High Unit Cost			@ Low Unit Cost		
	New	**Capital Cost Prior to Depreciation @ High Unit Cost**	**Depreciation**	**Capital Cost in 2010 @ High Unit Cost**	**Capital Cost Prior to Depreciation @ Low Unit Cost**	**Depreciation**	**Capital Cost in 2010 @ Low Unit Cost**
	[1]	[2]	[3]	[4]	[5]	[6]	[7]
2007	1,409	$1,052,523	$211,557	$840,966	$626,222	$125,871	$500,352
2008	586	$437,742	$58,657	$379,085	$260,444	$34,900	$225,545
2009	1,378	$1,029,366	$68,968	$960,398	$612,444	$41,034	$571,411
2010	2,181	$1,629,207	$0	$1,629,207	$969,333	$0	$969,333
Total	5,554	$4,148,838	$339,182	**$3,809,656**	$2,468,444	$201,804	**$2,266,640**

Source:
[1]: Toronto Hydro Responses to Interogatory #1
[2]: [1] x $747
[3]: [2] x 6.7% x number of years
[4]: [2] - [3]
[5]: [1] x $444
[6]: [5] x 6.7% x number of years
[7]: [5] - [6]

Exhibit 2: Bulk Conversion Suite Meters Installed By Year

		@ High Unit Cost			@ Low Unit Cost		
	Bulk Conversions	**Capital Cost Prior to Depreciation @ High Unit Cost**	**Depreciation**	**Capital Cost in 2010 @ High Unit Cost**	**Capital Cost Prior to Depreciation @ Low Unit Cost**	**Depreciation**	**Capital Cost in 2010 @ Low Unit Cost**
	[1]	[2]	[3]	[4]	[5]	[6]	[7]
2007	154	$115,038	$23,123	$91,915	$68,444	$13,757	$54,687
2008	556	$415,332	$55,654	$359,678	$247,111	$33,113	$213,998
2009	881	$658,107	$44,093	$614,014	$391,556	$26,234	$365,321
2010	1,419	$1,059,993	$0	$1,059,993	$630,667	$0	$630,667
Total	3,010	$2,248,470	$122,870	**$2,125,600**	$1,337,778	$73,104	**$1,264,673**

Source:
[1]: Toronto Hydro Responses to Interogatory #1
[2]: [1] x $747
[3]: [2] x 6.7% x number of years
[4]: [2] - [3]
[5]: [1] x $444
[6]: [5] x 6.7% x number of years
[7]: [5] - [6]

	Scope	New/Bulk	Total Meters	Assumed Bulk Converted	[redacted]			Description	Note
Case 1A	2010	New	3600	1419	2181	0	747	New Meters, High Unit Cost	
Case 1B	2010	New	3600	1419	2181	0	444	New Meters, Low Unit Cost	
Case 2A	2010	Bulk	3600	1419	1419	1419	747	Converted, High Unit Cost	
Case 2B	2010	Bulk	3600	1419	1419	1419	444	Converted, Low Unit Cost	
Case 3A	2007-2010	New	8,564	3,010	5554	0	686	Cumulative, New Meters, High Unit Cost	See Exhibit 1
Case 3B	2007-2010	New	8,564	3,010	5554	0	408	Cumulative, New Meters, Low Unit Cost	See Exhibit 1
Case 4A	2007-2010	Bulk	8,564	3,010	3010	3010	706	Cumulative, Converted, High Unit Cost	See Exhibit 2
Case 4B	2007-2010	Bulk	8,564	3,010	3010	3010	420	Cumulative, Converted, Low Unit Cost	See Exhibit 2

ONTARIO ENERGY BOARD

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 Toronto Hydro-Electric System Limited for an order approving just and reasonable rates and other charges for electricity distribution to be effective May 1, 2010

CURRICULUM VITAE OF

PHILIP Q. HANSER, THE BRATTLE GROUP

PHILIP Q HANSER **Principal**

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Mr. Philip Q Hanser is a principal of *The Brattle Group* and has over twenty-five years of consulting and litigation experience in the energy industry. His expertise includes issues ranging from industry structure, market power and associated regulatory questions, to specific operational and strategic questions such as transmission pricing, generation planning, tariff strategies, fuels procurement, environmental issues, forecasting, demand-side management, and other management and financial issues. He has supported clients' efforts in insurance recovery of environmental liabilities arising from former manufactured gas plant sites, assessed liability risk in mass tort suits, and designed statistical database auditing procedures.

He has appeared as an expert witness before the U.S. Federal Energy Regulatory Commission (FERC), the California Energy Commission (CEC), the New Mexico Public Service Commission (NMPSC), the Public Service Commission of Wisconsin (PSCW), the Vermont Public Service Board (VPSB), the Public Utilities Commission of Nevada (PUCN), the Connecticut Siting Commission, the Pennsylvania Department of Environmental Protection, before arbitration panels, and in Federal and state courts. He served for six years on the American Statistical Association's Advisory Committee to the Energy Information Administration (EIA). He serves on CIGRE's (Conseil International des Grands Reseaux Electriques) Working Group C5-8, Working Group on Renewables and Energy Efficiency in a Deregulated Market. Prior to joining *The Brattle Group*, he served as the manager of the Demand-Side Management Program at the Electric Power Research Institute (EPRI). He has published widely in leading industry and economic journals. Mr. Hanser has taught at the University of the Pacific, University of California at Davis, and Columbia University, and guest lectured at the Massachusetts Institute of Technology, Stanford University, and the University of Chicago.

AREAS OF EXPERTISE

- *Analysis of Electricity Generation, Contracts, and Wholesale Markets*
- *Resource Planning and Procurement*
- *Environment*
- *Energy Efficiency, Demand-Side Management, and Renewables*
- *Analysis of Market Power*
- *RTO Design and Participation*
- *Forecasting and Weather Normalization*
- *Rate Design and Related Issues*
- *Transmission*
- *Plant Performance and Strategy*

EXPERIENCE

Analysis of Electricity Generation, Contracts, and Wholesale Markets

- For the California Department of Water Resources provided expert testimony in federal bankruptcy court with regard to the public interest standard to be applied to Calpine Corporation's rejection of its contracts. This assignment included a valuation of the contract over time through the use of a simulation model of the California market, as well as an assessment of the potential reliability implications for the California market.

- For the California Department of Water Resources and the California Attorney General's Office, provided expert testimony on damages resulting from Sempra Energy Resources breaches of its power purchase agreement in both arbitration hearings and California state court. Analyzed two years of hourly data on energy deliveries, market prices, ISO charges, and invoice charges to identify and evaluate performance violations and invoice overcharges. Assisted counsel in developing the theory of the case and provided general litigation support in preparation for and during arbitration.

- For Dominion Electric Marketing, Inc. (DEMI), provided assistance in their response to a complaint by United Illuminating (UI) regarding their wholesale supply contract. The dispute centered on the allocation of reliability must run costs between UI as a load-serving entity and DEMI as wholesale supplier.

- For the California Department of Water Resources critically reviewed the California ISO's proposed implementation of locational marginal pricing (LMP) and analyzed implications for "seller's choice" supply contracts. Developed a framework for quantifying the incremental congestion costs that ratepayers would face if suppliers financially delivered power to the lowest priced nodes; estimated potential incremental contract costs using a third party's GE-MAPS market simulations (and helped to improve their model inputs to more accurately reflect the transmission system in California). Made recommendations to the CAISO as to how to address the issue.

- Provided expert testimony in Massachusetts state court on the damages incurred by a power plant developer as a result of alleged contractual violations by a supplier for a plant constructed in ISO-NE.

- For a Florida utility, provided a confidential expert report evaluating the benefits of the power from a co-generator and its potential rate implications, and assisted in the negotiation of a co-generation contract with a large industrial customer.

- Assisted a U.S. electric utility in the preparation of a bid proposal to an industrial firm for the leasing of a new power plant. The assignment included risk analysis of the proposal, assessment of financial and rate impacts, and market assessment of competitors' potential offerings.

Resource Planning and Procurement

- For the Edison Electric Institute, co-authored a report on the general inapplicability of standard financial portfolio theory to the resource portfolios of utilities.

- For the investor-owned utilities of Wisconsin, provided testimony before the Public Service Commission of Wisconsin on cost of capital issues for use in its statewide resource planning exercise.

- For an international development bank, evaluated generation resource needs for an Eastern European country as well as a determination of alternative means to meet those generation needs. This assignment included analysis of the impact of privatization on the country's economy, its import and export sectors, and future development of electricity and gas resources.

Environment

- For an Eastern utility with substantial coal-generating facilities, provided advice with regard to maintenance procedures and risk exposure to New Source Review standards under the Clean Air Act Amendments.

- For a Western generator with substantial coal-generating facilities he has provided assistance with regard to responding to allegations by the Environmental Protection Agency of failure to comply with the New Source Review standards under the Clean Air Act Amendments.

- For Illinois Power Company, provided expert testimony in federal court on the regulatory and rate base implications of the Clean Air Act Amendments, in support of the calculation of noncompliance economic damages arising from New Source Review.

- For a gas utility, assisted in the development of potential manufactured gas liabilities for use in insurance recovery and in estimating potential recovery under a variety of insurance allocation theories and estimated the risk distribution of the estimates.

- For a gas utility, assisted in the assessment of the announcement effect of environmental liabilities on its cost of capital. This assignment included estimation of changes in market betas for pre- and post- environmental liability announcement.

Energy Efficiency, Demand-Side Management, and Renewables

- For a large utility in the Southern United States, prepared expert report investigating alternative cost allocation approaches for generation capacity, fuel, and demand-side management (DSM) costs both through a review of the methods and surveys of practice.

- For Central Vermont Public Service, provided expert testimony on the impact of its demand-side management programs before the Vermont Public Service Board.

- For Ameren/UE's Illinois subsidiaries, provided expert testimony on the potential for gas demand-side management and resulting potential rate implications.

- For a Northeast utility developed an assessment of the potential penetration rate of microturbines. For the utility service territories under consideration, evaluated the back-up generation rates and connection charges likely to be incurred for such systems to determine customer costs and benefits.

- For a utility located in WECC procuring renewable resources, provided a system integration study for a range of renewable project proposals. Used production costing and power flow models to estimate the "deliverability" of various proposals, including estimating the LMP prices and the potential congestion costs. Ranked the proposed renewable power projects by their estimated benefits and costs, and delivered a formal presentation at the completion of the project.

- For a power marketer and developer of independent power projects in Great Britain, assisted in the preparation of comments on proposals by the UK pool regarding the role of demand-side bidding and the pricing of transmission losses.

- For a Texas utility, provided expert testimony regarding breach of contract claims made against it by an industrial participant in an energy efficiency project. Reviewed the energy efficiency impacts of program. Calculated the net present value of the project in relation to various rate options and market prices.

- For Connecticut Light and Power, provided testimony in support of an application for a Certificate of Environmental Compatibility and Public Need for the construction of a 345-kV electric transmission line and reconstruction of an existing 115-kV electric transmission line. At issue was the use of distributed resources to substitute for the proposed lines.

Analysis of Market Power

- For the California Parties, provided litigation support and testimony regarding manipulation of energy and ancillary service market prices and the outage behavior of gas fired power plants during 2000-01. The proceeding, before the Federal Energy Regulatory Commission involved Enron, Dynegy, Mirant, Reliant, Williams, and other suppliers in the U.S. and Canada. The analyses focused on the use by suppliers of generation outages to affect market prices through physical withholding, as well as the use of pricing to yield economic withholding.

- For the California Parties, provided litigation support and testimony regarding Enron's transmission and ancillary services market manipulation strategies, including 'Death Star' and 'Get Shorty.'

- For Southern California Edison, submitted testimony before the FERC describing the implications for the electricity market of the manipulation of gas market prices.

- For Sierra Pacific Resources Company, provided expert testimony before the Public Utilities Commission of Nevada and the FERC regarding the market power implications of generation asset divestiture required for the merger of Sierra Pacific Power and Nevada Power Company. Developed a Cournot market model to assess the market power implications of selling off alternative groupings of generation.

- For the Pennsylvania-New Jersey-Maryland Interconnection, LLC (PJM) co-authored annual report on the state of its markets. The report included an assessment of the market's competitiveness and potential structural deficiencies, and identified potential instances of market abuse.

- For PJM, developed an ensemble of metrics for assessing market power in its markets. The metrics included an early warning system to permit PJM interventions into market abuse at the earliest possible stage.

- For PJM, developed software for unilateral market power assessment and assisted PJM in its preliminary implementation. Its use was demonstrated with an incident involving potential market power abuse by PJM members.

RTO Design and Participation

- For Northeast Utilities provided testimony before the FERC with regard to the economics of imposing local installed capacity (LICAP) requirements on ISO-NE. Also has provided expert testimony before the FERC in support of its applications for market-based rate authority.

- For NSTAR provided testimony before the FERC on several matters including the necessity of imposing bid caps on the New England electricity market, replacement energy rates for generators when transfer capability into a transmission-constrained zone was reduced because of system upgrades, and the appropriateness of granting market-based rate authority to a generator in a transmission-constrained zone. Developed a Cournot market model to forecast the potential impact on market prices in the transmission-constrained zone that the majority of NSTAR's service territory is located.

- For Nevada Power Company, provided expert testimony before the FERC for its market-based rate authority application.

- For Otter Tail Power Company, provided an affidavit to the FERC assessing how the Midwest ISO's proposed Transmission and Energy Market Tariff would affect Otter Tail Power both operationally and financially. Based on the strategies that were pursued by some market participants during the 2001 California electricity market crisis, demonstrated the potential to pursue similar strategies in MISO and harm Otter Tail and its customers.

- For Edison Mission Energy's subsidiary Midwest Gen, provided expert testimony to the FERC for its market-based rate authority application.

- For a Midwest utility, examined the implications of differing configurations of the independent system operator on potential market power concerns. The issue particularly examined was the question of seams and how different ISO configurations affected the costs of transactions.

- Co-authored a report for the New York Independent System Operator's (NYISO) assessing the reliability implications of modifying its rules regarding installed capacity.

- Submitted testimony to the Public Utilities Commission of Texas (PUCT) regarding a proposed rule to allocate costs of procuring replacement reserves to market participants in ERCOT. The proposed rule required ERCOT to assign the majority of such costs directly to market participants who relied on ERCOT's balancing energy (*i.e.*, real-time energy) market. However, a review of the market rules and the historical evidence indicated that the majority of the procurement of replacement reserves was not caused by this behavior. The PUCT rejected the proposed cost allocation rule, and instead required ERCOT to uplift the replacement reserve costs based on the load ratio shares of market participants until the implementation of a reasonable allocation rule or the start of the Texas Nodal Market.

- For the Edison Electric Institute, authored a report on standard market design and its implications for utilities within regional transmission organizations.

Forecasting and Weather Normalization

- For an electric utility in the Southeast, reviewed the existing weather normalization process and diagnosed problems with weather data and regression model. Developed alternative daily and monthly normalization models, improved degree day specification, selection of weather stations, and regression specification to double prediction accuracy and improve stability of normalization process.

- For PJM, conducted a comprehensive review of its models for forecasting peak demand and re-estimated new models to validate recommendations. Individual models were developed for 18 transmission zones as well as a model for the entire PJM system.

- For a Southwestern utility, developed models for forecasting monthly sales and loads for the residential, commercial and industrial customer classes using primary data on customer loads, weather conditions and economic activity.

- For the Public Service Company of New Mexico, provided expert testimony before the Public Utilities Commission of New Mexico regarding the forecasted growth of the El Paso, Texas and Juarez, Mexico markets and their electricity requirements.

- For a Southeastern utility, developed a model for forecasting monthly demand that incorporated the impacts of its significantly declining housing market and which served the basis for its treasurer's revenue forecast.

Rate Design and Related Issues

- For Ameren/UE's Missouri subsidiary, provided expert testimony on its rate design before the Missouri Public Utility Commission. Assisted the development of company witnesses' rationale for the choice of cost of service allocation method, developed benchmarks for the rate increase against similarly situated utilities, as well for other commodities' escalations, and evaluated proposed demand-side management programs and rate options.

- For Ameren/UE's Illinois subsidiaries, provided expert testimony on the potential for gas demand-side management. The testimony discussed potential rate implications of such programs on the revenue of the utilities.

- For the Edison Electric Institute, co-authored a series of papers with regard to issues facing utilities. The reports covered the issues of fuel adjustment clauses, mitigating large rate increase impacts, and the Energy Policy Act of 2005.

- For a U.S. electric utility, assisted in the valuation of generation assets for use in its testimony on stranded costs. This included development a financial model to determine the generation assets' market value, development of a convolution algorithm to convert market scenarios into a probability distribution of asset values, and statistical analysis of the relationship of the utility's generation assets' operating costs in comparison to its competitors. The assignment also included testimony preparation, interrogatories, and rebuttals.

- For the City of Vernon submitted testimony to the FERC regarding its revenue requirements for transmission.

Transmission

- Before staff members of the FERC, assisted in the development of a review of the implications of the restructuring in transmission assets' cost of capital.

- For a power marketer and developer of independent power projects in Great Britain, assisted in the preparation of comments on proposals by the UK pool regarding the pricing of transmission losses and the role of demand-side bidding.

- For a European transmission company, provided an analysis of the likely development of the European electricity market. Also assessed market implications for the transmission company of modifications to the transmission grid.

- For Hydro Quebec, provided expert testimony before the Regie d'Energie regarding whether a set of privately held transmission facilities constituted a looped transmission system and, thus, was subject to requests for transmission service.

Plant Performance and Strategy

- For the Keystone-Conemaugh Project Office, performed a benchmarking analysis to identify the areas in which Keystone and Conemaugh coal units were better performing or under-performing compared to other units with similar characteristics. This involved comparing the historical operational and cost performance of the Keystone and Conemaugh coal units against their peer groups; identifying the areas where the performance of the Keystone and Conemaugh coal units were above and below the average quartile of their peer groups; and developing metrics and methodologies to combine the results of individual comparisons across the operational and cost performance assessments.

- For a U.S. electric utility, assisted in the development of a legislative and regulatory strategy with regard to restructuring. This assignment included generation asset valuation in a competitive market, development of stand-alone transmission and distribution rates under cost-of-service and performance-based regulation, and estimation of stranded costs.

Other energy experience

- For the Edison Electric Institute, conducted Pre-Course Workshop for Electric Rate Advanced Course, "Traditional Embedded Costing and Pricing Concepts," University of Wisconsin, Madison, July 26, 2009.

- For the Edison Electric Institute, conducted workshop for Electric Rate Advanced Course, "Unbundling Methodologies", University of Wisconsin, Madison, July 26, 2009.

- For the Indiana Energy Conference, presented "It Ain't Your Father's IRP, Meeting Today's Challenges," October 2, 2008

- For the Edison Electric Institute, conducted webinar "Long-Term Energy Forecasts: Challenges and Approaches," June 17, 2009.

- For the NEPOOL Forecasting Committee Summer Meeting, presented "I'm a Forecaster – And You Can Too!" July 17, 2008

- For the Electric Power Research Institute (EPRI), developed and directed a research program to provide electric utilities the following capabilities: marketing research, pricing and rate design, integrated resource planning, capital budgeting, environmental impacts of electric utilities and end-use technologies, load research, forecasting, and demand-side management through software tools, database development and technology development. Assisted in the development of the Load Management Strategy Testing Model (LMSTM), enhancements to the Electric Generation Expansion Analysis Model (EGEAS). Co-wrote reports on the environmental impacts of electric technologies, environmental externalities, cost-benefit analysis of evaluation of DSM programs, rate design and costing, integrated resource planning, impacts of interruptible and curtailable loads, product differentiation, activity-based costing, DSM program evaluation, and others. Served as project manager of the Edison Electric Institute (EEI), National Rural Electric

Cooperatives Association (NRECA), American Public Power Association (APPA), and National Association of Regulatory Utility Commissioners (NARUC) jointly sponsored Electric Utility Rate Design Study (EURDS). Represented the Institute before various regulatory commissions, Federal agencies, and utility executives. He served on the Environmental Protection Agency's advisory committee for the Clean Air Act Amendments. He also served as the operating agent for Annex IV, Improved Methods for Integrating Demand-Side Options into Utility Resource Planning, of the International Energy Agency Agreement on Demand-Side Management.

- For a California utility, supervised short- and long-term forecasts of sales and peak demand for use in resource and corporate planning. Supervised and helped prepare forecast documentation for public hearings before the California Energy Commission and represented the utility to the Commission on the forecast. Supervised the design and implementation of long-term strategic planning and financial models, and prepared both marginal and embedded cost of service studies for the utility and assisted in their use for the design of customer rates. Evaluated the impact of energy conservation programs and legislation on long-term system resource requirements. Designed and implemented the residential survey of appliance holdings and commercial customer equipment survey.

Non-energy Related

- Submitted testimony in bankruptcy court regarding the estimation of inventory subject to reclamation by a wholesale pharmaceuticals supplier which was sold to a bankrupt retail drug chain. The retail chain failed to maintain proper inventory records and a statistical approach which used a combination of data on overall inventory and the shipment and replenishment records of the supplier was used to develop the estimate.

- Designed a statistically valid database sampling procedure for assessing the validity of insurance claims arising from mass tort actions. The database contained summary information on the claims and for each claim there was, at times, voluminous information on the individual cases. The sampling procedure was used to determine which records would be chosen and assessed the individual's claim eligibility.

- Assessed the liability risk of an insurance company that provided coverage relevant to a mass tort suit. A Markov chain model was developed to estimate the size of the potential population and then a risk model was developed to calculate potential exposure.

TESTIMONY AND REGULATORY FILINGS

Before the Florida Public Service Commission on Behalf of Florida Power and Light Company, prepared Rebuttal Testimony of Philip Q Hanser, Docket No. 080677-EI, August 6, 2009.

Before the Federal Energy Regulatory Commission on Behalf of the City of Vernon, California, prepared Petition for Declaratory Order and Request for Waiver of Filing Fee of City of Vernon, California, Docket No. EL09-___-000, July 15, 2009

Before the Régie De L'Énergie, prepared Supplemental Expert Report of Philip Q Hanser on Behalf of Hydro-Québec TransÉnergie, in response to Newfoundland and Labrador Hydro's complaint P-110-1692, June 2009.

Before the Federal Energy Regulatory Commission, on Behalf of The People of the State of California, *ex rel.* Edmund G. Brown Jr., Docket No. EL09- __ (filed May 22, 2009) ("Brown Complaint"), filed direct testimony regarding emergency purchases the State authorized the California Energy Resources Scheduling division of the California Department of Water Resources ("CERS") to make when the California investor-owned utilities (IOUs) could not purchase the power needed to serve their customers.

Before the Florida Public Service Commission on Behalf of Florida Power and Light Company, prepared Direct Testimony of Philip Q Hanser, Docket No. 080677-EI, April 23, 2009.

Before the Office of the Attorney General of the State of California, prepared Addendum to Expert Report of Philip Q Hanser on Behalf of California Department of Water Resources, Case No. GIC 789291, March 31, 2009.

Before the Pennsylvania Public Utility Commission on Behalf of Wellsboro Electric Company, prepared Rebuttal Testimony of Philip Q Hanser and Metin Celebi concerning the Causes and Pricing of Transmission Congestion, Docket No. P-2008-2020257, January 16, 2009.

Before the Pennsylvania Public Utility Commission, Docket No. P-2008-2020257, prepared testimony on behalf of Wellsboro Electric Company concerning the causes and pricing of transmission congestion, July 30, 2008.

Before the Regie De L'Energie, Prepared Affidavit on Behalf of Hydro-Quebec regarding the public availability of SIS reports performed by a transmission provider, June 19, 2008.

Before the Federal Energy Regulatory Commission, Docket No. EL08-__-000, Prepared Direct Testimony on Behalf of the City of Vernon's revised TRR filing with the FERC, April 3, 2008.

Before the Regie De L'Energie, Prepared Expert Report on Behalf of Hydro-Quebec TransEnergie to assess whether the transmission facilities owned by ELL may be considered as a "radial generator lead", March 13, 2008.

Before the American Arbitration Association, Case No. 74Y1980019606MAVI, Prepared Rebuttal Report on Behalf of the California Department of Water Resources to evaluate the reports that William Hogan, Jeffrey Tranen, and Ellen Wolfe provided on behalf of Sempra Generation, June 4, 2007.

Before the American Arbitration Association, Case No. 74Y1980019606MAVI, Prepared Expert Report on Behalf of the California Department of Water Resources to evaluate certain claims made by the California Department of Water Resources ("DWR") in its Demand for Arbitration regarding the performance of Sempra Energy Resources, now known as Sempra Generation, under the Energy Purchase Agreement between the parties, and to calculate amounts that Sempra would owe to DWR assuming liability is established, May 14, 2007.

Before the United States Bankruptcy Court, Northern District of Ohio, Eastern Division, Case Nos. 01-44007 through 01-44015, Expert Report in regard to McKesson's inventory reclamation in the Phar-Mor bankruptcy, March 9, 2007.

Before the Public Utility Commission of Texas, Docket No. 33416, Prepared Rebuttal Testimony on Behalf of Constellation New Energy, Inc.'s appeal and complaint of ERCOT decision to approve PRR 676, PRR 674 and request for expedited relief, January 11, 2007.

Before the Public Utility Commission of Texas, Docket No. 33416, Prepared Direct Testimony on Behalf of Constellation NewEnergy, Inc. to analyze and discuss the flaws and potential negative impacts of the allocation methods under Protocol Revision Request ("PRR") 676 which relates to procurement costs for Replacement Reserve Service ("RPRS") and Out of Merit Capacity, November 22, 2006.

Before the American Arbitration Association, Case No. GIC 789291, Prepared Rebuttal Report on Behalf of California Department of Water Resources vs. Sempra Energy Resources, July 11, 2006.

Before the State Office of Administrative Hearings, Prepared Expert Report on Behalf of TXU Energy Solutions, regarding their demand-side management program and the difference between the actual and projected savings in the energy bill of University of Texas, July 7, 2006.

Before the Missouri Public Service Commission, Case No. ER-2007-0002, Prepared Direct Testimony on Behalf of Union Electric Company with regard to Ameren UE's rate design proposals, July 5, 2006.

Before the American Arbitration Association, Case No. GIC 789291, Prepared Expert Report on Behalf of California Department of Water Resources vs. Sempra Energy Resources, June 9, 2006.

Before the Superior Court of the State of California, J.C.C.P. Nos. 4221, 4224, 4226 and 4228, Prepared Declaration in support of California State Agencies' opposition to motion on shortened time and motion in support of preliminary approval of class action settlement, June 8, 2006.

Before the Superior Court of the State of California, J.C.C.P. Nos. 4221, 4224, 4226 and 4228, Prepared Declaration in support of California State Agencies' opposition to proposed publication notice, January 13, 2006.

Before the United States Bankruptcy Court, Case No. 05-60200 (BRL), Prepared Declaration on Behalf of Calpine Corporation with regard to the public interest standard for the rejection of the contract, December 30, 2005.

Before the FERC, Docket No. EL05-76-001, Prepared Direct Testimony on Behalf of Dominion Energy Marketing, Inc. (DEMI), regarding a dispute between DEMI and The United Illuminating Company as to which party is responsible for paying certain costs associated with Reliability Must-Ran agreements under a December 28, 2001 Power Supply Agreement between the two parties, December 5, 2005.

Before the American Arbitration Association, Case No. 74Y1980019304VSS, Prepared Expert Report on Behalf of California Department of Water Resources vs. Sempra Energy Resources with regard to damages from multiple contract breaches, May 2005.

Before the FERC, Docket No. EL03-180-000, Prepared Supplemental Testimony on Behalf of the California Parties with regard to Enron's circular scheduling and paper trading gaming practices, January 31, 2005.

Before the FERC, Docket No. ER96-496-010, *et al.*, Prepared Affidavit on Behalf of Northeast Utilities Service Company and affiliated companies market-based rate authorization, September 27, 2004, Revised December 9, 2004.

Before the Connecticut Siting Board, Docket 217, Prepared Testimony on Behalf of Connecticut Light and Power in support of its application for a Certificate of Environmental Compatibility and Public Need for the construction of a 345-kV electric transmission line and reconstruction of an existing 115-kV electric transmission line between Connecticut Light and Power Company's Plumtree Substation in Bethel, through the Towns of Redding, Weston, and Wilton, and to Norwalk Substation in Norwalk, Connecticut, November, 2004.

Before the FERC, Docket No. ER04-691-000, Prepared Affidavit on Behalf of Otter Tail Power Company (OTP) regarding problems that may result from the implementation of MISO's markets tariff in OTP's region, May 7, 2004.

Before the FERC, Docket No. ER03-563-030, Prepared Joint Affidavit with Judy W. Chang on Behalf of Devon Power LLC, *et al.*, March 24, 2004.

Before the FERC, Docket No. EL03-180-000, Prepared Direct Testimony on Behalf of the California Parties with regard to Enron's circular scheduling and paper trading gaming practices, February 27, 2004

Before the Commonwealth of Massachusetts, Case No. 99-6016, Prepared Expert Report on Behalf of Alstom Corporation and Black and Veatch vs. Meriden Corporation, LLC, Review of *"Value of the Meriden Power Project"*, January 9, 2004

Before the FERC, Docket No. EL03-159-000, Prepared Declaration on Behalf of The California Parties, Re: Gaming Activities Of Modesto Irrigation District, October, 2003.
Before the FERC, Docket No. ER03-118-000, Prepared Affidavit on Behalf of Otter Tail Power Company For Otter Tail Power Company, assessing how the Midwest ISO's proposed Transmission and Energy Market Tariff will affect Otter Tail Power both operationally and financially, September 15, 2003.

Before the Pennsylvania Environmental Hearing Board, New Jersey Department of Environmental Protection vs. Pennsylvania Department of Environmental Protection and Lower Mount Bethel Energy, LLC, Docket No. 2001-280-C, Prepared Expert Report on Behalf of Pennsylvania Power and Light, May 2, 2003.

Before the FERC, Docket No. EL00-95-069, Prepared Rebuttal Testimony on Behalf of Southern California Edison for the California Parties regarding manipulation of energy and ancillary service market prices and the outage behavior of gas fired power plants, March 20, 2003.

Before the FERC, Docket No. EL00-95-069, Prepared Testimony on Behalf of Southern California Edison for the California Parties regarding manipulation of energy and ancillary service market prices and the outage behavior of gas fired power plants, February 24, 2003.

Before Southern District Court of Illinois, Docket No.99-833-MBR, Prepared Expert Report for Department of Justice, Environmental Protection Agency vs. Illinois Power Company and Dynegy Midwest Generation regarding the likely rate treatment of, July 29, 2002.

Before the FERC, Docket No. ER99-3693-000, Prepared Direct Testimony on Behalf of Edison Mission Energy and Edison Mission Marketing and Trading, Inc. on behalf of Midwest Generation's application for market-based rate authority, April 1, 2002.

Before the FERC, Docket No. ER01-890-000, Prepared Rebuttal Testimony on Behalf of NSTAR on the appropriate rates for generators during transmission upgrades or enhancements requiring substantial and sustained reduction in transfer capability, September 21, 2001.

Before the FERC, Docket No. EL01-79-000, Prepared affidavit on Behalf of NSTAR, in their intervention of the granting of market-based rate authority to Sithe, May 2001.

Before the FERC and the Public Utilities Commission of Nevada, Docket No. EC0-173-000, Prepared Affidavit on Behalf of Sierra Pacific Resources Company, regarding the market power implication of generation asset divestiture required for the merger of Sierra Pacific Power and Nevada Power Company, February 23, 2001.

Before the California Energy Commission, Prepared Expert Report on Behalf of Calpine Corporation; Socioeconomic Resources: Economic Benefits of the Metcalf Energy Center, October 27, 2000.

Before the FERC, Docket No. EL00-83-000, Prepared Affidavit on Behalf of NSTAR with regard to the necessity of imposing bid caps on the New England electricity market, June 23, 2000.

Before the FERC, Docket No. ER99-2338-001, Prepared Direct Testimony on Behalf of Nevada Power Company in support of the divestiture of its generation assets, June 24, 1999.

Before the FERC, Docket No. ER99-2338-001, Prepared Direct Testimony on Behalf of Nevada Power Company in support of the divestiture of its generation assets, March 30, 1999.

Before the Vermont Public Service Board, Docket No. 6018, Prepared Rebuttal Testimony on Behalf of Central Vermont Public Service Corporation on the impact of its demand-side management programs, April 10, 1998.

Before the New Mexico Public Utility Commission, Case No. 2769, Prepared Direct Testimony prepared on Behalf of the Public Service Company of New Mexico regarding forecasted growth of the El Paso and Juarez, Mexico markets, 1997.

Before the Public Service Commission of Wisconsin, Docket No. 05-EP-7, Prepared Direct Testimony on Behalf of investor-owned utilities of Wisconsin on the utilities cost of capital, May 8, 1995.

Before the FERC, Docket No. RP95-363-015, Prepared Affidavit on Behalf of Southern California Edison describing the implications for the electricity market of the manipulation of gas market prices.

ACADEMIC HISTORY

Guest Lecturer, Energy Laboratory Short Courses, Massachusetts Institute of Technology, Cambridge, MA	1997-1998
Visiting Lecturer, Department of Economics, University of California, Davis; Davis, CA	1981-1982
Assistant Professor, Departments of Economics and Mathematics, University of the Pacific, Stockton, CA	1975-1980
Ph.D. Candidacy Requirements Completed, Columbia University, NY	1975
Phil.M. (Economics and Mathematical Statistics) Columbia University	1975
A.B. (Economics and Mathematics) The Florida State University, FL	1971
Time Series and Econometric Forecasting, University of California at Berkeley Engineering Extension Course	September 1979
Data Analysis and Regression, American Statistical Association Short Course, San Diego, CA	August 1978

PROFESSIONAL RELATIONSHIPS

American Statistical Association	1974-current
Member of Committee on Energy Statistics	1993-1999
Institute of Electrical and Electronics Engineer	1986-current
Association of Energy Service Professionals, Board Member	1991-1995
Journal of ADSMP, Editor	1995
American Economic Association	Present

Northeast Energy and Commerce Association	Present
National Association of Regulatory Commissioners	Present

HONORS

Teaching Incentive Award, University of the Pacific	1979
Teaching Assistantship in Econometrics, Columbia University	1974
National Science Foundation Research Traineeship	1972 – 1974
Undergraduate and Graduate Research Assistantships, Florida State University	1968 – 1972
Omicron Delta Epsilon, Economics Honor Society	1971

PUBLICATIONS AND PRESENTED PAPERS

"Utility Supply Portfolio Diversity Requirements" (with Frank Graves), *The Electricity Journal*, Vol. 20, Issue 5, June 2007.

"Electric Utility Automatic Adjustment Clauses Revisited: Why They Are Needed More Than Ever" (with Frank Graves and Greg Basheda), *The Electricity Journal*, Vol. 20, Issue 5, June 2007.

"Rate Shock Relief" (with Frank Graves and Greg Basheda), *Electric Perspectives*, May/June 2007.

"Rate Shock Mitigation" (with Frank Graves and Greg Basheda), prepared for Edison Electric Institute, May 2007.

"Wire We Here? Coal in the West," Law Seminars International, Coal in the West Conference, Denver, Colorado, March 30, 2007.

"Electric Utility Automatic Adjustment Clauses: Benefits and Design Considerations" (with Frank Graves and Greg Basheda), Edison Electric Institute, August 2006.

"Can Wind Work In An LMP Market?" (with Serena Hesmondhalgh and Dan Harris), *Natural Gas & Electricity*, November 2005.

"The CAISO'S Physical Validation Settlement Service: A Useful Tool for All LMP-Based Markets" (with Jared S. des Rosiers, Metin Celebi, Joseph B. Wharton), *The Electricity Journal*, September 2005.

"Does SMD Need a New Generation of Market Models? Or How I Learned to Stop Worrying and Enjoy Carrying a Pocket Protector," SMD Conference, Washington, D.C., December 5, 2002.

"A Summary of FERC's Standard Market Design NOPR," Edison Electric Institute, August 2002.
"Standard Market Design in the Electric Market: Some Cautionary Thoughts," SMD Conference, May 10, 2002, Chicago, Illinois.

"The Design of Tests for Horizontal Market Power in Market-Based Rate Proceedings" (with James Bohn and Metin Celebi), *The Electricity Journal*, May 2002.

"The State of Performance-Based Regulation in the U.S. Electric Industry" (with D.E.M. Sappington, J.P. Pfeifenberger, and G.N. Basheda), *The Electricity Journal*, October 2001.

"Deregulation and Monitoring of Electric Power Markets" (with R.L.Earle and J.D. Reitzes), *The Electricity Journal*, October 2000.

"Shortening the NYISO's Installed Capacity Procurement Period: Assessment of Reliability Impacts," NYISO, May 2000.

"PJM Market Competition Evaluation White Paper," (with Frank C. Graves), prepared for PJM, L.L.C., October 1998.

"Lessons from the First Year of Competition in the California Electricity Market" (with R.L.Earle, W.C. Johnson, and J.D. Reitzes), *The Electricity Journal*, October 1999.

Comments to the FERC concerning Regional Transmission Organizations Notice of Proposed Rule Making, RM99-2, (with Peter Fox-Penner), September 17, 1999.

"In What Shape is Your ISO?" (with J.P. Pfeifenberger, G.M. Basheda and P.S. Fox-Penner), *The Electricity Journal*, Vol. 11, No. 6, July 1998.

"What's in the Cards for Distributed Resources?" (with J. P. Pfeifenberger and P.R. Ammann), in Special Issue of *The Energy Journal, Distributed Resources: Towards a New Paradigm of the Electricity Business*, January 1998.

"One-Part Markets for Electric Power: Ensuring the Benefits of Competition" (with F.C. Graves, E.G. Read, and R.L. Earle), in *Power Systems Restructuring: Engineering and Economics*, ed. M. Ilic, F. Galiana, and L. Fink, (Boston, MA: Kluwer Academic Publishers, 1998)

"Power Market Price Forecasting: Pitfalls and Unresolved Issues" (with R.L. Earle and F.C. Graves), forthcoming in *The Energy Journal*.

Ten EPRI reports and approximately 20 articles in EPRI Reports and Conference Proceedings.

"Insurance Recovery for Manufactured Gas Plant Liabilities" (with G.S. Koch and K.T. Wise), *Public Utilities Fortnightly*, April 1997.

"Real-Time Pricing - Restructuring's Big Bang?" (with J.B. Wharton and P. Fox-Penner), *Public Utilities Fortnightly*, March 1997.

"Load Impact of Interruptible and Curtailable Rate Programs" (with D.W. Caves, J.A Herriges, and R.J. Windle), *IEEE Transactions on Power Systems*, Vol. 3, No. 4, November 1988.

"Estimating Hourly Electric Load with Generalized Least Squares Procedures" (With N. Toyama and C.K. Woo.), *The Energy Journal*, April 1986.

"Transfer Function Estimation Using TARIMA," *SAS User's Group International, 1982 Proceedings*. Cary, North Carolina: SAS Institute. Inc., 1982.

"Invited Editorial Response to Behavioral Community Psychology: Integrations and Commitments," by Richard Winett, *The Behavior Therapist* 4(5), Convention, 1981.

Statistics Through Laboratory Experiences (with D. Christianson and D. Hughes), Stockton, CA: University of the Pacific 1976-1977.

"Unsolved Advanced Problem," *American Mathematical Monthly*, May 1975.

"Multiattribute Utility Theory and Earthquake Mitigation Policy" (with T. Munroe), Western Economic Association Conference, June 1978.

"Introduction to Multivariate Data Analysis Techniques," Bureau of Applied Social Research, Columbia University, New York, NY, 1973.

ONTARIO ENERGY BOARD

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 Toronto Hydro-Electric System Limited for an order approving just and reasonable rates and other charges for electricity distribution to be effective May 1, 2010

Pre-filed Evidence of the
Smart Sub-Metering Working Group

SUMMARY

1. The Toronto Hydro-Electric System Limited ('THESL') has made application before the Ontario Energy Board ('OEB') in respect of its 2010 Electricity Distribution Rate Application ('Application'). In that Application, THESL has provided information regarding its historic and projected costs with regard to its offering so-called 'suite metering' as a service for condominiums. THESL has also provided information through its answers to a series of interrogatories to the Smart Sub-metering Working Group ('SSMWG') and other intervenors. Based on the information in that Application and THESL's answers interrogatories, it appears that THESL's provision of smart suite metering service is being cross-subsidized by rate payers that do not receive such service. As such, THESL's rate design is not in keeping with generally accepted regulatory principles. I provide evidence of the degree to which the revenues from the provision of this service fail to fully cover the costs of such services resulting in a

cross-subsidization from THESL's regulated business to a competitively offered service in a series of tables at the end of this statement.

2. Some cross-subsidization within a rate class is inevitable. However, cross-subsidizing services that can be provided by competitive service providers can harm the competitive market. While I have not quantified the degree to which such cross-subsidization is likely to preempt other parties from offering the metering service or estimate the magnitude of the long-term harm to the market, it is a general principle of utility regulation that utilities are prohibited from using cross-subsidization as a means to enhance their position in a competitive market. If THESL wishes to offer suite meter service, I would recommend that it consider following the example of U.S. utilities that have chosen to participate in competitive markets and set up an affiliate that operates at arm's length from THESL.

3. My statement is organized as follows. I discuss some of the general principles that guide cost allocation and rate design. I then discuss the issue of utilities participating in competitive markets and some of the principles that guide their participation. I then provide an analysis of the data in the Application and the interrogatories that provide evidence of cross-subsidization.

COST ALLOCATION AND RATE DESIGN

4. The principles of rate design have largely been codified by James C. Bonbright in his classic Principles of Public Utility Rates[1]. One of the most fundamental

[1] Bonbright, James C. Principles of Public Utility Rates (New York: Columbia University Press, 1961)

principles of assessing the reasonableness of utility rates is the standard of cost of service. As Bonbright notes, "one standard of reasonable rates can fairly be said to outrank all others in the importance attached to it by experts and by public opinion alike – the standard of cost of service". As he further notes, "A cost standard of rate making has been most generally accepted in the regulation of the levels of rates charged by private utility companies. But even more significant is the widespread adherence to cost, or to some approximation of cost, as a basis of rate making under public ownership. Thus, the great Hydro-Electric Power Commission of Ontario purports to apply the principle of 'service at cost' in its charges for wholesale power supplied to the various municipal distribution systems of the province."[2]

5. By using 'cost of service' as the basis for rates is meant that the rates that utilities charge for the services they provide should hew as closely as possible to the costs incurred for providing the services. This is also known as the standard of cost causation. For example, when fuel is classified as an energy-related cost, that cost is the cost incurred by the utility to provide for the energy consumed by its customers. The cost causation principle is also applied to the methods for allocating costs among customers. For example, the allocation of fuel costs among users on the basis of each user's relative share of total kilowatt-hours is done so because fuel is a variable cost primarily caused by the total kilowatt-hours produced and consumed. Thus the user that uses more would pay a larger portion of the total energy cost than the user that uses less.

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[2] Op. cit., pp. 67-68.

6. According to Bonbright, there are at least three economic rationales for this standard. The first is the consumer rationing function. Under the principle of consumer sovereignty, consumers should be free to consume whatever they wish of a particular good, so long as they compensate the producers of the service for the costs of producing the services. When the rates of a service are set at less than the cost of providing that service, either some form of rationing may be required or the service will be supplied in wasteful amounts. Secondly, setting rates at costs (including the return on and of capital) also provides the incentives to the company to supply the services at the amount demanded. If rates are set too high, the company has the incentive to provide more of the service than is efficient. Thirdly, there is the income distribution function of rates. A purchaser of a utility service gives up the opportunity to purchase other goods with equivalent costs. These three rationales are known under the rubrics of consumption efficiency, production efficiency, and distributive efficiency.[3]

7. A fourth rationale that comes into play in the particular situation of the smart suite meters is the impact on the competitive provision of such services by other suppliers. Although discounting the price of services in competitive market is a reasonable strategy, such discounting would drive down the market price for providing that service. In a market where all competitors are non-regulated, driving down the market price of a particular service would reduce the profitability, at least temporarily. Thus, a competitive entity undertakes such a strategy with great caution. However, a regulated utility may use the mechanism of cross-subsidization from its regulated services to the

[3] Op. cit., pp. 69-71.

competitively supplied market service and maintain its level of profitability despite reducing the price of the competitively supplied service.

8. Such behavior by a utility is troublesome because the utility can damage the competitive market. In such situation, non-regulated competitors may exit the market, reducing, and possibly eliminating competition and the potential positive attributes associated with competitive markets, such as efficiency in production, innovation in service or product design. Even if the utility may not mean to harm the market, by providing what it sees as a value-added service at a discounted price, it could block competition and place substantial stress on the market.

9. The issue of cross-subsidization is significant enough that the National Association of Regulatory Utility Commissioners ('NARUC') issued a 'Resolution Regarding Cost Allocation Guidelines for the Energy Industry' in July of 1999[4]. The specific focus of that resolution is to reduce the potential of regulated utilities to carry on undue burden by the utility's attempt to compete in non-regulated markets. Indeed, the resolution's appendix on cost allocation principles begins with "To the maximum extent practicable, in consideration of administrative costs, costs should be collected and classified on a direct basis for each asset, service or product provided."[5] It continues with "The general method for charging indirect costs should be on a fully allocated cost basis." To the extent that THESL fails to fully recover its costs associated with converting

[4] See http://www.sec.gov/rules/proposed/s70501/ramsay1.htm
[5] Ibid., Appendix A

condominiums from bulk meters to suite meters in the direct charges for those conversions, it would place a significant burden on its other customers, either in terms of additional allocated costs or reduced services.

10. From the information gathered through THESL's answers to interrogatories, it appears that THESL does not collect payments from the condominium customers that it converts or from new condominium developers. In its promotional material that THESL provided to SSMWG's Interrogatory #6, THESL indicated that "We supply and install our Smart Meter system at no cost to the condominium or suite owners." Further, in the same materials, THESL suggests that it would provide superior service at lower costs because it is regulated. This rationale suggests that THESL is subsidizing the suite meter costs through the charges that it collects from its other customers. If this is indeed the case, THESL's action is a violation of any reasonable cost of service standard with regard to the behavior of a regulated monopoly participating in a competitive market. For regulated monopolies such as utilities, it is required that the regulated entity should either offer its services on an equal footing as other non-regulated and competitive entities in the market or its services should be regulated. THESL should not participate in a competitive market while relying on regulated cost recovery simultaneously.

11. The most common solution to the difficulty that arises from a utility entering a competitive market is to create an unregulated affiliate entity which operates at arm's length from the utility. That entity would have separate accounting systems, management structure, information and financial management systems,

but could be owned by the utility. The unregulated entity would be free to offer services in the competitive market, but regulated by competition authorities, not the Ontario Energy Board ('OEB'). The OEB would become involved only in circumstances in which a code of conduct had been violated by THESL with regard to its interactions with its non-regulated affiliate.

ESTIMATED REVENUE SUFFICIENCY/(DEFICIENCY)

12. Based on the information provided by THESL in its rate filing and its responses to various interrogatories, I prepared an analysis to compare the increase in capital costs and costs associated with operation, maintenance and administration ("OM&A") of suite meters to the increase in revenues associated with the installed suite meters (after netting the reduction in commercial revenues from bulk-metered customers).

13. To perform the revenue sufficiency analysis, I rely primarily on public data from THESL's 2010 Electricity Distribution Rate Application which it filed before the Ontario Energy Board on August 29, 2009. I also rely on information contained in THESL's responses to interrogatories in this proceeding.

14. I performed two groups of analyses. The first analysis examines only the incremental revenue sufficiency/(deficiency) arising from THESL's projected additions to its suite metering program for 2010 alone. The second analysis examines the cumulative revenue sufficiency/(deficiency) from the suite meter program for the period 2007 through the projected rate year.

15. My incremental analysis for 2010 contains two main scenarios, each with high and low meter cost assumptions. For ease of reference, I have named these cases High Cost 1 and 2, and Low Cost 1 and 2. The cases labeled as '1' calculate revenue sufficiency/(deficiency) for new residential building suite meters only; the cases labeled '2' calculate revenue sufficiency/(deficiency) for bulk-converted residential suite meters.

16. The high end of my cost assumption for each suite-meter is $747. It is derived by dividing the total 2007-2010 external capital costs related to suite metering ($6.4 million) by the total 2007-2010 installed suite meters (8,564). The data for this computation were provided by THESL's responses to SSMWG's Interrogatories #1 and #3. On the lower cost end, I have assumed a $444 cost per suite-meter. This cost is derived by dividing the THESL's total 2010 capital cost related to suite metering ($2.4 million) by the number of 2010 forecasted installed suite meters (5,600).[6]

17. The results show that THESL's incremental revenue deficiency for 2010 is in the range between $213,000 to about $491,000. I have assumed that 1419 bulk meters converted to suite meters in the analysis below[7]. Table 1 below presents my results

[6] The source of these numbers is THESL's Exhibit D1, Tab 8, Schedule 7, Page 3.

[7] This number is calculated as the delta of cumulative bulk meter conversions from 2009 to 2010, which is presented in response to SSMWG Interrogatory Response 1A

Table 1
2010 Revenue Deficiencies By Case

	Residential Revenue Derived From	Suite Meter Unit Cost	
		High	Low
		[A]	[B]
[1]	New	(309,810)	(215,130)
[2]	Bulk	(491,336)	(429,736)

18. I have also performed a similar analysis for the cumulative revenue deficiency for beginning in 2007 through the projected 2010. My cumulative analysis contains two main scenarios, each with high and low meter cost assumptions. For ease of reference, I have named these cases High Cost 3 and 4, and Low Cost 3 and 4. The cases labeled as '3' calculate revenue sufficiency/(deficiency) for new residential building suite meters only; the cases labeled '4' calculate revenue sufficiency/(deficiency) for bulk-converted residential suite meters.

19. I follow similar assumptions as above, with the high end of the cost assumption for meters at $747 per meter and the low end at $444 per meter, based on the same rationale as above.

20. The results show that THESL's cumulative revenue deficiency for 2007 and projected through 2010 is in the range between $468,000 to about $1,100,000. Table 2 below presents my results

Table 2
Cumulative 2007-2010 Revenue Deficiencies By Case

	Residential Revenue Derived From	Suite Meter Unit Cost	
		High	Low
		[A]	[B]
[3]	New	(689,240)	(468,077)
[4]	Bulk	(1,102,616)	(979,218)

21. Whether viewed from an incremental standpoint for 2010 or viewed cumulatively, it appears that THESL is not recovering sufficient revenues from its suite metered customers to offset the increased capital and OM&A expenditures associated with the installation and operation of the suite meters. Thus, it appears that THESL is cross-subsidizing its suite meter program through revenues from other customers.

Attachment: Case 1A
Cost and Revenue Associated with Toronto Hydro's 2010 Proposed Suite Metering
Case 1A: New Meters, High Unit Cost

Line	Item	Amount	Calculation
[1]	Number of Installed Revenue Generating Suite Meters	2,181	
[2]	Unit Cost	747	
[3]	Total Capital Cost	$1,629,893	[1] x [2]
[4]	Working Capital Allowance		
[5]	Operation Expense	$758,914	[15]
[6]	Working Capital Allowance 14.1%	$107,007	[5] x 14.1%
[7]	Suite Metering Rate Base	$1,736,900	[3] + [6]
[8]	Return on Rate Base		
[9]	Debt 60% @ 5.32%	$55,442	[7] x 0.6 x 5.32%
[10]	Equity 40% @ 8.01%	$55,650	[7] x 0.4 x 8.01%
[11]	Return on Rate Base	$111,092	[9] + [10]
[12]	Operation Expense		
[13]	Incremental Operating Expenses	$300,000	
[14]	OM&A $210 / customer	$458,914	$210 x 2181
[15]	OM&A	$758,914	[13] + [14]
[16]	Amortization	$109,203	[3] x 6.7%
[17]	Total Operating Expenses	$868,117	[15] + [16]
[18]	Revenue Requirement Before PILs	$979,209	[11] + [17]
[19]	Payment in Lieu of Taxes @ 27.86 %	$21,489	([10] / (1-PILs)) - [10]
[20]	Suite Meter Revenue Requirement	$1,000,698	[18] + [19]
[21]	Residential Revenues (Proposed 2010 Rates)		
[22]	Number of Installed Smart Meters	2,181	
[23]	Yearly Customer Charge @ $18.82 / mo.	$492,557	[22] x $18.82 x 12
[24]	Variable Distribution @ 1.684 cents/kWh	$198,331	[22] x 450 kWh x 1.684 cents/kWh x 12
[25]	Forgone Commercial Revenues (Proposed 2010 Rates for GS < 50 kW Class)		
[26]	Variable Distribution @ $0.02399/kWh	0	0.02399 $/KWh x 450 KWh x 12 x 0
[27]	Total Revenue	$690,888	[23] + [24] + [26]
[28]	**Annual Suite Meter Program Sufficiency/(Deficiency)**	**(309,810)**	[27] - [20]

Attachment: Case 1B
Cost and Revenue Associated with Toronto Hydro's 2010 Proposed Suite Metering
Case 1B: New Meters, Low Unit Cost

Line	Item	Amount	Calculation
[1]	Number of Installed Revenue Generating Suite Meters	2,181	
[2]	Unit Cost	444	
[3]	Total Capital Cost	$969,333	[1] x [2]
[4]	Working Capital Allowance		
[5]	Operation Expense	$758,914	[15]
[6]	Working Capital Allowance 14.1%	$107,007	[5] x 14.1%
[7]	Suite Metering Rate Base	$1,076,340	[3] + [6]
[8]	Return on Rate Base		
[9]	Debt 60% @ 5.32%	$34,357	[7] x 0.6 x 5.32%
[10]	Equity 40% @ 8.01%	$34,486	[7] x 0.4 x 8.01%
[11]	Return on Rate Base	$68,843	[9] + [10]
[12]	Operation Expense		
[13]	Incremental Operating Expenses	$300,000	
[14]	OM&A $210 / customer	$458,914	$210 x 2181
[15]	OM&A	$758,914	[13] + [14]
[16]	Amortization	$64,945	[3] x 6.7%
[17]	Total Operating Expenses	$823,860	[15] + [16]
[18]	Revenue Requirement Before PILs	$892,703	[11] + [17]
[19]	Payment in Lieu of Taxes @ 27.86 %	$13,316	([10] / (1-PILs)) - [10]
[20]	Suite Meter Revenue Requirement	$906,019	[18] + [19]
[21]	Residential Revenues (Proposed 2010 Rates)		
[22]	Number of Installed Smart Meters	2,181	
[23]	Yearly Customer Charge @ $18.82 / mo.	$492,557	[22] x $18.82 x 12
[24]	Variable Distribution @ 1.684 cents/kWh	$198,331	[22] x 450 kWh x 1.684 cents/kWh x 12
[25]	Forgone Commercial Revenues (Proposed 2010 Rates for GS < 50 kW Class)		
[26]	Variable Distribution @ $0.02399/kWh	0	0.02399 $/KWh x 450 KWh x 12 x 0
[27]	Total Revenue	$690,888	[23] + [24] + [26]
[28]	**Annual Suite Meter Program Sufficiency/(Deficiency)**	**(215,130)**	[27] - [20]

Attachment: Case 2A
Cost and Revenue Associated with Toronto Hydro's 2010 Proposed Suite Metering
Case 2A: Converted, High Unit Cost

Line	Item	Amount	Calculation
[1]	Number of Installed Revenue Generating Suite Meters	1,419	
[2]	Unit Cost	747	
[3]	Total Capital Cost	$1,060,439	[1] x [2]
[4]	Working Capital Allowance		
[5]	Operation Expense	$598,578	[15]
[6]	Working Capital Allowance 14.1%	$84,400	[5] x 14.1%
[7]	Suite Metering Rate Base	$1,144,839	[3] + [6]
[8]	Return on Rate Base		
[9]	Debt 60% @ 5.32%	$36,543	[7] x 0.6 x 5.32%
[10]	Equity 40% @ 8.01%	$36,681	[7] x 0.4 x 8.01%
[11]	Return on Rate Base	$73,224	[9] + [10]
[12]	Operation Expense		
[13]	Incremental Operating Expenses	$300,000	
[14]	OM&A $210 / customer	$298,578	$210 x 1419
[15]	OM&A	$598,578	[13] + [14]
[16]	Amortization	$71,049	[3] x 6.7%
[17]	Total Operating Expenses	$669,628	[15] + [16]
[18]	Revenue Requirement Before PILs	$742,852	[11] + [17]
[19]	Payment in Lieu of Taxes @ 27.86 %	$14,164	([10] / (1-PILs)) - [10]
[20]	Suite Meter Revenue Requirement	$757,016	[18] + [19]
[21]	Residential Revenues (Proposed 2010 Rates)		
[22]	Number of Installed Smart Meters	1,419	
[23]	Yearly Customer Charge @ $18.82 / mo.	$320,467	[22] x $18.82 x 12
[24]	Variable Distribution @ 1.684 cents/kWh	$129,038	[22] x 450 kWh x 1.684 cents/kWh x 12
[25]	Forgone Commercial Revenues (Proposed 2010 Rates for GS < 50 kW Class)		
[26]	Variable Distribution @ $0.02399/kWh	(183,826)	0.02399 $/KWh x 450 KWh x 12 x 1419
[27]	Total Revenue	$265,679	[23] + [24] + [26]
[28]	**Annual Suite Meter Program Sufficiency/(Deficiency)**	**(491,336)**	[27] - [20]

Attachment: Case 2B
Cost and Revenue Associated with Toronto Hydro's 2010 Proposed Suite Metering
Case 2B: Converted, Low Unit Cost

Line	Item	Amount	Calculation
[1]	Number of Installed Revenue Generating Suite Meters	1,419	
[2]	Unit Cost	444	
[3]	Total Capital Cost	$630,667	[1] x [2]
[4]	Working Capital Allowance		
[5]	Operation Expense	$598,578	[15]
[6]	Working Capital Allowance 14.1%	$84,400	[5] x 14.1%
[7]	Suite Metering Rate Base	$715,066	[3] + [6]
[8]	Return on Rate Base		
[9]	Debt 60% @ 5.32%	$22,825	[7] x 0.6 x 5.32%
[10]	Equity 40% @ 8.01%	$22,911	[7] x 0.4 x 8.01%
[11]	Return on Rate Base	$45,736	[9] + [10]
[12]	Operation Expense		
[13]	Incremental Operating Expenses	$300,000	
[14]	OM&A $210 / customer	$298,578	$210 x 1419
[15]	OM&A	$598,578	[13] + [14]
[16]	Amortization	$42,255	[3] x 6.7%
[17]	Total Operating Expenses	$640,833	[15] + [16]
[18]	Revenue Requirement Before PILs	$686,569	[11] + [17]
[19]	Payment in Lieu of Taxes @ 27.86 %	$8,847	([10] / (1-PILs)) - [10]
[20]	Suite Meter Revenue Requirement	$695,415	[18] + [19]
[21]	Residential Revenues (Proposed 2010 Rates)		
[22]	Number of Installed Smart Meters	1,419	
[23]	Yearly Customer Charge @ $18.82 / mo.	$320,467	[22] x $18.82 x 12
[24]	Variable Distribution @ 1.684 cents/kWh	$129,038	[22] x 450 kWh x 1.684 cents/kWh x 12
[25]	Forgone Commercial Revenues (Proposed 2010 Rates for GS < 50 kW Class)		
[26]	Variable Distribution @ $0.02399/kWh	(183,826)	0.02399 $/KWh x 450 KWh x 12 x 1419
[27]	Total Revenue	$265,679	[23] + [24] + [26]
[28]	**Annual Suite Meter Program Sufficiency/(Deficiency)**	**(429,736)**	[27] - [20]

Attachment: Case 3A
Cumulative Cost and Revenue Associated with Toronto Hydro's 2007-2010 Proposed Suite Metering
Case 3A: Cumulative, New Meters, High Unit Cost

Line	Item	Amount	Calculation
[1]	Cumulative Depreciated Capital Cost	$3,809,656	See Exhibit 1
[2]	Working Capital Allowance	$1,882,310	[13]
[3]	Operation Expense	$265,406	[5] x 14.1%
[4]	Working Capital Allowance 14.1%		
[5]	Suite Metering Rate Base	$4,075,062	[1] + [4]
[6]	Return on Rate Base		
[7]	Debt 60% @ 5.32%	$130,076	[5] x 0.6 x 5.32%
[8]	Equity 40% @ 8.01%	$130,565	[5] x 0.4 x 8.01%
[9]	Return on Rate Base	$260,641	[7] + [8]
[10]	Operation Expense	$713,667	
[11]	Incremental Operating Expenses	$1,168,643	$210 x 5554
[12]	OM&A $210 / customer	$1,882,310	[11] + [12]
[13]	OM&A	$255,247	[1] x 6.7%
[14]	Amortization	$2,137,557	[13] + [14]
[15]	Total Operating Expenses		
[16]	Revenue Requirement Before PILs	$2,398,198	[9] + [15]
[17]	Payment in Lieu of Taxes @ 27.86 %	$50,416	([8] / (1-PILs)) - [8]
[18]	Suite Meter Revenue Requirement	$2,448,614	[16] + [17]
[19]	Residential Revenues (Proposed 2010 Rates)		
[20]	Number of Installed Smart Meters	5,554	
[21]	Yearly Customer Charge @ $18.82 / mo.	$1,254,315	[20] x $18.82 x 12
[22]	Variable Distribution @ 1.684 cents/kWh	$505,059	[20] x 450 kWh x 1.684 cents/kWh x 12
[23]	Forgone Commercial Revenues (Proposed 2010 Rates for GS < 50 kW Class)		
[24]	Variable Distribution @ $0.02399/kWh	0	0.02399 $/KWh x 450 KWh x 12 x 0
[25]	Total Revenue	$1,759,374	[21] + [22] + [24]
[26]	**Annual Suite Meter Program Sufficiency/(Deficiency)**	**(689,240)**	[25] - [18]

Attachment: Case 3B
Cumulative Cost and Revenue Associated with Toronto Hydro's 2007-2010 Proposed Suite Metering
Case 3B: Cumulative, New Meters, Low Unit Cost

Line	Item	Amount	Calculation
[1]	Cumulative Depreciated Capital Cost	$2,266,640	See Exhibit 1
[2]	Working Capital Allowance	$1,882,310	[13]
[3]	Operation Expense	$265,406	[5] x 14.1%
[4]	Working Capital Allowance 14.1%		
[5]	Suite Metering Rate Base	$2,532,046	[1] + [4]
[6]	Return on Rate Base		
[7]	Debt 60% @ 5.32%	$80,823	[5] x 0.6 x 5.32%
[8]	Equity 40% @ 8.01%	$81,127	[5] x 0.4 x 8.01%
[9]	Return on Rate Base	$161,950	[7] + [8]
[10]	Operation Expense	$713,667	
[11]	Incremental Operating Expenses	$1,168,643	$210 x 5554
[12]	OM&A $210 / customer	$1,882,310	[11] + [12]
[13]	OM&A	$151,865	[1] x 6.7%
[14]	Amortization	$2,034,175	[13] + [14]
[15]	Total Operating Expenses	$2,196,125	[9] + [15]
[16]	Revenue Requirement Before PILs	$31,326	([8] / (1-PILs)) - [8]
[17]	Payment in Lieu of Taxes @ 27.86 %	$2,227,451	[16] + [17]
[18]	Suite Meter Revenue Requirement		
[19]	Residential Revenues (Proposed 2010 Rates)		
[20]	Number of Installed Smart Meters	5,554	
[21]	Yearly Customer Charge @ $18.82 / mo.	$1,254,315	[20] x $18.82 x 12
[22]	Variable Distribution @ 1.684 cents/kWh	$505,059	[20] x 450 kWh x 1.684 cents/kWh x 12
[23]	Forgone Commercial Revenues (Proposed 2010 Rates for GS < 50 kW Class)		
[24]	Variable Distribution @ $0.02399/kWh	0	0.02399 $/KWh x 450 KWh x 12 x 0
[25]	Total Revenue	$1,759,374	[21] + [22] + [24]
[26]	**Annual Suite Meter Program Sufficiency/(Deficiency)**	**(468,077)**	[25] - [18]

Attachment: Case 4A
Cumulative Cost and Revenue Associated with Toronto Hydro's 2007-2010 Proposed Suite Metering
Case 4A: Cumulative, Converted, High Unit Cost

Line	Item	Amount	Calculation
[1]	Cumulative Depreciated Capital Cost	$2,125,600	See Exhibit 2
[2]	Working Capital Allowance	$1,347,015	[13]
[3]	Operation Expense	$189,929	[5] x 14.1%
[4]	Working Capital Allowance 14.1%		
[5]	Suite Metering Rate Base	$2,315,529	[1] + [4]
[6]	Return on Rate Base	$73,912	[5] x 0.6 x 5.32%
[7]	Debt 60% @ 5.32%	$74,190	[5] x 0.4 x 8.01%
[8]	Equity 40% @ 8.01%	$148,101	[7] + [8]
[9]	Return on Rate Base		
[10]	Operation Expense	$713,667	
[11]	Incremental Operating Expenses	$633,348	$210 x 3010
[12]	OM&A $210 / customer	$1,347,015	[11] + [12]
[13]	OM&A	$142,415	[1] x 6.7%
[14]	Amortization	$1,489,430	[13] + [14]
[15]	Total Operating Expenses	$1,637,531	[9] + [15]
[16]	Revenue Requirement Before PILs	$28,648	([8] / (1-PILs)) - [8]
[17]	Payment in Lieu of Taxes @ 27.86 %	$1,666,179	[16] + [17]
[18]	Suite Meter Revenue Requirement		
[19]	Residential Revenues (Proposed 2010 Rates)	3,010	
[20]	Number of Installed Smart Meters	$679,778	[20] x $18.82 x 12
[21]	Yearly Customer Charge @ $18.82 / mo.	$273,717	[20] x 450 kWh x 1.684 cents/kWh x 12
[22]	Variable Distribution @ 1.684 cents/kWh		
[23]	Forgone Commercial Revenues (Proposed 2010 Rates for GS < 50 kW Class)	(389,933)	0.02399 $/KWh x 450 KWh x 12 x 3010
[24]	Variable Distribution @ $0.02399/kWh		
[25]	Total Revenue	$563,562	[21] + [22] + [24]
[26]	**Annual Suite Meter Program Sufficiency/(Deficiency)**	**(1,102,616)**	[25] - [18]

Attachment: Case 4B

Cumulative Cost and Revenue Associated with Toronto Hydro's 2007-2010 Proposed Suite Metering

Case 4B: Cumulative, Converted, Low Unit Cost

Line	Item	Amount	Calculation
[1]	Cumulative Depreciated Capital Cost	$1,264,673	See Exhibit 2
[2]	Working Capital Allowance		
[3]	Operation Expense	$1,347,015	[13]
[4]	Working Capital Allowance 14.1%	$189,929	[5] x 14.1%
[5]	Suite Metering Rate Base	$1,454,602	[1] + [4]
[6]	Return on Rate Base		
[7]	Debt 60% @ 5.32%	$46,431	[5] x 0.6 x 5.32%
[8]	Equity 40% @ 8.01%	$46,605	[5] x 0.4 x 8.01%
[9]	Return on Rate Base	$93,036	[7] + [8]
[10]	Operation Expense		
[11]	Incremental Operating Expenses	$713,667	
[12]	OM&A $210 / customer	$633,348	$210 x 3010
[13]	OM&A	$1,347,015	[11] + [12]
[14]	Amortization	$84,733	[1] x 6.7%
[15]	Total Operating Expenses	$1,431,748	[13] + [14]
[16]	Revenue Requirement Before PILs	$1,524,784	[9] + [15]
[17]	Payment in Lieu of Taxes @ 27.86 %	$17,996	([8] / (1-PILs)) - [8]
[18]	Suite Meter Revenue Requirement	$1,542,781	[16] + [17]
[19]	Residential Revenues (Proposed 2010 Rates)		
[20]	Number of Installed Smart Meters	3,010	
[21]	Yearly Customer Charge @ $18.82 / mo.	$679,778	[20] x $18.82 x 12
[22]	Variable Distribution @ 1.684 cents/kWh	$273,717	[20] x 450 kWh x 1.684 cents/kWh x 12
[23]	Forgone Commercial Revenues (Proposed 2010 Rates for GS < 50 kW Class)		
[24]	Variable Distribution @ $0.02399/kWh	-389,933	0.02399 $/KWh x 450 KWh x 12 x 3010
[25]	Total Revenue	$563,562	[21] + [22] + [24]
[26]	**Annual Suite Meter Program Sufficiency/(Deficiency)**	**-979,218**	[25] - [18]

Workpaper-Assumptions

		Source
Working Capital Allowance	14.1%	Exhibit J1, Tab 2, Schedule 7, Page 1
Debt	60%	Exhibit J1, Tab 2, Schedule 2, Page 1
Return on Debt	5.32%	Exhibit J1, Tab 2, Schedule 2, Page 1
Equity	40%	Exhibit J1, Tab 2, Schedule 2, Page 1
Return on Equity	8.01%	Exhibit J1, Tab 2, Schedule 2, Page 1
Cost of Capital	6.39%	Exhibit J1, Tab 2, Schedule 2, Page 1
Number of Revenue Generating Suite Meters	3600	Response to SSMWG #2
Number of Installed Suite Meters	5400	Exhibit D1, Tab 8, Schedule 7, Page 3
Total Cost of 5,400 Suite Meters	$2,400,000	Exhibit D1, Tab 8, Schedule 7, Page 3
Total 2007-2010 External Capital Costs Related to Suite Metering	$6,400,000	Response to SSMWG #3
Total 2007-2010 Installed Suite Meters	8,564	Response to SSMWG #1
Number of Smart Meter Converted from Bulk Meters	1419	Response to SSMWG #1
Unit Costs		
HIGH	$747	$6,400,000 / 8,564
LOW	$444	$2,400,000 / 5,400
HIGH Depreciated New	$686	Workpaper-New Meters
LOW Depreciated New	$408	Workpaper-New Meters
HIGH Depreciated Bulk	$706	Workpaper-Bulk Converted Meters
LOW Depreciated Bulk	$420	Workpaper-Bulk Converted Meters
OM&A cost "related" to suite-metering in 2010	$300,000	Response to SSMWG #5
OM&A cost "related" to suite-metering in 2007-2010	$713,667	$300,000 x (8,564 cumulative meters /3,600 revenue generating meters installed in 2010)
Average O&M Cost for Rate Class 1 (Residential) for 2010 Test Year	$190	Exhibit D1, Tab 8, Schedule 3-2, Page 3
Administration Cost in 2009	10.57%	Exhibit D1, Tab 8, Schedule 3-2, Page 2
OM&A per residential customer	$210.41	
Amortization	6.70%	Response to SSMWG #5
2010 Payment in Lieu of Taxes	23,400,000	Exhibit H1, Tab 1, Schedule 1, Page 6
Utility Income Before Taxes	84,000,000	Exhibit J1, Tab 2, Schedule 5, Pagw 1
PILs	27.86%	PIL/ Utility Income Before Taxes
Residential Monthly Customer Charge	18.82	Exhibit M1, Tab 2, Schedule 2, Page 2 (service charge + smart meter rate rider)
Residential Monthly Variable Distribution ($ / kWh)	0.01684	Exhibit M1, Tab 2, Schedule 2, Page 2
Average Residential kWh per Month	450	Exhibit R1, Tab 3, Schedule 5, Page 1
General Service Less Than 50 kW Monthly Variable Distribution ($ / kWh)	0.02399	Exhibit M1, Tab 2, Schedule 2, Page 2
Peak Demand (kW) per Residential Customer Served Under GS	2	Assumption
Number of Months	12	

New Suite Meters Installed By Year

		@ High Unit Cost			@ Low Unit Cost		
	New	**Capital Cost Prior to Depreciation @ High Unit Cost**	**Depreciation**	**Capital Cost in 2010 @ High Unit Cost**	**Capital Cost Prior to Depreciation @ Low Unit Cost**	**Depreciation**	**Capital Cost in 2010 @ Low Unit Cost**
	[1]	[2]	[3]	[4]	[5]	[6]	[7]
2007	1,409	$1,052,523	$211,557	$840,966	$626,222	$125,871	$500,352
2008	586	$437,742	$58,657	$379,085	$260,444	$34,900	$225,545
2009	1,378	$1,029,366	$68,968	$960,398	$612,444	$41,034	$571,411
2010	2,181	$1,629,207	$0	$1,629,207	$969,333	$0	$969,333
Total	5,554	$4,148,838	$339,182	**$3,809,656**	$2,468,444	$201,804	**$2,266,640**

Source:
[1]: Toronto Hydro Responses to Interogatory #1
[2]: [1] x $747
[3]: [2] x 6.7% x number of years
[4]:[3] - [2]
[5]: [1] x $444
[6]: [5] x 6.7% x number of years
[7]:[6] - [5]

Bulk Conversion Suite Meters Installed By Year

		@ High Unit Cost			@ Low Unit Cost		
	Bulk Conversions	**Capital Cost Prior to Depreciation @ High Unit Cost**	**Depreciation**	**Capital Cost in 2010 @ High Unit Cost**	**Capital Cost Prior to Depreciation @ Low Unit Cost**	**Depreciation**	**Capital Cost in 2010 @ Low Unit Cost**
	[1]	[2]	[3]	[4]	[5]	[6]	[7]
2007	154	$115,038	$23,123	$91,915	$68,444	$13,757	$54,687
2008	556	$415,332	$55,654	$359,678	$247,111	$33,113	$213,998
2009	881	$658,107	$44,093	$614,014	$391,556	$26,234	$365,321
2010	1,419	$1,059,993	$0	$1,059,993	$630,667	$0	$630,667
Total	3,010	$2,248,470	$122,870	**$2,125,600**	$1,337,778	$73,104	**$1,264,673**

Source:
[1]: Toronto Hydro Responses to Interogatory #1
[2]: [1] x $747
[3]: [2] x 6.7% x number of years
[4]:[3] - [2]
[5]: [1] x $444
[6]: [5] x 6.7% x number of years
[7]:[6] - [5]

	Scope	New/Bulk	Total Meters	Assumed Bulk Converted	[redacted]			Description	Note
Case 1A	2010	New	3600	1419	2181	0	747	New Meters, High Unit Cost	
Case 1B	2010	New	3600	1419	2181	0	444	New Meters, Low Unit Cost	
Case 2A	2010	Bulk	3600	1419	1419	1419	747	Converted, High Unit Cost	
Case 2B	2010	Bulk	3600	1419	1419	1419	444	Converted, Low Unit Cost	
Case 3A	2007-2010	New	8,564	3,010	5554	0	686	Cumulative, New Meters, High Unit Cost	See Exhibit 1
Case 3B	2007-2010	New	8,564	3,010	5554	0	408	Cumulative, New Meters, Low Unit Cost	See Exhibit 1
Case 4A	2007-2010	Bulk	8,564	3,010	3010	3010	706	Cumulative, Converted, High Unit Cost	See Exhibit 2
Case 4B	2007-2010	Bulk	8,564	3,010	3010	3010	420	Cumulative, Converted, Low Unit Cost	See Exhibit 2

TAB 2

THESL INTERROGATORY #1

INTERROGATORY

Ref: Page 1

The submission filed on December 15, 2009 is entitled "Pre-Filed Evidence of the Smart Sub-Metering Working Group." It is not clear what individual(s) authored this submission.

(a) Please confirm whether Mr. Hanser prepared this submission and whether he will adopt this evidence as his own at the oral hearing. If not Mr. Hanser, who prepared the submission and who will adopt it at the hearing?

RESPONSE

(a) Mr. Hanser will confirm that the Pre-filed Evidence of the SSMWG was prepared by him and/or under his direction. He will adopt it at the hearing.

THESL INTERROGATORY #2

INTERROGATORY

Ref: Para 1

(a) Please provide your list of 'generally accepted regulatory principles'.

RESPONSE

(a) Paragraph 1 states "it appears that THESL's provision of smart suite metering service is being cross-subsidized by rate payers that do not receive such service. As such, THESL's rate design is not in keeping with generally accepted regulatory principles." As already noted in the submitted report, a fundamental principle of cost of service ratemaking is that rates should be tied to the costs incurred in providing a service. As THESL does not charge for the service and there are costs clearly incurred in excess of providing suite service, then other ratepayers must be making up the deficiency.

THESL INTERROGATORY #3

INTERROGATORY

Ref: Para 1, Para 10

The ultimate conclusion being rendered is that of "a cross-subsidization from THESL's regulated business to a competitively offered service..."

(a) What specific "competitively offered service" is being referred to? What, precisely, is the market that is competitive?

(b) What range of specific costs does the author assume exists for providers of this "competitively offered service"?

(c) Are you aware that it is established industry practice for sub-meterers to offer payments to condominium developers in the order of $100 or more per unit for the right to install their sub-metering systems? Did the author of the submission take into account any cash payments that may be paid by "competitive service providers" to property developers/land owners/landlords in connection with the installation of suite meters? What impact would such cash payments have on the operation of the competitive suite meter market assumed by the author of the submission? Do you consider such a practice to be consistent with offering services on an equal footing with non-regulated competitive entitles as stated at paragraph 10?

(d) Please identify the general principles that guide cost allocation and rate design in the context of essentially purchasing end-customers through cash payments to land developers/land owners/landlords as reference in part c) above.

RESPONSE

(a) Mr. Hanser has been referred to the Decisions of the Ontario Energy Board ("OEB") that confirmed on several occasions that the provision of smart sub-metering services is a competitive activity, including in its January 8, 2008 Notice[1] to amend the Distribution System Code and adopt the Smart Submetering Code. In June 2008, it reconfirmed this finding, stating:

[1] Notice of Proposal to Amend a Code and Notice of Proposal to Issue a New Code (EB-2007-0772), January 8, 2008, p. 3

> "Smart sub-metering providers offer their products and services in a competitive market. There are multiple service offerings from multiple providers from which developers and boards of directors of condominiums can compare and choose."[2]

The Board again confirmed that the smart sub-metering market is competitive in its Majority and Minority Decisions in the PowerStream 2009 rates application (EB-2008-0244)[3].

(b) The issue in this proceeding is the reasonableness of THESL's costs in respect of its suite metering program and the existence of a cross-subsidy. THESL has stated that it has not undertaken a fully allocated cost study in respect of its suite metering program. The appropriate question to ask is what are the specific costs which should be considered as part of the fully allocated cost study? These include the following: 1) capital cost of the meters, 2) installation costs, 3) operations and maintenance costs; 4) administrative and general; and 5) any associated overheads. The costs that individual members of the SSMWG incur in respect of their competitive service offerings are not relevant for the purposes of this proceeding.

(c) The questions asked are not relevant to the issues in this proceeding. The issue in this proceeding is whether THESL's proposed rates are just and reasonable; that is, are they consistent with appropriate regulatory rate-making principles. Despite this, and without waiving the right to continue to take the position that questions of this nature are irrelevant, Mr. Hanser is unaware that there is an "established industry practice" as alleged in THESL's question.

(d) The question asked is again not relevant to the issues in this proceeding. The implication in THESL's question that members of the SSMWG are, in effect, unlawfully buying customers, is completely inappropriate.

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[2] Notice of Revised Proposal to Amend a Code and Notice of Revised Proposal to Issue a New Code (EB-2007-0772), June 10, 2008, p. 4

[3] Majority Decision, EB-2008-0244, July 27, 2009, p.5, and Minority Decision, pps. 12 - 17

THESL INTERROGATORY #4

INTERROGATORY

Ref. Para 2

The author makes the statement: "Some cross-subsidization within a rate class is inevitable."

(a) How should electricity regulators manage the implications of this conclusion in connection with the application of general principles that guide cost allocation and rate design?

(b) Is the elimination of cross-subsidization within a rate class practically feasible?

RESPONSE

(a) What was being referred to is the situation in which a particular billing component, usually energy, is based on average usage. In that situation, cross-subsidization occurs between customers whose use is below to those whose use is above average. Such cross-subsidization can be minimized through rates which are more closely designed to capture the costs the utility incurs in serving customers, for example, the use of dynamic rates such as real time pricing.

(b) Yes, see above.

Even if total cross-subsidization is not practical, regulatory policies should aim at minimizing cross-subsidies.

THESL INTERROGATORY #5

INTERROGATORY

Ref: Para 2

On July 27, 2009 the OEB issued a decision concerning the rate application made by a neighbouring utility and specifically the issue of suite metering of condominium by utilities. In that Decision, the Board stated as follows:

> "Condominium suite metering, as offered by PowerStream, involves installing a separate meter for each condominium unit, and billing each unit owner as a residential customer; the condominium corporation is billed for the common areas. There is no bulk master meter required and there is no sub-metering taking place. The rates are regulated. As is common for residential customers, PowerStream does not charge for the cost of the meters; these are included in the costs allocated to the residential class as a whole. The cost of the condominium meter (Quadlogic) is considerably more expensive (about $680) than the standard meter for an individual single home (about $250). On the revenue side, PowerStream replaces one commercial customer with a larger number of residential customers, generating higher revenue because of the rate classification under which it bills for the same load previously billed for the bulk meter.
>
> Smart sub-metering, as offered by members of the SSMWG, happens "behind" the bulk meter. Members of the SSMWG install the smart meters for the condominium units. The condominium corporation continues to be a commercial customer of PowerStream. Smart sub-metering allows for the allocation of the condominium corporation's bill among the various unit owners, presumably in relation to their consumption of electricity. The rates are not regulated.
>
> Because no contribution is required by PowerStream for the higher cost of the meter for condominium customers, the SSMWG alleges that there is a cost subsidy for these customers by the rest of PowerStream's ratepayers and that this harms the competitive market and harms the SSMWG members.
>
> The relief sought by the SSMWG is that the condominium activity should be performed by an affiliate of PowerStream. In the alternative, if in the utility, the condominium activity should be treated as a stand-alone program, on a fully-costed basis. Under the stand-alone categorization, revenues and costs of the condominium suite program would be segregated from the rest of the distribution business. In the event the program is less profitable than the distribution business on a fully-costed basis, revenue would be imputed thereby reducing the revenue requirement and rates for the rest of the ratepayers.
>
> **Should the Program be offered through an Affiliate?**
>
> The SSMWG accepted that under the existing legislative and regulatory framework, utilities are required, when asked, to install smart meters in condominiums but argued that it is open to the Board to require that the condominium activity should be undertaken through an affiliate.
>
> PowerStream, Board staff and the intervenors argued that the legislative and regulatory framework clearly suggest that a utility such as PowerStream not only has the ability to carry out these

activities directly through the utility as opposed to a separate subsidiary, but in fact it is required to do so. PowerStream argued that if the activity was carried out through a separate subsidiary, which is not by definition a distributor, a utility would not be meeting its requirements under the *Electricity Act*, the Regulations and the Distribution System Code.

Section 71 (1) of the *Ontario Energy Board Act, 1998* (the "Act") states that distributors cannot carry on any business activity other than the distributing of electricity, except through an affiliate. However, section 71 (2) of the Act provides an exception to the general rule. Section 71 (2) states that a distributor may provide services in accordance with section 29.1 of the *Electricity Act, 1998* that would assist the government of Ontario in meeting its objectives in relation to electricity conservation.

Ontario Regulation 442/07, promulgated on August 1, 2007, allows licensed distributors to install smart meters in existing condominiums when the board of directors of the condominium corporation approves the installation of smart meters.

The Board's Distribution System Code was recently amended by adding section 5.1.9 which reads as follows:

When requested by either:

(a) the board of directors of a condominium corporation; or

(b) the developer of a building, in any stage of construction, on land for which a declaration and description is proposed or intended to be registered pursuant to section 2 of the Condominium Act, 1998,

a distributor shall install smart metering that meets the functional specification of Ontario Regulation 425/06 – *Criteria and Requirements for Meters and Metering Equipment, Systems and Technology* (made under the Electricity Act).(Emphasis added).

On the basis of the existing legislative and regulatory framework, the Board accepts that it is appropriate for PowerStream to continue to carry out its condominium activities as it has and proposes to continue." (emphasis added)

(a) What differences between PowerStream and THESL support your conclusion that THESL should be required to conduct suite metering through an affiliate when the Board has very recently confirmed that it is appropriate for PowerStream to do so directly through the utility?

RESPONSE:

(a) Mr. Hanser is not familiar with the record placed before the OEB in respect of the PowerStream Decision. Therefore, he is unable to undertake any comparative analysis. However, the SSMWG notes that the Majority Decision states, at page 5:

> "The fact that PowerStream is allowed to carry this activity as part of its distribution business does not take away from the fact that the metering of condominium units is a contestable market. To the extent that there is a cost subsidy as the SSMWG alleges, and if material, the SSMWG may be legitimately concerned."

In the Minority Decision, Vice Chair Kaiser went further stating that rate approval should be conditional upon PowerStream filing within four months a cost allocation methodology for its suite metering service in a manner that will allow the Board and the Parties to determine whether revenues are recovering costs (page 15). As indicated in the submission (Paragraph 11), Mr. Hanser recommends that a separate unregulated affiliate be established to offer suite-metering services.

THESL INTERROGATORY #6

INTERROGATORY

Ref: Para 7

(a) Does the SSMWG assert that THESL is practising predatory pricing? If so, provide the evidentiary basis for the assertion.

RESPONSE

(a) The determination of whether THESL is practising predatory pricing under Canadian law is a matter for Canadian lawyers and regulators. Mr. Hanser was asked to examine THESL's suite meter program from the perspective of recognized rate making principles. As noted in the pre-filed evidence, I have found that THESL is using revenues through regulated activities to subsidize the cost associated with a competitive service.

THESL INTERROGATORY #7

INTERROGATORY

Ref: Para 10

The author states, "THESL suggests that it would provide superior service at lower costs because it is regulated. This rationale suggests that THESL is subsidizing the suite meter costs through the charges that it collects from its other customers."

(a) Please explain the logic that the SSMWG used to equate THESL's provision of superior service at lower costs because it is regulated, with the conclusion, "THESL is subsidizing the suite meter costs through the charges it collects from its other customers."

(b) Does the SSMWG not agree that among the purposes of public regulation are to ensure that customer service quality is maintained and that costs are kept as low as possible?

RESPONSE

(a) As Mr. Hanser noted in his report, there were not sufficient incremental revenues to fully offset the costs of suite meters. In THESL's advertising for suite metering, it suggests that because it is regulated, it will provide superior service. However, if the playing field is truly level, then it should make no such claim in its provision of suite meter service. If it is offering the service on a competitive basis, then it is grossly inappropriate to use as means of attracting customers reference to the fact that it is a regulated entity.

(b) The purpose of THESL's regulated service should be to provide the best service at the lowest cost possible. However, THESL does not seem to be doing so because some of the costs associated with suite meters are paid for through revenues from THESL's regulated services.

THESL INTERROGATORY #8

INTERROGATORY

Ref: Attachment: Case 1A – Attachment: Case 4B

(a) In Response to Please provide the rationale for adding the "incremental Operating Expenses" to the OM&A cost per customer in deriving the total OM&A figure?

(b) Please explain how these are incremental to the costs of $210/customer?

RESPONSE

(a) THESL was asked, in SSMWG's Interrogatory #5(a), for the total amount of OM&A forecast for 2010 that relates to individual suite metering. Its response was that the 2010 OM&A forecast that relates to individual suite metering is $0.3 million. Mr. Hanser interprets this to mean this amount is attributable to the Suite Metering Program.

(b) According to THESL Rate Case Exhibit D1, Tab 8, Schedule 3-2, Page 3, the average of O&M cost for Residential Customers in the 2010 test year is $190. Further, Exhibit D1, Tab 8, Schedule 3-2, Page 2 shows that the average administration cost is 10.57% of O&M cost. Therefore, Mr. Hanser has calculated the average OM&A cost as average O&M cost plus 10.57%, which is $210.

THESL INTERROGATORY #9

INTERROGATORY

Ref: Attachment: Case 1A – Attachment Case 4B

(a) Please explain why the rate class used for the "Foregone Commercial Revenues" is the GS<50 kW class, when the conversions would be from the GS 50-999 kW class?

RESPONSE

(a) It is acknowledged that the majority of buildings that are converted would be in the GS 50-999 kW class. If the only change to the analysis involved using GS 50-999 kw demand rates in place of the GS < 50 kw volumetric rates, then the revenue deficiencies noted would tend to increase.

THESL INTERROGATORY #10

INTERROGATORY

Ref: Attachment: Case 1A – Attachment: Case 4B

(a) Please re-run all eight cases, removing the "Incremental Operating Expenses", and in the case of conversions, using the proposed GS 50-999 kW rates and assuming 1420 kVA displaced load in Cases 2A and 2B, and 3014 KVA displaced load in Cases 4A and 4B.

Please include a calculation of Revenue to Cost ratio for each case.

RESPONSE

(a) In THESL's response to SSMWG Interrogatory #5, it states that its 2010 OM&A forecast that relates to individual suite metering is $0.3 million. Therefore it would be inappropriate to remove this line item. Mr. Hanser, however, did revaluate his analysis using 1,419 and 3,010 displaced load (1 kVA per bulk-converted meter). As the following tables demonstrate, the conclusions remain the same:

2010 Revenue Deficiencies By Case
(1419 kVA Displaced Load)

	Residential Revenue Derived From	Suite Meter Unit Cost	
		High	Low
		[A]	[B]
[1]	New	(190,287)	(95,608)
[2]	Bulk	(218,933)	(157,333)

Cumulative 2007-2010 Revenue Deficiencies By Case
(3010 kVA Displaced Load)

	Residential Revenue Derived From	Suite Meter Unit Cost	
		High	Low
		[A]	[B]
[3]	New	(435,707)	(214,544)
[4]	Bulk	(446,656)	(323,258)

It was not clear from the question what revenues and costs should be used for the purpose of developing a revenue to cost ratio. It was also not clear whether the question is asking for a ratio in respect of residential or commercial customers.

THESL INTERROGATORY #10

INTERROGATORY

Ref: Attachment: Case 1A – Attachment: Case 4B

(a) Please re-run all eight cases, removing the "Incremental Operating Expenses", and in the case of conversions, using the proposed GS 50-999 kW rates and assuming 1420 kVA displaced load in Cases 2A and 2B, and 3014 KVA displaced load in Cases 4A and 4B.

Please include a calculation of Revenue to Cost ratio for each case.

RESPONSE

(a) In THESL's response to SSMWG Interrogatory #5, it states that its 2010 OM&A forecast that relates to individual suite metering is $0.3 million. Therefore it would be in appropriate to remove this line item. Mr. Hanser, however, did revaluate his analysis using 1,419 and 3,010 displaced load (1 kVA per bulk-converted meter). As the following tables demonstrate, the conclusions remain the same:

Cumulative 2007-2010 Revenue Deficiencies By Case (1419 kVA Displaced Load)

	Residential Revenue Derived From	Suite Meter Unit Cost	
		High	Low
		[A]	[B]
[1]	New	(309,810)	(215,130)
[2]	Bulk	(402,639)	(341,039)

Cumulative 2007-2010 Revenue Deficiencies By Case (3010 kVA Displaced Load)

	Residential Revenue Derived From	Suite Meter Unit Cost	
		High	Low
		[A]	[B]
[3]	New	(689,240)	(468,077)
[4]	Bulk	(914,471)	(791,073)

It was not clear from the question what revenues and costs should be used for the purposes of developing a revenue to cost ratio. It was also not clear whether the question is asking for a ratio in respect of residential or commercial customers.

VECC INTERROGATORY #1

INTERROGATORY

Reference: Exhibit SSMWG Evidence Page 1

Preamble: In Paragraph 1 Mr. Hanser states:

> "I provide evidence of the degree to which the revenues from the provision of this service fail to fully cover the costs of such services resulting in a cross-subsidization from THESL's regulated business to a competitively offered service in a series of tables at the end of this statement."

(a) Is Mr. Hanser aware that:

(i) THESL and all other utilities are required to provide smart meters to customers in the Residential and GS <50 kW classes; and

(ii) THESL customer pay both a rate rider to cover some of the historic costs and SM rate adder pending final disposition of deferral accounts recording the prudently incurred SM costs; and

(iii) These costs are/will be recovered from all ratepayers (including Suite sub-metered) in those classes?

(b) Provide a list of the important differences related to the rate treatment of costs for suite metering and THESL's smart metering Program.

(c) If as claimed by SSMWG, the costs for installation and operation of in-suite meters are different than for residential Smart Metering, provide a Comparison Table that illustrates these differences and demonstrates the basis of the claim of cross subsidy.

(d) If the costs of Suite sub-metering are materially different from SM, what regulatory approach(es) does SSMWG advocate based on other jurisdictions – for example creation of subclasses of residential customers.

RESPONSE

(a) Mr. Hanser responds as follows:

(i) The question as stated does not appear to be entirely accurate. It is Mr. Hanser's understanding that while units in condominiums at any stage of construction must be either suite metered or smart sub-metered, there is no

requirement that existing condominium corporations or landlords smart meter or smart submeter individual units.

(ii) Mr. Hanser is aware that THESL's customers pay amounts in respect of THESL's smart meter program, the costs of which have been and continue to be the subject of detailed Board scrutiny. The costs of THESL's suite meter program have not been the subject of such detailed scrutiny.

(iii) Currently, all residential ratepayers share in the cost of THESL's smart meter program. This may represent a further reason for the creation of a residential high-rise sub-class which would prevent smart meter customers from paying towards the costs of THESL's suite meter program.

(b) Mr. Hanser understands that the smart meter program undertaken by local distribution companies was mandated by the Province. In contrast, THESL's Suite Metering Program is a foray by a rate-regulated monopoly into the competitive marketplace.

(c) As indicated in paragraph 16 of THESL's pre-filed evidence, Mr. Hanser calculated a cost of between $444 and $747 for each suite meter. The $444 cost per suite-meter is derived by dividing the THESL's total 2010 capital cost related to suite metering ($2.4 million) by the number of 2010 forecasted installed suite meters (5,600). The $747 cost per suite-meter is derived by dividing the total 2007-2010 external capital costs related to suite metering ($6.4 million) by the total 2007-2010 installed suite meters (8,564)[1]. The THESL cost allocation study includes a figure of $158.75[2] for each smart meter. Please refer to the SSMWG Pre-filed Evidence for evidence of the cross subsidy.

(d) Based on the evidence of cross-subsidization between THESL's regulated service customers and its suite metered customers, Mr. Hanser recommends a separation of customer class such that it is those who use the suite meters who pay for the suite meters.

[1] The source of these numbers is THESL's Exhibit D1, Tab 8, Schedule 7, Page 3.
[2] Ex. L1, T2, Sch. 1, p. 11

VECC INTERROGATORY #2

INTERROGATORY

Reference: Exhibit SSMWG Evidence Page 8, paras. 16 and 17

Preamble: Mr. Hanser states:

> "The high end of my cost assumption for each suite-meter is $747. It is derived by dividing the total 2007-2010 external capital costs related to suite metering $6.4 million) by the total 2007-2010 installed suite meters (8,546). The data for this computation were provided by THESL's responses to SSMWG's Interrogatories #1 and #3. On the lower cost end, I have assumed a $444 cost per suite-meter. This cost is derived by dividing the THESL's total 2010 capital cost related to suite metering ($2.4 million) by the number of 2010 forecasted installed suite meters (5,600)."

(a) Does SSMWG believe the above Capital costs are in the appropriate range from its members' direct experience?

(b) Provide the experience-based cost range from its members

(c) Provide the basis of the annual O&M cost of $210

(d) Provide the range of O&M costs from the experience of SSMWG members.

RESPONSE

(a) Mr. Hanser advises that the range of suite meter capital costs ($444 - $747) is taken from THESL's evidence. THESL indicates that through its suite meter service provider, it installs Quadlogic metering systems. Mr. Hanser understands from the SSMWG members (some use the same type of equipment) that they do not believe that the lower figure includes all of the capital acquisition and installation costs associated with such systems.

(b) Please see response to Question 2(a).

(c) According to THESL Rate Case Exhibit D1, Tab 8, Schedule 3-2, Page 3, the average of O&M cost for Residential Customers in the 2010 test year is $190. Further, Exhibit D1, Tab 8, Schedule 3-2, Page 2 shows that the average administration cost is 10.57%. Therefore, Mr. Hanser has calculated the average OM&A cost as average O&M cost plus 10.57%, which is $210.

(d) Mr. Hanser understands that the range of services provided by various SSMWG members varies significantly, and in some instances includes services beyond

electricity sub-metering. The range of O&M costs, as requested, would therefore include, in some instances, more or less services than those provided by THESL. Such a comparison would therefore not be helpful.

VECC INTERROGATORY #3

INTERROGATORY

References: Exhibit SSMWG Evidence Attachment Case 1A and Case 2A

(a) Provide a copy of the Revenue requirement Spreadsheet in Excel format

(b) Provide a copy of the Workpaper assumptions for New and Converted costs

(c) Provide more details of the rate revenue calculations at lines 23-26, including the references to THESL's proposed 2010 rate schedules

(d) What is the basis of the assumption of 450 kwh/month in the context of Condominiums?

(e) Provide revenue calculations for consumptions of 250 and 750 kwh/month

(f) Explain the peak demand assumption of 2 kw

(g) Explain the basis of no change in revenue at lines 23/24.

RESPONSE

(a) The pre-filed evidence sets out all of the Workpaper assumptions, evidentiary references and sources. If VECC has additional assumptions beyond those set out in sub-paragraph (e) below and would like further spreadsheets, please advise.

(b) Please see the pre-filed evidence "Workpaper Assumptions" under the heading "Unit Costs – New versus Bulk" (i.e. converted).

(c) Please see the Workpaper assumptions included in the pre-filed evidence.

(d) Please see BOMA Interrogatory #5, Exhibit R1, Tab 3, Schedule 5.

(e) While there may be unique situations of a unit using as little as 250 kwh and as much as 750 kwh/month, to undertake revenue calculations for "all units" using either figure alone would distort the revenue projections inappropriately. It remains Mr. Hanser's view that the average 450 kwh/month remains the most reliable figure. Nonetheless Mr. Hanser has re-evaluated his analysis implementing the above load assumptions, and his conclusions remain unchanged. The following tables summarize his results:

2010 Revenue Deficiencies By Case (250 kWh Load)

	Residential Revenue Derived From	Suite Meter Unit Cost	
		High	Low
		[A]	[B]
[1]	New	(278,434)	(183,755)
[2]	Bulk	(234,004)	(172,404)

Cumulative 2007-2010 Revenue Deficiencies By Case (250 kWh Load)

	Residential Revenue Derived From	Suite Meter Unit Cost	
		High	Low
		[A]	[B]
[3]	New	(660,178)	(439,014)
[4]	Bulk	(478,625)	(355,227)

2010 Revenue Deficiencies By Case (750 kWh Load)

	Residential Revenue Derived From	Suite Meter Unit Cost	
		High	Low
		[A]	[B]
[1]	New	(58,066)	36,613
[2]	Bulk	(196,327)	(134,726)

Cumulative 2007-2010 Revenue Deficiencies By Case (750 kWh Load)

	Residential Revenue Derived From	Suite Meter Unit Cost	
		High	Low
		[A]	[B]
[3]	New	(99,001)	122,162
[4]	Bulk	(398,703)	(275,305)

(f) This is an assumption made of average demand of a building as whole but was not used in the analysis because the rates Mr. Hanser used were all volumetric rates (e.g., in $/kWh).

(g) Counsel for VECC has advised that the question which VECC wishes to be answered is why has it been assumed that there is no foregone commercial revenue in scenarios 1A, 1B, 3A, and 3B. This response is to this question. There is no foregone commercial revenue because these cases assume that all the meters are from new construction.

VECC INTERROGATORY #3

INTERROGATORY

References: Exhibit SSMWG Evidence Attachment Case 1A and Case 2A

(a) Provide a copy of the Revenue requirement Spreadsheet in Excel format

(b) Provide a copy of the Workpaper assumptions for New and Converted costs

(c) Provide more details of the rate revenue calculations at lines 23-26, including the references to THESL's proposed 2010 rate schedules

(d) What is the basis of the assumption of 450 kwh/month in the context of Condominiums?

(e) Provide revenue calculations for consumptions of 250 and 750 kwh/month

(f) Explain the peak demand assumption of 2 kw

(g) Explain the basis of no change in revenue at lines 23/24.

RESPONSE

(a) The pre-filed evidence sets out all of the Workpaper assumptions, evidentiary references and sources. If VECC has additional assumptions beyond those set out in sub-paragraph (e) below and would like further spreadsheets, please advise.

(b) Please see the pre-filed evidence "Workpaper Assumptions" under the heading "Unit Costs – New versus Bulk" (i.e. converted).

(c) Please see the Workpaper assumptions included in the pre-filed evidence.

(d) Please see BOMA Interrogatory # 5, Exhibit R1, Tab 3, Schedule 5.

(e) While there may be unique situations of a unit using as little as 250 kwh and as much as 750 kwh/month, to undertake revenue calculations for "all units" using either figure alone would distort the revenue projections inappropriately. It remains Mr. Hanser's view that the average 450 kwh/month remains the most reliable figure. Nonetheless Mr. Hanser has re-evaluated his analysis implementing the above load assumptions, and his conclusions remain unchanged. The following tables summarize his results:

2010 Revenue Deficiencies By Case (250 kWh Load)

	Residential Revenue Derived From	Suite Meter Unit Cost	
		High	Low
		[A]	[B]
[1]	New	(397,957)	(303,278)
[2]	Bulk	(459,989)	(398,389)

Cumulative 2007-2010 Revenue Deficiencies By Case (250 kWh Load)

	Residential Revenue Derived From	Suite Meter Unit Cost	
		High	Low
		[A]	[B]
[3]	New	(913,711)	(692,547)
[4]	Bulk	(1,036,123)	(912,725)

2010 Revenue Deficiencies By Case (750 kWh Load)

	Residential Revenue Derived From	Suite Meter Unit Cost	
		High	Low
		[A]	[B]
[1]	New	(177,589)	(82,909)
[2]	Bulk	(316,614)	(255,014)

Cumulative 2007-2010 Revenue Deficiencies By Case (750 kWh Load)

	Residential Revenue Derived From	Suite Meter Unit Cost	
		High	Low
		[A]	[B]
[3]	New	(352,534)	(131,371)
[4]	Bulk	(731,993)	(608,595)

(f) This is an assumption made of average demand by a building as whole but was not used in the analysis because the rates Mr. Hanser used were all volumetric rates (e.g., in $/kWh).

(g) Counsel for VECC has advised that the question which VECC wishes to be answered is why has it been assumed that there is no foregone commercial revenue in scenarios 1A, 1B, 3A and 3B. This response is to this question. There is no foregone commercial revenue because these cases assume that all the meters are from new construction.

INTERROGATORIES OF BUILDING OWNERS AND MANAGERS ASSOCIATION OF THE GREATER TORONTO AREA

INTERROGATORY 5:

Reference(s): Exhibit D1, Tab 8, Schedule 7, page 3

a) What is the estimated impact on distribution revenues of the 5,400 individual suite meter installations? Please provide the estimated revenue, showing all assumptions and calculations, associated with these 5,400 individual customers. Please also show the estimated revenue, along with all assumptions and calculations, for the current bulk metered accounts.

b) How has this shift from bulk metered accounts to individual suite meter installations been taken into account in the revenue forecast?

RESPONSE:

a) Not all of the 5400 meter installations will become customers, and hence generate revenue, for the full year. Assuming 3600 of these become customers, and assuming a monthly load of 450kWh, at the proposed 2010 residential rates these customers will generate approximately $90,000 per month.

Assuming these customers remain on bulk meters, and assuming 175 units per building, at the proposed 2010 GS1-5MW rates the revenue generated would be approximately $34,000 per month.

Note that these two amounts are not strictly comparable. The 2010 proposed rates are based on a forecast of loads and customer by class which assumes the suite meters. If instead the bulk meters remain in place, the class load and customer forecasts would be different, the proposed rates would be different, and the revenue estimates shown

TAB 3

DISTRIBUTION EXPENSES – VARIANCE ANALYSIS

DISTRIBUTION EXPENSES SUMMARY

Introduction

Distribution expenses based on the OEB's reporting categories, for 2008, 2009 and 2010 historical, bridge, and test years are presented below.

Table 1: Distribution Expense Summary ($ millions)

	2008 Board-Approved	2008 Historical	2009 Board-Approved	2009 Bridge	2010 Test
Operations	57.2	45.8	59.2	51.5	64.6
Maintenance	46.5	41.3	48.8	44.5	43.5
Billing and Collections	35.6	31.9	38.6	35.4	37.0
Community Relations	3.0	3.5	3.2	4.1	4.5
Administrative and General	35.4	46.1	33.8	46.8	62.6
Other Distribution Expenses	13.5	14.0	12.0	11.9	8.7
Amortization Expense	146.9	149.0	154.4	158.4	167.0
TOTAL	**338.1**	**331.6**	**350.0**	**352.6**	**387.9**

Variance Analysis

Table 2: 2008 Board-Approved versus 2008 Historical ($ millions)

	2008 Board-Approved	2008 Historical	Variance ($)	Variance (%)
Operations	57.2	45.8	(11.4)	(19.9)
Maintenance	46.5	41.3	(5.2)	(11.2)
Billing and Collections	35.6	31.9	(3.7)	(10.4)
Community Relations	3.0	3.5	0.5	16.7
Administrative and General	35.4	46.1	10.7	30.2
Other Distribution Expenses	13.5	14.0	0.5	3.7
Amortization Expense	146.9	149.0	2.1	1.4
TOTAL	**338.1**	**331.6**	**(6.5)**	**(1.9)**

Total 2008 OEB-approved distribution expenses were $338.1 million compared to actual 2008 distribution expenses of $331.6 million, representing a decrease of $6.5 million or 1.9 percent. A change in methodology in the allocation of occupancy and fleet charges occurred after THESL's 2008-2010 rate filing (EB-2007-0680). The impact of this change has resulted in an overall shift within the reported variances noted above (specifically in Operations, Maintenance and Administration and General). The overall variance of the 2008 Historical to 2008 Board-Approved decrease of $6.5 million is primarily driven by the decrease in Billing and Collections expenses, which resulted from lower Call Centre costs as a result of a delay in Time-of-Use implementation. Operations expenses also decreased due to a delay in the expansion of the apprenticeship program. Further, amortization expense as compared to 2008 Board-Approved was higher (refer to Exhibit D1, Tab 13).

Table 3: 2008 Historical versus 2009 Bridge ($ millions)

	2008 Historical	2009 Bridge	Variance ($)	Variance (%)
Operations	45.8	51.5	5.7	12.4
Maintenance	41.3	44.5	3.2	7.7
Billing and Collections	31.9	35.4	3.5	11.0
Community Relations	3.5	4.1	0.6	17.1
Administrative and General	46.1	46.8	0.7	1.5
Other Distribution Expenses	14.0	11.9	(2.1)	(15.0)
Amortization Expense	149.0	158.4	9.4	6.3%
TOTAL	**331.6**	**352.6**	**21.0**	**6.3%**

Total 2009 forecasted distribution expenses are $352.6 million compared to 2008 historical distribution expenses of $331.6 million, representing an increase of $21.0 million or 6.3 percent. The increase is primarily due to higher operations costs due to an expanding workforce and an increase in external vendor costs related to suite metering. Operations costs will also increase as a result of the conversion of flat rate water heater customers to metered services. The increase in maintenance costs relate primarily to an expanding workforce. Costs in billing and collections are expected to be higher due to an increase in bad debt expense and higher compensation costs. The decrease in other distribution expenses is primarily due to a one-time increase in capital taxes related to the settlement in 2008 of the 2001, 2002, 2003 and 2004 PILs audits. Higher amortization expenses as compared to 2008 historical will result from increased capital expenditures for distribution plant and IT assets; refer to Exhibit D1, Tab 13.

DISTRIBUTION ASSETS – VARIANCE ANALYSIS

DISTRIBUTION ASSETS SUMMARY

Introduction

Average distribution fixed assets net of accumulated depreciation, based on the Board's minimum reporting groups for the historical, bridge, and test years are presented below.

Table 1: Years Ending December 31 – Historical, Bridge and Test Years
($ millions)

	2008 Approved	2008 Historical	2009 Approved	2009 Bridge	2010 Test
Land and Buildings	65.8	53.0	68.5	50.0	50.8
TS Primary above 50	11.9	11.9	14.7	11.9	11.9
Distribution System	159.7	164.3	176.2	187.9	207.7
Poles and Wires	2,255.0	2,283.1	2,364.3	2,418.0	2,582.9
Transformers	611.7	590.5	657.4	623.8	664.9
Service and Meters	264.8	246.3	286.6	259.2	274.8
General Plant	104.9	119.0	105.9	122.2	127.8
Equipment	156.7	148.0	166.3	160.0	173.6
Information Technology	182.0	178.6	207.7	205.5	232.6
Other Distribution Assets	64.0	63.9	66.3	68.4	75.4
Contributions and Grants	(218.5)	(212.7)	(242.9)	(238.1)	(261.0)
Gross Assets	**3,657.9**	**3,645.9**	**3,870.8**	**3,868.7**	**4,141.3**
Accumulated Depreciation	(1,946.4)	(1,942.7)	(2,094.9)	(2,093.3)	(2,255.9)
Net Assets	**1,711.5**	**1,703.2**	**1,775.9**	**1,775.3**	**1,885.4**

Note: Variance due to rounding may exist.

General plant assets are expected to increase by $16.3 million or 15.4 percent from $105.9 million in 2009 approved to $122.2 million in 2009 bridge. The increase in general plant is primarily due to leasehold improvement spending at the existing service centres.

Table 6: 2008 Historical versus 2010 Test ($ millions)

	2008 Historical	2010 Test	Variance ($)	Variance (%)
Land and Buildings	53.0	50.8	(2.2)	(4.2)
TS Primary above 50	11.9	11.9	-	-
Distribution System	164.3	207.7	43.4	26.4
Poles and Wires	2,283.1	2,582.9	299.8	13.1
Transformers	590.5	664.9	74.4	12.6
Service and Meters	246.3	274.8	28.5	11.6
General Plant	119.0	127.8	8.8	7.4
Equipment	148.0	173.6	25.6	17.3
Information Technology	178.6	232.6	54.0	30.2
Other Distribution Assets	63.9	75.4	11.5	18.0
Contributions and Grants	(212.7)	(261.0)	48.3	22.7
Gross Assets	**3,645.9**	**4,141.3**	**495.4**	**13.6**
Accumulated Depreciation	(1,942.7)	(2,255.9)	313.2	16.1
Net Assets	**1,703.2**	**1,885.4**	**182.2**	**10.7**

Between 2008 and 2010 average net assets are expected to increase from $1,703.2 million to $1,885.4 million, representing an increase of $182.2 million or 10.7 percent. The increase in net assets is primarily due to the need the renew THESL's distribution system and address emerging capital requirements.

Distribution system assets are expected to increase by $43.4 million or 26.4 percent from $164.3 million in 2008 to $207.7 million in 2010. The increase in distribution assets is primarily due to the need to rehabilitate the system and to improve safety, reliability and

customer satisfaction as described in D1, Tabs 8 and 9.

Capital investment in poles and wires is expected to increase by $299.8 million or 13.1 percent from $2,283.1 million in 2008 to $2,582.9 million in 2010. The increase is primarily due to the need to rehabilitate poles to counter the worsening SAIFI trend illustrating increasing overhead line equipment failures, and in light of the potential public safety hazards posed by the advanced age of current poles. Additional information about these investments can be found in Exhibit D1, Tab 8, Schedule 1.

Investment in transformer assets is expected to increase from $590.5 million in 2008 to $664.8 million in 2010, resulting in an increase of $74.4 million or 12.6 percent. The 2010-2019 Electrical Distribution Capital Plan filed at Exhibit D1, Tab 8, Schedule 10 describes the investment requirements related to rehabilitation of overhead distribution assets, replacement of distribution transformers, and rehabilitation of duct systems.

Service and meter assets will increase between 2008 and 2010 from $246.3 million to $274.8 million. This represents an increase of $28.5 million or 11.6 percent. The variance primarily relates to wholesale meter compliance activities to increase the accuracy of the meter measurements and registration, implementing suite metering in bulk-metered condominiums and to achieve full compliance with the Smart Meter Initiative. Refer to Exhibit D1, Tab 8, Schedule 7 for additional information.

The increase in equipment assets from $148.0 million in 2008 to $173.6 million in 2010 amounts to $25.6 million or 17.3 percent and is mainly due to an increase in the fleet complement to support the capital work program.

The increase in information technology assets from $178.6 million in 2008 to $232.6 million in 2010 amounts to $54.0 million or 30.2 percent. As described in Exhibit D1,

SUMMARY OF CAPITAL BUDGET

THESL's capital programs for 2010 were identified using its business planning and work prioritization process that reflects risk-based decision-making. This approach ensures that appropriate, cost-effective solutions are put in place to meet THESL's objectives of reliability, customer service, asset modernization and safety. During 2008, THESL introduced improvements to its risk-based approach. The approach is now more individual-asset-centric and data-driven. It assists engineers in identifying the optimal replacement time for each asset based on asset condition, risk, criticality, and life-cycle costs of asset ownership. The approach is described in more detail in Exhibit C1, Tab 6, Schedule 1.

The capital expenditures proposed represent investments that will ultimately become in-service capital assets providing value to ratepayers and the community overall for many years to come.

THESL's investments in capital plant will increase in the coming years, consistent with the capital requirements set out in the 2010-2019 Electrical Distribution Capital Plan ("Capital Plan") filed under Exhibit D1, Tab 8, Schedule 10 of this Application. Exhibit D1, Tab 8 details several material capital projects that are planned for the 2010 test year that will maintain the adequacy, reliability and quality of electricity distribution service to THESL's customers. In addition to required operational investments forming part of THESL's regular capital program, a number of emerging requirements arising from recent events and government initiatives are presented at Exhibit D1, Tab 9 of this Application. THESL is focused on planning, building and maintaining its distribution facilities to meet or exceed service quality and reliability requirements for all of its customers, and intends to make prudent use of existing and new technologies in order to provide efficient and effective levels of customer service.

wires between hand wells, fuse installation in street lighting poles and replacement of poles etc. It is essential that the required work be completed to maintain the physical and electrical integrity of the system. Details are provided at Exhibit D1, Tab 9, Schedule 7.

Table 2 below shows THESL's capital costs for 2010, together with the 2008 actual capital costs and the 2009 forecasted capital costs for each category of investment. The table presents operational investments in a similar format as was presented in EB-2007-0680 for consistency and comparative purposes. Additional investment categories have been added to the table which represent emerging requirements new to this filing. This presentation allows THESL to show new categories of investment to satisfy emerging requirements, and to continue to present a view of its investment needs to modernize the distribution plant.

It is clear that the level of sustaining capital investment resulting from the Board's reduction to THESL's proposed 2008 and 2009 program presented in EB-2007-0680 is insufficient. A significant "catch-up" is required and proposed in 2010. Additionally THESL is faced with very significant emerging requirements over and above its infrastructure renewal plans, which comprise more than 25 percent of the test year capital program. THESL has amended its infrastructure renewal plans to reflect the Board's previous decisions in EB-2007-0680, and has incorporated refinements in its asset condition assessment and risk-based modeling to more effectively direct capital investments. Improvements to the long-term planning and work prioritization methods used by THESL are filed at Exhibit C1, Tab 6, Schedules 1 and 2, respectively. THESL's updated 2010-2019 Electrical Distribution Plan is filed at Exhibit D1, Tab 8 Schedule 10, and updated Asset Condition Study is filed at Exhibit Q1, Tab 3, Schedule 1.

Table 2: Summary of Capital Budget ($millions)

	2008 Historical	2009 Bridge	2010 Test
OPERATIONAL INVESTMENTS			
Sustaining Capital			
Underground Direct Buried	23.8	48.3	70.3
Underground Rehabilitation	38.2	33.7	36.3
Overhead	19.3	15.7	22.0
Network	4.7	4.8	5.7
Transformer Station	8.5	7.2	15.9
Municipal Substation Investment	8.3	6.3	6.8
Total Sustaining Capital	**102.9**	**116.0**	**157.0**
Reactive Work	19.3	13.8	22.5
Customer Connections	42.8	37.4	32.5
Customer Capital Contribution	(32.7)	(21.0)	(24.4)
Asset Management	(4.9)	1.0	2.8
Engineering Capital	26.4	27.0	31.2
AFUDC	2.0	2.6	4.4
Other	1.0	1.0	-
Total Operations	**156.8**	**177.8**	**226.0**
GENERAL PLANT			
Fleet &Equipment Services	7.9	9.9	11.4
Facilities	3.4	8.4	12.6
Other	0.3	2.0	4.4
Total GENERAL PLANT	**11.6**	**20.3**	**28.4**
CUSTOMER SERVICES			
Wholesale Metering	0	0.5	10.9
Suite Metering	0	1.8	2.4
Other	13.2	0.2	0.6
Total CUSTOMER SERVICES	**13.2**	**2.5**	**13.9**

OPERATIONAL INVESTMENTS

METERING

THESL provides its customers with meters through which electricity passes before reaching a distribution board or service panel that directs the electricity to end-use circuits on the customer's premises. The meters are used to measure electricity consumption. THESL owns the meters and is responsible for their maintenance and accuracy in accordance with Measurement Canada requirements. THESL is also responsible for funding meter installations at the point where electricity is transferred from Hydro One Networks Inc. ("HONI") to THESL, and ensuring they are compliant with Independent Electricity System Operator ("IESO") requirements.

Table 1 summarizes the total requirements for metering capital investments for 2008, 2009 and the 2010 test year:

Table 1: Metering Capital Investments Summary ($ millions)

	2008 Actual	2009 Bridge	2010 Test
Metering	13.2	2.5	13.9

The costs in Table 1 exclude costs associated with the Smart Metering program, except for the 2008 Actual costs of $13.2 million, which include $5.6 million of Smart Metering program costs which had not been transferred to a Regulatory Assets account at the time the THESL 2008 financial statements were filed. For comparison purposes, the 2008 Actual would be $7.6 million without the Smart Metering Costs.

Wholesale Metering

Wholesale meter installation upgrades, the largest component in the metering capital plan, are required by the Ontario Wholesale Electricity Market rules administered by the

IESO. The rationale for the wholesale meter installation upgrades is to increase the accuracy of the meter measurements and registration. The existing meter points were not necessarily installed for revenue billing purposes, so some associated equipment is not approved for its current application. Given the large revenue amount generated by these meter points, the IESO developed a set of market rule requirements intended to provide the highest level of confidence possible in the metered values. The upgraded meters also provide additional complex measurements on a more timely and reliable basis, which allows the IESO to better operate the hourly wholesale pricing market.

The majority of the work at the wholesale metering installations is contracted to HONI because the equipment is located within HONI facilities. The fluctuations in the capital spend from 2008 to 2009 and 2010 are due to HONI's schedule to complete the installations, and the timing of requests for these installations made by THESL.

For THESL, the wholesale meter installation upgrades can be divided into two categories. There are two primary transmission circuits that pass through Toronto – a north circuit and a south circuit. Meter points on the north circuit can be more easily upgraded by relocating the meter point elsewhere in the station. After the upgrades, there will be a total of 74 meter points in this group. As of the end of 2008, 34 of these meter points had been fully upgraded, based on formal proposals provided by HONI which include replacement of current and potential transformers, new metering cabinets, modification to bus support structures, and new communication lines. The remaining 40 meter points are scheduled to be upgraded by the end of 2011. In 2010, $6.9 million has been included for this work.

The upgrades on the south circuit are more complex and costly. A total of 149 meter points at 23 transformer stations will be required to meet IESO specifications. As an alternative, THESL had proposed to install metering equipment at specific locations on

the transmission lines that supply these stations. However, as detailed planning for this proposal took place among HONI, IESO and THESL, the risks and costs of this alternative escalated. THESL has now concluded that upgrading the meter points at individual stations is required. The estimated cost of these upgrades is $20.0 million of which $4.0 million will be spent in 2010.

Suite Metering

Another portion of the metering capital is for individual suite metering in condominiums. Many condominiums are currently "bulk-metered", with only one billing meter installed to measure electricity usage. Individual unit consumption is estimated and allocated through mechanisms such as square foot area, and collected through property management fees. By having THESL install individual meters for each suite, unit owners will become THESL customers and pay for actual metered electricity consumption. In consideration of anticipated requests for THESL to provide such services in both new and existing condominium buildings, the forecasted capital spend is $2.4 million in 2010 for a total of 5,400 individual suite meter installations. THESL has contracted a metering equipment and installation services supplier through an RFP process to provide individual suite metering.

Other Metering Capital

The remaining capital budget involves the replacement of interval meters currently installed at approximately 2,500 of THESL's largest customers' facilities, and meter test shop equipment. The existing meters need to be replaced for full compliance with the requirements of the Smart Meter initiative, and for ongoing compliance with Measurement Canada regulations. Since these accounts already have interval meters, which by definition are considered to be Smart Meters, this project is not considered to be part of the Smart Meter initiative. The budgeted cost for this work for 2010 is $0.4 million.

INFORMATION TECHNOLOGY PROGRAM DESCRIPTIONS
OPERATIONAL INVESTMENTS

OPERATIONAL DATA STORE

Program Overview

The Operational Data Store ("ODS") project extends the capabilities of the information systems being built for smart meter implementation. Business benefits accruing from this project include operational effectiveness through improved information management, decision support and streamlined business processes in the following areas and functions:

- Meter Reading and Billing Types;
- Complex Billing;
- Net System Load Shape ("NSLS");
- Wholesale Settlement;
- Outage integration support;
- Business Intelligence, Data Mining and Theft of Power; and
- Customer Meter Data Presentment.

Program Benefits

The following objectives are expected to be realized after the full scope of this three-year program has been delivered:

- Support THESL's Smart Meter Initiative obligations to implement smart meters for all its customers;
- Continue the automation of systems needed for the new and modified business processes to implement and sustain THESL's Smart Meter Initiative; and
- Create a unified set of business processes for all metering classes and customer loads.

Progress to-date

By the end of 2009, the ODS program will have accomplished the deliverables outlined below:

1) Implemented system changes to support the meter read process for registered reads;
2) Upgraded the Energy Internet Protocol ("EIP") software to version 5.3 and subsequently implemented EIP version 5.5 SP3 into production;
3) Completed required system configurations to support TOU billing (i.e., Full-Synch ("F-Synch") and Incremental Synch ("I-Synch") implementation);
4) Completed all requirements, design and build activities for the upgraded version of ODS, which will provide:
   - Enhanced functionality;
   - Multi-channel support for Metering Automated Software ("MAS");
   - SmartSynch provisioning;
   - Resolution of some known outstanding defects;
   - Propagation of meter attribute changes to MAS; and
   - Support for new meters and com types.
5) Quadlogic integration (Suite Metering)
   - Investigate additional Automated Meter Integration ("AMI") to support condos;
   - Begin uploading meter read data into ODS; and
   - Billing for Condo customers through Smart Meter ODS.

2010 Program Plan

In 2010, IT&S plans to deliver the following capabilities:

- Finalize and complete testing and implementation of the EIP version 6.3 or higher;
- Complete integration for Suite Metering; and

- Complete integration for Commercial and Industrial customers;

Some development activities were completed in 2009.

Program Costs

The 2010 ODS Program costs in this application will build upon the progress achieved during 2008-2009, deliver on 2010 scope and allow the overall program stated benefits to be realized.

Table 1: Program Costs ($ millions)

Project Name	2008 Historical	2009 Bridge	2010 Test
SM - ODS	0.60	0.86	0.16
Total	**0.60**	**0.86**	**0.16**

CUSTOMER SERVICES

INTRODUCTION AND SUMMARY OF O&M COSTS

The Customer Services division performs activities that are required to provide services to customers connected to THESL's distribution system. These activities serve customers receiving electricity under the Regulated Price Plan, spot market prices, retailer contracts, Time-of-Use pricing, and the net metering and standard offer programs. THESL's service levels meet or exceed requirements stipulated in the OEB's 2006 Electricity Distribution Rate Handbook, issued May 11, 2005.

Approximately 684,000 customers were connected to the THESL distribution system as of December 2008. A recently launched initiative to convert bulk-metered buildings to individual-metering, coupled with the typical customer growth rate, is expected to add approximately 12,000 customers by year-end 2010.

Most customers fall into the residential rate classification. Commercial rate classifications include:

- General Service, for customers that have peak monthly demands of less than 50 kW
- General Service, for customers that have peak monthly demands greater than 50kW but less than 1000 kW
- General Service, for customers that have peak monthly demands greater than 1000 kW but less than 5000 kW
- Large User, for customers that have peak monthly demands greater than 5000kW

Customer Services is comprised of three main operating areas: Meter-to-Cash, Customer Relationship Management and Field Services. Meter-to-Cash ensures that meters are safely and correctly installed, meter readings are accurately recorded and processed either

manually or through an Advanced Metering Infrastructure ("AMI") for billing, and accounts are billed and collected in a timely manner. This group also manages day-to-day retailer issues, including dealing with all information related to daily transfers and billing transactions through the HUB and retail settlement.

The Customer Relationship Management team includes the Call Centre, a customer concern escalation group and the Key Accounts team. The Call Centre responds to customer inquiries, by telephone and in writing. Call Centre employees also interact with the customer through email and web services. The escalation group manages major customer concerns directed from senior executives, city councilors and the OEB. The Key Accounts team interacts with THESL's large volume customers to ensure that their enquiries, requests for service and account issues are handled in an efficient and consistent manner. This area also manages relationships with retailers and resolution of customer complaints that cannot be resolved through other processes in THESL.

The Field Services staff responds to the first level of emergency response for power outages, wires down, etc., installs residential smart meters, checks service connections and performs underground plant locates.

Customer Services staff members are also engaged in a number of system development projects and activities. Those related to system fixes and other smaller improvements are included in the operating budget. Larger initiatives and those related to ensuring regulatory compliance are explained fully with their associated costs in Exhibit D1, in the capital spending narratives.

Smart Meter Program

Most of the costs associated with THESL's Smart Meter and Time-of-Use billing program are capital costs. However, Customer Services will incur additional Operating

and Maintenance costs to:

- Operate daily processes that collect and store Smart Meter data, and interface to the Independent Electricity System Operator ("IESO") Meter Data Management Repository("MDM/R");
- Update and maintain Time-of-Use web data presentation and other customer self-service features;
- Update and maintain the Interactive Voice Response system that provides an automated option to direct a customer's inquiry to the appropriately trained Customer Service Representative; and
- Implement Time-of-Use rates and process additional call volumes from affected customers.

Government Programs and Regulatory Changes

Customer Services will implement and integrate processes that support:

- The *Green Energy and Green Economy Act, 2009* ("GEA") and conservation and demand management;
- Smart Grid Strategy;
- Low-Income Energy Assistance Program ; and
- International Financial Reporting System implementation.

Individual Suite Metering

The installation of individual suite metering in condominium buildings will impact all areas of customer service, including:

- an increased number of customer concerns and billing queries to the Call Centre;
- increased postage costs, bill mailings, and remittance transactions;
- increased meter installation updates; and
- additional collections for outstanding payment.

New Customer Information System

THESL is currently engaged in a three-year collaborative effort with Enersource Hydro Mississauga ("EHM") to design and build a customer information system that will meet the needs of both EHM and THESL, and reduce future costs with respect to the programming of new regulatory requirements. The system, forecast to go live in 2010, will provide improved functionality and efficiencies that will improve customer service. This initiative is discussed in detail at Exhibit D1, Tab 10, Schedule 4.

Mobile Workforce Project

THESL has introduced a corporate initiative to implement a mobile data capture system. Customer Services' goal in this initiative will be to expand the existing Mobile Workforce System to take advantage of electronic dispatching, work management for field staff, emergency response and construction crew tracking. Other benefits will include GPS tracking of vehicles, leading to enhanced safety, improved troubleshooting (particularly for Smart Meter communication issues) and more efficient vehicle assignment. This initiative is discussed in detail at Exhibit D1, Tab 10, Schedule 7.

Develop and Implement a New Customer Relationship Strategy

THESL intends to continue developing a more pro-active approach to dealing with customers. A critical component of the strategy has been to identify how customers would like THESL to communicate with them, determine what information customers need and how they would like to receive or obtain it. As a result, THESL's web site is being customized to provide a more personal information portal and the ability to self-service. It will also utilize new ways to communicate with customers through email, phone calls and text messaging to cell phones. This initiative is discussed in detail at Exhibit D1, Tab 8, Schedule 8-5.

Develop and Implement a Flat Rate Water Heater Conversion Program

Prior to the 2002 Market Opening, utilities offered a flat rate energy charge for water heater services based on element and tank size. The electrical supply during peak periods to these water heaters was interrupted in order to reduce demand. Since market open in 2002, flat rate was discontinued as a billing option for new customers, but approximately 38,000 existing customers continued with this option. With Smart Meters and Time-of-Use rates, this rate structure would not motivate customers to change their consumption patterns. Therefore, a program was developed to convert the water heater services to metered services by the end of 2010. The cost of this conversion is the responsibility of the customer.

COSTS

Table 1: Customer Services Costs ($ millions)

	2008 Historical	2009 Bridge	2010 Test
Meter Services	3.7	3.6	3.2
Billing/Remittance/Meter Data Management	13.1	13.9	16.5
Collections	8.1	10.0	11.5
Customer Relationship Management	10.0	11.3	13.1
Field Services	5.5	6.8	7.0
Administration	0.53	0.51	0.54
Total Customer Services	41.0	46.2	51.9

The details of the year-over-year variances are presented in the schedules that follow covering specific Customer Services activities (Exhibit F1, Tab 7, Schedules 2 through 6). Below is a high level summary of increased costs from 2008 through 2010. The most significant increases are due to Smart Meter data management and the move to Time-of-Use billing in 2009.

Customer Services' year-end 2009 costs are projected to exceed 2008 by $5.2 million, primarily due to:

- $1.0 million in labour cost increases;
- $0.30 million for additional staff, attributed to Time-of-Use billing;
- $1.10 million additional expense for Call Centre resourcing for Time-of-Use billing implementation;
- $1.90 million in the bad debt account. (In 2008, the bad debt provision was re-established, increasing $1.90 million in the bad debt account. This required a decrease of $1.90 million in the bad debt provision. The actual bad debt is tracking to the estimated provision.);
- $0.25 million for underground plant locate costs due to an increase in customer demand;
- $0.55 million for an increase in project costs for the conversion of flat rate water heater customers to metered services; and
- $0.31 million for external vendor costs for suite metering and AMI.

The 2010 Customer Services budget represents an increase of $5.7 million over 2009, due to:

- Anticipated labour cost increases of $1.80 million, including five additional staff to support Time-of-Use implementation, GEA initiatives and web enhancements;
- $0.84 million for additional Call Centre resources required for Time-of Use billing and the Customer Care and Billing ("CC&B") conversion;
- $1.00 million for bad debt due to the increase in delinquent accounts as a result of the downturn in the economy;
- An increase of $0.80 million in communications costs for additional phone lines and communication circuits to retrieve Smart Meter data;
- $0.31 million for miscellaneous billing costs for additional customers with suite meters and low income monthly billing;

- $0.14 million for an expected increase to provisions for bad debt expenses related to non-electricity receivables;
- $0.40 million for labour returning from the CC&B capital project and enhancements;
- $0.30 million for overtime labour costs to support the conversion to the new CIS; and
- $0.10 million for underground plant locate costs due to an increase in customer demand.

CUSTOMER SERVICES

METER SERVICES

Introduction

Meter Services maintains, repairs and replaces THESL's revenue meters and wholesale metering installations. THESL conducts inspection and calibration of all revenue metering to uphold customer confidence in the fairness of their electricity bills. The wholesale metering installations allow THESL to confirm the validity of invoices from the Independent Electricity System Operator ("IESO"), and ensure customers are paying for only their fair share of the provincial electricity system costs.

By the end of 2010, all Residential and Small Commercial services, and approximately 80 percent of Large Commercial and Industrial services will have Smart Meters. This represents a transition for Meter Services, moving beyond a focus on the meters themselves towards metering data, supporting data collection technologies and maintaining service standards for consistent data collection.

Activities

Meter Services operates a meter shop that is certified under the *Electricity and Gas Inspection Act* to be a Measurement Canada accredited meter verifier. The key functions of the shop are to:

- Perform the sample and re-verification testing on in-service meters as required by Measurement Canada;
- Undertake cleaning, testing, calibration and resealing of removed meters before they are reused;
- Assess the accuracy of meters removed as a result of billing disputes; and
- Confirm the accuracy and performance of new meters purchased.

Each revenue meter must be tested and sealed according to Measurement Canada standards. Depending on the type of meter, the seal is valid for a specified number of years of use, currently mostly six or ten years, before it must be re-tested.

Prior to the Smart Meter program, the meter shop would annually test 10,000 meters for routine re-verification, and examine 3,200 meter changes for compliance testing. Compliance sample groups of 10,000 to 15,000 meters are formed from homogeneous lots (same meter type, electrical characteristics, manufacturer and seal year). Each year a percentage of the meters in each compliance sample group is randomly selected to be tested for accuracy as specified by Measurement Canada standards. When any of the sample groups fail to meet the specified requirements, all the meters in that sample group are replaced.

Due to the complete replacement of revenue meters required by the Smart Meter program, the routine sample and re-verification testing has been reduced, but will be ramped up as the Smart Meter replacements are completed.

Meter Services is also responsible for the field maintenance of the approximately 684,000 revenue meters owned by THESL. This includes changing out meters that require scheduled testing; replacement of broken or damaged meters; removal of meters from buildings scheduled to be demolished; installing meters at new or upgraded customer services; responding to meter remote communications problems within specified service standards; and installing specialized metering equipment to support customers' conservation and demand management projects. Meter Services also conducts inspections and tests in the event of unresolved concerns by customers about the validity of their electricity bills.

With the growing number of commercial and industrial Smart Meters, resolving communication failures to collector and individual meters is becoming a more frequent activity.

Most of this field work related to Residential and Small Commercial meters is being transferred to Field Services in 2009 and 2010. This will allow the meter trades staff in Meter Services to concentrate on the maintenance of revenue metering at Medium and Large Commercial and Industrial customers. Significant staff retirements are expected in these two work groups over the next few years, and the required work is being assigned where qualified resources are available.

Meter Services is also responsible for all the wholesale meter installations used to measure load at grid supply points to THESL's distribution system. Most of these wholesale meters are currently owned by HONI, but responsibility for their maintenance was transferred to THESL when the electricity market was opened in 2002. THESL is bound by the Ontario Wholesale Electricity Market Rules to ensure that these meters remain compliant with IESO technical requirements and performance standards. This will result in the 108 wholesale meter installations that existed in 2002 being increased to 223 as combined measurement points are separated. This has required significant work which is funded from the capital budget and is described in Exhibit D1, Tab 7, Schedule 1 and in Exhibit D1, Tab 8, Schedule 7. Ongoing maintenance, testing and resealing of the wholesale meters in accordance with both Measurement Canada and IESO requirements is performed by a combination of THESL staff and contract service providers.

Meter Services is also responsible for installing and maintaining individual suite metering in condominiums. The majority of this work is performed by an external contractor selected in an RFP process to install, commission and maintain these meters. When the

Smart Meter program is complete, THESL expects to train internal staff to continue this function.

Table 1: Meter Services Operating Costs ($ millions)

	2008 Historical	2009 Bridge	2010 Test
Metering Services	3.7	3.6	3.2

The decrease in operating costs from 2008 to 2009 of $0.12 million is due to:

- $0.20 million reduction for staff moved into the accounts receivable organization responsible for a new data management operation managing the Residential Time-of-Use data and the interval meter data for Commercial customers; and
- A contracted labour cost increase of $0.1 million.

The decrease from 2009 to 2010 of $0.41 million is due to:

- A greater portion of available meter trade resources in 2010 will be focused on the installation of new commercial and industrial smart meters. Following the completion of the smart meter program, operating costs are expected to rise as staff resumes their normal proportion of maintenance activities; and
- A contracted labour cost increase of $0.10 million.

CUSTOMER SERVICES

BILLING AND REMITTANCE

Introduction

Billing and Remittance is responsible for reading meters, managing and validating the meter data, preparing customer bills, and billing for other services provided to customers. Billing and Remittance also processes customer payments through various channels, ensuring payments balance to the General Ledger. Currently, most residential and small commercial (General Service <50kW) customers are billed bi-monthly. All other commercial and industrial customers (General Service > 50 kW) receive monthly bills. THESL complies with all applicable billing requirements in the Distribution System Code including the provision of a validating, estimating and editing ("VEE") process.

Activities

The role of this department is to:

- Capture and validate meter readings through manual and several automated meter reading systems and processes on a daily, monthly and bi-monthly basis;
- Ensure interval data is available to customers through THESL's web presentation system, to allow for proactive decisions to be made by customers on energy usage;
- Calculate and deliver accurate regular and final bills to THESL's customers and to Retailer customers;
- Ensure that appropriate payment channel options are available and that payments are appropriately applied to customer accounts; and
- Prepare invoices and handle collections for THESL's miscellaneous accounts receivable process. This includes invoices for customer-driven projects and claims for damage done to THESL assets.

Relationships with retailers operating within THESL's territory are also managed by this group. The manager and a coordinator oversee ongoing communications with retailers and ensure that new retailers complete the necessary legal agreements prior to set up. Ongoing customer issues and complaints related to retailer activities in THESL's service area are communicated to the retailers as appropriate. This group also manages the day-to-day operations including information transfers and billing transactions, paying the cost of the daily transactions through the HUB and handling the settlement with the Retailers and the Independent Electricity System Operator ("IESO").

To help control cost to other customers, this department actively researches potential losses from power theft or diversions and other situations that impact THESL's ability to invoice and collect from the customer. By doing so, THESL is able to minimize and control potential losses. As an example, from 2006 to 2008, 450 marijuana grow house operations were uncovered, the theft of power was halted for these operations, and steps were taken to collect the lost revenue where possible.

THESL currently has approximately 684,000 customers as of December 2008, of which about 589,000 are billed bi-monthly and 95,000 on a monthly basis. THESL issues 4.8 million bills per year. Of these, approximately 2,500 are large use customers with remotely interrogated meters that are read and billed on a monthly basis using the spot market energy price or retailer rates. As new real estate development and commercial development in Toronto remains reasonably strong despite the current economy, and with the conversion of multi-unit dwellings to suite metering models, the customer base is projected to climb to approximately 697,000 by the end of 2010.

THESL also had approximately 50,000 flat rate services as of December 2008. These flat rate services include telephone booths, bus shelters, cable television boosters and signs. At the time of this filing and included in this number are approximately 26,700 remaining

water heaters that are billed on a flat rate basis. There is currently a program to convert these water heaters to metered energy at the customer's expense. This program is due to be completed by the end of 2010.

In addition, Billing and Remittance processes approximately 140,000 customer moves per year, approximately one move for every five customers. Information is maintained on 147,000 customers who pay their bills using a pre-authorized payment plan and 41,000 customers who receive their bills on line using e-billing options. As a strategic initiative, THESL continues to educate customers on the flexible billing and payment options available to them. By working to ensure these options are easy to use THESL has seen an increasing adoption rate, thereby providing services which benefit our customers and helping to contain costs.

Meter Data Management

The introduction of Smart Meters has impacted the operation of Billing and Remittance. Accordingly, departmental processes are being reviewed and adjusted and will need to continue to be refined throughout this transition. In the first quarter of 2008, THESL began to phase in remote cumulative meter readings to bill those customers whose smart meters have been installed and updated in the Customer Information System ("CIS"). THESL now has over 400,000 customers who can view their hourly electricity consumption on the Web and have the capability of being billed on remotely read smart meter data. This move to an automated process has begun to reduce the incidence of error, and by extension, work required to correct errors, and has reduced the number of bills produced with estimated reads. In the event of a dispute, a reading can quickly be checked on-line by both customers and staff to validate a bill.

The technology and processes required to read Smart Meters on an hourly basis, store and verify the data, submit data to the IESO for validation, produce bills using Time-of-Use

pricing and display the detailed information to THESL's customers in a timely manner, are adding considerable complexity to the meter reading and billing process. They represent a dramatic change to the fundamental billing process, requiring a significant shift in the way this function operates, and a new mindset and culture change on the part of customers and staff. Due to the complexity of the new business model, THESL anticipates an overall required net increase in total labour resources despite the reduction in labour required for certain processes.

As the practice of remote meter reading has grown, some of the costs associated with manual meter reading have been reduced, but THESL has also experienced a transitional increase in costs associated with reading meters that are sporadically located. As of May 31, 2009, THESL is manually reading approximately 300,000 meters and electronically reading approximately 395,000 meters. Manual meter reading costs overall will be reduced from $2.78 million in 2008 to a projected $2.44 million in 2009 and $2.18 million in 2010. However, remote meter reading requires new communication facilities, and the associated costs for telephone lines and wireless communications are growing and at this stage of the transition more than offset any savings.

Low Income Program

An anticipated change for 2010 is the Low-Income Energy Assistance Program ("LEAP") currently being proposed. The administration of this program will impact labour resources in terms of identification and set-up of customers, possible changes to billing cycles, possible changes to frequency of billing, liaison with social agencies and overall maintenance, the extent of which will depend on the final design of the program.

Green Energy and Green Economy Act, 2009

Another anticipated change that will impact this department is the introduction of the *Green Energy and Green Economy Act, 2009* ("GEA"). This important initiative will

create additional complexity as THESL moves from a standardized billing process to a configurable and adaptable process to manage the customization and uniqueness of customer set-ups and bidirectional electricity metering. The billing function will require both a receivables and a payables component. To successfully provide appropriate levels of service to this new customer type, senior level clerical staff will be required for ongoing management of non-standard set-ups, billing and credit/refund calculations, customer issues or concerns, and liaison with Customer Account Representatives.

Customer Information System

The planned introduction of a new CIS in 2010 will result in significant initial and some ongoing impacts to the billing and remittance processes as new features are introduced and existing features function differently. Staff will need to be trained in both the process changes and the operating procedures for the new CIS. This will impact overall performance during the transition period.

Also, THESL staff working on the capital project to install the new CIS will be returning to their normal duties. Due to changes in accounting standards, staff time spent on supporting the new CIS will need to be charged to operating and maintenance costs once the new CIS is in service.

Internal Controls

The department works to ensure internal controls are in place for existing processes and are developed for new processes. These controls have been designed to ensure that the main business follows well-defined steps that are checked, audited and signed-off by management at various stages to ensure accuracy and integrity. All existing and new processes are reviewed annually to ensure that adequate controls are in place and the procedures in use are still valid.

Costs

Table 1: Billing/Remittance Operating Costs ($ millions)

	2008 Historical	2009 Bridge	2010 Test
Billing / Remittance	13.1	13.9	16.5

The operating costs for Billing and Remittance are predicted to increase by $0.88 million from 2008 to 2009, and include the following:

- Labour resource costs are higher by $0.26 million due to contract labour cost increases;
- Labour transfers from other parts of Customer Services of $0.25 million;
- Manual meter reading costs are expected to decline by $0.34 million in 2009 from 2008 actuals as we move to electronic reads;
- Bad Debt expenses for non-electricity miscellaneous receivables is expected to be within plan for 2009, but approximately $0.39 million higher than 2008;
- External vendor costs for suite metering reads and Advanced Metering Infrastructure ("AMI") technology increased by $0.31 million; and
- The balance of the anticipated increase in 2009 over 2008 is attributable to postage and bill printing increases, the cost of remittance processing, and increased transactions through the HUB.

The increase from 2009 to 2010 is projected to be $2.54 million, and includes the following:

- Labour costs are expected to increase $0.40 million due to a contracted increase;
- $0.54 million of transferred labour from other parts of Customer Services and two new positions to accommodate the additional complexity around Time-of-Use interval data capture and management, suite metering, and additional processes resulting from the GEA;

- Provisions for bad debt expenses related to non-electricity receivables is expected to increase $0.14 million;
- Costs for phone lines, wireless communications, external vendors and other technical costs for meter data collection increases by approximately $0.80 million as the number of customers with remotely read meters continues to climb;
- The budgets for bill printing, return envelopes, mailing, remittance activities, and additional Hub transactions increase by $0.31 million to cover the expected increase in the customer base due to natural growth and condominium conversions from bulk to individual metering, and the potential increase of Retailer customers due to Time-of-Use pricing;
- $0.20 million for cost of resources returning from the CIS project to normal duties; and
- CIS enhancements of $0.20 million for the LEAP and GEA.

LOADS, CUSTOMERS AND REVENUE

The purpose of this evidence is to present the Company's load, customer and distribution revenue forecast for the test year. The detailed load forecasts by rate class are shown at Exhibit K1, Tab 3, Schedules 1 to 3. Forecasts of customers by rate class are shown in Exhibit K, Tab 4, Schedules 1 to 2. Forecast of distribution revenues by rate class are shown at Exhibit K, Tab 6, Schedules 1 to 3.

Table 1 below provides a summary of the loads, revenues, and customer forecasts. The revenue forecast is calculated based on proposed distribution rates, excluding commodity, and excluding rate riders.

Table 1: Total Load, Revenues and Customers

Year	Total GWh	Total MVA	Total Distribution Revenue ($M)	Total Customers
2006 Actual	26,765	43,748	$441.2	679,249
2007 Actual	26,394	43,462	$438.7	681,062
2008 Actual	26,214	43,201	$482.4	685,282
2009 Bridge	26,056	43,454	$491.8	691,400
2010 Test	25,755	42,949	$540.5	697,702

Notes:

1. Total GWh are purchased GWh, and are weather normalized to Test Year heating and cooling assumptions.
2. Total kVA are weather normalized kVA
3. Distribution Revenue is weather normalized and does not include adjustment for Transformer allowance.
4. Total Customers are as of year-end and exclude streetlighting and unmetered load connections.

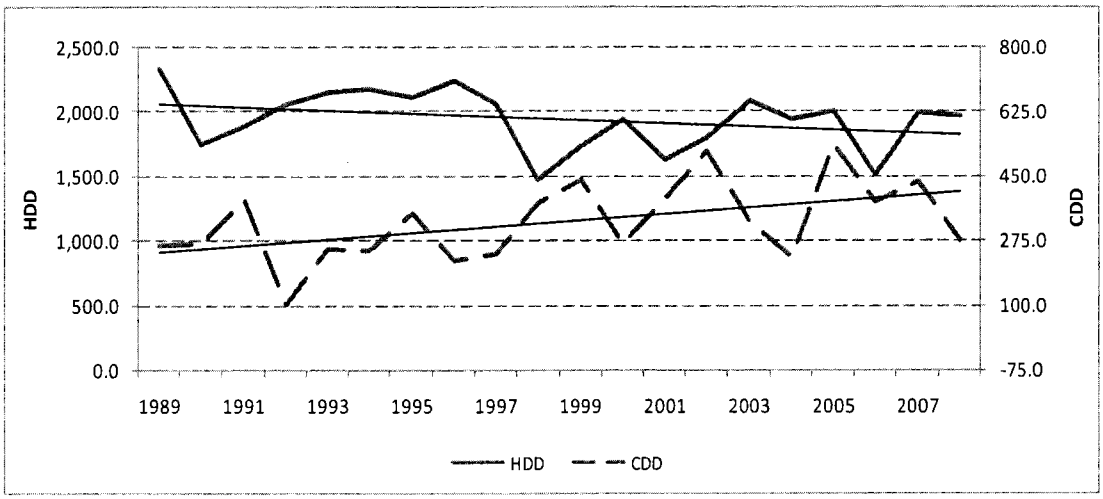

Figure 3: Historic CDD and HDD

Peak Demand Forecast

The forecast of peak demand by customer class, which is used to determine revenue for those customers billed on a demand basis, is established using historical relationships between energy and demand.

CDM Impact on kWh and kW Forecast

The load forecast as described above does not explicitly take into account any load impacts arising from CDM programs undertaken by THESL. However, the inclusion of the time trend variables does capture the impacts of conservation – both natural conservation and CDM program conservation. No additional adjustments for CDM are thus required.

Customer Forecast

Customer additions in the company's operating area have been fairly flat over recent history, with about 3,500 to 4,500 new customers (excluding Unmetered loads and streetlighting) added annually. The forecast of new customers is primarily based on extrapolation models for each rate class.

The forecast of customers for the residential sector in 2009 through 2010 includes an estimate for new individually-metered condominium suites, as well as the conversion of some condominiums from bulk-metered to individual suite-metering. The following table provides the detail on the number of new suite metered customers expected over the 2009/2010 period. These numbers are included in the total residential customer forecast.

Table 5: Individually-Metered Suites

Year	Individually-Metered Suites (cumulative)
2007 Actual	1,563
2008 Actual	2,705
2009	4,964
2010	8,564

The detailed forecast of customers by rate class is found in Exhibit K1, Tab 4, Schedule 1.

Toronto Hydro-Electric System Limited
EB-2009-0139
Exhibit C1, Tab 5, Schedule 1
ORIGINAL
(338 pages)

toronto hydro electric system

CONDITIONS OF SERVICE

REVISION #8

Effective Date: February 27, 2009

The latest revisions to the Conditions of Service are highlighted in red.
Comments to these revisions can be emailed to: ConditionsofService@torontohydro.com

Customers without e-mail access can fax inquiries to 416.542.2630, Attn: Jim Trgachef, or submit through regular mail to:
Standards & Policy Planning Department
Toronto Hydro-Electric System Limited
500 Commissioners Street
Toronto, Ontario
M4M 3N7

To contact Toronto Hydro call (416) 542-8000 or e-mail at: ConditionsofService@torontohydro.com

Section 2 – DISTRIBUTION ACTIVITIES (GENERAL)

- Maintain an unobstructed working space in front of equipment, free from, or protected against, the adverse effects of moving machinery, vibration, dust, moisture or fumes

Where Toronto Hydro deems self-contained meters to be in a hazardous location, the Customer shall provide a meter cabinet or protective housing.

Any compartments, cabinets, boxes, sockets, or other workspace provided for the installation of Toronto Hydro's metering equipment shall be for the exclusive use of Toronto Hydro. No equipment, other than that provided and installed by Toronto Hydro, may be installed in any part of the Toronto Hydro metering workspace.

2.3.7.1.1 Metering Requirements for Multi-Unit Sites and Condominium Corporations

In an effort to promote conservation Toronto Hydro will provide electronic or conventional smart suite metering for each unit of a new Multi-unit site, or a condominium at no direct charge to the Customer. If the Customer chooses to pursue an Alternative Bid for the installation of suite metering and uses services of a qualified contractor, the Customer is required to:

(i) select and hire a qualified contractor;
(ii) ensure all contestable work is done in accordance with Toronto Hydro's technical standards and specifications: and
(iii) assume full responsibility for the installation and warranty all aspects for a period of 2 years from date of commissioning.

Where the Customer transfers the metering facilities installed under the alternative bid option to Toronto Hydro and provided Toronto Hydro has inspected and approved the facilities installed, Toronto Hydro shall pay the Customer a transfer price. The transfer price shall be the lower of the cost to the Customer to install the metering facilities or Toronto Hydro's burden cost to install the metering facilities.

For existing condominium corporations that fall under the Condominium Act, 1998, and Ontario Regulation 442/07, the Condominium Corporation wishing to install smart suite metering systems, shall make arrangements with Toronto Hydro. In each case, the Customer will comply with the detailed technical requirements set forth at: http://www.torontohydro.com/electricsystem/business/suite_meters.html

Section 2 – DISTRIBUTION ACTIVITIES (GENERAL)

Installation and operation of a smart sub-metering system will require a licence from the Ontario Energy Board.

a) Individual Metering and House Metering Requirements for Multi-Unit Sites
Where individual units in a multi-unit site, or condominium, are to be metered individually, the building owner (or operator, or property manager, or condominium corporation) shall enter into a contract with Toronto Hydro for the supply of electrical energy for all common or shared services. Common or shared services typically include lighting of all common areas shared by the tenants, or units owners, or which supply common services such as heating, air conditioning, hot water heating, elevators, and common laundry facilities. In such cases, in addition to the individual meter for each unit, a separate house meter (or halls meter) will be required to measure the energy used for all common or shared services.

b) Requirements for Existing Multi-Unit Sites with no House Meter
Where units in an existing multi-unit site, or condominium, are metered individually and shared services are supplied through one or more unit meters (i.e. the existing multi-unit site is not equipped with a house meter or halls meter), the building owner shall enter into a contract with Toronto Hydro for the supply of electricity to such unit(s).

For better clarity, the house meter account(s) shall be in the multi-unit site, or condominium, owner's name, who shall also be responsible for the payment for all energy supplied through such meter(s).

2.3.7.1.2 Main Switch and Meter Mounting Devices

The Customer's main switch immediately preceding the meter shall be installed so that the top of the switch is 1.83 m or less from the finished floor and shall permit the sealing and padlocking of:

(a) the handle in the "open" position; and
(b) the cover or door in the closed position.

Meter mounting devices for use on Commercial/Industrial accounts shall be installed on the load side of the Customer's main switch and be located indoor.

The Customer is required to supply and install a Toronto Hydro approved meter socket for the use of Toronto Hydro's self-contained

Section 5 – TABLES

TABLE 1.2 Demarcation Points & Charges for Connection Assets and Disconnection

Rate/Customer Class	Ownership Demarcation Point	Standard Allowance (Basic Connection)	Basic Connection Fee (for Std. Allowance)	Variable Connection Fee	Additional Services charged to customer (as part of Var. Connections)	Service Disconnection Fee (Initiated by customer request)
CLASS 3-A General Service 50 kW - 999 kW						
Overhead - Single building Bulk Metered or Suite Metering (Not requiring Transformation Facilities on private property)	Top of Customer's service mast	equivalent credit to Class 1 Residential Overhead Single Service	See Table 2	Customer charged Actual costs for connection assets beyond standard allowance.	Additional or redesign due changes in customer initial proposal; electrical inspections more than standard allowance	Customer charged fixed, average costs associated with disconnection and/or removal of connection assets up to the demarcation point. See Table 2
Underground - Single Building Bulk Metered or Suite Metering (Not requiring Transformation Facilities on private property)	Line side of customer's Main disconnect switch	equivalent credit to Class 1 Residential Overhead Single Service	See Table 2	Customer charged Actual costs for connection assets beyond standard allowance, including cable chamber(s), UG conduits as required	Additional or redesign due changes in customer initial proposal; electrical inspections more than Std. Allowance and all civil inspections.	Customer charged actual costs associated with disconnection and/or removal of connection assets up to the demarcation point. See Table 2
Overhead - Single Building Bulk Metered or Suite Metering (Requiring Transformation Facilities on private property)	Line side of customer's Main disconnect switch (secondary UG) OR Top of customer's service mast (secondary OH)	equivalent credit to Class 1 Residential Overhead Single Service	See Table 2	Customer charged Actual costs for connection assets beyond standard allowance, including transformer(s), Tx. connections, associated switching equipment, transformer pole(s), cable chamber(s), UG conduits as applicable.	Additional or redesign due changes in customer initial proposal; electrical inspections more than Std. Allowance and all civil inspections and related feeder switching/scheduling	Customer charged actual costs associated with the disconnection and/or removal of connection assets including cables, transformers and related vault equipment up to the demarcation point and, related feeder switching and scheduling
Underground - Single Building Bulk Metered or Suite Metering (Requiring Transformation Facilities on private property)	Line side of customer's Main disconnect switch or customer's bus	equivalent credit to Class 1 Residential Overhead Single Service	See Table 2	Customer charged Actual costs for connection assets beyond standard allowance, including transformer(s), Tx. connections, associated switching equipment, transformer pads, transformer vaults, cable chambers,cable pull rooms, UG conduits and cabling and road crossing (as applicable)	Additional or redesign due changes in customer initial proposal; electrical inspections more than Std. Allowance and all civil inspections and related feeder switching/scheduling	Customer charged actual costs associated with the disconnection and/or removal of connection assets including cables, transformers and related vault equipment up to the demarcation point and related feeder switching and scheduling

Section 5 – TABLES

TABLE 1.3 Demarcation Points & Charges for Connection Assets and Disconnection

Rate/Customer Class	Ownership Demarcation Point	Standard Allowance (Basic Connection)	Basic Connection Fee (for Std. Allowance)	Variable Connection Fee	Additional Services charged to customer (as part of Var. Connections)	Service Disconnection Fee (Initiated by customer request)
CLASS 3-B **General Service 50 kW - 999 kW**						
Underground (Multi-units or Townhouse Complex with Transformation Facilities on private property other than supplied from primary distribution systems built along private streets)	(Bulk meter) First point of connection past transformers on private property as applicable, i.e. a) Tx. Secondary spade b) cable chamber c) tap box d) meter center	equivalent credit to Class 1 Residential Overhead Single Service	See Table 2	Customer charged Actual costs for connection assets beyond standard allowance, including transformer(s), associated switching equipment, transformer pads, transformer vaults, cable chambers, connections in cable chamber(s), tap boxes excess UG conduit & cabling.	Additional or redesign due to changes in customer initial proposal; electrical inspections more than Std. Allowance and all civil inspections and related feeder switching/scheduling	Customer charged actual costs associated with the disconnection and/or removal of connection assets including cables, transformers and related vault equipment up to the demarcation point and related feeder switching and scheduling See Table 2
	(Townhouse individual meter) line side of individual meter base	equivalent credit to Class 1 Residential Overhead Single Service applied to each meter	Recovered through Distributor's rates	Customer charged Actual costs for connection assets beyond standard allowance.		Recovered through Distributor's Tariffs or rates.
Underground (Multi-units or Townhouse Complex with NO Transformation Facilities on private property or supplied from primary distribution system built along private streets)	(Bulk meter) First point of connection past Distributor's system onto private private as applicable I.e. a) cable chamber b) tap box c) meter center	equivalent credit to Class 1 Residential Overhead Single Service	See Table 2	Customer charged Actual costs for connection assets beyond standard allowance, including cable chamber(s), excess UG conduit and cabling.	Additional or redesign due to changes in customer initial proposal; electrical inspections more than Std. Allowance and all civil inspections.	Customer charged actual costs associated with the disconnection and/or removal of connection assets up to the demarcation point See Table 2
	(Townhouse individual meter) line side of individual meter base	equivalent credit to Class 1 Residential Overhead Single Service applied to each meter	Recovered through Distributor's rates	Customer charged Actual costs for connection assets beyond standard allowance.		Recovered through Distributor's Tariffs or rates.
CLASS 3-C **Residential Subdivision** (development with more than 5 lots)	Line side of customer's meter base (UG) Top of Customer's service mast (OH)	equivalent credit to Class 1 Residential Overhead Single Service	See Table 2	blended costs net of basic allowance credit		Recovered through Distributor's Tariffs or rates.
CLASS 4 & 5 **General Service 1000kW and Up**						
Underground Single/Multiple Building Bulk Metered or Suite Metering (Requiring Transformation Facilities on private property)	Line side of Customer's main bus	equivalent credit to Class 1 Residential Overhead Single Service	See Table 2	Customer charged Actual costs for connection assets beyond standard allowance, including transformer(s), Tx. connections, associated switching equipment, transformer pads, transformer vaults, cable chambers, cable pull rooms, UG conduits, excess cabling and street crossings	Additional or redesign due to changes in customer initial proposal; electrical inspections more than Std. Allowance and all civil inspections and related feeder switching/scheduling	Customer charged actual costs associated with the disconnection and/or removal of connection assets including cables, transformers and related vault equipment up to the demarcation point and related feeder switching and scheduling See Table 2
Underground Single/Multiple Building Bulk Metered or Suite Metering (Customer owned Sub-Station) (Requiring Transformation Facilities on private property) *Note: Individual Suite Metering will negate the Transformer Allowance Discount*	Pot head Terminations at line side of Customer's High Voltage Switchgear	equivalent credit to Class 1 Residential Overhead Single Service	See Table 2	Customer charged Actual costs for connection assets beyond standard allowance, including cable chamber(s), cable pullroom, excess UG conduit and cabling and street crossing	Additional or redesign due changes in customer initial proposal; electrical & Swgr inspections more than Std. Allowance; all civil inspection and related feeder switching/ scheduling; additional Hi-pot, protection & control relays, wiring and relay settings associated with pilot wire prot. or other extra reliability systems	Customer charged actual costs associated with the disconnection and/or removal of connection assets including related feeder switching and scheduling See Table 2

Residential

This classification refers to an account where the electricity is used exclusively in a separately 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. Separately metered dwellings within a town house complex or apartment building also qualify as residential customers. Bulk metered residential buildings with up to six units also qualify as residential customers

General Service Less Than 50 kW

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

General Service - 50 to 999,000 kW

This classification refers to a non-residential account whose monthly average peak demand is equal to or greater than 50 kW but less than 1,000 kW, or is forecast to be equal to or greater than 50 kW but less than 1,000 kW and with an interval meter. This rate also applies to bulk metered residential apartment buildings or the house service of a residential apartment building with more than 6 units.

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 1,000 kW but less than 5,000 kW, or is forecast to be equal to or greater than 1,000 kW but less than 5,000 kW. This rate also applies to bulk metered residential apartment buildings or the house service of a residential apartment building with more than 6 units.

2010 COST ALLOCATION INFORMATION FILING

Toronto Hydro-Electric System Limited

Aug 14 2009

Sheet I7.1 Meter Capital Worksheet - First Run

		Residential			GS <50			GS>50<999 NON RIMS		
		1	2	3	1	2	3	1	2	3
		Number of	Weighted	Weighted	Number of	Weighted	Weighted	Number of	Weighted	Weighted
Allocation Percentage Weighted Factor				70.24%			10%			13%
Cost Relative to Residential Average Cost				1.00			1.29			11.84
Total		614,841	108,432,627	176	65,747	14,911,949	227	9,457	19,748,816	2,088
Meter Types	Cost per Meter (Installed)									
Single Phase 200 Amp - Urban	50	17,532	876604		14,328	716383.7			0	
Network Meter (Costs to be updated)	150	-	0		12,823	1923450			0	
Three-phase - No demand	210	-	0		0	0			0	
Smart Meters	225	7,500	1687500		0	0			0	
Demand without IT (usually three-phase)	500	-	0		2000	1000000		69	34685.86387	
Demand with IT	2,100		0		1,000	2,100,000		9,388	19,714,130	
Demand with IT and Interval Capability - Secondary	2,300		0			0			0	
Demand with IT and Interval Capability - Primary	10,000		0			0			0	
Demand with IT and Interval Capability -Special (WMP)	40,000		0			0			0	
LDC Specific 1	158.75	558,534	88667272.5		26,596	4222115			0	
LDC Specific 2	550	31,275	17201250		9,000	4950000			0	
LDC Specific 3	550		0			0			0	

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2010 COST ALLOCATION INFORM
Toronto Hydro-Electric Syst

Aug 14 2009
Sheet I7.1 Meter Capital Wo

		GS>50<999 RIMS			GS >50-Intermediate			Large Use >5MW		
		1	2	3	1	2	3	1	2	3
		Number of	Weighted	Weighted	Number of	Weighted	Weighted	Number of	Weighted	Weighted
Allocation Percentage Weighted Factor				4%			3%			0%
Cost Relative to Residential Average Cost				13.04			47.53			56.70
Total		2,819	6,482,974	2,300	517	4,332,748	8,382	47	470,000	10,000
Meter Types	**Cost per Meter (Installed)**									
Single Phase 200 Amp - Urban	50		0			0			0	
Network Meter (Costs to be updated)	150		0			0			0	
Three-phase - No demand	210		0			0			0	
Smart Meters	225		0			0			0	
Demand without IT (usually three-phase)	500		0			0			0	
Demand with IT	2,100	-	-			0			0	
Demand with IT and Interval Capability - Secondary	2,300	2,819	6482973.684		109	249780			0	
Demand with IT and Interval Capability - Primary	10,000	-	0		408	4082968.01		47	470000	
Demand with IT and Interval Capability -Special (WMP)	40,000		0			0			0	
LDC Specific 1	158.75		0			0			0	
LDC Specific 2	550		0			0			0	
LDC Specific 3	550		0			0			0	

2010 COST ALLOCATION INFORM
Toronto Hydro-Electric Syst

Aug 14 2009
Sheet I7.1 Meter Capital Wo

		Street Light			Unmetered Scattered Load			TOTAL		
		1	2	3	1	2	3	1	2	3
		Number of	Weighted	Weighted	Number of	Weighted	Weighted	Number of	Weighted	Weighted
Allocation Percentage Weighted Factor				0%			0%			100%
Cost Relative to Residential Average Cost				-			-			1.26
Total		-	-	-	-	-	-	693,427	154,379,113	223
Meter Types	**Cost per Meter (Installed)**									
Single Phase 200 Amp - Urban	50		0			0		31,860	1592987.7	
Network Meter (Costs to be updated)	150		0			0		12,823	1923450	
Three-phase - No demand	210		0			0		0	0	
Smart Meters	225		0			0		7,500	1687500	
Demand without IT (usually three-phase)	500		0			0		2,069	1034685.864	
Demand with IT	2,100		0			0		10,388	21814129.9	
Demand with IT and Interval Capability - Secondary	2,300		0			0		2,927	6732753.684	
Demand with IT and Interval Capability - Primary	10,000		0			0		455	4552968.01	
Demand with IT and Interval Capability -Special (WMP)	40,000		0			0		0	0	
LDC Specific 1	158.75		0			0		585,130	92889387.5	
LDC Specific 2	550		0			0		40,275	22151250	
LDC Specific 3	550		0			0		0	0	

TAB 4

INTERROGATORIES OF SMART SUB-METERING WORKING GROUP

INTERROGATORY 1:

Reference(s): Exhibit K1, Table 1, Schedule 1, page 10, Table 5

THESL includes the actual individually-metered suite numbers for 2007 and 2008, and forecasts for 2009 and 2010 for new individually-metered condominium suites, and condominiums converted from bulk metered to individually-suite metered units (Table 5).

a) Please provide a breakdown between the number of new versus converted condominium suite meters installed in each of the years identified in Table 5.

b) Does THESL offer suite metering to commercial properties? If so, does Table 5 include any meters installed in commercial applications, and if so, how many in each year?

c) Of the 4,964 individually-metered suites (cumulative) forecast for the end of 2009, what percentage or number are forecast to be revenue generating at the end of 2010? Does THESL adjust its revenue forecasts to reflect the fact that some of the forecast metered suites will not be revenue producing in 2010?

d) If the answer to (d) above is No, are there individually-metered suites which are not included in any of the individual year and cumulative numbers in Table 5because they are not forecast to be in service in any of the subject years?

e) When does THESL count a newly constructed (i.e., not a conversion from a bulk meter) individually metered suite as a customer? Does this occur when the meter is installed, upon registration of the condominium's declaration, upon occupancy or at some other time?

INTERROGATORIES OF SMART SUB-METERING WORKING GROUP

RESPONSE:

a)

Individually-Metered Suites (cumulative)

Year	New Buildings	Conversions - Bulk to Individual
2007 Actual	1409	154
2008 Actual	1995	710
2009	3373	1591
2010	5554	3010

b) THESL does offer suite metering to commercial properties. Table 5 includes 25 meters that are installed at retail suite meter locations.

c) All of the 4,964 individually-metered suites forecast for the end of 2009 are expected to be generating revenue before year-end 2010. THESL bases its revenue forecasts on the number of customers expected to be consuming electricity, not the number of new meters expected to be installed.

d) Yes. Each year shown in Table 5 includes some meters that were installed in the previous year but not placed into service during the year of installation.

e) THESL typically reports a suite metered customer as a new customer at the time of the first reading of the meter, which occurs shortly after occupancy and the creation of an accompanying new THESL account.

INTERROGATORIES OF SMART SUB-METERING WORKING GROUP

INTERROGATORY 2:

Reference(s): **Exhibit D1, Tab 8, Schedule 7, page 3**
Exhibit K1, Tab 1, Schedule 1, page 10, Table 5

THESL states, at D1/T8/S7, p. 3, that in consideration of anticipated requests for THESL to provide both new and existing condominium buildings with individual suite metering, the forecasted capital spend is$2.4 million in 2010, for a total of 5,400 individual-suite meter installations.

a) Please reconcile this with Table 5, which contemplates an increase in individually-metered suites on a cumulative basis of only 3,600, in 2010.

b) What is the number of suite meters which THESL has used for 2010 for the purposes of developing its revenue forecasts?

RESPONSE:

a) THESL anticipates purchasing 5,400 suite meter units in 2010. THESL anticipates that most will be installed in 2010. THESL forecasts that 3,600 of the meters will be installed on revenue producing accounts, with the balance to be phased in by early 2011.

b) THESL has used 3,600 additional suite meter accounts for revenue forecasting purposes in 2010.

INTERROGATORIES OF SMART SUB-METERING WORKING GROUP

INTERROGATORY 3:

Reference(s): Exhibit D1, Tab 3, Schedule 1, page 3

THESL forecasts an increase in distribution expenses of $21 million in 2009, in comparison to 2008 Historical. The pre-filed evidence states: "The increase is primarily due to higher operations costs due to an expanding workforce and an increase in external vendor costs related to suite metering."

Please provide:

a) The actual external vendor costs relating to the Suite Metering Program for the years 2008 and 2009 (to date), the forecast external vendor cost in 2009 and 2010, broken down between payments on account of OM&A and payments on account of capital (e.g. costs to purchase and install suite meters)

b) In each of the above years, please advise of the actual number of suite meters installed or forecast (whether operational or not) for which payment was made to the external vendor.

c) Please confirm that the external vendor used for the suite metering program is Trilliant.

d) Please advise how the customers of Trilliant, a licensed sub-metering company, have been treated? Have these customers been transferred to THESL and if so, are they part of the suite metering customer count at Exhibit K1, Tab 1, S1, p. 10, Table 5? How many customers were transferred and what are financial details of the transfer?

RESPONSE:

a) External vendor costs paid from 2008 to 2010 for the purchase and installation of suite meters are as follows:

INTERROGATORIES OF SMART SUB-METERING WORKING GROUP

	External Capital Costs ($ millions)
Paid in 2008	2.1
Paid in 2009	1.4
Forecast for 2009	0.5
Forecast for 2010	2.4

b) In 2008, payment was made for 4,505 suite meters. To date in 2009, payment has been made or approved for 4,905 suite meters.

c) Trilliant is the external vendor used for suite meter installations.

d) THESL has no knowledge of Trilliant's relationship with its present or former customers. No Trilliant customers have been transferred to THESL. Three condominiums that were formerly sub-metered by Trilliant are now individually-metered by THESL, after going through our normal contracting process. In each case, THESL considers the condominium to be a conversion from bulk to individual metering, with each unit owner established as a new THESL customer.

b

INTERROGATORIES OF SMART SUB-METERING WORKING GROUP

INTERROGATORY 4:

Reference(s): Exhibit F1, Tab 7, Schedule 1, page 3
Exhibit D1, Tab 8, Schedule 3-2, page 3

THESL indicates that the installation of individual suite metering in condominium buildings will impact all areas of customer service including: (a) an increased number of customer concerns and billing queries to the call centre; (b) increased postage costs, bill mailings and remittance transactions;(c) increased meter installation updates; and, (d) additional collections for outstanding payment.

a) Has Toronto Hydro undertaken a study to determine the difference in cost, on a fully allocated basis, to serve a condominium suite under the suite metering program versus the cost to serve other residential customers? Please provide a copy of any study, analysis or calculations, including any assumptions and data relied upon?
b) What is the average cost to serve residential customers on a fully allocated basis?
c) Please produce any analysis or documentation which may indicate that the cost to serve an individually-suite metered customer is more or less than the fully allocated average O&M cost to serve residential rate class 1 customers.
d) Please produce any analysis or documentation which may indicate that the cost to serve an individually-suite metered customer is more or less than the average O&M cost to serve rate class 1 customers of $178.21 (2009 Bridge) and $190.30 (2010 Test).

RESPONSE:

a) THESL has not undertaken any such study.

INTERROGATORIES OF SMART SUB-METERING WORKING GROUP

b) Based on data contained in the 2010 cost allocation model filed at Exhibit L1, Tab 2, Schedule 10, the average cost to serve residential customers is $418.

c) THESL does not have any such analysis or documentation.

d) THESL does not have any such analysis or documentation.

INTERROGATORIES OF SMART SUB-METERING WORKING GROUP

INTERROGATORY 5:

Reference(s): **Exhibit D1, Tab 8, Schedule 7, page 3**
Exhibit K1, Tab 1, Schedule 1, page 10, Table 5
Exhibit F1, Tab 7, Schedule 1, page 6
Exhibit F1, Tab 7, Schedule 2, pages 3, 4

THESL forecasts individually-suite metering 5,400 individual units (new and converted buildings), yet at Table 5, it calculates an addition of only 3,600 units in 2010. THESL states that the majority of the work relating to the installation, commissioning and maintenance of condominium suite meters is performed by an external contractor.

a) What is the actual number of metered units used by THESL for the purposes of developing its OM&A forecasts for 2010?
b) What is the total amount in the OM&A forecast for 2010 that relates to individual suite metering?
c) What are the fully allocated internal costs (excluding payments to third party vendors) that THESL forecasts it will incur in 2010 for suite metering?
d) Please calculate the fully allocated internal costs (excluding forecast payments to third party vendors) that THESL forecasts it will incur in 2010 for suite metering. Please confirm that all costs are calculated on a fully allocated basis and that such costs include: (a) software licence and maintenance costs; (b) network and communications management system O&M; (c) technical and non-technical training; (d) third party vendor negotiations, communications and management costs; (e) advertising, promotional, government relations costs; (f) regulatory costs; (g) all other implementation and ongoing operational costs; and (f) depreciation.
e) What are the rates of depreciation that THESL uses in respect of the Suite Metering Program?

INTERROGATORIES OF SMART SUB-METERING WORKING GROUP

RESPONSE:

a) The THESL 2010 OM&A forecast is based on 8,564 units.

b) The 2010 OM&A forecast cost is $0.3 million.

c) THESL has not yet done a fully-allocated cost study. The requested information is not available, and can't be calculated in the available time.

d) THESL has not yet done a fully allocated cost study. The requested information is not available, and can't be calculated in the available time.

e) THESL has used a depreciation rate of 6.7% for the 2008 actual, 2009 forecast and 2010 budget calculations.

10

INTERROGATORIES OF SMART SUB-METERING WORKING GROUP

INTERROGATORY 6:

Reference(s): none

Please produce a copy of all brochures, postcards, posters, and/or other information available in hard copy or on-line (including copies of all Web page screen prints) provided or available to developers, building owners, or condominium corporations that promote, explain or deal with the suite metering program.

RESPONSE:

The following documents are provided as Appendix A to this Schedule:

- Suite Call Centre Info Form Nov 08.pdf
- Suite Meter Case Study 1.pdf
- Suite Meter Case Study 2.pdf
- Suite Meter Conservation Tips V2.1.pdf
- Suite Meter EMS Pocket Folder BIP Nov 2008.pdf
- Suite Meter Info Sheet tl10[1]_1.pdf
- Suite Meter Letter.pdf
- Suite Meter Postcard Nov 08.pdf
- Suite Meter Welcome Kit_tl4_11x17 Nov 08.pdf
- Suite Meters _ Toronto Hydro Electric System - Web Page 1.pdf
- Suite Meters _ Toronto Hydro Electric System - Web Page 2.pdf

Questions? Please contact Maria D'orazio
Accounts Receivable **416-542-3100 ext. 50037**

toronto hydro electric system

5800 Yonge Street
Toronto ON M2M 3T3
tel 416-542-8000
fax 416-542-3429
www.torontohydro.com

New Customer Information

PLEASE FILL OUT THIS INFORMATION IN FULL:

NAME _____

ADDRESS _____

_____ SUITE # _____

OCCUPANCY DATE _____

RESIDENCE TELEPHONE # |__|__|__|-|__|__|__|-|__|__|__|__|

BUSINESS TELEPHONE # |__|__|__|-|__|__|__|-|__|__|__|__|

EMPLOYER _____

DRIVER'S LICENSE # _____

DATE OF BIRTH (DD/MM/YY) _____

PREVIOUS ADDRESS _____

_____

CUSTOMER SIGNATURE _____

Property Owner/Landlord Information

CONTACT NAME _____

MAILING ADDRESS _____

_____

CONTACT TELEPHONE # |__|__|__|-|__|__|__|-|__|__|__|__|

CONTACT FAX # |__|__|__|-|__|__|__|-|__|__|__|__|

New Customer Deposit

A deposit of 2.5 months is required for all new customers. The deposit can be waived if one of the following conditions apply:

1. You sign up for our convenient pre-authorized payment plan.
2. Proof provided of 12 months of good payment history with any electric or gas utility in Canada.
3. Proof provided of satisfactory credit check (visit the Web for free credit checks).

Thank you,
Toronto Hydro-Electric System Limited

Your Privacy

Please see reverse for details on how we use your personal information.
For further details, please refer to our privacy policy at
www.torontohydro.com/electricsystem/privacypolicy

Privacy Policy

The *Personal Information Protection and Electronic Documents Act* came into effect January 1, 2004 for all provincially-regulated businesses. This new federal law now applies to all personal information collected, used or disclosed by all private-sector companies in the course of doing business with their customers.

We recognize that your information is private. We have developed a privacy policy for Toronto Hydro-Electric System Limited ("Toronto Hydro"), in compliance with the new law, that governs our collection, use, disclosure and protection of your personal information. You can access our privacy policy at www.torontohydro.com/electricsystem/privacypolicy or you can call us at 416-542-8000 to request a copy of this policy. We are committed to protecting your privacy and would like to take this opportunity to inform you about the personal information we collect, how it is used, and how we protect your confidentiality and your rights with respect to this information.

What is this information used for?

- To identify or contact customers, respond to customer inquiries and otherwise maintain business relations with customers.
- To deliver and maintain electricity service.
- To bill and collect payment.
- To establish credit-worthiness.
- To sign up for pre-authorized payment.
- For legal, regulatory and electricity market operation requirements.
- To help prevent or investigate fraud, theft of power or other breaches of the law.
- To provide customers with information about Toronto Hydro services, the electricity industry and rates.
- To request customer participation in surveys or contests.
- To notify customers about events or causes sponsored by Toronto Hydro or its parent company, Toronto Hydro Corporation.

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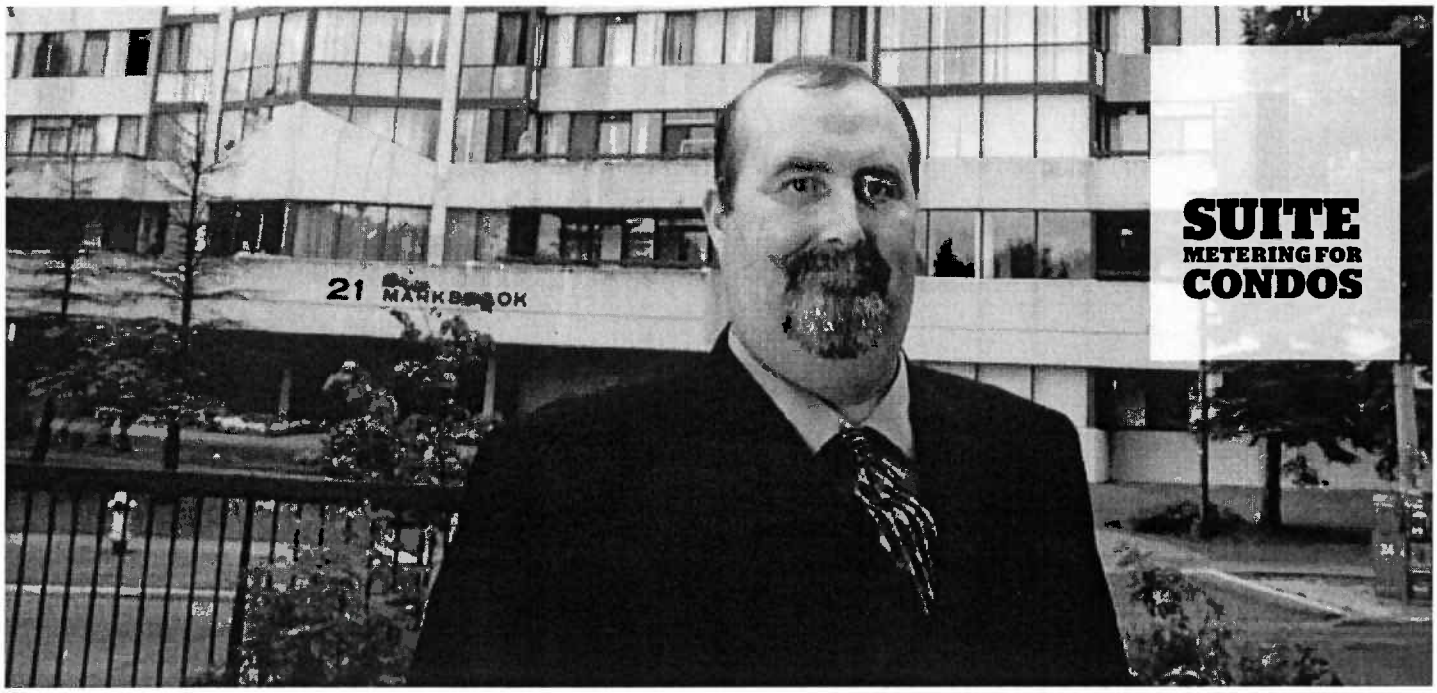

"The owners already knew they wanted to convert It was an easy process."

Don Sawyer,
Canlight Hall Management Inc.

The board sees the environmental benefits of suite metering

Overall electricity consumption has been reduced

Canlight Hall Management is implementing a number of energy reduction programs in their buildings. When they introduced the idea of suite metering to the board at 21 Markbrook Lane, they found it was already under consideration. Some owners admitted that previously they had no incentive to use less electricity. After the conversion, there is keen interest in reducing use and finding ways to save.

Owners have changed habits

Don Sawyer of Canlight Hall Management mentioned that suite metering was brought up at the recent Annual General Meeting of the board. "Some owners had specific tips they shared. They've changed how they're using electricity, even unplugging appliances, computers and televisions when they go out for the day. It's been a big change in perception here."

For more information visit
www.torontohydro.com/suitemeters

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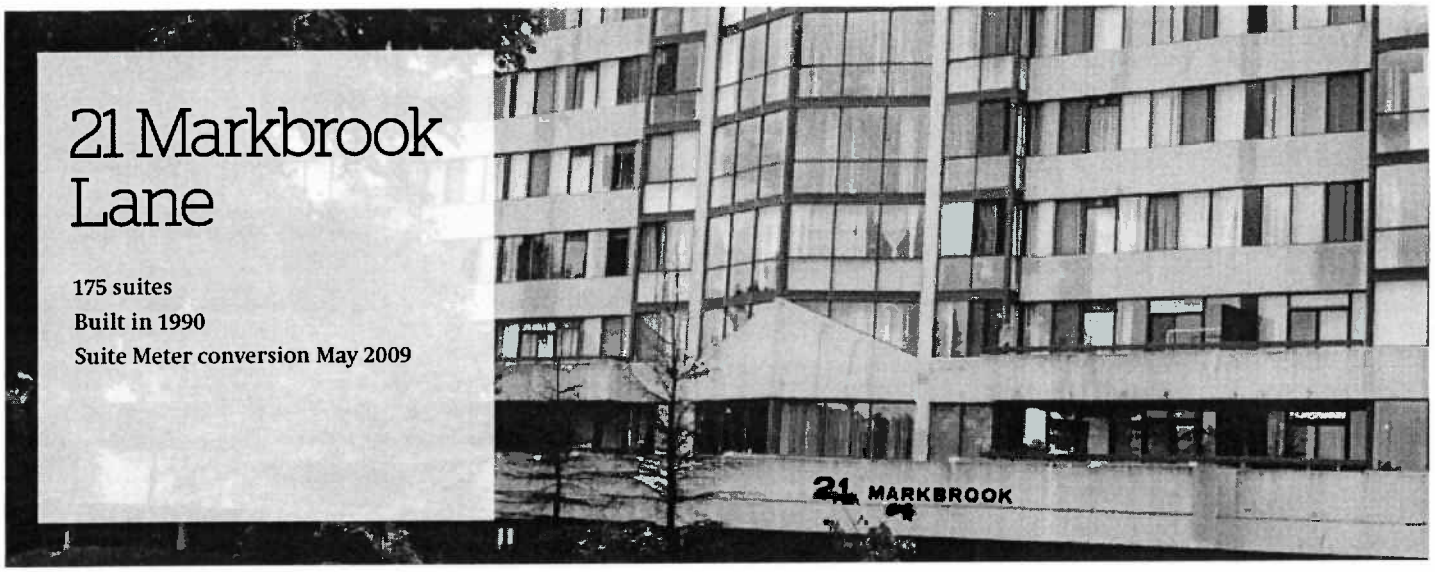

21 Markbrook Lane

175 suites
Built in 1990
Suite Meter conversion May 2009

Working with Toronto Hydro was easy

The actual conversion process went seamlessly. Once the agreement was in place, Toronto Hydro took over and installed the meters and ensured that the owners had all the information they needed about their Toronto Hydro bill and where they could access further information on the website. When asked about that aspect of the project, Sawyer simply says, "Things went fine. It has been a very positive experience."

Canlight Hall is managing costs in common areas

In conjunction with the conversion to suite metering, Canlight Hall Management is reducing electricity usage in the common areas of the buildings. This will allow them to manage the common condominium fees. Programs underway include complete energy audits of their buildings, lighting retrofits for all common areas, new controllers on garage fans that could cut energy use by 50% and upgrades to the chiller.

It's simply good management

Sawyer and his team are working with all appropriate programs to make their buildings as energy efficient as possible. "We start with the audits and we look at everything – electricity, gas and water. Working with Toronto Hydro and the suite meter program is a key part of that. Today, that's just responsible and part of being a leading property management company."

SUITE METERING FOR CONDOS

For more information visit
www.torontohydro.com/suitemeters

Or contact Leo Guidolin today at:
Tel: 416.542.3100 ext. 50327
Email: lguidolin@torontohydro.com

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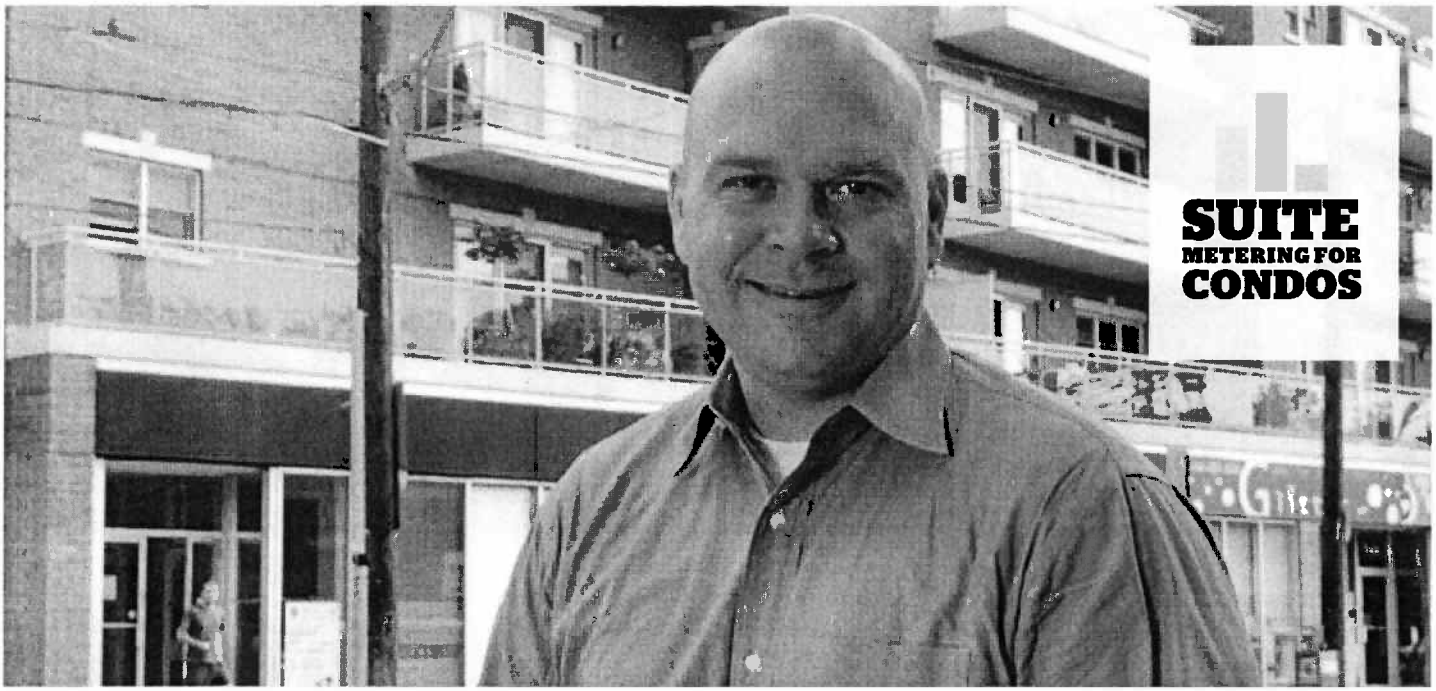

"This condo board sees both the cost and environmental benefits."

Michael Kudrac,
Cape Property Management Ltd.

Suite metering is fair for all condo owners

Flawless conversion to suite metering

When Cape Property Management took over One Lawlor Avenue, the conversion to suite metering was high on the list of energy efficiency improvements for the building. Michael Kudrac had worked on a similar conversion and understood the process, its benefits and the ease of working with Toronto Hydro.

"The project was flawless," said Kudrac. "Toronto Hydro delivered above and beyond our expectations."

Toronto Hydro hosted an information session for owners

Anytime there are changes to people's homes, there are bound to be questions. Toronto Hydro representatives worked with the condominium board to organize an information session for all owners to attend.

"That really helped," said Kudrac. "The Toronto Hydro rep was able to answer everyone's questions. He also left materials for owners to read."

For more information visit
www.torontohydro.com/suitemeters

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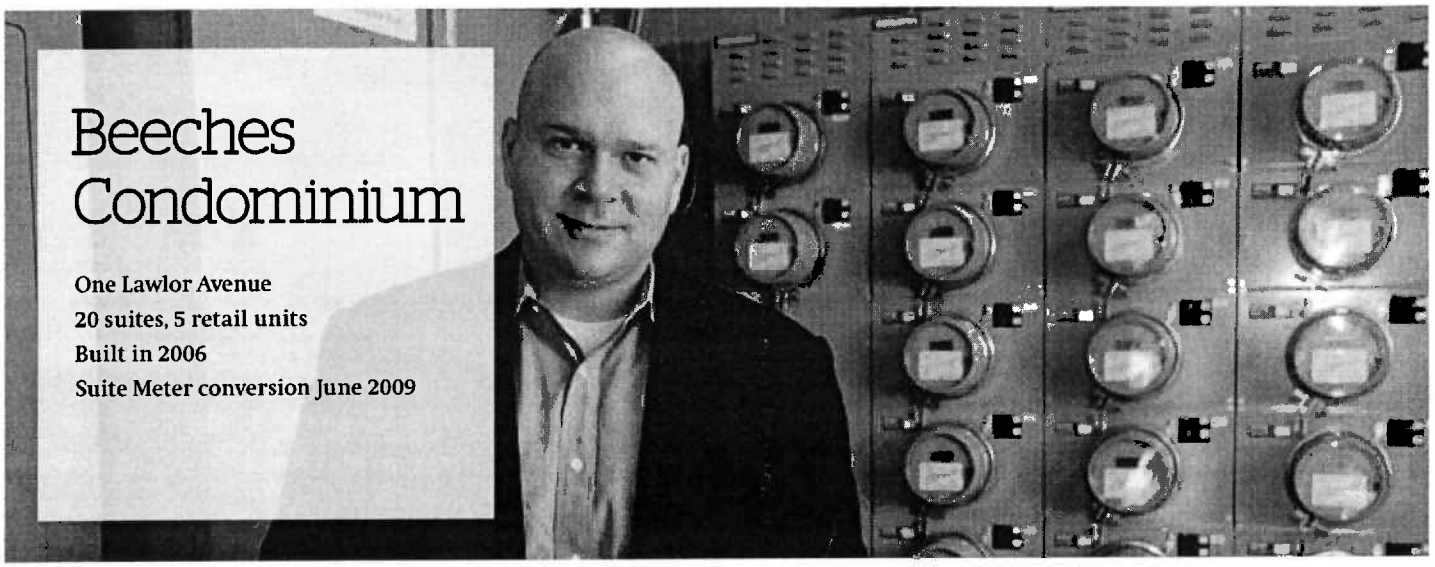

Beeches Condominium

One Lawlor Avenue
20 suites, 5 retail units
Built in 2006
Suite Meter conversion June 2009

The conversion was completed in one day

Once the condominium board approved the conversion, a date was set, and the work was completed within one day. Now every owner is a Toronto Hydro customer and pays for the electricity they use in their suites. The common fees have been appropriately reduced. Owners still pay their share for electricity used in hallways, garages, elevators and other common requirements.

Suite metering is fair to all owners

Kudrac points out two characteristics of this group of owners. "They were already environmentally aware and conscious of how they used electricity. But of course, they had no real way of measuring, so they like the fact that they can see what they use. Also, a percentage of our owners are snowbirds – they spend a few months down south each year, so when they're away, they're not consuming electricity. Suite metering is especially important to them."

Easy for owners and property management companies

Toronto Hydro's expertise and responsiveness made an impression on Kudrac. "Toronto Hydro's customer service is great. They answer my calls, they show up when they say they will, they do a great job and they clean up after themselves. I'll continue to work with them on other buildings. Makes life easy for me."

SUITE METERING FOR CONDOS

For more information visit
www.torontohydro.com/suitemeters

Or contact Leo Guidolin today at:
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Email: lguidolin@torontohydro.com

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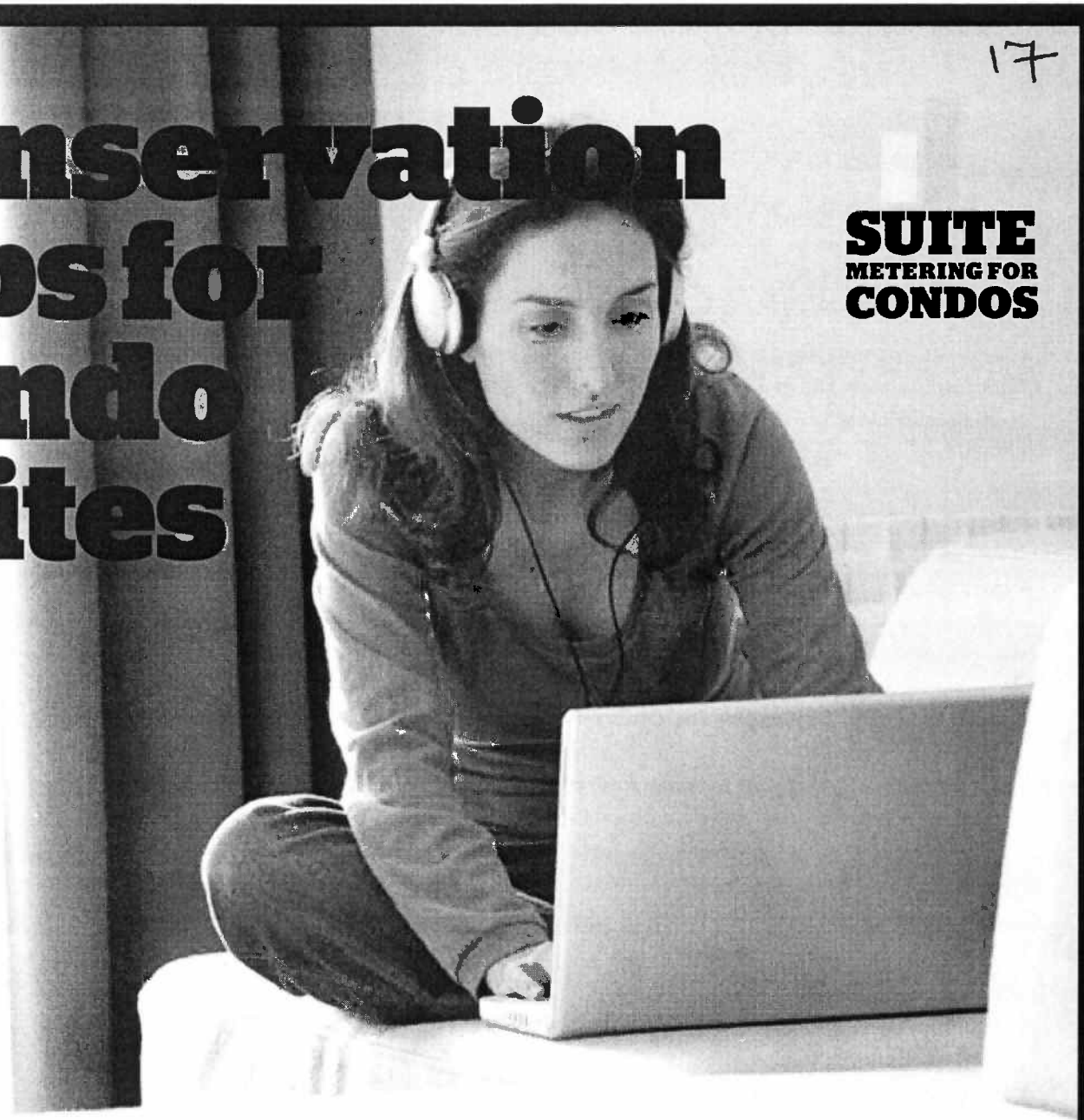
17

Conservation Tips for Condo Suites

SUITE METERING FOR CONDOS



There are many ways to manage your electricity costs. See the tips on the back of this sheet and find more at www.torontohydro.com.

toronto hydro electric system

SUITE METERING FOR CONDOS

Heating/Cooling

- Set your air conditioner at 25°C when you're home and 28°C when away. You can even turn it off if you're not going to be home.
- Set your heat/thermostat at 20°C when you're at home and 18°C overnight.
- Use drapes/blinds in the summer to keep the heat out. And close them when you're going to be out of the suite.
- Arrange your furniture and drapes so they don't block or obstruct heat vents, radiators and baseboard heaters.
- Try to avoid opening windows when the outdoor temperature is uncomfortably cooler than inside.
- Open a window or use ceiling fan. Often air conditioning isn't really needed.
- Rather than adjusting your thermostat when you're cold, consider making yourself more comfortable by putting on another layer of clothing. Sweaters, jackets and flannel shirts can be removed when you're active and put back on when you're at rest.

Appliances/Lighting

- Fight phantom load – unplug electronics that draw power even when they're turned off.
- An uncrowded fridge works more efficiently than a crowded one. However, freezers work best when they are two thirds full.
- Turn off the monitor if you're not going to use your computer for more than 20 minutes.
- Use power bars with on/off switches, automatic shutoff, or integrated timers.
- Replace your high-use incandescent light bulbs with ENERGY STAR®-qualified compact fluorescent light bulbs (CFLs) wherever it makes sense. Available in a wide variety of styles to match your lighting needs, they use up to 75 per cent less electricity and last up to 10 times longer.
- Install dimmer switches and use dimmable CFLs.

Laundry

- Wash laundry in cold water whenever possible.
- Always select your washing machine's cold water rinse – rinsing in hot or warm water won't make your laundry any cleaner.
- Wait until you have a full load before doing laundry.
- Although they are more expensive, front-loading washing machines use one-half to one-third less energy than traditional models because they use less water.
- Remove and clean the washer's agitator once a month. Clean the filters of both water hose inlets on the back of the machine once a year.

Cooking

- Thaw frozen foods before cooking; they will require less cooking time and less energy.
- Unless you're baking, preheating the oven isn't necessary especially for roasts or casseroles. When appropriate, use the broiler. It saves energy and requires no pre-heating
- Use a toaster oven or microwave instead of the oven, whenever possible.
- Use pots with tight-fitting lids. Your food will cook faster.
- Use the oven light to check on your food instead of opening the door.
- Use an automatic shut-off kettle.
- Always set your dishwasher to air dry and only run it when full.
- Allow hot food to cool before placing it in your refrigerator.
- Vacuum your refrigerator coils to keep them efficient.
- Use the oven's self-cleaning option after cooking. You can take advantage of the existing heat.
- Rinse dishes in a tub of clean water. It uses more energy to run them under hot running water.

For more information visit us at www.torontohydro.com/suitemeters

Some of these tips have been provided by the Ontario Power Authority.
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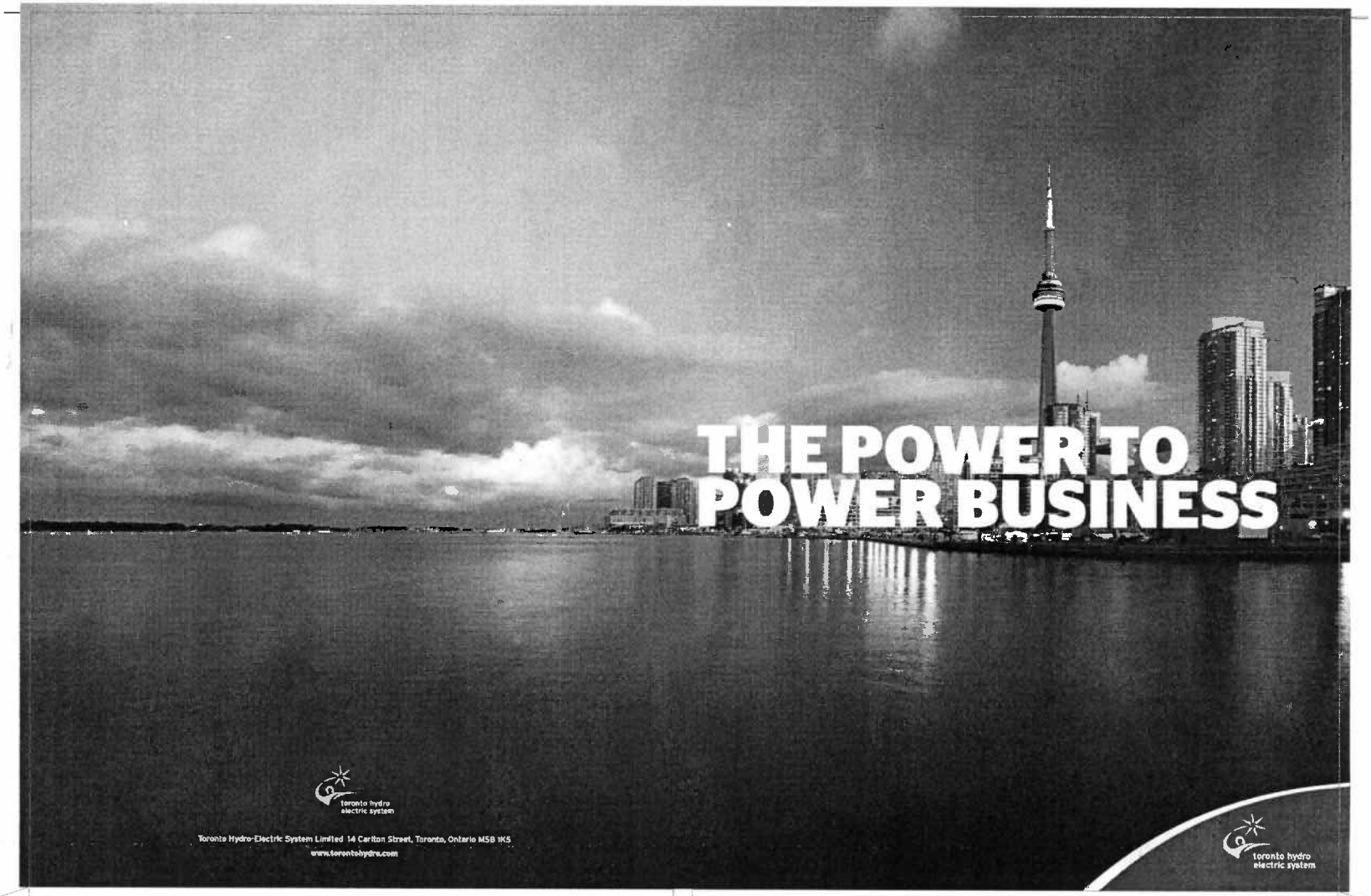

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ENERGY MANAGEMENT SUITE

THE POWER TO POWER BUSINESS

20

SUITE METERING FOR CONDOS

Benefits of Suite Metering

Toronto Hydro-Electric System's suite metering program provides many benefits.

It helps make units more marketable because it reduces maintenance fees. This is important to many first-time buyers who are looking for every possible saving.

Also, the Toronto Hydro name is a badge of reassurance. Customers know our company, recognize our trucks on the street and are confident that we are the best choice for the delivery of reliable electricity.

It's also socially responsible. People who pay for their own electricity consumption usually use less, and today, that's important. Suite metering is a fair way to allocate costs. Those who consume more, pay more.

toronto hydro electric system

The right choice for today and tomorrow

Toronto Hydro Delivers

Today everyone is seeing the advantages of individual suite metering for condominium units. For condo owners, it means they can better control their energy costs. All charges on the bill are regulated by the Ontario Energy Board and suite owners can work with the retailer of their choice. As direct customers of Toronto Hydro, they'll be able to take advantage of popular energy conservation programs, many of which include incentives.

Suite-metered units work with Time-of-Use pricing

All suite-metered units have "smart meters" that work with Time-of-Use pricing. When introduced, this pricing structure will offer further incentive to owners to control their electricity use, and to time-shift use whenever possible. Doing laundry and using the dishwasher in the evenings or on weekends are two obvious examples of taking advantage of Time-of-Use pricing.

Toronto Hydro will take care of everything

We offer a complete service for the supply and installation of individual suite meters. From assessment, system design and project management to post-installation end user customer seminars and full customer service support, Toronto Hydro has developed a suite metering solution to meet everyone's needs.

It's reassuring to work with the leader

- The process is seamless. We take care of all coordination and follow-up with unit owners.
- We are the established experts in the field.
- We are regulated by the Ontario Energy Board.
- Condo owners will receive the same level of service as our other 687,000 customers.
- We have been in business for nearly 100 years. We're owned by the City of Toronto.

22

The Toronto Hydro bill reassures customers

SUITE METERING FOR CONDOS

The Toronto Hydro-Electric System bill is a good example of the quality of communications we deliver to our customers.

YOUR ELECTRICITY CHARGES
It's easy to see the various components that go into the charges for electricity.

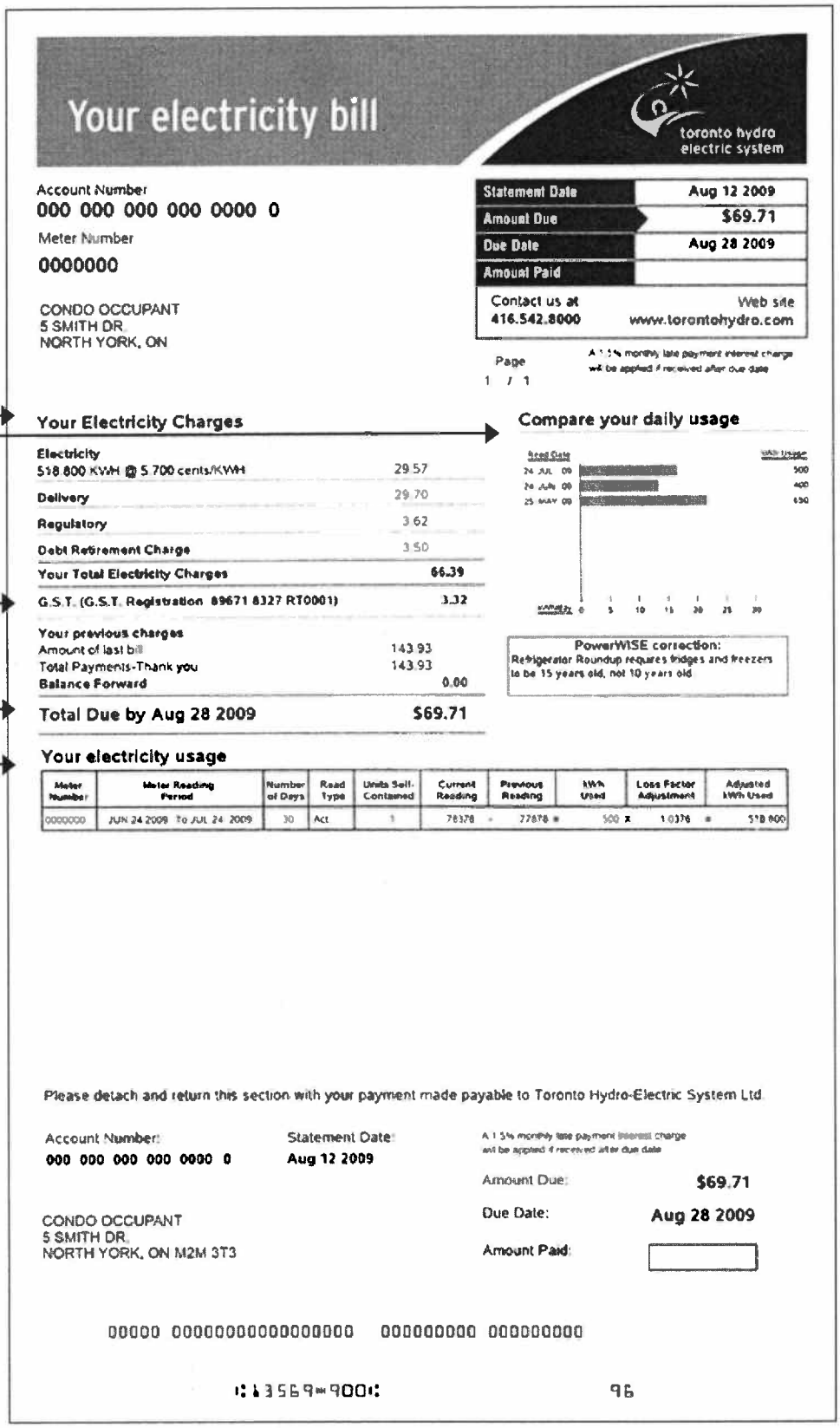
HISTORICAL INFORMATION DRIVES CONSERVATION
This helps explain bill amounts and encourages wise use.

OTHER CHARGES
This is where other services and taxes are shown, followed by previous charges and payments.

TOTAL AND DUE DATE
Quick, concise communication on one line.

YOUR ELECTRICITY USAGE - ALL THE DETAILS
For those who want to know the details, this easy-to-understand chart provides the calculations.

CLEAR LAYOUT, RESEARCHED FOR ACCEPTANCE
We've taken great care with the communications on the bill. Research shows that customers can understand it at a glance.



Your electricity bill

toronto hydro electric system

Account Number
000 000 000 000 0000 0

Meter Number
0000000

CONDO OCCUPANT
5 SMITH DR
NORTH YORK, ON

Statement Date	Aug 12 2009
Amount Due	$69.71
Due Date	Aug 28 2009
Amount Paid	

Contact us at 416.542.8000 | Web site www.torontohydro.com

Page 1 / 1

A 1.5% monthly late payment interest charge will be applied if received after due date

Your Electricity Charges

Electricity 518.800 KWH @ 5.700 cents/KWH	29.57
Delivery	29.70
Regulatory	3.62
Debt Retirement Charge	3.50
Your Total Electricity Charges	66.39
G.S.T. (G.S.T. Registration 89671 8327 RT0001)	3.32

Your previous charges	
Amount of last bill	143.93
Total Payments-Thank you	143.93
Balance Forward	0.00
Total Due by Aug 28 2009	$69.71

Compare your daily usage

PowerWISE correction:
Refrigerator Roundup requires fridges and freezers to be 15 years old, not 10 years old

Your electricity usage

Meter Number	Meter Reading Period	Number of Days	Read Type	Units Self-Contained	Current Reading		Previous Reading		kWh Used		Loss Factor Adjustment		Adjusted kWh Used
0000000	JUN 24 2009 To JUL 24 2009	30	Act	1	78378	-	77878	=	500	x	1.0376	=	518.800

Please detach and return this section with your payment made payable to Toronto Hydro-Electric System Ltd.

Account Number:
000 000 000 000 0000 0

Statement Date:
Aug 12 2009

A 1.5% monthly late payment interest charge will be applied if received after due date

Amount Due: $69.71

Due Date: Aug 28 2009

Amount Paid:

CONDO OCCUPANT
5 SMITH DR.
NORTH YORK, ON M2M 3T3

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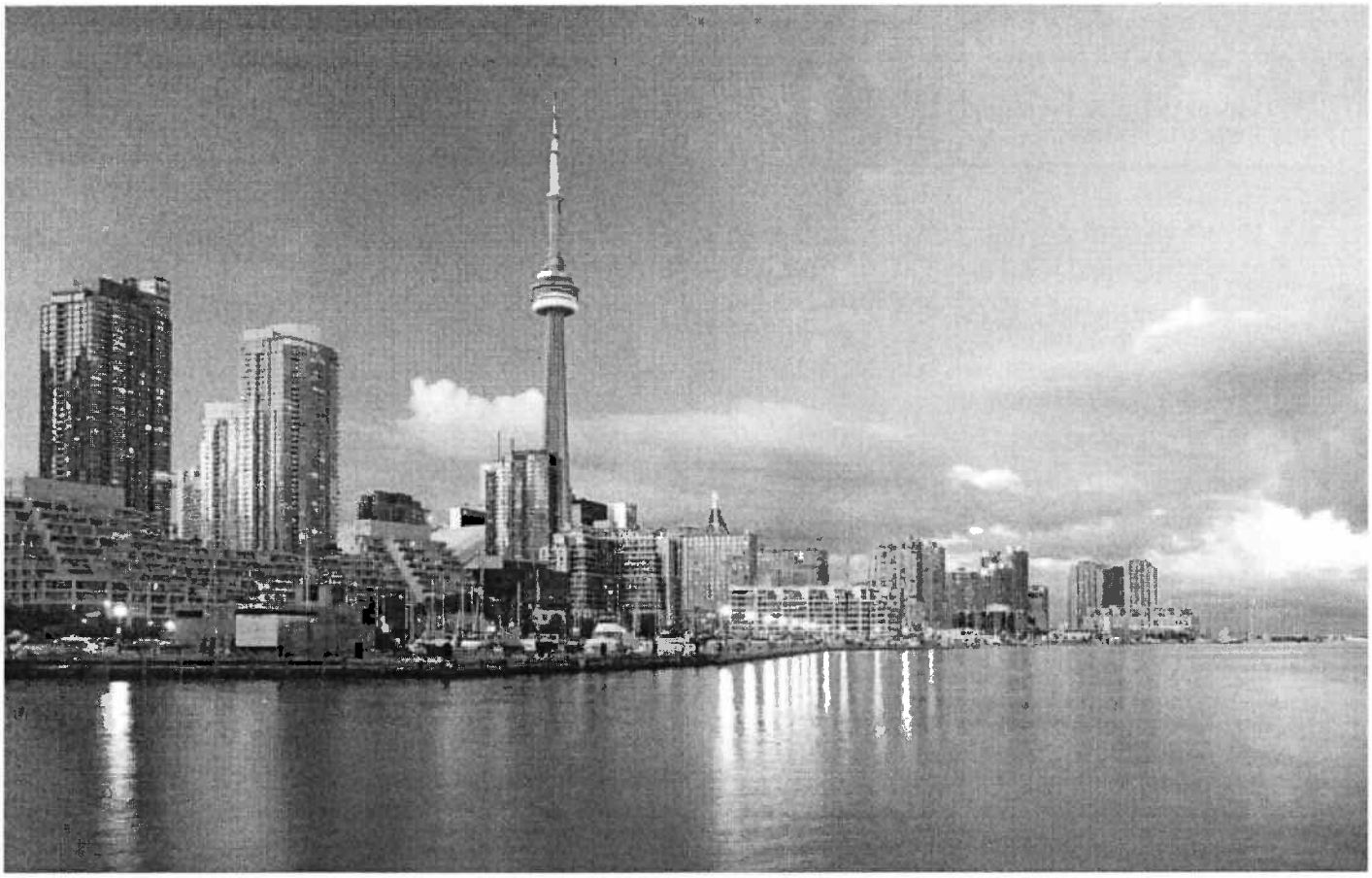

Your Toronto Hydro advantage

Toronto Hydro-Electric System will:

- Provide and arrange for installation of one meter point per condominium suite, at **no cost** to the suite owner, condominium corporation or developer.
- Establish each condominium unit owner as a Toronto Hydro-Electric System customer.
- Perform all account management activities, including meter reading, billing, meter maintenance, collection, and reconnect/disconnect activities.

Condominium boards and builders will:

- Agree on behalf of each suite/unit owner that Toronto Hydro-Electric System will be the meter service provider.
- Permit meter installation at service connection points recommended by Toronto Hydro-Electric System or its subcontractors.
- Be responsible for any on-site upgrades required to accommodate the new metering equipment.
- Arrange access for Toronto Hydro-Electric System personnel to carry out any required maintenance or service activities.

For more information visit us at
www.torontohydro.com/suitemeters

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FSC Mixed Sources
Product group from well-managed forests, controlled sources and recycled wood or fiber
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toronto hydro electric system

24

toronto hydro
electric system

SUITE METERING FOR CONDOS

March 09, 2009

Dear Sir or Madam,

Today, many condominiums across the city are choosing to individually meter their suites. Property Managers and condominium boards can choose between sub-metering or individual metering. What's the difference?

A licensed sub-metering company typically installs sub-meters behind the bulk meter. Then they bill and collect from unit owners on behalf of the condominium corporation which they return to the corporation. But there are three issues to keep in mind:

1. The condominium corporation is still responsible for paying the bill based on the bulk meter. If any individual owners are delinquent in their payments, it is up to the condominium to make good.
2. Secondly, the administrative fees charged by the sub-metering services are un-regulated.
3. Lastly, in most cases, the condominium corporation will own the metering system and will be responsible for re-certifying it every six years.

Toronto Hydro's approach is different

We supply and install our Smart Meter system at no cost* to the condominium or suite owners. Suite owners become customers of Toronto Hydro and are billed directly by Toronto Hydro. We own and maintain the system forever. All of our charges are regulated by the Ontario Energy Board.

Our experience shows that many condominium corporations prefer this arrangement because it is simpler and places a lesser obligation on the condominium corporation.

Suite meters are smart meters

All new suite meters will work with Time-of-Use pricing. When introduced, this pricing structure offers further incentive to owners to control their electricity use.

No cost to suite owner or condominium corporation

When a building converts to suite metering, Toronto Hydro-Electric System will:

- Provide and arrange for installation of one meter point per condominium unit, at no cost to the suite owner or condominium corporation
- Establish each customer as a Toronto Hydro-Electric System customer, responsible for their own bill
- Perform all account management activities including meter reading, billing and meter maintenance

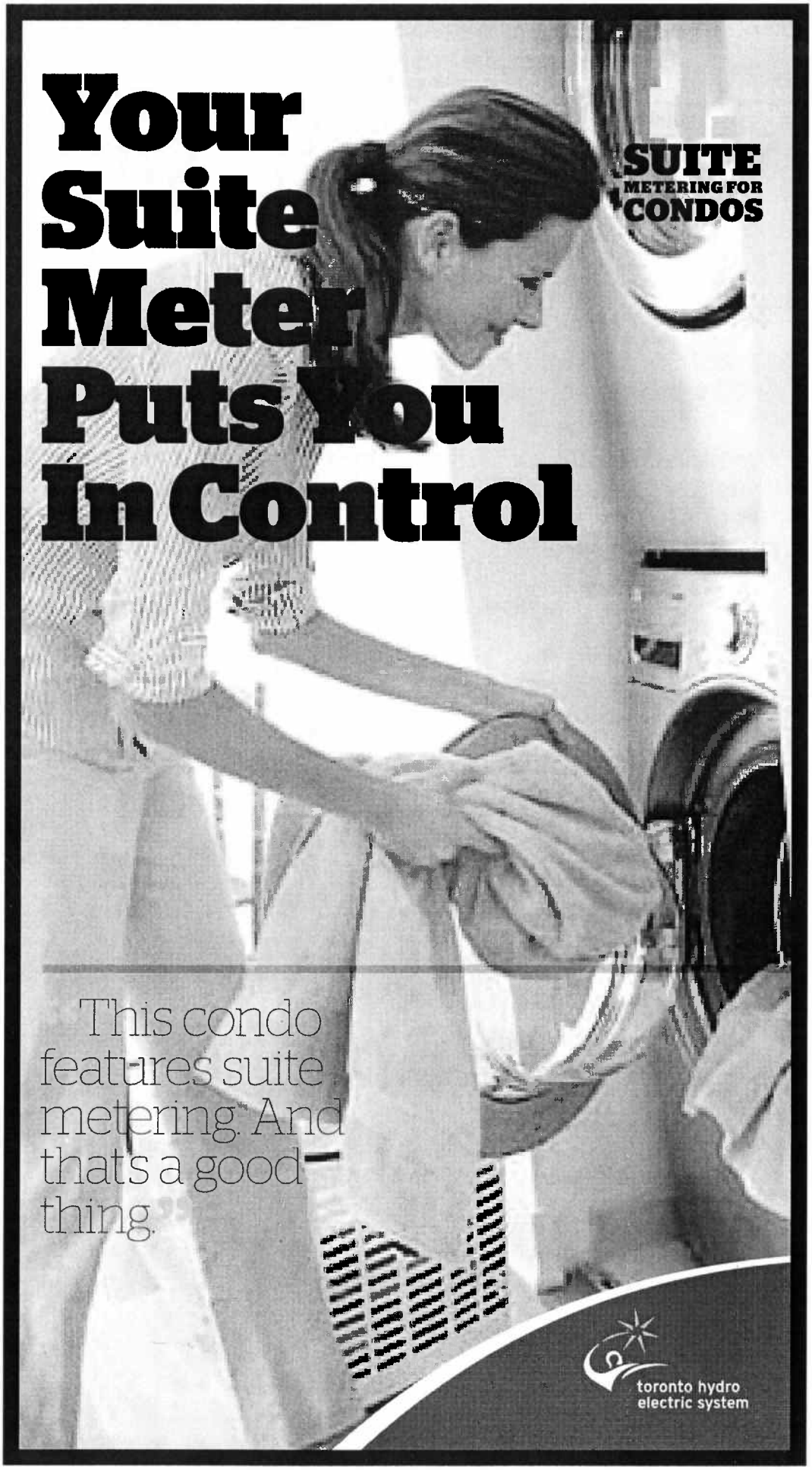
Learn more about the benefits of suite metering at **www.torontohydro.com/suitemeters**. To book an appointment, or for more information, please contact me directly.

Sincerely,

Leo Guidolin

Leo Guidolin, CET, CEM, CDSM
Suite Metering Co-ordinator
Tel: 416-542-3100 ext. 50327
Email: **lguidolin@torontohydro.com**

*Pending a site review.


Your Suite Meter Puts You In Control
SUITE METERING FOR CONDOS
This condo features suite metering. And that's a good thing.
toronto hydro electric system

2b

YOUR
LOGO
HERE

SUITE
METERING FOR
CONDOS

The right choice for individual control

This condominium features individual suite metering for electricity. That means you can control your electricity costs by managing your usage. That's much better than having to pay a share of the building's total electricity use where you could be paying more than you consume.

Your meter is a smart meter

Here's more good news – all suite meters are based on smart metering technology and are programmed to accommodate Time-of-Use billing, when introduced. Time-of-Use rates can help you control how much you pay for electricity.

For more information visit us at
www.torontohydro.com/suitemeters

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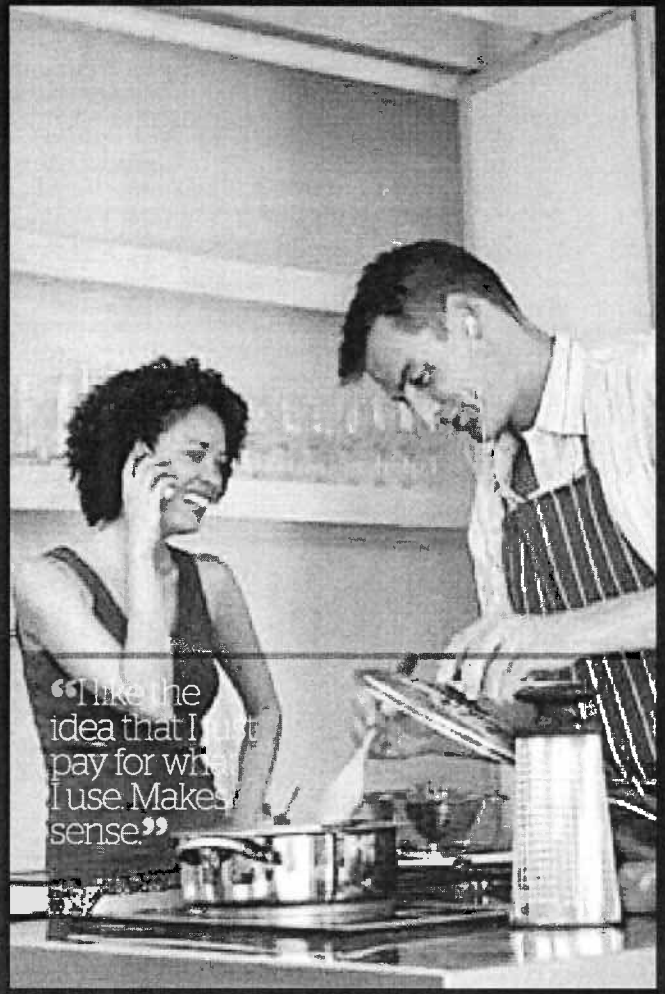
electric system



A few electricity conservation ideas from Toronto Hydro-Electric System

- Typically you use nearly 50% of your electricity for heating and cooling. So in the summer, try to keep your thermostat at 25° Celsius. In the winter aim for 22° Celsius.*
- Energy-efficient appliances help you save, too. Consider how you use them to save electricity.
- Use compact fluorescent bulbs wherever possible. They're much more efficient than the old incandescent bulbs.
- Turn off lights and equipment such as computers, TVs and stereos when they're not being used. If you go away for more than a day, consider unplugging your TV, computer and any other equipment. They all use electricity to remain in stand-by mode, even when they're not on.

*Source: "Heating and Cooling your Home: A Conservation Guide," Government of Ontario, 2004.

Get more electricity conservation tips at www.torontohydro.com/suitemeters

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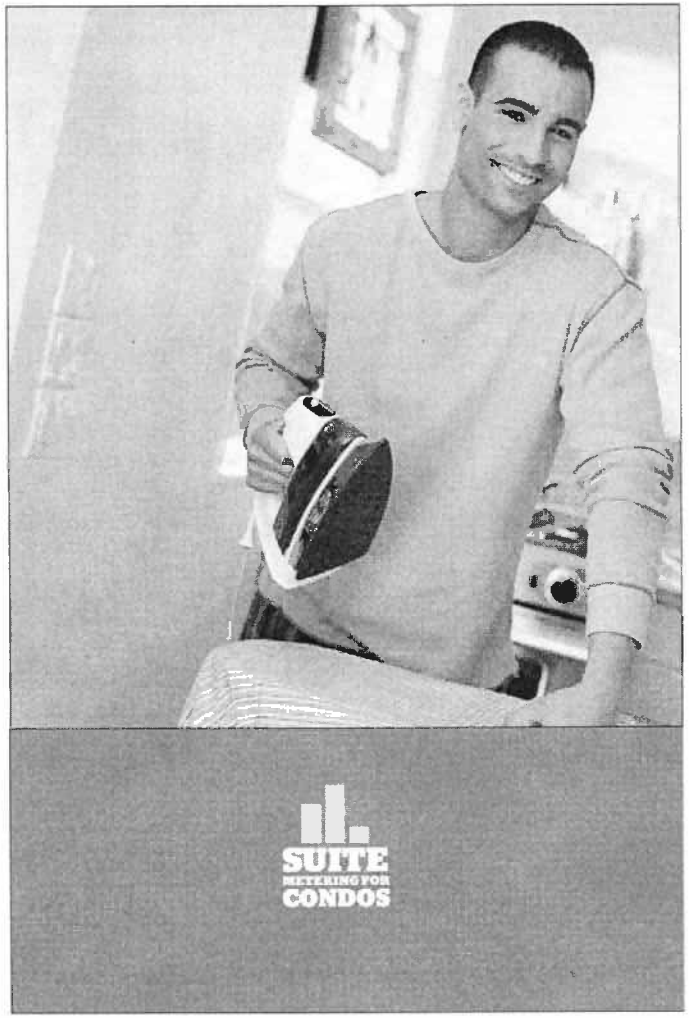
toronto hydro electric system

Your Suite Meter Puts You In Control

SUITE METERING FOR CONDOS

toronto hydro electric system

"Your new home has suite metering. And that's a good thing."



"Off-peak use helps the environment. I like that."

Suite metering gives you control of your electricity costs

Your condominium has an individual suite meter for the electricity that you use. That means you will be a customer of Toronto Hydro-Electric System and you will get a regular bill from us for the electricity used in your suite. You can select the retailer of your choice.

It also means you can control your electricity costs by managing your usage. So if you use electricity wisely and practise conservation, it will be reflected in your bill. That's much better than having to pay a share of the building's total electricity use where you could be paying more than you consume.

Your meter works with Time-of-Use rates

When Time-of-Use rates are introduced, the charge for electricity will vary during the day. Typically the lowest rates apply early in the morning, again in the evening and on weekends and holidays.

You can take advantage of this by shifting some of your electricity use to the lowest cost times. For example, you could do your laundry or run your dishwasher during these off-peak hours.

That helps reduce your bill, and also helps our environment. Every little bit counts and this is an easy way to do your part.

What about electricity in the building's common areas?

Your monthly condominium fees will include your share of the electricity used for lighting in the hallways, operating elevators, lighting and running fans in underground garages and outdoor lighting. As a condominium owner, you should ensure that the best choices are being made for electricity use in these areas too, to keep the building's electricity use down.

Questions about your meter, bill, payment options or account?

The Toronto Hydro-Electric System Web site has everything you need to know about your meter, bill, payment options and conservation programs. Take a moment to familiarize yourself with the bill and consider the various payment options.

Sign up for electronic billing
Electronic billing is the most convenient way to take care of paying your electricity bill. It takes just minutes to sign up at www.torontohydro.com/ebills. You can also choose our pre-authorized payment plan which deducts the same amount from your account every month to help you budget.

Go to www.torontohydro.com to learn more
If you still have questions, our customer service department will be pleased to help you.

For more information see
www.torontohydro.com/suitemeters 416.542.8000

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8

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- Your Meter
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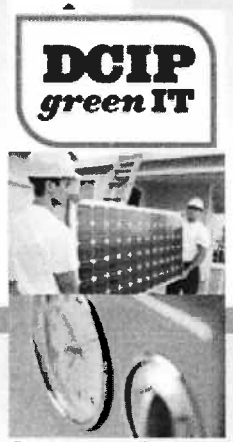
- FAQs RPP & MUSH Sector
- Net System Load Shape
- Saving Tips For Businesses
- Smart Meters
- Electrical Safety
- Electricity Retailers
- Suite Meters
- Conditions of Service

Home > For Your Business > Suite Meters



Green your data centre.

Get $300/kW in project incentives!

+ read more

Individual suite meters are a good idea for everyone. Suite owners or renters can control how much electricity they use and pay for. For builders, landlords and property managers, suite meters are a selling feature.

PEOPLE WHO PAY FOR ELECTRICITY USE LESS

Research has proven that people who pay for their own electricity consumption usually use less. Today, that's important. Suite metering is a fair way to allocate costs. Those who consume more, pay more.

Also, since the electricity used in suites is paid directly with suite metering, the overall monthly maintenance fees can be adjusted accordingly.

Smart builders include suite metering right from the start.

Condo boards and property managers know it pays to switch to suite metering.

SUITE METERS

Suite Owners

Builders

Condo Boards

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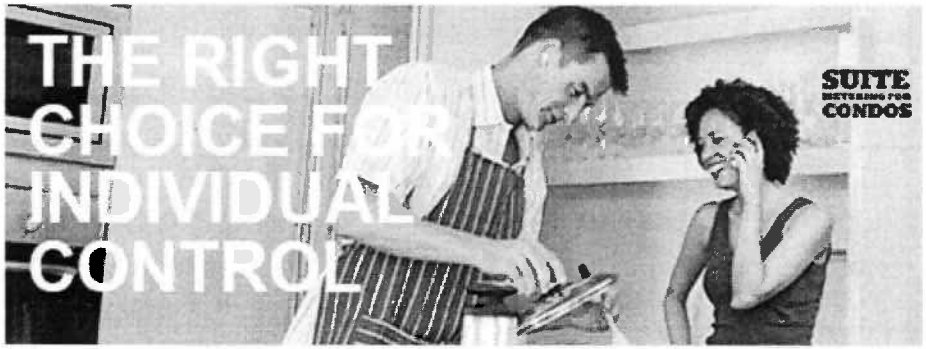
- Smart Meters
- Suite Meters
- Conservation Tips
- Electrical Safety
- Electricity Retailers
- Standard Offer Program
- Conditions of Service
- Generation Connection

Home > For Your Home > Suite Meters



DCIP green IT

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+ read more

Suite metering means you can control your electricity costs by managing your usage. So if you use electricity wisely and practice conservation it will be reflected in your bill. That's much better than having to pay a share of the building's total electricity use where you could be paying more than you consume.

YOUR METER WORKS WITH TIME-OF-USE RATES

When Time-of-Use rates are introduced, the charge for electricity will vary during the day. Typically the lowest rates apply early in the morning, again in the evening and on weekends and holidays.

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ARE YOU A NEW CUSTOMER?

Download our **New Customer Information form**.

SIGN UP FOR ELECTRONIC BILLING

Electronic billing is the most convenient way to take care of paying your electricity bill. It takes just minutes to sign up at Toronto Hydro eBills. You can also choose our pre-authorized payment plan which deducts the same amount from your account every month to help you budget.

CONSERVATION IDEAS FROM TORONTO HYDRO-ELECTRIC SYSTEM

- Typically you use nearly 50% of your electricity for heating and cooling. So in the summer try to keep your thermostat at 25 degrees Celsius. In the winter, aim for 22 degrees Celsius.*
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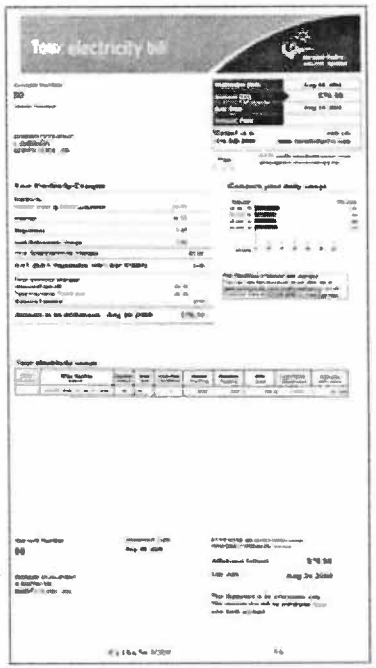
SUITE METERS

Builders

Condo Boards



Click above to view sample electricity bill

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Source: "Heating and Cooling your Home: A Conservation Guide," Government of Ontario, 2004.

Questions or Comments

If you'd like to know more about suite metering for your suite, please contact:

Maria D'orazio

Tel: 416-542-3100 ext. 50037

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Greater Toronto's Top 75 Employers

TOP 20 EMPLOYERS

2009 Canada's Greenest Employers

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Suite metering is a selling feature for your units. Units are more marketable because maintenance fees may be reduced. This is important to many first-time buyers who are looking for every possible saving. After the sale, your relationship with Toronto Hydro continues to pay off. Customers know our company and are confident that we are the best choice for the delivery of reliable electricity.

WORK WITH TORONTO HYDRO FOR YOUR SUITE METERING REQUIREMENTS

Suite metering is also socially responsible. People who pay for their own electricity consumption tend to use less, and today, thats important. Suite metering is a fair way to allocate costs. Those who consume more, pay more.

YOUR SUITE OWNERS GET REGULATED ELECTRICAL RATES

It's important to know that all charges on a Toronto Hydro-Electric Services bill are regulated by the Ontario Energy Board. Suite owners still have the option of working with the retailer of their choice. As direct customers of Toronto Hydro, theyll be able to take advantage of popular energy conservation programs, many of which include incentives.

SUITE METERS

Suite Owners

Condo Boards

SUITE METERED UNITS WORK WITH TIME-OF-USE PRICING

All suite-metered units have "smart meters" that work with Time-of-Use pricing. When introduced, this pricing structure will offer further incentive to owners to control their electricity use, and to time-shift use whenever possible. Doing laundry and using the dishwasher in the evenings or on weekends are two obvious examples for taking advantage of Time-of-Use pricing.

WE'LL HELP YOU CLOSE THE DEAL

We've developed postcards and posters that outline the benefits of suite meters to potential buyers, making it easier to close sales. These materials can be customized with your logo and printed by Toronto Hydro for use in your sales suites, free of charge.

- View postcard
- View posters
- Order materials

IT'S EASY TO WORK WITH US

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- Condo owners will receive the same level of service as our other 687,000 customers.
- We have been in business for nearly 100 years. Were owned by the City of Toronto.

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Toronto Hydro-Electric System will:

- Provide and arrange for installation of one meter point per condominium suite, at no cost to the suite owner, condominium corporation or developer.
- Establish each condominium unit owner as a Toronto Hydro-Electric System customer.
- Perform all account management activities, including meter reading, billing, meter maintenance, collection,

Click above to view sample electricity bill (pdf 192k)

LEARN MORE ABOUT SUITE METERS

Click here to contact us

and reconnect/disconnect activities.

RESPONSIBILITIES OF THE BUILDER

- Agree on behalf of each suite/unit owner that Toronto Hydro-Electric System will be the meter service provider.
- Permit meter installation at service connection points recommended by Toronto Hydro Electric System or its subcontractors.
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THE TORONTO HYDRO BILL REASSURES CUSTOMERS

The Toronto Hydro-Electric System bill is a good example of the quality of communications we deliver to our customers.

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Easy to see the various components that go into the charges for electricity.

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This helps explain bill amounts and encourages wise use.

Your Electricity Usage All the Details

For those who want to know the details, this easy to understand chart provides the calculations.

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Leo Guidolin

Tel: 416-542-3100 ext. 50327

Email: lguidolin@torontohydro.com

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- Electricity Retailers
- Suite Meters
- Condominium Boards
- Conditions of Service

W9

If you're renovating or refurbishing your building, it may make sense to make the switch to suite metering. Experience shows that owners tend to be happier when they're in control, and furthermore, they use less electricity. And that's good for all of us.

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SUITE METERS

Residential Suite Owners

Builders

LEARN MORE ABOUT SUITE METERS

Click here to contact us

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Leo Guidolin

Tel: 416-542-3100 ext. 50327

Email: lguidolin@torontohydro.com

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Canada's Top 100 Employers

Greater Toronto's Top 75 Employers

Canada's Top 20 Employers 2009

2009 Canada's Greenest Employers

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INTERROGATORIES OF SMART SUB-METERING WORKING GROUP

INTERROGATORY 7:

Reference(s): none

Please provide a copy of all offers, contracts, agreements, undertakings, or other documents which THESL requests that condominium developers and/or condominium corporations execute, or any terms and conditions which THESL deems to be in effect where a developer or condominium corporation agrees that THESL may undertake suite metering in a building.

RESPONSE:

Please see documents provided:

1. Smart Meter Installation and Service Agreement Template (Appendix A)
2. Offer to Connect Template for bulk or suite metered building (Appendix B)

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SMART METER INSTALLATION AND SERVICE AGREEMENT

THIS AGREEMENT is made this _____day of _____, 200___ (the "Effective Date")

BETWEEN:

Toronto Hydro-Electric System Limited

a corporation incorporated under the laws of the Province of Ontario

(hereinafter called "**Toronto Hydro**")

and

_____

a corporation incorporated under the laws of Ontario

or a condominium corporation registered with the provisions of the *Condominium Act* of Ontario, as applicable

(hereinafter called the "**Customer**")

RECITALS.

1. Toronto Hydro is in the business of supplying, installing and servicing smart meter systems to multi-residential buildings;
2. Customer is the owner of, or the condominium corporation in respect of, the multi-residential building(s) located at _____ (collectively, as applicable, hereinafter referred to as the "**Building**");
3. Customer wishes to retain Toronto Hydro to design, supply, install and service a smart meter systems for the Building upon the terms and conditions set forth herein;

NOW THEREFORE, in consideration of the mutual covenants contained herein and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties agree as follows:

1. INTERPRETATION.

1.1 All capitalized terms in this Agreement shall have the meaning as defined in Schedule 5;

1.2 All dollar amounts in this Agreement are expressed in Canadian dollars, unless otherwise stated; and

1.3 The recitals hereto shall form an integral part of this Agreement as if specifically restated herein.

2. SCHEDULES. The following schedules are attached to and form part of this Agreement:

(i) SCHEDULE 1 –Supply and Installation of Smart Meter System

(ii) SCHEDULE 2 – Smart Meter Services

(iii) SCHEDULE 3 – Additional Cost Items

(iv) SCHEDULE 4 – Assignment and Assumption Agreement

(v) SCHEDULE 5 – Defined Terms

In the event of a conflict between the terms of any schedule and the terms of this Agreement, the terms of this Agreement shall govern.

3. APPOINTMENT OF TORONTO HYDRO. The Customer appoints Toronto Hydro to design, supply and install the smart meter system described in schedule 1 (the "**Smart Meter System**") at the Building and to provide the services relating to the smart meter system as described in Schedule 2 (the "**Services**") during the term, upon the terms and conditions of this Agreement.

4. TERM.

4.1 Subject to any termination rights herein, this Agreement shall be for an initial term of three (3) years, starting on the Effective Date (the "**Initial Term**").

4.2 Unless the Customer or Toronto Hydro provides written notice to the other party at least ninety (90) days before the end of the Initial Term that it has elected not to renew the Term of this Agreement, this Agreement shall automatically renew in respect of the provision of Services for an additional three (3) year period (such renewal period referred to as the "**Renewal Term**"). The same terms and conditions contained herein shall apply during the Renewal Term, save and except as amended in writing by the parties. The Initial Term and the Renewal Term, if any, shall hereinafter together be referred to as the "**Term**".

5. SUPPLY AND INSTALLATION.

5.1 Subject to Section 5.2 and Schedule 3, Toronto Hydro shall design, supply and install the Smart Meter System at the Building as described in Schedule 1 (the "**Work**") at no cost to the Customer.

5.2 Any equipment or material to be supplied or work to be performed by Toronto Hydro in addition to the Work shall be at such additional cost to the Customer as may be specified in Schedule 3 to this Agreement ("**Additional Cost Items**").

5.3 Toronto Hydro shall invoice Customer for all Additional Cost Items and Customer shall make payment to Toronto Hydro not later than thirty (30) days following receipt of the invoice. All amounts not received from the Customer when due shall bear interest at the lesser of (i) 2% per month; or (ii) the maximum allowed by Applicable laws, from the due date to and including the date of payment in full.

6. SMART METER SERVICES.

6.1 After completion of the Work and for the remainder of the Term, Toronto Hydro shall provide the Services at the Building as described in Schedule 2.

6.2 The Services shall be performed by Toronto Hydro at no cost to the Customer.

7. REPRESENTATIONS, WARRANTIES AND COVENANTS.

7.1 The Customer represents, warrants to and covenants with Toronto Hydro that:

(a) it is entitled to enter into this Agreement in respect of the Building and it has the corporate power and authority to enter into this Agreement and to perform its obligations hereunder, and that this Agreement constitutes a legal, valid, and binding obligation of the Customer, enforceable against the Customer in accordance with its terms;

(b) the entering into of this Agreement and the performance of the terms of this Agreement by the Customer do not breach or contravene any provision of any agreement to which the Customer is bound or which otherwise affects the Building;

(c) it shall be responsible at Customer's cost for any on-site upgrades at the Building required to accommodate the installation of the Smart Meter System;

(d) it shall remain as the account holder for the current general service account at the Building, and make payment for electricity consumption measured by the existing Building meter minus the aggregated electricity consumption measured by the Smart Meter System;

(e) it shall obtain and maintain, for the Building during the Term, insurance covering such risks and in such amount as a prudent owner of a building the same as or similar to the Building would maintain and as may be required pursuant to the *Condominium Act* of Ontario; and to provide evidence thereof to Toronto Hydro upon request; and

(f) it shall not cause or voluntarily permit any tampering with or modification or alteration to the Smart Meter System (or any part thereof).

7.2 Toronto Hydro represents, warrants to and covenants with the Customer that:

(a) it has the corporate power and authority to enter into this Agreement and to perform its obligations hereunder, and that this Agreement constitutes a legal, valid, and binding obligation of Toronto Hydro, enforceable against Toronto Hydro in accordance with its terms;

(b) the installation and operation of the Smart Meter System shall be in compliance with all Applicable Laws; and

(c) it shall establish each residential and retail condominium unit owner in the Building as a Toronto Hydro electricity distribution customer and residential or commercial rate account holder, as applicable.

8. OWNERSHIP AND ACCESS.

8.1 Notwithstanding the installation or attachment of the Smart Meter System in and to the Building, all components of the Smart meter System shall remain the property of Toronto Hydro and no part of the Smart Meter System shall become the property of the Customer or the owners of the units in the Building.

8.2 During the Term and for a period of six (6) months after the expiry of the Term or the date of any earlier termination of this Agreement in accordance with Section 12, the Customer grants to Toronto Hydro a licence over those portions of the Building where the Smart Meter System is installed for: (i) the placement of any equipment used in the supply of the Smart Meter System; and (ii) the installation, operation, maintenance, inspection, alteration and removal of the Smart Meter System. The Customer will provide Toronto Hydro with reasonable access to and from the Smart Meter System located in the Building as reasonably required by Toronto Hydro to allow Toronto Hydro to fulfill its obligations under this Agreement.

9. SUBCONTRACTORS. Toronto hydro may subcontract provision of any of the Work or the Services under this Agreement.

10. FORCE MAJEURE. If, by reason of Force Majeure, either party hereto (the "**Frustrated Party**") is delayed or unable, in whole or in part, to perform or comply with any obligation or condition of this Agreement, then it will be relieved of liability and will suffer no prejudice for failing to perform or comply or for delaying such performance or compliance during the continuance and to the extent of the inability so caused from and after the happening of the event of Force Majeure, provided that it gives to the other party prompt notice of such inability, reasonably full particulars of the cause thereof and the expected cessation. If notice is not promptly given, then the Frustrated Party will only be relieved from performance or compliance from and after the giving of such notice. The Frustrated Party will use its commercially reasonable efforts to remedy the situation and remove, so far as possible with reasonable dispatch, the cause of its inability to perform or comply, provided, however, that settlement of strikes, lockouts and other industrial disputes shall be within the discretion of the frustrated party. The Frustrated Party will give prompt notice of the cessation of Force Majeure.

11. LIMITATION OF LIABILITY. Toronto Hydro and its Representatives shall not be liable in contract, tort (including negligence), or otherwise, for incidental, consequential, indirect, special, or punitive damages of any kind, or for the loss of revenue or profits, loss of business, loss of information or data, or other financial loss, arising out of or in connection with the installation, use, inability to use, performance, failure or interruption of the Smart Meter System or the Services, even if Toronto Hydro has been advised of the possibility of such damages and regardless of whether such damages were foreseeable.

12. TERMINATION.

12.1 If one of the parties (the "**Defaulting Party**") fails to fulfil any covenant or material obligation under this Agreement or breaches any representation or warranty contained herein, then the other party (the "**Non-Defaulting Party**") may, without prejudice to any other right or remedy the Non-Defaulting Party may have, notify the Defaulting Party in writing that the Defaulting Party is in default of its contractual obligations and instruct the Defaulting Party to correct the default within thirty (30) Business Days immediately following the receipt of such notice. If the Defaulting Party fails to correct the default in the time specified, then, without prejudice to any other right or remedy, the Non-Defaulting Party may terminate this Agreement.

12.2 Toronto Hydro may, for its convenience and at its sole option, terminate this Agreement by providing at least one hundred and twenty (120) days prior written notice of such termination to the Customer (a "**Termination Notice**"). The Termination Notice shall specify the date for termination of this Agreement that is at least one hundred and twenty (120) days after the date of the Termination Notice (the "**Termination Date**"). If a Termination Notice has been delivered by Toronto Hydro to the Customer in accordance this Section 12.2, this Agreement shall terminate on the Termination Date.

12.3 If bankruptcy or insolvency proceedings are instituted by or against the Customer or the Customer is adjudicated a bankrupt, becomes insolvent, makes an assignment for the benefit of creditors or proposes or makes arrangements for the liquidation of its debts, or a receiver or receiver and manager is appointed with respect to all or part of the assets of the Customer, Toronto Hydro may, without prejudice to any other rights or remedies it may have, immediately terminate this Agreement.

12.4 The termination of this Agreement shall not affect any rights or obligations which may have accrued prior to such termination or any other right which the terminating party may have arising out of either the termination or the event giving rise to the termination.

12.5 Upon the expiry of the Term or any earlier termination of this Agreement: (i) the Customer shall forthwith pay to Toronto Hydro any unpaid amounts payable to Toronto Hydro under this Agreement accruing to the

date of expiry or termination; (ii) Toronto Hydro shall provide the Customer with the opportunity to purchase the Smart Meter System, on an as-is-where-is basis, at such price and upon such terms and conditions as may be agreed between Toronto Hydro and the Customer at such time; or, in the event that the Customer does not purchase the Smart Meter System, then Toronto Hydro shall have the right, at its expense, to remove the Smart Meter System installed at the Building and return the Building to a bulk meter system. Notwithstanding the foregoing, in the event of a termination pursuant to Sections 12.1 or 12.3, the Customer shall forthwith pay to Toronto Hydro any direct reasonable costs incurred by Toronto Hydro associated with disconnecting and removing the Smart Meter System installed at the Building.

13. CONFIDENTIAL INFORMATION. The parties agree and acknowledge that: (a) subject to Applicable Laws or court order, each party shall maintain in strict confidence the terms of this Agreement and any and all proprietary and confidential information about the business or operations of the other party or any of their Affiliates, which it acquires in any form from the other party (the "**Disclosing Party**") by virtue of this Agreement ("**Confidential Information**") and will not disclose to any third party or make use of such Confidential Information for itself or any third party without the prior written consent of the Disclosing Party; and (b) Toronto Hydro is subject to MFIPPA and may be required to disclose confidential information concerning this Agreement in accordance with the provisions of MFIPPA.

14. ASSIGNMENT.

14.1 Save and except for Toronto Hydro's right to assign this Agreement to any of its Affiliates and Sections 14.2 and 14.3, neither party may assign this Agreement or any of its rights or obligations hereunder, in whole or in part, without the prior written consent of the other party, which consent may not be unreasonably withheld, conditioned or delayed.

14.2 Where the Customer is not the condominium corporation in respect of the Building, and the Building is or will be registered as a condominium under the *Condominium Act, 1998*, (Ontario) (the "**Condo Act**") then, notwithstanding the restrictions on assignment of this Agreement in Section 14.1, upon registration of the condominium corporation for the Building under the Condo Act, the Customer will execute and cause the condominium corporation to execute, an assignment and assumption agreement (the "**Assignment and Assumption Agreement**") in the form attached hereto as Schedule 4 pursuant to which the condominium corporation shall assume all of the obligations of the Customer under this Agreement and Toronto Hydro shall release the Customer of all of its obligations under this Agreement as of the effective date of the Assignment and Assumption Agreement. In addition, the Customer will upon request provide Toronto Hydro with a copy of such bylaws, resolutions or other documents as may be required to authorize the condominium corporation to enter into the Assignment and Assumption Agreement. Where the Customer is the condominium corporation in respect of the Building, the terms of this article 14.2 and of Schedule 4 shall be deemed to be null and void.

14.3 In the event that Customer conveys, sells or transfers title to the Building to a third party the Customer shall assign all of its right title and its interest in this Agreement to the same third party and the third party shall execute a written agreement in a form reasonably satisfactory to MDE, wherein such third party assumes and agrees to keep and perform all of the Customer's obligations under this Agreement to be kept and performed from and after the date of assignment.

15. RELATIONSHIP OF THE PARTIES. Nothing contained in this Agreement shall be construed to constitute either party as the partner, employee or agent of, or joint venturer with the other party, nor shall either party have any authority to bind the other in any respect, it being intended that each party shall remain an independent contractor of the other.

16. SEVERABILITY. In the event that any of the covenants herein shall be held unenforceable or declared invalid for any reason whatsoever, to the extent permitted by law, such unenforceability or invalidity shall not affect

the enforceability or validity of the remaining provisions of this Agreement and such unenforceable or invalid portion shall be severable from the remainder of this Agreement.

17. NO WAIVER. A waiver of any provisions of this Agreement shall not constitute either a waiver of any other provisions or a continuing waiver, unless otherwise expressly indicated in writing.

18. ENUREMENT. This Agreement and everything contained herein shall enure to the benefit of, and be binding upon, the parties hereto and their respective successors and permitted assigns.

19. NOTICE. All notices, requests, claims, demands and other communications hereunder shall be in writing and shall be deemed (in the absence of evidence of prior receipt) to have been validly and effectively given on the same day if personally served, the next Business Day if sent by facsimile or similar means of recorded communication or on the fifth (5th) business day next following if sent by registered mail. Notices shall be addressed as follows:

to the Customer:		to Toronto Hydro:	
Name:	_____	Name:	Steve MacDonald
Title:	_____	Title:	Manager, Meter technologies
Address:	_____	Address:	5800 Yonge St. Toronto, On. M2M 3T3
Telephone:	_____	Telephone:	(416) 542-3421
Facsimile:	_____	Facsimile:	(416) 542-3501

20. GOVERNING LAW. This Agreement shall be governed by and construed in accordance with the laws of the province of Ontario and the laws of Canada applicable therein. The parties irrevocably attorn to the jurisdiction of the courts of Ontario with respect to any matter arising under or related to this Agreement.

21. ENTIRE AGREEMENT.

21.1 This Agreement, including all schedules referred to herein and subsequent amendments, constitutes the entire agreement between the Customer and Toronto Hydro relating to the subject matter hereof. This Agreement supersedes the terms of any purchase order, all prior correspondence, representations, warranties, covenants, collateral undertakings, discussions, negotiations, understandings or agreements, oral or otherwise, express or implied, unless otherwise provided in this Agreement.

21.2 No modification or amendment to this Agreement shall be binding on Toronto Hydro unless agreed to in writing.

22. FURTHER ASSURANCES. The Customer agrees to execute such further assurances and documents, including any bills of sale, and to do all such things and actions which shall be necessary or proper for the carrying out of the purposes and intent of this Agreement.

23. SURVIVAL. In addition to the terms of this Agreement that by their nature survive the expiry or termination of this Agreement, the terms of Sections 7 (Representations, Warranties and Covenants), 8 (Ownership and Access), 11 (Limitation of Liability), 13 (Confidential Information), 16 (Severability), 18 (Enurement), 19 (Notice) and 20 (Governing Law) shall survive the expiry or termination of this agreement for a period of five (5) years.

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IN WITNESS WHEREOF, the parties have duly executed this Agreement as of the day and year first written above:

	Toronto Hydro-Electric System Limited
_____	
Per: _____	Per: _____
Name: _____	Name: Susan Davidson
Title: _____	Title: Senior Vice-President, Customer Care
I have authority to bind the Customer.	I have authority to bind Toronto Hydro.

SCHEDULE 1
SUPPLY AND INSTALLATION OF SMART METER SYSTEM

(i) Supply of Smart Meter System

Toronto Hydro will provide at no cost to the Customer:

- one (1) smart meter per residential or retail suite in the Building;
- one (1) meter point for the common area or "house" electrical load; and
- one meter (1) point to measure the total load of the Building.

If more than one (1) smart meter is required for any residential or retail suite in the Building, such smart meters will be supplied and installed at a cost to the Customer to be agreed and documented in Schedule 3 to this Agreement.

(ii) Components of Smart Meter System

The main components of the Smart Meter System to be installed at the Building consist of the following:

- Quadlogic Mini Closet, MC5 for all voltages configurations.
- Quadlogic Scan Transponder, ST5 (data collector and communications device).
- Quadlogic Socket Meter, S – 20 socket base meters for all voltage and current configurations.
- Instrument Transformers, 2DARL-201 or equivalent,
- Instrument Transformer interface box(es).
- A Local Area Network for meter reading data communications, that utilizes the existing electrical distribution system in the building for data transmission.

(iii) Installation of Smart Meter System

The installation activities to be performed by Toronto Hydro at no cost to the Customer consist of the following:

- design of the Smart Meter System;
- construction of the Smart Meter System;
- testing, sealing and registration of smart meters with Measurement Canada;
- project management of the installation of the Smart Meter System, including required safety inspections;
- inspection and approval of Smart Meter System by the Electrical Safety Authority; and
- commissioning of the Smart Meter System.

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SCHEDULE 2
SMART METER SERVICES

During the Term, Toronto Hydro shall provide the following Services in respect of the Smart Meter System installed at the Building at no additional cost to the Customer:

- data acquisition;
- data storage;
- data management;
- data transfer to Toronto Hydro for billing purposes;
- operations, maintenance, troubleshooting, and repair work to maintain the Smart Meter System to required Measurement Canada and Toronto Hydro standards; and
- all account management activities, including scheduled meter reading, billing, revenue collection, and service disconnect and reconnect if required.

SCHEDULE 3
ADDITIONAL COST ITEMS

NIL

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SCHEDULE 4

FORM OF ASSIGNMENT AND ASSUMPTION AGREEMENT TO TRANSFER THIS AGREEMENT FROM THE CUSTOMER TO THE CONDOMINIUM CORPORATION

ASSUMPTION AND ASSIGNMENT AGREEMENT

THIS AGREEMENT made the ■ day of ■ 200■.

B E T W E E N:

[CUSTOMER]., a corporation incorporated under the laws of ■ ("**Customer**")

-and-

[CONDOMINIUM CORPORATION], a corporation created under the laws of Ontario ("**Corporation**")

-and-

Toronto Hydro-Electric System Limited, a corporation incorporated under the laws of Ontario ("**Toronto Hydro**")

WHEREAS pursuant to the terms and provisions of a Smart Meter Installation and Service Agreement dated ■, 200■ (the "**Smart Meter Agreement**"), made between Toronto Hydro and the Customer with respect to the supply and installation of smart meters and related services to the Building by Toronto Hydro.

AND WHEREAS the Corporation has agreed to assume the rights and obligations of the Customer under the Smart Meter Agreement effective as of the ■ day of ■, 200■ (the "**Effective Date**").

NOW THEREFORE THIS AGREEMENT WITNESSES that in consideration of the premises and other good and valuable consideration (the receipt and sufficiency of which are hereby acknowledged by each of the parties hereto), the parties hereto covenant and agree as follows:

1. INTERPRETATION

1.1 Definitions. In this Agreement, unless something in the subject matter or context is inconsistent therewith, capitalized words not otherwise defined herein shall have the meaning ascribed thereto in the Energy Agreement.

1.2 Severability. In the event that any of the covenants herein shall be held unenforceable or declared invalid for any reason whatsoever, to the extent permitted by law, such unenforceability or invalidity shall not affect the enforceability or validity of the remaining provisions of this Agreement and such unenforceable or invalid portion shall be severable from the remainder of this Agreement.

1.3 Governing Law. This Agreement shall be governed by and construed in accordance with the laws of Ontario and the laws of Canada applicable therein.

1.4 Binding on Successors. This Agreement and everything herein contained shall enure to the benefit of and be binding upon the parties hereto and their respective successors and permitted assigns.

2. ASSIGNMENT BY CUSTOMER AND ASSUMPTION BY THE CORPORATION

2.1 **Assignment**. As at the date of this Agreement, the Customer hereby assigns to the Corporation all interest in and to the Smart Meter Agreement including all rights, obligations and liabilities thereunder.

2.2 **Assumption**. As of the date of this Agreement, the Corporation hereby:

(a) assumes all rights, obligations and liabilities of the Customer under the Smart Meter Agreement;

(b) covenants and agrees to pay all amounts owing by the Customer under the Smart Meter Agreement, at the times and in the manner set forth in the Smart Meter Agreement; and

(c) covenants and agrees to do, observe, perform, keep and be bound by every term, covenant, proviso, condition and agreement contained in the Smart Meter Agreement to be done, observed, performed and kept by the Customer as if the Corporation were an original party to the Smart Meter Agreement and as such had executed the Smart Meter Agreement.

3. REPRESENTATIONS AND WARRANTIES

3.1 **Representations and Warranties of the Corporation**. The Corporation represents and warrants to Toronto Hydro as follows:

(a) *Status.* The Corporation is a condominium corporation created and validly existing under the laws of Ontario.

(b) *Power.* The Corporation has all necessary power and authority to enter into this Agreement and to assume the rights, obligations and liabilities of the Customer under the Smart Meter Agreement and to do all acts and things as are required hereunder or thereunder to be done, observed or performed by it in accordance with their terms.

(c) *Authorization.* The Corporation has taken all necessary action to authorize the execution, delivery, observance and performance of this Agreement and the observance and performance of the Smart Meter Agreement in accordance with its terms.

4. CONSENT BY TORONTO HYDRO AND RELEASE OF CUSTOMER

4.1 **Consent**. Toronto Hydro hereby acknowledges and agrees to the assignment by the Customer and the assumption by the Corporation of the rights, obligations and liabilities of the Customer under the Smart Meter Agreement as of the date of this Agreement.

4.2 **Release**. Toronto Hydro hereby releases and discharges the Customer from and after the Effective Date, from all obligations and liabilities under the Smart Meter Agreement.

5. GENERAL

5.1 **Amendments**. This Agreement may not be modified or amended except with the written consent of the parties hereto.

5.2 **Further Assurances**. The parties hereto agree that they will from time to duly execute and deliver such instruments and take such further action as may be required to accomplish or give effect to the purposes of this Agreement.

5.3 **Counterparts**. This Agreement may be executed in one or more counterparts, each of which shall be deemed to be an original and all of which taken together shall be deemed to constitute one and the same instrument.

IN WITNESS WHEREOF the parties hereto have executed this Agreement the day and year first above written.

[THE CORPORATION]

By:_____
Name:
Title:

[THE CUSTOMER]

By:_____
Name:
Title:

TORONTO HYDRO-ELECTRIC SYSTEM LIMITED

By:_____
Name:
Title:

SCHEDULE 5
DEFINITIONS

In this Agreement, the following definitions shall apply:

"Affiliates"	shall have the meaning as prescribed in the *Business Corporations Act* (Ontario);
"Applicable Laws"	means all federal, provincial and municipal statutes, regulations, codes, by-laws, orders in council, directives, rules, guidelines and ordinances applicable to this Agreement, including without limitation all applicable OEB codes, rules or guidelines;
"Business Day"	means a day on which banks are open for business in the City of Toronto, Ontario, but does not include a Saturday, Sunday, or a statutory holiday in the Province of Ontario;
"Force Majeure"	means events beyond the reasonable control of a party applying reasonable diligence and foresight given the nature of the Work and Services being provided under the Agreement, including, as applicable, any acts of God and the public enemy, the elements; fire; accidents; vandalism; sabotage; power failure; strikes, lockouts or any other industrial, civil or public disturbances; any laws, orders, rules, regulations, acts or restraints of any government or governmental body or authority, civil or military, including the orders and judgments of courts and any other similar causes or acts;
"MFIPPA"	means *Municipal Freedom of Information and Protection of Privacy Act* (Ontario) and the regulations thereunder, each, as amended;
"OEB"	means Ontario Energy Board;
"Representatives"	in respect of a party, means such party's directors, officers, employees, agents and contractors, the party's Affiliates, and all such Affiliates' respective directors, officers, employees, agents and contractors.

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OTC, SEPTEMBER 2009
[Date]

[Customer's Full Legal Name]
[Customer's Address]

Attention: **[Contact Person]**

Dear Sir/Madam:

Re: **[Customer's Name]** development of **[municipal address]**
as legally described in PIN *] ("Property")
Toronto Hydro Customer Class **[3C] [3C multi-phase] [4] [5]**
Toronto Hydro Project No. * Work Order No. * ("Project")

Toronto Hydro-Electric System Limited ("Toronto Hydro") acknowledges receipt of **[Customer]**'s ("Customer") written request for connection of the Project to the Toronto Hydro main distribution system.

[For residential Class 3, 4 high-rise]
The Customer has represented to Toronto Hydro that [#] residential units will be constructed and connected to the Toronto Hydro main distribution system and the estimated increased demand load attributable to the Project will be **[***]** kW ("Estimated Incremental Demand").
OR
[For commercial Class 4, 5]
The Customer has represented to Toronto Hydro that the estimated increased demand load attributable to the Project will be **[***]** kW ("Estimated Incremental Demand").

In order to connect the Project, an expansion to the Toronto Hydro main distribution system will be needed.

Based on the plans dated **[***]** ("Plans") this document, including all Schedules attached, is Toronto Hydro's firm Offer to Connect ("Offer to Connect") as required by the Distribution System Code ("Distribution System Code") established by the Ontario Energy Board ("OEB").

In addition to the obligations set forth in this Offer to Connect, the Customer shall be bound by and required to comply with all provisions of the Conditions of Service filed by Toronto Hydro with the OEB. A copy of the Conditions of Service can be obtained at www.torontohydro.com.

Terms used in this Offer to Connect shall have the meaning ascribed thereto in the Distribution System Code and the Conditions of Service unless otherwise defined herein.

The following Schedules attached hereto form a part of this Offer to Connect:

Schedule A – Connection Work and Fees;
Schedule B – Expansion Work and Fees;
Schedule C – Capital Contribution Requirements and Economic Evaluation;
Schedule D – Expansion Deposit;
Schedule E – Alternative Bid Process and Contestable Work;
Schedule F – General Terms and Conditions; **[.]**
[Schedule G – Additional Work and Costs.]

A Capital Contribution, as described in Schedule C, **[will/will not]** be required from the Customer.

An Expansion Deposit, as described in Schedule D, **[will/will not]** be required from the Customer.

This Offer to Connect includes Contestable Work for which the Customer may obtain an alternative bid as described in Schedule E.
OR
Since all of the expansion work required to connect the Project will be on Toronto Hydro's existing distribution system, the Customer may not obtain an alternative bid to perform the work.

Based on the Plans and information provided to Toronto Hydro, as of the date of this Offer to Connect, an easement **[will be required to connect the Project.] OR [will not be required to connect the Project, but may be required if the information, plans or design of the Project changes.]** General easement requirements are set out under the heading "Easements" in Schedule F, General Terms and Conditions.

If the terms and conditions of this Offer to Connect are acceptable to the Customer, a duly authorized officer of the Customer shall sign the duplicate copy and return it to Toronto Hydro within 60 days of the date set forth above. If a signed copy is not returned to Toronto Hydro within that time period, Toronto Hydro reserves the right to revoke this Offer to Connect without further notice to the Customer. The Customer is advised that Toronto Hydro requires a minimum of [***] weeks, if not more ("lead time") to complete the Project, after receiving the signed Offer to Connect from the Customer, and, if necessary the Customer should make arrangements to return the signed Offer to Connect earlier, to accommodate the required lead time.

If the expansion work for this Project has not commenced within one (1) year from the date set forth above, Toronto Hydro has the right to terminate this Offer to Connect in accordance with its rights of termination as set out herein.

Any notice, communication, inquiry and payment regarding this Offer to Connect shall be directed as follows:

To: Toronto Hydro-Electric System Limited
Asset Management – 500 Commissioners Street
Toronto, Ontario M4M 3N7
Attention: Brad Harper
Supervisor, External Demand & Customer Relations
Telephone (416) 542-3152, Facsimile: (416) 542-2630

To: The Customer at the address set forth below:
*
Attention: *
Telephone: (*), Facsimile: (*)

All payments and security as may be required hereunder shall be due and payable, or deliverable, upon acceptance of this Offer to Connect by the Customer.

Please sign in the appropriate place below and return one signed copy, and all payments and security as may be required, to the address indicated above.

Yours truly,

Toronto Hydro-Electric System Limited

Per: _____
Name: Ivano Labricciosa, P.Eng., M.Eng., MBA **OR** if above $1M, Anthony Haines,
Title: Vice-President, Asset Management President
I have authority to bind the Corporation.

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[Customer] acknowledges its understanding of, accepts, agrees to comply with, and be bound by, all of the terms and conditions of this Offer to Connect, which include the provisions set forth above and all of the Schedules attached. The Customer acknowledges that by accepting this Offer to Connect a binding agreement is created and, upon signing, this Offer to Connect constitutes a legally valid and binding obligation of the Customer, enforceable in accordance with its terms.

The Customer confirms that it will not be obtaining alternative bids for the Contestable Work described in Schedule E.

[Customer]

Per:_____ Date:_____
Name:
Title:
I have authority to bind the Corporation.

OR

[Customer] confirms it is not accepting Toronto Hydro's Offer to Connect and it will be proceeding by way of an alternative bid process for the Contestable Work, as described in Schedule E.

[Customer]

Per:_____ Date:_____
Name:
Title:
I have authority to bind the Corporation.

SCHEDULE A
CONNECTION WORK and FEES

1. Connection Assets are the assets between the point of connection to the Toronto Hydro main distribution system and the ownership demarcation point as defined in Table 1.3 of Toronto Hydro's Conditions of Service.

2. The Connection Work and Connection Fees to supply and install the Connection Assets for the Project are described below.

3. Toronto Hydro shall recover costs associated with the installation of Connection Assets through:
   (a) Basic Connection Fees which are part of the Economic Evaluation; and
   (b) Variable Connection Fees collected directly from the Customer. The variable Connection Fees arise from the Variable Connection Work and are in addition to the Basic Connection Fees.

4. The Variable Connection Fees are payable by the Customer to Toronto Hydro pursuant to this Offer to Connect upon acceptance of this Offer to Connect by the Customer, or, if the Customer pursues an alternative bid process described in Schedule E, to the Customer's qualified contractor.

Connection Work shall mean the following:

- All necessary engineering design and inspections;
- **[insert description of connection assets and work]**

Connection Fees:

a) A Basic Connection Fee of $1,310.00 per meter connection has been included in Toronto Hydro's Economic Evaluation.

a) **[For 3C]** A Basic Connection Fee of $850.00 per meter connection has been included in Toronto Hydro's Economic Evaluation.

b) Variable Connection Fees $

GST 5%	$
TOTAL CONNECTION FEES, GST	**$**
Less Deposit and GST received	**- $**
BALANCE OUTSTANDING	**$**

The Connection Fees are based on the Connection Work being done during non-winter conditions. If the Customer requires the Connection Work to be done during winter conditions that would result in additional costs, Toronto Hydro will advise the Customer of the estimated additional costs and if the Customer provides a written request to Toronto Hydro to proceed, a Project Invoice will be issued and payment must be received by Toronto Hydro prior to the commencement of any of the applicable work.

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SCHEDULE B
EXPANSION WORK AND FEES

1. The Uncontestable Expansion Work and Contestable Expansion Work that must be performed to connect the Project to the Toronto Hydro main distribution system, and corresponding Fees and Total Expansion Fees ("Total Expansion Fees") are described below.

2. The Customer will also be responsible for the payment of the operating, maintenance and administration costs ("OM&A Costs") of the Project, including applicable taxes. The OM&A Costs are included in the Economic Evaluation.

3. The Expansion Fees and OM&A Costs are recovered by Toronto Hydro by way of Capital Contribution if applicable, as described in Schedule C and the increased distribution revenues attributable to the Project, which are received by Toronto Hydro ("Incremental Revenues").

Uncontestable Expansion Work shall mean the following:

- All necessary engineering design and inspections;
- **[insert description of uncontestable expansion work e.g. dedicated replacement work]**

Uncontestable Expansion Fees:

Enhancement Costs (*** x $260 per kW)	$
Materials	$
Labour (engineering design, inspections)	$
Equipment	$
Basic Connection Charge ($1,310.00 per ***meter connections)	$
OR For Class 3C, ($850.00 per meter connection)	
Overhead (including administration)	$
[dedicated replacement fees, if any]	$
TOTAL UNCONTESTABLE EXPANSION FEES	$

Contestable Expansion Work shall mean the following:
[insert description of contestable expansion work]

Contestable Expansion Fees:

Materials	$
Labour (construction)	$
Equipment	$
Overhead (including administration)	$
TOTAL CONTESTABLE EXPANSION FEES	$
TOTAL UNCONTESTABLE EXPANSION FEES	$
TOTAL EXPANSION FEES (CONTESTABLE AND UNCONTESTABLE)	$
GST (5%)	$
TOTAL EXPANSION FEES, GST	$

The Expansion Fees are based on the Expansion Work being done during non-winter conditions. If the Customer requires the Expansion Work to be done during winter conditions that would result in additional costs, Toronto Hydro will advised the Customer of the estimated additional costs and if the Customer provides a written request to Toronto Hydro to proceed, a Project Invoice will be issued and payment must be received by Toronto Hydro prior to the commencement of any applicable work.

SCHEDULE C
CAPITAL CONTRIBUTION REQUIREMENTS and ECONOMIC EVALUATION

[For residential projects Class 3, 4]

1. The Customer acknowledges that it has represented to Toronto Hydro that the estimated increased demand load attributable to the Project will be **[***]** kW ("Estimated Incremental Demand") and that **[#]** residential units will be constructed and connected to the Toronto Hydro main distribution system.

OR

[For Commercial projects Class 4, 5]

1. The Customer acknowledges that it has represented to Toronto Hydro that the estimated increased demand load attributable to the Project will be **[***]** kW ("Estimated Incremental Demand").

2. To determine the amount of Capital Contribution that is required from the Customer for this Project, Toronto Hydro has performed, as described in Appendix B of the Distribution System Code, an economic evaluation ("Initial Economic Evaluation"). A copy of the Initial Economic Evaluation, including the calculation used to determine the amount of the Capital Contribution to be paid by the Customer, including all of the assumptions and inputs used to produce the Initial Economic Evaluation, is included with this Offer to Connect.

[CAPITAL CONTRIBUTION REQUIRED]

3. As a result of Toronto Hydro's Initial Economic Evaluation of the Project, the Customer shall pay to Toronto Hydro, upon acceptance of this Offer to Connect, a Capital Contribution in the amount set forth below:

Capital Contribution	$
GST (5%)	$
Capital Contribution and GST	$

OR

[NO CAPITAL CONTRIBUTION]

3. As a result of Toronto Hydro's Initial Economic Evaluation of the Project, the Customer will not be required to pay a Capital Contribution.

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SCHEDULE D
EXPANSION DEPOSIT

1. An Expansion Deposit is intended to ensure that Toronto Hydro is held harmless in respect of the Expansion Fees and OM&A Costs by securing payment of the Total Expansion Fees in the event the Estimated Incremental Demand does not materialize. The Expansion Deposit shall be in the form of cash, or an irrevocable commercial letter of credit issued by a Schedule 1 bank as defined in the Bank Act, or a surety bond. The form of security must expressly provide for its use to cover the events for which it is held as a deposit. Any portion of the Expansion Deposit held as cash, which is returned to the Customer, shall include interest on the returned amount from the date of receipt of the full amount of the Expansion Deposit, at the Prime Business Rate set by the Bank of Canada less two (2) percent.

[for Class 3 residential single phase]

2. An Expansion Deposit is not applicable for this Project.

OR

[for Class 3, 4 multi-phase residential, Class 4, 5]

2. The Customer is required to post an Expansion Deposit, upon acceptance of this Offer to Connect, for the difference between the actual Expansion Fees and GST and the amount of the Capital Contribution and GST paid by the Customer, in accordance with Toronto Hydro's Initial Economic Evaluation of the Project.

3. This Expansion Deposit is in addition to any other charges that may be payable to Toronto Hydro under this Offer to Connect, or the Conditions of Service, or otherwise.

4. The amount of the Expansion Deposit is set out below.

[for residential multi-phase]

5. After the facilities are energized, the Expansion Deposit shall be reduced, at the end of each 365-day period, by an amount calculated by multiplying the original Expansion Deposit by a percentage derived by dividing the actual connections completed or materialized in that 365-day period, by the total number of connections contemplated in this Offer to Connect. For information about reduction in the amount of the Expansion Deposit after each 365 day period, please contact Carrie Matthew at (416) 542-3100 ext. 32076.

6. If after five (5) years from the energization date of the facilities, the total number of connections contemplated by the original Offer to Connect have not materialized, Toronto Hydro shall retain any cash held as an Expansion Deposit, or to be entitled to realize on any letter of credit or bond held as an Expansion Deposit and retain any cash resulting therefrom, with no obligation to return any portion of such monies to the Customer at any time.

OR
[for commercial and industrial]

5. After the facilities are energized, the Expansion Deposit shall be reduced, at the end of each 365-day period, by an amount calculated by multiplying the original Expansion Deposit by a percentage derived by dividing the actual demand materialized in that 365-day period, by the Estimated Incremental Demand contemplated in this Offer to Connect. For information about reduction in the amount of the Expansion Deposit after each 365 day period, please contact Carrie Matthew at (416) 542-3100 ext. 32076.

6. If after five (5) years from the energization date of the facilities, the Estimated Incremental Demand contemplated by this Offer to Connect has not materialized, Toronto Hydro shall retain any cash held as an Expansion Deposit, or be entitled to realize on any letter of credit or bond held as an Expansion Deposit and retain any cash resulting therefrom, with no obligation to return any portion of such monies to the Customer at any time.

EXPANSION DEPOSIT:

TOTAL EXPANSION FEES AND GST	$
LESS CAPITAL CONTRIBUTION AND GST	-$
EXPANSION DEPOSIT	$

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SCHEDULE E
ALTERNATIVE BID PROCESS AND CONTESTABLE WORK

1. Toronto Hydro advises the Customer that part of the work that will be required for the expansion and connection to the existing distribution facilities includes work for which the Customer may obtain an alternative bid i.e. work that would not involve work with existing Toronto Hydro assets. The work for which the Customer may obtain alternative bid, "Contestable Work" is described below.

2. The Customer must use a contractor for the Contestable Work qualified by Toronto Hydro in accordance with its Conditions of Service. To qualify, contractors shall submit a "Contractor Qualification Application" and meet the requirements posted at: http://www.torontohydro.com/electricsystem/customer_care/cond_of_services/index.cfm at least 30 business days prior to their selection by the Customer to undertake Contestable Work. The Customer shall not be entitled to start performance of the Contestable Work until the contractor has completed its qualification by Toronto Hydro and has been qualified for no less than 30 business days.

3. Toronto Hydro does not make any representation or warranty regarding any contractor selected by the Customer to do any work regardless of whether the contractor has been qualified by Toronto Hydro or not and shall have no liability to the Customer in respect of such work.

4. If the Customer decides to hire a qualified contractor to perform the Contestable Work, the Customer will be required to select, hire and pay the contractor's costs for such work and to assume full responsibility for the construction of all of the Contestable Work.

5. The Customer shall ensure that the Contestable Work is done in accordance with Toronto Hydro's design and technical standards and specifications.

6. The Customer and his qualified contractor shall only use materials that meet the same specifications as Toronto Hydro approved materials (i.e. same manufacturers and same part numbers). Once the Customer has hired a qualified contractor, the Customer may request and obtain from Toronto Hydro the listing of approved materials that may be required for the Contestable Work.

7. The Customer will be required to pay for administering the contract with the qualified contractor, or if agreed by Toronto Hydro, pay Toronto Hydro a fee for performing this activity on its behalf. Upon request if Toronto Hydro is agreeable to performing such activity, Toronto Hydro will advise the Customer of the amount of the fee. Administering the contract includes, among other things, acquiring all permissions, permits and easements.

8. Toronto Hydro shall have the right to inspect and approve all aspects of the facilities constructed by the qualified contractor as part of its system commissioning activities, prior to connecting the expanded facilities to the Toronto Hydro main distribution system. If all of Toronto Hydro's requirements for the Contestable Work, including but not limited to, those set out in Sections 5, 6, and 7 above, have not been completed satisfactorily to Toronto Hydro, acting reasonably, the Project will not be energized, until the Contestable Work is in compliance with all of Toronto Hydro's requirements.

9. If the Customer decides to pursue an alternative bid for the Contestable Work, Toronto Hydro may charge the Customer costs, including, but not limited to, the following, for:
   (a) additional design, engineering or installation of facilities required to complete the Project that are required in addition to the original Offer to Connect; and,
   (b) inspection or approval of the work performed by the contractor hired by the Customer; and
   (c) making the final connection of the new facilities to the Toronto Hydro distribution system.
   ("Additional Costs for Alternative Bid Work").

10. If the Customer decides to hire a qualified contractor to perform the Contestable Work, the Customer must:
    1. Sign an Alternative Bid Agreement;
    2. Hire a qualified contractor;
    3. Pay to Toronto Hydro, the firm amount of Toronto Hydro's Additional Costs for Alternative Bid Work, as set out below;
    4. Provide the Alternative Bid Expansion Deposit as set out below.

11. After the Customer has performed the Contestable Work and Toronto Hydro has inspected and approved the constructed facilities, the Customer shall transfer the expansion facilities that were constructed under the alternative bid option to Toronto Hydro and Toronto Hydro shall pay to the Customer, a transfer price, ("Transfer Price") to be determined, as hereinafter set out.

12. The Transfer Price for the Contestable Work shall be the lower of the Customer's Costs or the amount set out in this Offer to Connect of the Contestable Work. The Customer's Costs shall mean:
    (a) the costs the Customer paid to have the Contestable Work performed, excluding the Variable Connection Work, as provided by evidence satisfactory to Toronto Hydro;
    (b) the Additional Costs for Alternative Bid Work charged by Toronto Hydro.
    Toronto Hydro shall be satisfied that all Customer's Costs shall have been properly incurred.

13. If the Customer does not provide the calculation setting out the Customer's Costs to Toronto Hydro within 30 days of all new facilities being energized, then the amount of the Transfer Price shall be the amount set out in this Offer to Connect for the Contestable Work.

14. Toronto Hydro shall carry out a final economic evaluation after the facilities are energized ("Final Economic Evaluation"). The Final Economic Evaluation shall be based on the amounts used in this Offer to Connect for costs and forecasted revenues, and the amount of the Transfer Price to be paid by Toronto Hydro to the Customer for the Contestable Work, where applicable. A copy of the Final Economic Evaluation shall be provided to the Customer.

15. Any amount payable by the Customer to Toronto Hydro, may be deducted from the Transfer Price owing to the Customer by Toronto Hydro.

16. [Even if no Expansion Deposit is otherwise required for the Project, if the Customer pursues an alternative bid, the Customer shall post an Alternative Bid Expansion Deposit in the amount of 10% of the Total Expansion Fees and GST set out in Schedule B.] **OR** [If the Customer pursues an Alternative Bid, the Customer shall post an Alternative Bid Expansion Deposit in the amount of 10% of the Expansion Deposit as set out in Schedule D.]

17. Toronto Hydro will retain the Alternative Bid Expansion Deposit for a warranty period of up to two years. The warranty begins at the end of the Realization Period, defined below.

18. The Realization Period for a Project ends, **[For residential developments]** upon the first to occur of:
    (i) the materialization of the last forecasted connection in the expansion project, or
    (ii) Five (5) years after energization of the new facilities.
    OR
    [For commercial and industrial developments] upon the first to occur of:
    (i) the materialization of the last forecasted demand, or
    (ii) Five (5) years after energization of the new facilities.

19. Toronto Hydro shall be entitled to retain and use the Alternative Bid Expansion Deposit to complete, repairing or bring up to standard the facilities constructed by the Customer, including Toronto Hydro's costs to ensure that the expansion is completed to the proper design, technical standards and specifications, using approved materials and that the facilities operate properly when energized.

20. Toronto Hydro shall return to the Customer the unapplied portion of the Alternative Bid Expansion Deposit, if any, at the end of the two-year warranty period.

21. Upon receipt of notice from the Customer that it intends to hire an alternative bid contractor, Toronto Hydro will provide an Alternative Bid Agreement.

Contestable Work shall mean the following:

Note:

- All Customer-supplied materials must be submitted to Toronto Hydro for approval prior to installation and meet Toronto Hydro Distribution Construction Standards;
- All equipment and underground plant installed must be inspected and approved prior to connection to the Toronto Hydro distribution system;
- [Customer is responsible for applying for and obtaining the necessary City road cut permits.]

Description of Work to Be Completed by Toronto Hydro:

Toronto Hydro's Additional Costs for Alternative Bid Work	**$**
GST (5%)	**$**
TOTAL ADDITIONAL COSTS FOR ALTERNATIVE BID WORK, GST	**$**
Less Deposit and GST received	**-$**
BALANCE OUTSTANDING	**$**
ALTERNATIVE BID EXPANSION DEPOSIT	**$**

SCHEDULE F
GENERAL TERMS AND CONDITIONS
of OFFER TO CONNECT

1. ASSIGNMENT

1.1 Neither party may assign this Offer to Connect without the prior written consent of the other party, such consent not to be unreasonably withheld.

2. DEMARCATION POINTS

2.1 The ownership and operational demarcation points of the Project shall be identified as such by Toronto Hydro on the as-constructed drawings.

2.2 In accordance with Toronto Hydro's Conditions of Service, the Customer is responsible for maintaining, repairing and replacing, in a safe condition satisfactory to Toronto Hydro, all the Customer's civil infrastructure on private property that is deemed required by Toronto Hydro to house Toronto Hydro's Connection Assets, including but not limited to poles, underground conduits, cable chambers, cable pull rooms, transformer rooms, transformer vaults and transformer pads.

3. DISPUTE RESOLUTION

3.1 Any controversy between the parties arising under this Offer to Connect not resolved by discussions between the parties shall be determined by an arbitration tribunal convened pursuant to a notice of submission given either by Toronto Hydro or the Customer.

3.2 The notice shall name one arbitrator.

3.3 The party receiving the notice shall, within 10 days of notice to the other, name the second arbitrator or, if it fails to do so, the party giving the notice of submission shall name the second arbitrator.

3.4 The two arbitrators appointed shall name the third arbitrator within 10 days, or if they fail to do so within that time period, either party may make application to the applicable court for appointment of the third arbitrator.

3.5 Any arbitrator selected to act under this Offer to Connect shall be qualified by education, training and experience to pass on the particular question in dispute and shall have no connection to either of the parties other than acting in previous arbitrations.

3.6 The arbitration shall be conducted in accordance with the provisions of *The Arbitration Act, 1991* S.O. c-17, as amended.

3.7 The decisions of the arbitration tribunal shall be made in writing and shall be final and binding on the parties as to the questions submitted and the parties shall have no right of appeal therefrom.

4. EASEMENTS

4.1 Upon request by Toronto Hydro, the Customer shall, at its own expense, execute, register and provide a solicitor's opinion on title in a form acceptable to Toronto Hydro, within the time period specified by Toronto Hydro, and subject only to those encumbrances permitted in writing by Toronto Hydro, such easement agreements as Toronto Hydro may require for the installation and continued existence of any electrical or telecommunication plants or access to same for the life of such plant or as otherwise required to perform its responsibility as a distribution company.

4.2 The customer acknowledges that in order for an easement to be registered, it shall be required, at its expense, to arrange for and register any necessary documentation required by the appropriate Land Registry Office, including a Reference Plan, prepared by an Ontario Land Surveyor, describing the extent of the lands required for the easement.

5. FORCE MAJEURE

5.1 Force Majeure means any act, event, cause or condition that is beyond Toronto Hydro's reasonable control, including wind, ice, lightning or other storms, earthquakes, landslides, floods, washouts, fires, explosions, contamination, breakage of equipment or machinery, delays in transportation, strikes, lockouts or other labour disturbances, civil disobedience or disturbances, war, acts of sabotage, blockades, insurrections, vandals, riots, epidemics, loss of any relevant license or a declaration of force majeure by Hydro One Networks Inc., or any successor, under any agreement which Hydro One Networks Inc., or any successor, has with Toronto Hydro in connection with any work to be performed by Toronto Hydro under this Offer to Connect.

5.2 If by reason of Force Majeure, Toronto Hydro is unable, wholly or partially, to perform or comply with any or all of its obligations under, this Offer to Connect, it shall be relieved of such obligations, and any liability (including liability for any injury, damage or loss to the Customer caused by such event of Force Majeure) for failing to perform or comply with such obligations, during the continuance of Force Majeure.

6. LIMITATION OF LIABILITY

6.1 Toronto Hydro shall not be responsible for the acts or omissions of the Customer or its employees, contractors, subcontractors or agent.

6.2 Neither Toronto Hydro nor any of its employees, agents, officers, directors or other representatives ("Representatives") shall be liable for any loss, injury or damage to persons or property caused in whole or in part by negligence or fault of the Customer, or any of the Customer's Representatives, contractors or subcontractors.

6.3 Notwithstanding any other provision in this Offer to Connect, or any applicable statutory provision Toronto Hydro and its Representatives shall only be liable for any damages which arise directly out of the wilful misconduct or negligence of Toronto Hydro or its Representatives.

6.4 Neither Toronto Hydro nor any of its Representatives shall be liable under any circumstances whatsoever for any loss of profits or revenues, business interruption losses, loss of contract or loss of goodwill, or for any indirect, consequential, incidental or special damages, including but not limited to punitive or exemplary damages, arising from any breach of this Offer to Connect, fundamental or otherwise, or from any tortious acts, including the negligence or willful misconduct of it or its Representatives, however arising.

6.5 No action arising out of this Offer to Connect, regardless of the form thereof, may be brought by either party more than two (2) years following the date the cause of action arose, provided however that, subject to any applicable law, Toronto Hydro may bring an action for non-payment of amounts, or non-delivery of Expansion

Deposits, required to be paid or delivered by the Customer under this Offer to Connect at any time.

6.6 The Customer shall indemnify and save harmless Toronto Hydro and its Representatives from any action, claim, penalty, damages, losses, judgements, settlements, costs and expenses or other remedy brought by any party or governmental authority, arising out of or resulting from any negligent act or failure to act or any willful misconduct by the Customer or any of its Representatives.

6.7 All of the provisions of Sections 6.1, 6.2, 6.3, 6.4, 6.5 and 6.6 shall survive the termination of this Offer to Connect.

7. NOTICE

7.1 Any notice to be given under this Offer to Connect shall be in writing and delivered by prepaid registered mail, hand, courier or facsimile to the contact for the parties as set forth in the Offer to Connect.

7.2 Delivery by facsimile shall be deemed received on the day following transmittal provided the facsimile is received as confirmed by the issuance of a confirmation receipt at the point of transmission.

7.3 Delivery by hand or courier shall be deemed received on the date delivered.

7.4 Delivery by prepaid registered mail shall be deemed received on the 5th business day after mailing.

7.5 Either party may change its address for notice by providing written notice of that change to the other party.

8. REVISED PLANS

8.1 If the Customer submits revised plans or requires additional design work, Toronto Hydro may provide, at cost, a new offer based on the revised plans or the additional design work.

8.2 If the Plans are revised at any time, after acceptance of this Offer to Connect shall be withdrawn or terminated immediately, despite any acceptance by the Customer. A new Offer to Connect will only be provided to the Customer upon payment in the amount of $3,500.00 that must be paid prior to the new Offer to Connect being provided to the Customer.

9. SECURITY INTEREST

9.1 As security for its obligation under this Offer to Connect, the Customer grants to Toronto Hydro a present and continuing security interest in, and lien on (and right of set-off against), and assignment of all money, cash collateral and cash equivalent collateral and any and all proceeds resulting therefrom or the liquidation thereof, delivered as an Expansion Deposit or otherwise pursuant to the terms of this Offer to Connect, or for the benefit of Toronto Hydro.

9.2 The Customer agrees to take such action as Toronto Hydro reasonably requires in order to perfect Toronto Hydro's first-priority security interest in, and lien on (and right of set-off against), such collateral and any and all proceeds resulting therefrom or from the liquidation thereof.

9.3 Toronto Hydro shall apply the proceeds of the collateral realized upon the exercise of any such rights or remedies to reduce Customer's obligations under this Offer to Connect (Customer remaining liable for any amounts owing to Toronto Hydro after such application), subject to Toronto Hydro's obligation to return any surplus proceeds remaining after such obligations are satisfied in full.

10. TAXES

10.1 Unless specified, none of the amounts payable or deliverable under the Offer to Connect include goods and services taxes or any other taxes that may be payable.

10.2 The Customer shall pay all such taxes in accordance with applicable laws.

11. TERMINATION

11.1 Each of the following shall constitute an event of default ("Event of Default"):

(i) the Customer fails to make any payment at the time specified for payment in this Offer to Connect and such failure has not been remedied within 4 days notice of such failure;

(ii) the Customer fails to deliver any Expansion Deposit, including a renewal, or additional Expansion Deposit within the time period specified for delivery in this Offer to Connect;

(iii) the Customer fails to execute and deliver any agreement, or deliver any other document, within the time period specified for execution and/or delivery;

(iv) the Customer fails to commence the Expansion Work within 1 year from the date of this Offer to Connect;

(v) the Customer cancels the Project for any reason;

(vi) the Customer fails to comply with any other covenant or obligation in this Offer to Connect and such failure has not been remedied (where it is possible to remedy such failure) within 15 days of the initial failure to perform;

(vii) a resolution has passed, or documents filed at an office of public record, for the merger, amalgamation, dissolution, termination of existence, liquidation or winding-up of the Customer, unless the prior consent of Toronto Hydro has been obtained;

(viii) a receiver, manager, receiver-manager, liquidator, monitor or trustee in bankruptcy of the Customer or any of its property is appointed by any government authority, and such receiver, manager, receiver-manager, liquidator, monitor or trustee is not discharged within 30 days of appointment; or, if by decree of any government authority, the Customer is adjudicated bankrupt or insolvent, or any substantial part of its property is taken, and such decree is not discharged within 30 days after the entry thereof; or, if a petition to declare bankruptcy or to reorganize such party pursuant to any applicable law is filed against the Customer and is not dismissed within 30 days of such filing;

(ix) the Customer files, or consents to the filing of, a petition in bankruptcy or seeks, or consents to, an order or other protection under any provision of any legislation relating to insolvency or

bankruptcy ("Insolvency Legislation"); or files, or consents to the filing of, a petition, application, answer or consent seeking relief or assistance in respect of itself under provision of any Insolvency Legislation; or files, consents to the filing of, an answer admitting the material allegations of a petition filed against it in any proceeding described herein; or makes an assignment for the benefit of its creditors; or admits in writing its inability to pay its debts generally as they become due; or consents to the appointment of a receiver, trustee, or liquidator over any, or all, of its property.

11.2 Upon the occurrence of an Event of Default, Toronto Hydro may, at its sole option, do any one or more of the following:

(i) exercise any of the rights and remedies of a secured party including any such rights and remedies under law then in effect;

(ii) exercise its rights of set-off against any and all property of the Customer in the possession of Toronto Hydro;

(iii) declare the full amounts of the Expansion Fees and OM&A Costs that are unpaid and unrecovered as due and owing ("Accelerated Amounts");

(iv) draw on any cash, or draw under any letter of credit, then held by or for the benefit of Toronto Hydro as an Expansion Deposit or Capital Contribution or otherwise, free from any claim or right of any nature whatsoever of the Customer, including any equity or right of purchase or redemption by the Customer, to cover all costs incurred on, or prior to, the date of termination, including costs for materials ordered for the expansion, storage costs and facilities removal costs and any amounts owing under this Offer to Connect, including the Accelerated Amounts; and/or

(v) terminate this Offer to Connect, provided that, any termination shall not affect any obligations incurred prior to the effective date of termination or any other rights that Toronto Hydro may have arising out of any rights or obligations that are expressed to survive termination of this Offer to Connect.

12. TITLE AND RISK OF LOSS

12.1 Notwithstanding that Toronto Hydro may install equipment and materials under this Offer to Connect to which title is intended to pass to the Customer, title to such equipment or materials shall be transferred to the Customer, and risk of loss shall be assumed by the Customer, upon delivery to the Property.

12.2 Toronto Hydro shall be entitled to receive reasonable compensation for storing any materials or equipment not delivered to the Customer due to a delay caused by the Customer and such equipment or materials shall be held at the Customer's risk.

13. WARRANTIES

13.1 Toronto Hydro warrants that the services it provides are in accordance with Good Utility Practice.

13.2 Except as expressly set forth in this Offer to Connect, Toronto Hydro provides no warranties, for fitness for purpose or otherwise, and whether statutory or otherwise, to the Customer.

14. MISCELLANEOUS

14.1 This Offer to Connect, including the Schedules attached, shall constitute the entire agreement between the parties, and there are no other agreements or understandings, either written or oral, to conflict with, alter or enlarge this Offer to Connect unless agreed to in writing between the parties subsequent to the effective date of this Offer to Connect.

14.2 Failure or delay by Toronto Hydro in enforcing any right under, or provision of this Offer to Connect shall not be deemed a waiver of such provision or right with respect to the instant, or any previous, or subsequent, breach.

14.3 This Offer to Connect shall be governed by the laws of the Province of Ontario and the laws of Canada as applicable.

14.4 Toronto Hydro shall be entitled to access at all reasonable times to any of the Customer's properties to perform the services in this Offer to Connect.

14.5 Interest on unpaid amounts shall bear interest at the rate of 1.5 percent calculated and compounded monthly (19.56 percent per annum) at and from the due date up to and including the date of payment in full of such amount, together with all interest accrued to the date of payment.

14.6 Toronto Hydro and the Customer agree to execute and deliver such further documents as may be required for either party to fulfill its obligations and enforce its rights under this Offer to Connect.

14.7 If any provision of this Offer to Connect is declared illegal, invalid or unenforceable for any reason whatsoever, to the extent permitted by law, such illegality, invalidity or unenforceability shall not affect the legality, validity or enforceability of any of the other provisions.

14.8 This Offer to Connect and the obligations of the parties under it are subject to all applicable present and future laws, rules, regulations and orders of any regulatory or legislative body or other duly constituted authority having jurisdiction over Toronto Hydro or the Customer.

14.9 Time shall be of the essence.

14.10 If there is a conflict between this Offer to Connect and Toronto Hydro's Conditions of Service, this Offer to Connect shall govern.

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SCHEDULE G
ADDITIONAL WORK AND COSTS

1. The Customer has requested Toronto Hydro to perform additional work ("Additional Work") at an additional cost ("Additional Costs") as described below.

2. The Customer shall pay the Additional Costs prior to commencement of the Additional Work.

Additional Work:
[insert description of work]

Additional Costs:	$
GST (5%)	$
Total Additional Costs, GST	$

The Additional Fees are based on the Additional Work being done during non-winter conditions. In the event the Customer requires the Additional Work to be done during winter conditions that would result in additional costs, Toronto Hydro will advise the Customer of the estimated additional costs and if the Customer provides a written request to Toronto Hydro to proceed, a Project Invoice will be issued and payment must be received by Toronto Hydro prior to the commencement of any of the applicable Additional Work.

INTERROGATORIES OF SMART SUB-METERING WORKING GROUP

INTERROGATORY 8:

Reference(s): none

Please provide a breakdown of the total amounts actually spent on the Suite Metering Program in 2007 and 2008, to date in 2009, and the forecast for 2009 and 2010. Please provide for each of these years the number of buildings in which suite meters were installed or are forecast to be installed?

RESPONSE:

	Total Capital ($ millions)		Building Installations	
	To Date	Forecast	Started or Completed	Forecast
2008	2.1	N/A	19	N/A
2009	1.4	0.5	14	6
2010	N/A	2.4	N/A	30

Suite Meter costs for 2007 are not available.

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INTERROGATORIES OF SMART SUB-METERING WORKING GROUP

INTERROGATORY 9:

Reference(s): Exhibit F1, Tab 7, Schedule 1, page 5, Table 1

THESL identifies its total customer service costs for each of 2008, 2009, and 2010. Please confirm that these numbers do not include external third party customer costs associated with customer services for suite-metered condominium units.

RESPONSE:

None of the costs proposed by THESL for recovery through rates consist of "external third party customer costs".

INTERROGATORIES OF SMART SUB-METERING WORKING GROUP

INTERROGATORY 10:

Reference(s): Exhibit D1, Tab 3, Schedule 2, page 7

Service and meter assets will increase between 2008 and 2010, from $246.3 million to $274.8 million. The variance primarily relates to wholesale meter compliance, full compliance with the Smart Meter Initiative, and "implementing suite metering in bulk metered condominiums". In respect of the implementation of suite metering in bulk metered buildings, please provide the following:

a) the amount THESL has closed to rate base or the amount for which THESL seeks approval to close to rate base for 2007 and 2008 and 2009 (if any) by year;
b) the forecast capital spend by Toronto Hydro in 2010 to suite meter bulk metered buildings;
c) the number of units individually metered (actual or forecast) in each of the years 2007 through 2010 in formerly bulk metered buildings;
d) an explanation as to how THESL has forecast its capital spend for 2010, including:
    i. the number of condominium units that are currently bulk metered which are eligible for conversion;
    ii. the percentage of the available bulk metered market which THESL estimates it will capture in 2010.

RESPONSE:

a) THESL forecasts that $0.3 million will be closed to rate base by year-end 2009.

b) THESL has forecast that $0.4 million will be spent in 2010 to convert existing bulk-metered buildings to individually-metered.

INTERROGATORIES OF SMART SUB-METERING WORKING GROUP

c) In 2007, 154 units were converted from bulk to individual metering. In 2008, 1,002 units were converted to individual metering. To date in 2009, 535 units have been converted to individual metering, with 883 more scheduled for completion before year end. THESL is forecasting that 864 units will be converted from bulk to individual metering in 2010.

d) THESL's suite meter capital plan is based on a combination of meetings with developers, feedback from our external Project Manager, business reports and direct contact with customers. THESL's current estimate is that there are approximately 550 bulk-metered condominium buildings in Toronto housing approximately 160,000 units that could be converted to individual metering.

THESL estimates it will successfully convert 0.5% of the bulk-metered buildings to individual metering in 2010.

INTERROGATORIES OF SMART SUB-METERING WORKING GROUP

INTERROGATORY 11:

Reference(s): Exhibit D1, Tab 7, Schedule 1, page 19, Table 2
Exhibit K1, Tab 1, Schedule 1, page 10, Table 5

THESL indicates, at Table 5, an installation of 2,705 (actuals) individually-metered suites (cumulative) at the end of 2008. Table 2, being the summary of THESL's capital budget, indicates Nil for suite metering for 2008.

a) Please explain the above apparent inconsistency;

b) Please advise of the total capital cost to acquire and install (including any third party vendor costs) the 2,705 suite meters installed by the end of 2008.

c) Has THESL closed to rate base any of these capital costs and/or is it seeking approval to close to rate base these costs in 2010?

RESPONSE:

a) In Table 2, the suite metering costs of $2.1 million are included in the "Other" line, as part of the $13.2 million total.

b) The 2,705 customers listed in Exhibit K1, Tab 1, Schedule 1, page 10, Table 5, indicate the number of active revenue producing accounts cumulative for 2007 and 2008. The cost to install the meters at the revenue producing accounts was $1.15 million.

c) THESL forecasts that $5.3 million of capital costs will be closed to rate base by year-end 2010. Approval will be sought to close additional costs to rate base as installations are completed and work orders closed.

INTERROGATORIES OF SMART SUB-METERING WORKING GROUP

INTERROGATORY 12:

Reference(s): Exhibit D1, Tab 7, Schedule 1, page 19

THESL's summary of capital budget includes a budget of $1.8 million for 2009, and $2.4 million in 2010 for its Suite Metering Program. Please advise of the average capital cost to acquire and install suite meters in each of 2009 and 2010 for each of: (a) new condominiums; and (b) bulk metered condominiums being converted to individual suite metering. What are the forecast numbers for each type? Please advise if there are any additional costs which THESL may contemplate capitalizing in respect of these meters in subsequent years.

RESPONSE:

The average acquisition costs and forecasted installations are:

	Average Acquisition and Installation Costs			
	New Condominiums		Conversions to Individual Metering	
	Number of Units	Cost	Number of Units	Cost
2009 Actual	2454	$453	535	$453
2009 Forecast	394	$368	883	$350
2010 Forecast	4536	$440	864	$440

THESL does not contemplate capitalizing additional costs in respective years beyond those which will be capitalized upon the completion of work.

INTERROGATORIES OF SMART SUB-METERING WORKING GROUP

INTERROGATORY 12:

Reference(s): Exhibit D1, Tab 7, Schedule 1, page 19

THESL's summary of capital budget includes a budget of $1.8 million for 2009, and $2.4 million in 2010 for its Suite Metering Program. Please advise of the average capital cost to acquire and install suite meters in each of 2009 and 2010 for each of: (a) new condominiums; and (b) bulk metered condominiums being converted to individual suite metering. What are the forecast numbers for each type? Please advise if there are any additional costs which THESL may contemplate capitalizing in respect of these meters in subsequent years.

RESPONSE:

The average acquisition costs and forecasted installations are:

	Average Acquisition and Installation Costs			
	New Condominiums		Conversions to Individual Metering	
	Number of Units	Cost	Number of Units	Cost
2009 Actual	2454	$453	535	$453
2009 Forecast	394	$443	883	$462
2010 Forecast	4536	$440	864	$440

/C

THESL does not contemplate capitalizing additional costs in respective years beyond those which will be capitalized upon the completion of work.

INTERROGATORIES OF SMART SUB-METERING WORKING GROUP

INTERROGATORY 13:

Reference(s): Exhibit D1, Tab 7, Schedule 1, page 19

a) Please provide a breakdown of the type of capital costs included in THESL's budget of $1.8 million for 2009, and $2.4 million in 2010, for its Suite Metering Program. Please advise whether these capital budgets include any allocation of the costs associated with related capital expenditures, including, to the extent applicable, the following:

i. local area network components;
ii. wide area network or backhaul;
iii. field data collection devices and back office software;
iv. data protection security system;
v. network management system or meter infrastructure head-end;
vi. meter data management system;
vii. costs associated with any other IT component which serves the Suite Metering Program such as, for example, necessary modifications to the billing system;
viii. other applicable capital accounts.

b) To the extent that any of the above capital costs are not included in the capital budgets of $1.8 and $2.4 million for 2008 and 2009, please provide your best estimate of the appropriate amount to allocate in respect of such costs to the Suite Metering Program.

RESPONSE:

a) THESL's 2009 and 2010 suite meter capital budget includes:

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INTERROGATORIES OF SMART SUB-METERING WORKING GROUP

Item	2009 ($ millions)	2010 ($ millions)
Labour, Installation and Vehicles	0.1	0.4
Material and Contracts	1.7	2.0
Total	1.8	2.4

None of the eight cost components listed are included in the suite metering capital budget for 2008 and 2009.

b) There are no additional capital costs that should be allocated to the Suite Metering Program for the cost components listed.

INTERROGATORIES OF SMART SUB-METERING WORKING GROUP

INTERROGATORY 14:

Reference(s): Exhibit D1, Tab 7, Schedule 1, page 19

What is the amount, if any, which THESL forecasts it will pay to its third party suite metering vendor in each of 2009 and 2010, which it may or is seeking to capitalize?

RESPONSE:

THESL forecasts that external vendor costs of $1.7 million for work completed, or forecast for completion by year-end 2009, and $2.0 million for 2010.

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INTERROGATORIES OF SMART SUB-METERING WORKING GROUP

INTERROGATORY 15:

Reference(s): Exhibit D1, Tab 7, Schedule 1, page 19

THESL produced, in EB-2007-0680 a business plan for its Suite Metering Program, entitled "Draft – Project Plan for Individual Suite Metering in Condominium Buildings". A copy of this business plan was filed on November 12, 2007, in response to VECC Interrogatory 9 during this proceeding. A copy is attached to this interrogatory for convenience of reference. Please advise as follows:

a) Has this business plan been updated, or has THESL prepared a new or revised business case or plan in respect of condominium suite metering? If so, please produce copies of same.

b) Does THESL contemplate undertaking suite metering in any Residential Tenancy Act buildings (new and/or to be converted) in 2010? If so, how many, and what is THESL's forecast of the total cost to suite meter these buildings? Does THESL seek recovery or plan to capitalize and request approval to clear to rate base any amounts associated with the installation and operation of suite meters in Residential Tenancy Act buildings in 2010?

c) Please provide an update in respect of the following areas identified in the attached business plan:

   i. Does THESL continue to estimate that there are close to 300,000 existing condominium suite candidates for individual suite metering? If not, what is THESL's current estimate?

   ii. The Table, at page 8 of the attached business plan, provides the total cost and cost per suite (based upon the assumptions stated in the plan) for bulk metering, individual smart meters, and integrated electronic smart metering. Please update the figures in this Table using the best

INTERROGATORIES OF SMART SUB-METERING WORKING GROUP

information currently available. For the integrated electronic smart metering costs, what is the average cost per suite forecast for 2010.

RESPONSE:

a) THESL has not prepared an update to the plan.

b) THESL is contemplating the installation of individual metering for Residential Tenancy Act buildings, but has not included any costs or work volume forecasts, pending further regulatory direction. THESL is not seeking to recover any costs.

c)

i) THESL believes that there are close to 300,000 candidates for conversion to suite metering. However, the draft plan incorrectly identified the units as condominium units; rental units were included in the estimate.

ii) The costs for bulk metering and individual smart meters are still accurate. The current cost for integrated electronic smart metering is approximately $440 per suite.

Toronto Hydro-Electric System Limited
EB-2007-0680
Exhibit R1
Tab 6
Schedule 9
Appendix A
Filed: 2007 Nov 12

DRAFT

Project Plan for Individual Suite Metering in Condominium Buildings

Prepared by: Steve MacDonald

Updates by: David Grant

1. Executive Summary

In the spring of 2007, executive approval was given to develop plans for to offer individual suite metering services to condominium corporations. This decision was based on the draft regulations that would require all condominium buildings in Ontario to have individual suite metering by the end of 2010.

In mid-August, the final regulations were published, and the 2010 deadline was removed. This report was prepared to assess the implications of this significant change.

As a result of our reassessment, the number of condominium individual suite meters that we anticipate Toronto Hydro could install has been significantly reduced.

However, with regulatory approval, Toronto Hydro can still successfully offer individual suite metering to both existing and new condominium boards within our city.

We recommend that we proceed with the evaluation, selection and contracting with a suitable business partner to begin offer these services.

2. Background

When the six metropolitan Toronto utilities amalgamated in 1998, there were significant inconsistencies in metering practices for multi-tenant residential buildings. Some utilities did not allow individual metering, while it was mandatory or optional for others. Some utilities allowed individual metering but charged the developer for the meter costs, while others provided the service at no cost. To establish the consistent approach requested by developers and employees, a policy requiring bulk metering was established for all buildings with more than 18 tenants.

Initiatives such as conservation and demand management caused a review of this policy, and led to a policy change that allows individual metering, using traditional glass meters only. Although generally viewed as a positive step, property developers often elect to have a bulk meter point from Toronto Hydro and use a third party service provider to install sub-metering for individual units or suites. However, many developers have indicated that they would prefer to have the individual suite metering provided by Toronto Hydro, but only if an electronic metering product was offered. The advantages to the developer are primarily reduced space requirements and therefore increased retail opportunities. The latest Conditions of Service allow for the possibility of installing integrated electronic metering systems, but require evaluation by Toronto Hydro on a case-by-case basis.

The third party meter service providers have been offering terms that are attractive to developers, but may not be in the best long-term interests of the individual suite owners. In some cases, the terms included contracts of up to 25 years duration. The contract

provisions offered by other service providers requires Toronto Hydro to develop a service package that is competitive, complies with regulatory obligations and doesn't compete at an affiliate company level.

In 2006, the Ontario government introduced draft regulations to require all new and existing condominium buildings to install individual suite smart meters. The draft regulations also addressed the need for licensing the meter service providers, but kept the concept of allowing competition for these services. The condominium community raised concerns about some of the provisions, especially the deadline to have all existing building converted by the end of 2010. In August 2007, the official regulations were published, and this deadline was removed.

A search of our Banner Customer Information System suggests that close to 300,000 existing condominium suites may be candidates to have individual metering installed (the number of cumulative suites in bulk metered buildings identified as "designated customers"). Converting these units to be individually metered will provide a significant conservation and demand management opportunity.

3. Installation Situations

There are several different situations where individual suite metering may be installed. Regardless of the building type, and type of metering installed, all existing requirements and processes will continue to apply, including:

- Compliance with all the other terms in Toronto Hydro's Conditions of Service
- Premise and customer account set-up completed by Customer Connection and Maintenance staff
- Individual account holders will become Toronto Hydro customers
- Toronto Hydro will provide all meter reading, billing, collection, and reconnect/disconnect activities (either directly or through contract services)

3.1. New Buildings / Developments

Developers currently have two choices for Toronto Hydro meter installations:

1) Traditional style meters, installed in meter centres or meter sockets. As per the existing Conditions of Service, the developer must provide:
   - all required meter sockets or meter centres
   - common area meter requirements (switchgear, meter cabinets, phone lines, etc.)
   - metering for all services required by building codes or standards (e.g. fire pumps)

   Builders/developers in general will not be agreeable to giving up rentable space for the traditional meter installations.

2) Integrated metering, where the individual metering is installed downstream of the traditional metering location. Typically, the metering equipment will be integrated into customer-owned breaker panels or distribution boxes.

   The developer will provide:
   - a "bulk", or whole load meter, to measure the entire load of the building
   - metering for all services required by building codes or standards (e.g. fire pumps)
   - all required mechanical interfaces for suite metering
   - a single meter to measure all common area load
   - all meter communication or data collection requirements (phone lines, network connectivity, etc.)

3.2. Retrofitting Existing Bulk Metered Buildings

Retrofits will likely be substantially more difficult and costly than to install individual metering in new buildings. Although there are no requirements that preclude property managers from installing meter centers or sockets, space limitations will likely require integrated metering to be used to convert buildings that are currently bulk metered to individual suite metering.

Installation space even for integrated metering will be an issue, since most breaker panel enclosures were not built large enough to house metering equipment. Perhaps more importantly, most suites, if converted from bulk to individual, will be double metered, and an adjustment process will be required to correct duplicate billing. The chance for incorrect billing is higher than usual in a retrofit situation.

For retrofit situations, Toronto Hydro will provide and arrange for installation of the suite metering. Equipment will be installed in existing customer-owned breaker panels or distribution boxes. The property manager may be responsible for any significant modifications required to install new metering equipment, and for the provision of all communication or network connectivity circuits, including conduit, where applicable.

The existing bulk meter will remain as a billing point. Common area load will be calculated by subtracting the aggregated total of the suite meters from the bulk point. Payment for the common area load will remain the responsibility of the existing account holder. All metering points will provide hourly interval data, with all meters time synchronized to allow for proper allocation of common area and suite metering costs.

3.3. Retrofitting Existing Individually Metered Buildings to Smart Meters

Existing individually metered condominium buildings will be relatively easy to upgrade to smart metering installations. Since the site requirements for meter

installations already exist, the installation of the smart meters should consist of routine meter changes, and communication equipment installation. The appropriate technology selection will be the most challenging consideration. Each building will need individual assessment and analysis.

Property managers will be required to allow access during regular working hours to Toronto Hydro personnel. It is recommended that condominiums currently metered with traditional metering not be given the option to convert to integrated metering installations.

3.4. Existing Sub-Metering Systems

Customers who have an existing sub-metering system may approach Toronto Hydro to ask us to take over its operation. In these cases, we should presume that the metering equipment may be installed incorrectly, is a generation of technology no longer supported and is incompatible with our data collection systems. Also, the customers may have been billed incorrectly, and we could inherit numerous problem accounts.

Toronto Hydro should only assume the operation of these systems on the condition that the property owner/manager accepts all financial liability for making the technology compatible, and resolution of any existing billing errors.

3.5. Rental Buildings – New or Retrofit

The current regulations only require the installation of individual suite metering in condominium buildings, not rental units.

The majority of Toronto Hydro's unrecoverable ongoing bad debt comes from tenant accounts. For this reason, expanding our exposure to greater numbers of tenant accounts by installing individual suite metering in rental buildings is not recommended. Although a considerable number of condominium suites are rented out by their owners, the expected financial risks are greater with purely rental buildings.

4. Integrated Metering Technology Alternatives

A significant decision that we will have to make is how many systems, and therefore supporting software applications, we will approve for use.

Most integrated systems have similar construction, installation, and operational methods. The system consists of individual current transformers or transducers (CT) slipped around the service conductors that lead to each suite. One voltage source is taken from the breaker panel to a head end device, usually a transponder, and associated with the currents from each suite. The metering data is transferred to a

dedicated computer system on-site, which can be remotely interrogated by the utility from their billing office.

The choices of integrated technologies, each with one or more possible suppliers, are:

4.1. Mesh Technologies

Mesh technologies have been the mainstay of our residential smart meter deployment, and have been successfully deployed in some multi-unit buildings. Limiting factors include building age, construction technologies and lack of proximity to other buildings. Systems such as Elster's EnergyAxis are designed to broadcast the RF transmissions over a horizontal plane, so they work very well in single meter rooms, or when multiple meter rooms are on the same level. Testing of dwellings with horizontally located meter rooms has been mostly successful, and indications are that the system will work well for many applications. New products have been developed to extend the strength and range of signal broadcasting. There are occasions where the building construction type limits the communication success rate, and an alternate solution will be needed.

Based on cost, ease of installation, and integration with existing systems and processes, the mesh technology is a viable option for individual suite metering.

4.2. Power Line Carrier

Power line carrier systems operate by sending hourly data over the existing building wiring to a central receiver, or collector. The data in turn is collected from the collector by phone or LAN, using a dedicated data collection computer. Some power line carriers use meters that can directly replace the existing. Other systems require additional devices to assist in moving the data. Meters come in either traditional socket base configurations or with the equipment integrated into the dwelling units' breaker panels.

Power line carrier systems work well when there is only one voltage present in a building. However, most buildings have multiple transformation levels that can result in challenging data communications. The best of the current power line carrier systems can communicate through one level of voltage transformation. Power line carrier systems are also affected by open switches and supply point transfers. Data transfer rates, although often slower than other systems, should be adequate for the relatively small amount of data to be collected, and the system is always available for operation. Power line carrier systems provide excellent additional information with regard to outage reporting and restoration activity.

The comparatively high per point installation cost, coupled with the complexity of the installations and additional engineering and design considerations, can make power line a less desirable option. However, power line carrier systems remain a viable option for multi-suite buildings.

4.3. Point-to-Point

Point-to-point systems are ones where each meter sends its own hourly data back to the data collection computer. Vendors of this type of technology include SmartSynch, who manufacture third party cellular communication boards that are installed as part of a smart meter in a traditional metering package. Each meter operates independently of the others, and of any network operations. Meter attributes are tailored to customer billing requirements.

Point-to-point systems are easily installed, and will easily deliver all required data over an acceptable time period. The system is easily installed, although some installations will need specialized antenna solutions. The monthly communication costs will be higher, unless they can be bundled with other purchases from common service providers. The system may also have a less than acceptable communication rate for some installations that are below grade or inside steel cabinets.

5. Operations

Toronto Hydro's implementation of individual suite metering will require significant changes to our operations and business processes. These processes include: business development and promotion, property manager /developer liaison, customer communications, account set-up, metering equipment purchase and installation, contracting for communications facilities and services, installation testing and commissioning, ongoing maintenance and failure response, customer inquiries and billing questions.

Initially, meter reading and data collection will necessarily be done using a third party service, who will read the meters daily, provide hourly interval data in a manner suitable to Toronto Hydro, and investigate all meters where collected data is not suitable.

The initial installation will also likely have to be done by a third-party contractor, because our present metering staff doesn't have the skill sets or experience to install this type of metering. More importantly, our staff does not have the required licence or ESA certification to work on customer-owned equipment, which is where this type of metering will be installed. However, our staff should be given appropriate training and assigned to spot-check the installation process as a quality assurance function. They should also oversee the commissioning of the central metering equipment at each installation site.

Meter maintenance will likely be an issue, as many systems require on-site testing and certification, for which we currently don't have processes, tools, or skill-sets. If we are able to limit the number of different systems we are required to support, it should be feasible to develop our existing metering staff to troubleshoot and maintain these systems. Again, we will have to rely on a third party initially.

Account set up will be the most difficult part of the billing process. We need much information from customers, and will apply the same credit checks and deposit policy as we would for any other residential customer. As with all of our existing customers, when time-of-use rates are applied, the volume of inquiries is expected to be significantly higher. Billing dispute resolution will be a challenge, primarily because of on-site testing requirements, and the unfamiliarity of the regulator with many of the systems.

Toronto Hydro will have to ensure that the meter reading, data and presentment capabilities meet all of the regulated requirements, including the MDM/R, IESO, and Ministry of Energy rules that will be introduced.

6. Financial

The per point price for integrated metering costs substantially more than traditional metering, so cost recovery for capital expenses will take longer. To be competitive with other metering service providers, Toronto Hydro will need to provide individual unit integrated metering at no cost to the developer or condominium corporation. Ongoing operating costs will need to be recovered through our standard customer service charges.

There are benefits to Toronto Hydro in having more condominium buildings with individually suite metering. It will make our costs per customer more comparable with other utilities that do not have significant numbers of bulk metered customers.

Typical costs for a new, 250 suite, non-electrically heated condominium:

Assume there is one primary service, 347/600 V., 3000 A. Peak demand for the building is 1800 kW. The building has the following features:

- in-suite air conditioning
- indoor pool and recreation facility
- in-suite washers and dryers
- underground parking with ramp heating

Alternative Metering Installations	Total Cost	Cost per Suite
Bulk Metering	$3,500	$14
Individual Smart Meters	$40,000	$160
Integrated Electronic Smart Metering	$137,500	$550

Sample calculations will need to be made to illustrate the typical expected costs and savings per suite before and after the implementation of individual suite metering, from a customer perspective.

Based on the draft regulations, our projections of the number of estimated individual suite meters were as shown in the table below. With the removal of the 2010 deadline from the final regulations, our revised projections have been added.

Additional Suite Meters	2007	2008	2009	2010
Original	5000	15000	15000	15000
Revised	1920	3700	8200	9700

7. Customer Communications

An essential part of the overall plan for to offer individual suite metering for condominiums is customer communications. In this case, the customers include developers, property managers, condominium boards, and individual suite owners.

Our Corporate Communications staff have been engaged to develop a detailed communications plan, and to assist in its execution. The plan will include initial contact and promotion, working with our third party service provider, contacting condominium associations and property management companies. In addition to promoting Toronto Hydro as a desirable metering service provider, the communications will need to ensure clear understanding of expectations and obligations by all parties.

In general, many of the condominium corporations in Toronto are expected to prefer to have Toronto Hydro provide individual suite metering and billing services. Our corporate stability, city ownership and publicly regulated services make us attractive, if we can offer competitive services and costs.

8. Pilot Trial Installations

Toronto Hydro has committed to installing meters at six new condominium development sites, involving approximately 2300 individually metered suites. All of these installations are using the Quadlogic power line carrier metering system.

Since we cannot justify buying and supporting the meter reading software for these pilot installations, our interim solution is to hire a third party service provider to collect and store the data, and provide it to the Banner CIS as required for billing.

These pilot installations will give Toronto Hydro a valuable opportunity to test our internal business processes for the creation of large numbers of new customer accounts within tight time limits.

9. Next Steps

It is clear that Toronto Hydro will need the assistance of a third party metering services provider to meet the immediate demand from condominium corporations. We will need to partner with one or more third party companies to install meters and solicit existing condominiums for installations.

A RFP was sent out to prospective third party meter service providers and responses have been received recently. The evaluation requires diligent analysis before a recommendation for selection is made and contract agreement developed. The selection of metering technology is also inherent in the RFP evaluation.

10. Conclusions and Recommendations

The introduction of Regulation 442/07 of the Electricity Act was done to improve electricity conservation in Ontario. Toronto Hydro has both an opportunity and an obligation to participate in the implementation of individual suite metering in condominium buildings.

The technologies to provide individual suite metering are evolving, but there are currently available options to make individual suite metering successful.

With regulatory approval, Toronto Hydro can offer individual suite metering to both existing and new condominium boards within our city.

We recommend that we proceed with the evaluation, selection and contracting with a suitable business partner to begin offer these services.

INTERROGATORIES OF SMART SUB-METERING WORKING GROUP

INTERROGATORY 16:

Reference(s): **D1/T8/S3-1, p.3**
D1/T8/S3-2

THESL's Conditions of Service state, at Clause 2.3.7.1.1, that it will provide electronic or conventional smart suite metering for each unit of a new multi-unit site, or condominium, at no direct charge to the customer. Please advise:

a) Whether THESL provides electronic suite metering in bulk metered condominium conversion projects at no cost to the condominium corporation and/or unit owners;

b) Does THESL undertake an economic evaluation pursuant to the Distribution System Code in respect of bulk metered buildings looking to be individually suite metered? Does THESL adjust its revenue forecast in respect of such buildings to account for the expected decrease in load due to the conservation impact of the building being suite metered?

c) In respect of new condominiums, does THESL exclude the costs to acquire and install suite meters in its economic evaluations undertaken pursuant to the Distribution System Code?

d) If the answer to (b) is Yes, if the acquisition and installation costs of suite meters had been included in the economic evaluations, are there any developers or condominium corporations that would have been required to make a capital contribution in aid of construction?

RESPONSE:

a) Yes.

INTERROGATORIES OF SMART SUB-METERING WORKING GROUP

b) No. Once a customer has signed an Offer to Connect, Toronto Hydro does not perform another economic evaluation for any conversions. We do not adjust our revenue forecast.

c) Yes. In our economic evaluation Toronto Hydro excludes the costs to install suite meters.

d) Not applicable as the answer to (b) was no.

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INTERROGATORIES OF SMART SUB-METERING WORKING GROUP

INTERROGATORY 17:

Reference(s): **D1/T8/S3-1, p.3**
D1/T8/S3-2

If the 3,600 condominium suites that THESL forecasts suite metering in 2010 were in fact suite-metered by a licensed smart sub-meterer, would THESL's forecast of capital contributions from the developers of the very same buildings be affected? Please explain your answer, and identify whether the change would be an increase or decrease in the forecast recovery of capital contributions.

RESPONSE:

Yes, THESL's forecast would be affected. Bulk-metering would cause an increase in the number of capital contributions. In THESL's economic evaluations, if a condominium decides to go suite-metered each condominium unit is considered as a single customer, so the total electrical load of the condominium is spread across all customers. In a bulk-metering situation, the condominium is treated as a single customer with the load of all the units combined. The main factor in the calculation of capital contributions is the load; the larger the load the more likely a capital contribution will be required.

INTERROGATORIES OF SMART SUB-METERING WORKING GROUP

INTERROGATORY 18:

Reference(s): **D1/T8/S3-1, p.3**
D1/T8/S3-2

Has THESL, in 2008 and 2009,provided orally or in writing an offer to connect to a new condominium developer that contemplates the developer paying no capital contribution where THESL suite meters the building but requires the developer to pay a capital contribution should the developer contemplate using a licensed smart sub-metering provider to smart sub-meter the building? Please produce a copy of all such offers to connect and the economic evaluations undertaken in support of same.

RESPONSE:

THESL includes the required developer capital contribution in the Offer to Connect. The calculation is based on the expected electrical demand of the building, when the demand is expected to materialize, and the number of new accounts that THESL will realize once the development is complete.

In some cases, developers have decided to have THESL install suite meters after the initial Offer to Connect had been made. In these cases, THESL recalculates the Offer to Connect, taking into consideration the additional number of new accounts that will be realized, based on information provided by the developer. There have been occasions where the requirement for a capital contribution has been eliminated.

In cases where suite metering is provided and installed by a service provider other than THESL, THESL only realizes the bulk meter as an additional account. As the Offer to

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INTERROGATORIES OF SMART SUB-METERING WORKING GROUP

Connect would not contemplate the additional new suites as THESL customers, the required capital contribution would be calculated based on a bulk metered installation.

Offers to Connect and the supporting economic evaluations contain confidential customer information and, therefore, are not provided.

INTERROGATORIES OF SMART SUB-METERING WORKING GROUP

INTERROGATORY 19:

Reference(s): **Exhibit D1, Tab 8, Schedule 3-1, page 3**
Exhibit D1, Tab 8, Schedule 3-2

Please confirm that no costs (OM & A and capital) associated with the suite metering program have been allocated to or form part of any of the costs incurred or forecast by THESL in respect of its Smart Meter Program?

RESPONSE:

No suite meter costs have been allocated to the smart meter program.

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INTERROGATORIES OF SMART SUB-METERING WORKING GROUP

INTERROGATORY 20:

Reference(s): L1/T2/S1, p. 11

Please identify each of the four meter types referenced under Column 1"Residential"in this Exhibit. Please advise which meter type relates to the meters used for THESL's Suite Metering Program. If the suite meters are included under the "LDC Specific 2"meter type, please explain the total number of meters included at 31,275.

RESPONSE:

The quantity of 17,532 refers to single-phase conventional meters. The quantity of 7,500 refers to smart meters that were installed as part of an initial pilot program. The quantity of 558,534 refers to smart meters that were installed as part of THESL's smart meter implementation plan. The 31,275 includes four meter types:

- Collectors that have been installed as part of the smart meter program;
- Transformer-type meters that are installed at large houses;
- Polyphase meters installed at large residential or small commercial accounts; and
- Suite meters, which make up approximately 9,000 of the indicated total.

INTERROGATORIES OF ONTARIO ENERGY BOARD STAFF

INTERROGATORY 12:

Reference(s): K1/ T1/ S1, p. 10

THESL states that the forecast of customers for the residential sector in 2009 through 2010 includes an estimate for new individually-metered condominium suites, as well as the conversion of some condominiums from bulk-metered to individual suite-metering.

a) What is the percentage of new individually-metered suite meters and what is the percentage of converted individually suite meter from bulk meters?

b) Please provide an estimate of how many bulk meters are added each year.

c) Please provide an estimate of how many individually-metered suite meters result from a bulk meter.

d) Please provide a customer count forecast excluding the individual suite meters.

RESPONSE:

a)

Percentage of individually metered suites converted from bulk-metered condo (retrofits) in the total number of expected individually-metered suites	80%
Percentage of new individually-metered suites (new construction) in the total number of expected individually-metered suites	20%

This percentage was assumed at the time when the forecast was built based on the economy conditions and construction market expectations.

b) The number of new bulk or check meters installed at condominiums varies according to developer requests, but recently has been approximately 22 per year.

INTERROGATORIES OF ONTARIO ENERGY BOARD STAFF

c) The number of individually-metered suites resulting from a bulk meter conversion may vary anywhere from 20 to 300 suites depending on the size of the condominium, but would typically be about 175 suites.

d)

Year	Individually-Metered Suites (cumulative)	Residential Customers Forecast (year-end)	Residential Customers Forecast excluding individually-metered suites
2009	4,964	611,640	606,676
2010	8,564	618,042	609,478

INTERROGATORIES OF ONTARIO ENERGY BOARD STAFF

INTERROGATORY 70:

Reference(s): D1/T8/Sh7/p.3

It is stated when discussing suite metering capital expenditure amounts included for 2010 that "In consideration of anticipated requests for THESL to provide such services in both new and existing condominium buildings, the forecasted capital spend is $2.4 million in 2010 for a total of 5,400 suite meter installations."

Please state whether the meters to be installed are smart meters and, if so, why this amount should be included in capital expenditures and not recovered through the smart meter funding adder.

RESPONSE:

The suite meters installed are Smart Meters.

THESL's Smart Meter Implementation Plan was designed to convert existing mechanical meters to Smart Meters. The suite meter initiative converts multi-unit buildings from a single bulk meter to many individual suite meters.

The regulation requiring the installation of Smart Meters in condominium buildings did not come into force until December 31, 2007. This was after the Smart Meter Initiative was underway. THESL chose to include all suite metering costs in the Cost of Service rate application, separate from the funding for Smart Meters. This was granted in the Ontario Energy Board's decision on THESL's 2008 and 2009 rates.

INTERROGATORIES OF BUILDING OWNERS AND MANAGERS ASSOCIATION OF THE GREATER TORONTO AREA

INTERROGATORY 5:

Reference(s): Exhibit D1, Tab 8, Schedule 7, page 3

a) What is the estimated impact on distribution revenues of the 5,400 individual suite meter installations? Please provide the estimated revenue, showing all assumptions and calculations, associated with these 5,400 individual customers. Please also show the estimated revenue, along with all assumptions and calculations, for the current bulk metered accounts.

b) How has this shift from bulk metered accounts to individual suite meter installations been taken into account in the revenue forecast?

RESPONSE:

a) Not all of the 5400 meter installations will become customers, and hence generate revenue, for the full year. Assuming 3600 of these become customers, and assuming a monthly load of 450kWh, at the proposed 2010 residential rates these customers will generate approximately $90,000 per month.

Assuming these customers remain on bulk meters, and assuming 175 units per building, at the proposed 2010 GS1-5MW rates the revenue generated would be approximately $34,000 per month.

Note that these two amounts are not strictly comparable. The 2010 proposed rates are based on a forecast of loads and customer by class which assumes the suite meters. If instead the bulk meters remain in place, the class load and customer forecasts would be different, the proposed rates would be different, and the revenue estimates shown

INTERROGATORIES OF BUILDING OWNERS AND MANAGERS ASSOCIATION OF THE GREATER TORONTO AREA

above would be different. Under either scenario, the total revenue recovered through rates remains the same (i.e., revenue requirement is unchanged).

b) The load and customer forecast provided in Exhibits K1 incorporate the forecasted suite meters, as is described at Exhibit K1, Tab 1, Schedule 1, page 10.

INTERROGATORIES OF BUILDING OWNERS AND MANAGERS ASSOCIATION OF THE GREATER TORONTO AREA

INTERROGATORY 10:

Reference(s): Exhibit K1, Tab 1, Schedule 1, page 10
Exhibit D1, Tab 8, Schedule 7, page 3

a) Are the figures shown in Table 5 of Exhibit K1, Tab 1, Schedule 1 year-end customers? If not, please explain.

b) Please reconcile the increase in residential customers for individually metered suites shown in Table 5 of Exhibit K1, Tab 1, Schedule 1 which shows an increase in 2010 of 3,600 to the 5,400 individual suite meter installations referenced on page 3 of Exhibit D1, Tab 8, Schedule 7.

c) What is the most recent number of cumulative individually metered suites for 2009?

RESPONSE:

a) Yes, Table 5 of Exhibit K1, Tab 1, Schedule 1 represents the expected amount of new suite-metered customers cumulatively for the end of each year.

b) The number of 5,400 on the page 3 of Exhibit D1, Tab 8, Schedule 7 represents the amount of suite meters installations expected in 2010. This number differs from the number of additional residential customers due to the lag between meter installation and new customer activation in THESL billing system. The residential customer forecast incorporates these lags.

c) Based on the most recent data available the estimated cumulative number of individually-metered customers as of the end of October 2009 is 5,213.

INTERROGATORIES OF BUILDING OWNERS AND MANAGERS ASSOCIATION OF THE GREATER TORONTO AREA

INTERROGATORY 13:

Reference(s): Exhibit K1, Tab 2, Schedule 2

The following questions relate to the residential model shown on page 1 of Exhibit K1, Tab 2, Schedule 2.

a) Please confirm that using the current model, the residential kWh volume forecast is independent of the number of residential customers.

b) Did THESL try an equation that included the number of residential customers in addition to the explanatory variables shown? If not, why not? If yes, please provide the regression model statistics.

c) Please re-estimate the equation by including the residential customers as an explanatory variable, but excluding the population variable and provide the regression statistics.

d) Please re-estimate the equation by including population divided by the number of residential customers as an explanatory variable in place of the population variable and provide the regression statistics.

e) In place of the dependent variable of monthly kWh's per day, please use monthly kWh's per customer with suitably adjusted explanatory variables (i.e., HDD and CDD in place of their per day counterparts). Please also remove the population variable and include a variable that is the number of days in the month. Please provide the regression statistics.

f) In place of the dependent variable of monthly kWh's per day, please use monthly kWh's per day per customer and remove the population variable from the equation. Please provide the regression statistics.

g) Please provide a table showing the 2010 residential volume forecast that would result

INTERROGATORIES OF BUILDING OWNERS AND MANAGERS ASSOCIATION OF THE GREATER TORONTO AREA

from each of the equations requested in (b) through (f) above.

h) Please provide a live Excel spreadsheet that has all of the data needed to estimate the equations in (b) through (f) above, along with the forecasted values of all the explanatory variables need to calculate the 2010 forecast.

RESPONSE:

a) The Residential regression model does not have customer numbers as an input variable, therefore, the regression outcome does not depend on the residential customer numbers. However, residential monthly volumes are adjusted for the amount of load which is expected to shift from the GS 50-1000 kW customer class to the residential class due to suite metering. In particular, monthly load shift values are calculated based on expected retrofit suite metered customers.

INTERROGATORIES OF CONSUMERS COUNCIL OF CANADA

INTERROGATORY 24:

Reference(s): Exhibit F1, Tab 7, Schedule 1, Page 3

Please provide a complete description of THESL's Suite Metering Program. Please identify where, in the evidence all costs and revenues are found. Please provide a business case for this program.

RESPONSE:

The Suite Metering Program is a component of THESL's normal revenue metering business. THESL has always provided individual metering of multi-unit buildings, as an option for the building owner or developer. Recently, THESL's Suite Metering Program was expanded to include a more compact, modern meter technology.

THESL's Suite Metering Program is designed to assist building owners, managers and developers to install individual suite metering in both new and existing buildings. To support this program, THESL has prepared brochures and posters describing the benefits of suite metering, and has made presentations to developers, property managers and condominium boards.

THESL decided to outsource the installation of suite meters. Following the release and evaluation of an RFP, Trilliant was selected to provide meters and program management, and arrange for installation of the suite meters. Trilliant is also providing meter reading and data management services.

INTERROGATORIES OF CONSUMERS COUNCIL OF CANADA

Expected revenues are included as part of customer load and revenue forecast as shown in Exhibit K1, Tab 1, Schedule 1. Budgeted costs are shown in Exhibit D1, Tab 7, Schedule 1, Table 2 and in Exhibit F1, Tab 7, Schedule 1, Table 1.

Since suite meters present an additional option to THESL's existing individual metering program, and aren't considered to be a new business opportunity, a business plan was not prepared as explained in Exhibit R1, Tab 4, Schedule 23.

INTERROGATORIES OF CONSUMERS COUNCIL OF CANADA

INTERROGATORY 36:

Reference(s): D1/T7/S1/p.9

Please recast Table 2 – Summary of Capital Budget to include Board approved and actual numbers for the years 2006-2009.

RESPONSE:

Please find the 2006-2007 actual capital numbers (Appendix A). The 2006 numbers were not previously captured at the level of detail as presented in Exhibit D1, Tab 7, Schedule 1, Table 2, as the categories were differently presented in 2006. Hence, the 2006 numbers have been remapped to match the categories as presented Exhibit D1, Tab 7, Schedule 1, Table 2.

Board approved numbers are not provided because, contrary to the question, the Board did not approve budgets for specific capital portfolios in 2008 and 2009. Rather, the Board authorized an overall revenue requirement as a basis for establishing just and reasonable rates. Management then directed appropriate levels of capital spending in specific areas based on the actual circumstances and priorities experienced during the test years.

Toronto Hydro-Electric System Limited
Exhibit R1, Tab 4, Schedule 36, Appendix A
Filed: 2009 Nov 30 (1 page)

Appendix A
Revised Table 2: Summary of Capital Budget ($millions)

	2006 Historical	2007 Historical	2008 Historical	2009 Bridge	2010 Test
OPERATIONAL INVESTMENTS					
Sustaining Capital					
Underground Direct Buried	7.3	33	23.8	48.3	70.3
Underground Rehabilitation	33.1	35.7	38.2	33.7	36.3
Overhead	19	24.3	19.3	15.7	22
Network	5.6	9.9	4.7	4.8	5.7
Transformer Station	0.8	15.9	8.5	7.2	15.9
Municipal Substation Investment	6	6.2	8.3	6.3	6.8
Total Sustaining Capital	71.8	125	102.9	116	157
Reactive Work	11.1	15.6	19.3	13.8	22.5
Customer Connections	36.4	41.7	42.8	37.4	32.5
Customer Capital Contribution	-23.6	-27	-32.7	-21	-24.4
Asset Management			-4.9	1	2.8
Engineering Capital	21	20.7	26.4	27	31.2
AFUDC		3.4	2	2.6	4.4
Other	2.6	1.6	1	1	-
Total Operations	119.3	181	156.8	177.8	226
GENERAL PLANT					
Fleet &Equipment Services	6.2	9.2	7.9	9.9	11.4
Facilities	5.7	20	3.4	8.4	12.6
Other	4.9	4.2	0.3	2	4.4
Total GENERAL PLANT	16.8	33.4	11.6	20.3	28.4
CUSTOMER SERVICES					
Wholesale Metering	1.5	0	0	0.5	10.9
Suite Metering	0	0	0	1.8	2.4
Other	3.6	4.6	13.2	0.2	0.6
Total CUSTOMER SERVICES	5.1	4.6	13.2	2.5	13.9
Total INFORMATION TECHNOLOGY	15.2	20.4	24.1	27.8	33.3
Total OPERATIONAL INVESTMENTS	156.4	239.4	205.7	228.4	301.6
EMERGING REQUIREMENTS					
Standardization			-	5.5	32.7
Downtown Contingency			-	-	31.3
FESI 7 / WPF			-	1.6	5.5
Smart Grid Operations			-	-	3
Externally Initiated Plant Relocations			-	-	27.8
Stations System Enhancements			-	-	15.2
Secondary Upgrade			-	-	6.5
Total EMERGING REQUIREMENTS				7.1	122
TOTAL CAPITAL	156.4	239.4	205.7	235.5	423.6
TOTAL BOARD APPROVED	153.4	note 1	230.4	240.2	

INTERROGATORIES OF CONSUMERS COUNCIL OF CANADA

INTERROGATORY 42:

Reference(s): Exhibit D1, Tab 8, Schedule 7, page 3

Please provide a detailed breakdown of the $2.4 million forecast for suite metering capital. In addition, please provide a total budget, OM&A and capital for all costs related to THESL's suite metering program.

RESPONSE:

The suite meter capital budget for 2010 includes:

Item	$ million
Labour, Installation and Vehicles	0.4
Material and Contracts	2.0
Total	2.4

The suite meter OM&A budget for 2010 is $0.3 million.

INTERROGATORIES OF VULNERABLE ENERGY CONSUMERS COALITION

INTERROGATORY 18:

Reference(s): Exhibit D1 Tab 3 Schedule 1 Table 1
Exhibit F1 Tab1 Schedule1 Table 1

Trends in OM&A are important to understanding efficiency gains and comparisons to similar distributors

a) With regard to benchmarking THESL's historic OM&A costs, confirm/correct the base data for 2005 and 2007 shown in the file "Comparison of Distributors (EB-2006-0268)" found on the OEB web site: http://www.oeb.gov.on.ca/OEB/_Documents/EB-2006-0268/Comparison_of_Distributors_with_2007_data.xls

2007	2006	2005
$167,979,422	$154,607,722	$157,441,700

b) For the historic and bridge years 2008-2009 compute the THESL OM&A cost per customer.

c) Compute the OM&A per kilowatt hour of energy distributed for the years 2005-2009.

d) Compute the year over year percentage increases and discuss trends in OM&A per customer and per Kilowatt hr of energy distributed .2005-2009.

e) Compute the forecast metrics (OM&A/customer and per kWh distributed) for 2010 and discuss the changes relative to 2005-2009 and the implied trend.

RESPONSE:

a) 2008 EDR and 2010 EDR data is available for comparative purposes.

b) See Appendix A of this Schedule.

INTERROGATORIES OF VULNERABLE ENERGY CONSUMERS COALITION

c) See Appendix A of this Schedule.

d) See Appendix A of this Schedule. The overall trend in OM&A per Kilowatt hour (KWh) and per customer implies an increase from 2005-2009.

The increase in OM&A per KWh is partially driven by a decrease in load consumption since 2007 due to conservation activities and economic conditions. A steady increase in OM&A expenses since 2007 has contributed to the overall increase in OM&A per KWh.

THESL has continued to experience modest customer growth since 2007 impacted by the increase in suite meter customers. This has helped to offset the increase in OM&A per customer to some extent. A steady increase in OM&A expenses since 2007 has contributed to the overall increase in OM&A per customer.

e) See Appendix A of this schedule. The trend in 2010 OM&A costs per KWh and customer implies a year over year increase of 14.5% and 12.7%, respectively. Similar trends are observed in 2010 for KWh, customers and OM&A expenses as in 2005-2009. Refer to explanation above for further detail.

OM&A Expense, Customer and KWh Trending

	Reference	2005 Historical	2006 Historical	2007 Historical	2008 Historical	2009 Bridge	2010 Test
THESL OM&A Expense		**157.4**	**169.4**	**168.0**	**182.6**	**194.2**	**220.9**
Total Kilowatt hours	K1/T3/S1	26,336,651,977	25,519,951,665	25,755,440,781	25,142,336,053	25,038,061,786	24,865,322,485
Cost per Kilowatt hr		0.0060	0.007	0.007	0.007	0.008	0.009
change per kilowatt hr ($)			0.001	- 0.000	0.001	0.000	0.001
change per kilowatt hr (%)			11.0%	-1.7%	11.4%	6.8%	14.5%
Total Customers	K1/T4/S1	674,231	677,645	679,327	684,143	688,047	694,551
Cost per customer		233.5	250.0	247.3	266.9	282.2	318.0
change per customer ($)			16.5	- 2.7	19.6	15.3	35.8
change per customer (%)			7.1%	-1.1%	7.9%	5.7%	12.7%

Notes:

1. THESL OM&A Expense excludes Amortization Expense and is presented in $ millions.
2. 2006 historical amounts were obtained from previous rate filing (D1/T3/S1).
3. 2005 and 2007 historical amounts were obtained from the OEB web site mentioned in part a) of this IR.

INTERROGATORIES OF VULNERABLE ENERGY CONSUMERS COALITION

INTERROGATORY 44:

Reference(s): Exhibit K1/Tab 1/Schedule 1, pages 9-10

a) Page 8 notes that customer counts were forecast based on trend analysis. Using such an approach, how do the population and customer count forecasts capture economic conditions (as suggested on page 6)?

b) Please provide a schedule that sets out for each class the year over year growth rate in customer/connection count from 2002-2010.

c) Please provide Toronto's actual customer count by class for the most recent month available.

d) Please show the derivation of the 2009 and 2010 Residential class customer counts and how the increase in individually metered suites was specifically factored in.

RESPONSE:

a) Extrapolation and trend forecasting techniques have demonstrated their value in forecasting population and customer numbers in the past. Generally, because customer numbers and population do not experience significant short-term swings – unlike loads - extrapolation techniques are quite acceptable as forecasting methods for such variables. Furthermore, as the most recent actual data is included in the development of these models, recent experience is being captured within them, making them very suitable for short-term forecasts such as one or two years.

b) For the requested schedule please refer to Exhibit R1, Tab11, Schedule 44, Appendix A.

c) Please see the table below.

INTERROGATORIES OF VULNERABLE ENERGY CONSUMERS COALITION

Customer Class	Cust / Conn	October 2009
Residential	Customers	610,419
GS < 50 kW	Customers	65,873
GS 50-1000 kW	Customers	12,316
GS 1-5 kW	Customers	506
Large Users	Customers	47
Street Lighting	Connections	162,371
USL	Customers	1,093
	Connections	21,394
Total	**Customers**	**690,254**
	Connections	**183,765**
Note: the latest available data for USL are from June 2009.		

d) The 2009 and 2010 residential customer numbers were derived using a two step methodology:

- First, a linear trend extrapolation was used to forecast "conventional" residential customer numbers. Forecasting was performed on the monthly data and the historic data range included residential customer numbers from May 2002 to May 2009.
- Second, monthly cumulative projections of individually metered suites (both retrofits and new construction) were then added to the forecast of the "conventional" residential customers.

TAB 5

Electricity Act, 1998
Loi de 1998 sur l'électricité

ONTARIO REGULATION 442/07

INSTALLATION OF SMART METERS AND SMART SUB-METERING SYSTEMS IN CONDOMINIUMS

Consolidation Period: From December 31, 2007 to the e-Laws currency date.

No amendments.

This Regulation is made in English only.

Definitions

1. In this Regulation,

"board of directors" means the board of directors of a condominium corporation;

"condominium corporation" means a corporation created or continued under the *Condominium Act, 1998*;

"smart meters" includes smart meters, metering equipment, systems and technology and associated equipment, systems and technologies;

"smart sub-metering systems" includes smart sub-metering systems, equipment and technology and any associated equipment, systems and technologies. O. Reg. 442/07, s. 1.

Prescribed class of property

2. For the purposes of subsection 53.17 (1) of the Act, the following are prescribed classes of property:

1. A building on land for which a declaration and description have been registered pursuant to section 2 of the *Condominium Act, 1998*.
2. A building on land for which a declaration and description have been registered creating a condominium corporation that was continued pursuant to section 178 of the *Condominium Act, 1998*.
3. A building, in any stage of construction, on land for which a declaration and description is proposed or intended to be registered pursuant to section 2 of the *Condominium Act, 1998*. O. Reg. 442/07, s. 2.

Prescribed circumstances

3. For the purposes of subsection 53.17 (1) of the Act, the following are prescribed circumstances:

1. The approval by the board of directors to install smart meters or smart sub-metering systems, in the case of a building that falls into a prescribed class of property described in paragraph 1 or 2 of section 2.
2. The installation of smart meters or smart sub-metering systems, in the case of a building that falls into a prescribed class of property described in paragraph 3 of section 2. O. Reg. 442/07, s. 3.

Installation of authorized metering technology

4. (1) For a class of property prescribed under section 2 and in the circumstances prescribed under section 3, a licensed distributor, or any other person licensed by the Board to do so, shall install smart meters or smart sub-metering systems of a type, class or kind,

(a) that are authorized by an order of the Board or by a code issued by the Board; or

(b) that meet any criteria or requirements that may be set by an order of the Board or by a code issued by the Board. O. Reg. 442/07, s. 4 (1).

(2) For licensed distributors installing smart meters in a class of property prescribed under section 2,

(a) unless otherwise required by the Board, the distributor is not required to comply with the requirements set out in Ontario Regulation 425/06 (Criteria and Requirements for Meters and Metering Equipment, Systems and Technology) made under the Act; and

(b) the distributor shall comply with the procurement requirements set out section 2 of Ontario Regulation 427/06 (Smart Meters: Discretionary Metering Activity and Procurement Principles) made under the Act. O. Reg. 442/07, s. 4 (2).

(3) For a person, other than a licensed distributor, who is licensed by the Board to engage in the activity prescribed by subsection 1 (2) of Ontario Regulation 443/07 (Licensing Sub-Metering Activities), made under the *Ontario Energy Board Act, 1998,* unless otherwise required by the Board, the person is not required to comply with the requirements set out in Ontario Regulation 425/06 made under the Act. O. Reg. 442/07, s. 4 (3).

(4) In this section,

"licensed distributor" means a distributor licensed by the Board under clause 57 (a) of the *Ontario Energy Board Act, 1998*. O. Reg. 442/07, s. 4 (4).

Exclusive authority of the Board

5. (1) Pursuant to subsection 53.17 (4) of the Act, the Board has the exclusive authority, on and after August 1, 2007, to approve or authorize the type, class or kind or to approve or authorize the criteria or requirements applicable to smart meters and smart sub-metering systems when installed in a class of property prescribed under section 2. O. Reg. 442/07, s. 5 (1).

(2) In carrying out its functions under subsection (1), the Board shall ensure that smart meters and smart sub-metering systems are capable of measuring electricity consumption or use in accordance with electricity rates that are based on the time of day when electricity is consumed or used and, at a minimum, are capable of measuring electricity consumption or use in hourly intervals. O. Reg. 442/07, s. 5 (2).

6. Omitted (provides for coming into force of provisions of this Regulation). O. Reg. 442/07, s. 6.

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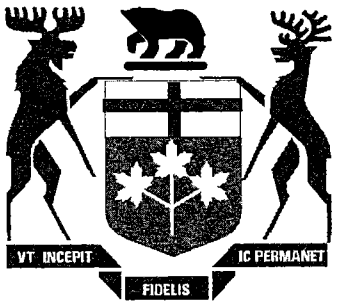
TAB 6



Ontario

ONTARIO ENERGY BOARD

Distribution System Code

Last revised on October 21, 2009
(Originally Issued on July 14, 2000)

2.5.1 A distributor shall, at least once in each calendar year, review each non-residential customer's rate classification to determine whether, based on the rate classification requirements set out in the distributor's rate order, the customer should be assigned to a different rate class. Subject to section 2.5.3, other than at the request of the non-residential customer a distributor may not change a non-residential customer's rate classification more than once in any calendar year.

2.5.2 A distributor shall review a non-residential customer's rate classification upon being requested to do so by the customer to determine whether, based on the rate classification requirements set out in the distributor's rate order, the customer should be assigned to a different rate class. Subject to section 2.5.4, a distributor is not required to respond to more than one such customer request in any calendar year.

2.5.3 A distributor may review a non-residential customer's rate classification at any time if the customer's demand falls outside the upper or lower limits applicable to the customer's current rate classification for a period of five consecutive months.

2.5.4 A distributor shall review a non-residential customer's rate classification upon being requested to do so by the customer at any time if the customer's demand falls outside the upper or lower limits applicable to the customer's current rate classification for a period of five consecutive months.

2.5.5 Where a distributor assigns a non-residential customer to a different rate class as a result of a review initiated by the distributor, the distributor shall give the customer written notice of the reclassification no less than one billing cycle before the reclassification takes effect for billing purposes.

2.5.6 A distributor that charges a non-residential customer on the basis of 90% of the kVA reading of the customer's meter rather than on the basis of the kW reading of the customer's reading shall include on all bills issued to that customer a message to the effect that billing is based on 90% of the kVA reading.

3 CONNECTIONS AND EXPANSIONS

3.1 Connections

3.1.1 In establishing its connection policy as specified in its Conditions of Service, and determining how to comply with its obligations under section 28 of the *Electricity Act*, a distributor may consider the following reasons to refuse to connect, or continue to connect, a customer:

(a) contravention of the laws of Canada or the Province of Ontario including the Ontario Electrical Safety Code;

(b) violation of conditions in a distributor's licence;

(c) materially adverse effect on the reliability or safety of the distribution system;

(d) imposition of an unsafe worker situation beyond normal risks inherent in the operation of the distribution system;

(e) a material decrease in the efficiency of the distributor's distribution system;

(f) a materially adverse effect on the quality of distribution services received by an existing connection; and

(g) if the person requesting the connection owes the distributor money for distribution services, or for non-payment of a security deposit. The distributor shall give the person a reasonable opportunity to provide the security deposit consistent with section 2.4.20.

3.1.2 A distributor shall ensure that all electrical connections to its system meet the distributor's design requirements, unless the electrical connections are separated by a protection device that has been approved by the distributor. If an electrical connection does not meet the distributor's design requirements, a distributor may refuse connection.

3.1.3 If a distributor refuses to connect a customer, the distributor shall inform the person requesting the connection of the reason(s) for not connecting and, where the distributor is able to provide a remedy, make an offer to connect. If the distributor is unable to provide a remedy to resolve the issue, it is the responsibility of the customer to do so before a connection may be made.

3.1.4 For residential customers, a distributor shall define a basic connection and recover the cost of the basic connection as part of its revenue requirement. The basic connection for each customer shall include, at a minimum:

(a) supply and installation of overhead distribution transformation capacity or an equivalent credit for transformation equipment; and

(b) up to 30 meters of overhead conductor or an equivalent credit for underground services.

3.1.5 For non-residential customers, a distributor may define a basic connection by rate class and recover the cost of connection either as part of its revenue requirement, or through a basic connection charge to the customer.

3.1.6 All customer classes shall be subject to a variable connection charge to be calculated as the costs associated with the installation of connection assets above and beyond the basic connection. A distributor may recover this amount from a customer through a connection charge or equivalent payment.

3.2 Expansions

3.2.1 If a distributor must construct new facilities to its main distribution system or increase the capacity of existing distribution system facilities in order to be able to connect a specific customer or group of customers, the distributor shall perform an initial economic evaluation based on estimated costs and forecasted revenues, as described in Appendix B, of the expansion project to determine if the future revenue from the customer(s) will pay for the capital cost and on-going maintenance costs of the expansion project.

3.2.2 If the distributor's offer was an estimate, the distributor shall carry out a final economic evaluation once the facilities are energized. The final economic evaluation shall be based on forecasted revenues, actual costs incurred (including, but not limited to, the costs for the uncontestable work, and any transfer price paid by the distributor to the customer) and the methodology described in Appendix B.

3.2.3 If the distributor's offer was a firm offer, and if the alternative bid option was chosen and the facilities are transferred to the distributor, the distributor shall carry out a final economic evaluation once the facilities are energized. The final economic evaluation shall be based on the amounts used in the firm offer for costs and forecasted revenues, any transfer price paid by the distributor to the customer, and the methodology described in Appendix B.

3.2.4 The capital contribution that a distributor may charge a customer other than a generator or distributor to construct an expansion shall not exceed that customer's share of the difference between the present value of the projected capital costs and on-going maintenance costs for the facilities and the present value of the projected revenue for distribution services provided by those

facilities. The methodology and inputs that a distributor shall use to calculate this amount are described in Appendix B.

3.2.5 The capital contribution that a distributor may charge a generator to construct an expansion to connect a generation facility to the distributor's distribution system shall not exceed the generator's share of the present value of the projected capital costs and on-going maintenance costs for the facilities. Projected revenue and avoided costs from the generation facility shall be assumed to be zero, unless otherwise determined by rates approved by the Board. The methodology and inputs that a distributor shall use to calculate this amount are described in Appendix B.

3.2.5A Notwithstanding section 3.2.5 but subject to section 3.2.5B, a distributor shall not charge a generator to construct an expansion to connect a renewable energy generation facility:

(a) if the expansion is in a Board-approved plan filed with the Board by the distributor pursuant to the deemed condition of the distributor's licence referred to in paragraph 2 of subsection 70(2.1) of the Act, or is otherwise approved or mandated by the Board; or

(b) in any other case, for any costs of the expansion that are at or below the renewable energy generation facility's renewable energy expansion cost cap.

For greater clarity, the distributor shall bear all costs of constructing an expansion referred to in (a) and, in the case of (b), shall bear all costs of constructing the expansion that are at or below the renewable energy generation facility's renewable energy expansion cost cap.

3.2.5B Where an expansion is undertaken in response to a request for the connection of more than one renewable energy generation facility, a distributor shall not charge any of the requesting generators to construct the expansion:

(a) if the expansion is in a Board-approved plan filed with the Board by the distributor pursuant to the deemed condition of the distributor's licence referred to in paragraph 2 of subsection 70(2.1) of the Act, or is otherwise approved or mandated by the Board; or

(b) in any other case, for any costs of the expansion that are at or below the amount that results from adding the total name-plate rated capacity of each renewable energy generation facility referred to in section 6.2.9(a) (in MW) and then multiplying that number by $90,000.

For greater clarity, the distributor shall bear all costs of constructing an expansion referred to in (a) and, in the case of (b), shall bear all costs of constructing the expansion that are at or below the number that results from the calculation referred to in (b).

3.2.5C Where, in accordance with the calculation referred to in section 3.2.5B(b), a capital contribution is payable by the requesting generators, the distributor shall apportion the amount of the capital contribution among the requesting generators on a pro-rata basis based on the total name-plate rated capacity of the renewable energy generation facility referred to in section 6.2.9(a) (in MW).

3.2.6 If a shortfall between the present value of the projected costs and revenues is calculated under section 3.2.1, the distributor may propose to collect all or a portion of that amount from the customer in the form of a capital contribution, in accordance with the distributor's documented policy on capital contributions by customer class.

3.2.7 If the capital contribution amount resulting from the final economic evaluation provided for in section 3.2.2 or 3.2.3 differs from the capital contribution amount resulting from the initial economic evaluation calculation, the distributor shall obtain from the customer, or credit the customer for, any difference between the two calculations.

3.2.8 If an expansion is needed in order for a distributor to connect a customer, the distributor shall make an initial offer to connect the customer and build the expansion. A distributor's initial offer shall include, at no cost to the customer:

(a) a statement as to whether the offer is a firm offer or is an estimate of the costs that would be revised in the future to reflect actual costs incurred;

(b) a reference to the distributor's Conditions of Service and information on how the customer requesting the connection may obtain a copy of them;

(c) a statement as to whether a capital contribution will be required from the customer;

(d) a statement as to whether an expansion deposit will be required from the customer and if the distributor will require an expansion deposit from the customer, the amount of the expansion deposit that the customer will have to provide; and

(e) a statement as to whether the connection charges referred to in sections 3.1.5 and 3.1.6 will be charged separately from the capital contribution

referred to in section 3.2.8(c), and a description of, and if known, the amount for, those connection charges.

3.2.9 If the distributor will require a customer to pay a capital contribution, the distributor must, in addition to complying with section 3.2.8, also include in its initial offer, at no cost to the customer:

(a) the amount of the capital contribution that the customer will have to pay for the expansion;

(b) the calculation used to determine the amount of the capital contribution to be paid by the customer including all of the assumptions and inputs used to produce the economic evaluation as described in Appendix B;

(c) a statement as to whether the offer includes work for which the customer may obtain an alternative bid and, if so, the process by which the customer may obtain the alternative bid;

(d) a description of, and costs for, the contestable work and the uncontestable work associated with the expansion broken down into the following categories:

(i) labour (including design, engineering and construction);

(ii) materials;

(iii) equipment; and

(iv) overhead (including administration);

(e) an amount for any additional costs that will occur as a result of the alternative bid option being chosen (including, but not limited to, inspection costs);

(f) if the offer is for a residential customer, a description of, and the amount for, the cost of the basic connection referred to in section 3.1.4 that has been factored into the economic evaluation; and

(g) if the offer is for a non-residential customer and if the distributor has chosen to recover the non-residential basic connection charge as part of its revenue requirement, a description of, and the amount for, the connection charges referred to in section 3.1.5 that have been factored into the economic evaluation.

3.2.10 Once the customer has accepted the distributor's offer, and if the customer requests it, the distributor shall provide to the customer, at cost, an itemized list

of the costs for the major items in each of the categories listed in section 3.2.9(d) and shall be done in the following manner:

(a) if the customer has not chosen to pursue an alternative bid, the distributor shall provide the itemized list for all of the work; or

(b) if the customer has chosen to pursue the alternative bid option, the distributor shall only be required to provide the itemized list for the uncontestable work.

3.2.11 If the customer submits revised plans or requires additional design work, the distributor may provide, at cost, a new offer based on the revised plans or the additional design work.

3.2.12 The distributor shall provide the customer with the calculation used to determine the final capital contribution amount including all of the assumptions and inputs used to produce the final economic evaluation as provided for in sections 3.2.2 and 3.2.3. The distributor shall provide the final economic evaluation and final capital contribution amount to the customer at no cost to the customer.

3.2.13 The last sentence of section 3.2.12 does not apply to a customer who is a generator or is proposing to become a generator unless the customer's proposed or existing generation facility is an emergency backup generation facility.

3.2.14 Where the distributor requires a capital contribution from the customer, the distributor shall allow the customer to obtain and use alternative bids for the contestable work. The distributor shall require the customer to use a qualified contractor for the contestable work.

3.2.15 The following work shall be uncontestable:

(a) the preliminary planning, design and engineering specifications of the work required for the distribution system expansion and connection (specifications shall be made in accordance with the distributor's design and technical standards and specifications); and

(b) work involving existing distributor assets.

3.2.16 If a customer chooses to pursue an alternative bid and uses the services of a qualified contractor for the contestable work, the distributor shall:

(a) require the customer to complete all of the contestable work;
(b) require the customer to:

(i) select and hire the contractor;
(ii) pay the contractor's costs for the contestable work; and
(iii) assume full responsibility for the construction of that aspect of the expansion;

(c) require the customer to be responsible for administering the contract (including the acquisition of all required permissions, permits and easements) or have the customer pay the distributor to do this activity;
(d) require the customer to ensure that the contestable work is done in accordance with the distributor's design and technical standards and specifications; and
(e) inspect and approve, at cost, all aspects of the constructed facilities as part of a system commissioning activity, prior to connecting the constructed facilities to the existing distribution system.

3.2.17 In addition to the capital contribution amounts in sections 3.2.4 and 3.2.5, the distributor may also charge a customer that chooses to pursue an alternative bid any costs incurred by the distributor associated with the expansion including, but not limited to, the following:

(a) costs for additional design, engineering, or installation of facilities required to complete the project;
(b) costs for administering the contract between the customer and the contractor hired by the customer if the distributor is asked to do so by the customer and the distributor agrees to do it; and
(c) costs for inspection or approval of the work performed by the contractor hired by the customer.

When the customer transfers the expansion facilities to the distributor in accordance with section 3.2.18 and 3.2.19, the charges referred to above shall be included as part of the customer's costs for the purposes of determining the transfer price.

3.2.18 When the customer transfers the expansion facilities that were constructed under the alternative bid option to the distributor, and provided that the distributor has inspected and approved the constructed facilities, the distributor shall pay the customer a transfer price. The transfer price shall be the lower of the cost to the customer to construct the expansion facilities or the amount set out in the distributor's initial offer to do the contestable work. If the customer does not provide the distributor with the customer's cost information in a timely manner, then the distributor may use the amount for the contestable work as set out in its initial offer for the transfer price instead of the customer's cost.

3.2.19 Where a distributor is required to pay a transfer price under section 3.2.18, the transfer price shall be considered a cost to the distributor for the purposes of completing the final economic evaluation.

3.2.20 For expansions that require a capital contribution, a distributor may require the customer to provide an expansion deposit for up to 100% of the present value of the forecasted revenues as described in Appendix B. For expansions that do not require a capital contribution, a distributor may require the customer to provide an expansion deposit for up to 100% of the present value of the projected capital costs and on-going maintenance costs of the expansion project.

3.2.21 If an expansion deposit is collected under section 3.2.20, the expansion deposit shall cover both the forecast risk (the risk associated with whether the projected revenue for the expansion will materialize as forecasted) and the asset risk (the risk associated with ensuring that the expansion is constructed, that it is completed to the proper design and technical standards and specifications, and that the facilities operate properly when energized) related to the expansion.

3.2.22 If the alternative bid option was chosen, a distributor shall be allowed to retain and use the expansion deposit to cover the distributor's costs if the distributor must complete, repair, or bring up to standard the facilities. Complete, repair, or bring up to standard includes costs the distributor incurs to ensure that the expansion is completed to the proper design and technical standards and specifications, and that the facilities operate properly when energized.

3.2.23 Once the facilities are energized and subject to sections 3.2.22 and 3.2.24, the distributor shall annually return the percentage of the expansion deposit in

proportion to the actual connections (for residential developments) or actual demand (for commercial and industrial developments) that materialized in that year (i.e., if twenty percent of the forecasted connections or demand materialized in that year, then the distributor shall return to the customer twenty percent of the expansion deposit). This annual calculation shall only be done for the duration of the customer connection horizon as defined in Appendix B. If at the end of the customer connection horizon the forecasted connections (for residential developments) or forecasted demand (for commercial and industrial developments) have not materialized, the distributor shall be allowed to retain the remaining portion of the expansion deposit.

3.2.24 If the alternative bid option was chosen, the distributor may retain up to ten percent of the expansion deposit for a warranty period of up to two years. This portion of the expansion deposit can be applied to any work required to repair the expansion facilities within the two year warranty period. The two year warranty period begins:

(a) when the last forecasted connection in the expansion project materializes (for residential developments) or the last forecasted demand materializes (for commercial and industrial developments); or
(b) at the end of the customer connection horizon as defined in Appendix B,

whichever is first. The distributor shall return any remaining portion of this part of the expansion deposit at the end of the two year warranty period.

3.2.25 Any expansion deposit required under section 3.2.20 shall be in the form of cash, letter of credit from a bank as defined in the *Bank Act*, or surety bond. The distributor shall allow the customer to select the form of the expansion deposit.

3.2.26 Where any expansion deposit is in the form of cash, the distributor shall return the expansion deposit to the customer together with interest in accordance with the following conditions:

(a) interest shall accrue monthly on the expansion deposit commencing on receipt of the total deposit required by the distributor; and
(b) the interest rate shall be at the Prime Business Rate set by the Bank of Canada less 2 percent.

3.2.27 Unforecasted customers that connect to the distribution system during the customer connection horizon as defined in Appendix B will benefit from the earlier expansion and should contribute their share. In such an event, the initial contributors shall be entitled to a rebate from the distributor. A distributor shall collect from the unforecasted customers an amount equal to the rebate the distributor shall pay to the initial contributors. The amount of the rebate shall be determined as follows:

(a) for a period of up to the customer connection horizon as defined in Appendix B, the initial contributor shall be entitled to a rebate without interest, based on apportioned benefit for the remaining period; and

(b) the apportioned benefit shall be determined by considering such factors as the relative load level and the relative line length (in proportion to the line length being shared by both parties).

3.2.27A Notwithstanding section 3.2.27, when the unforecasted customer is a renewable energy generation facility to which section 3.2.5A or 3.2.5B applies and the customer entitled to a rebate under section 3.2.27 is a load customer or a generation customer to which neither section 3.2.5A nor 3.2.5B applies, the initial contributors shall be entitled to a rebate from the distributor in an amount determined in accordance with section 3.2.27. The distributor shall reduce the connecting renewable energy generation facility's renewable energy expansion cost cap by an amount equal to the rebate. If the amount of the rebate exceeds the connecting renewable generation facility's renewable energy expansion cost cap, the distributor shall also collect the difference from the connecting renewable energy generation customer.

3.2.28 A distributor shall prepare all estimates and offers required by section 3.2 in accordance with good utility practice and industry standards.

3.2.29 The distributor shall perform all of its responsibilities and obligations under section 3.2 in a timely manner.

3.2.30 An expansion of the main distribution system includes:

(a) building a new line to serve the connecting customer;

(b) rebuilding a single-phase line to three-phase to serve the connecting customer;

(i) communication systems to facilitate the connection of renewable energy generation facilities.

3.3.3 Subject to section 3.3.4, the distributor shall bear the cost of constructing an enhancement or making a renewable enabling improvement, and therefore shall not charge:

(a) a customer a capital contribution to construct an enhancement; or

(b) a customer that is connecting a renewable energy generation facility a capital contribution to make a renewable enabling improvement.

3.3.4 Section 3.3.3(a) shall not apply to a distributor until the distributor's rates are set based on a cost of service application for the first time following the 2010 rate year.

3.4 Relocation of Plant

3.4.1 When requested to relocate distribution plant, a distributor shall exercise its rights and discharge its obligations in accordance with existing legislation such as the *Public Service Works on Highways Act*, regulations, formal agreements, easements and common law. In the absence of existing arrangements, a distributor is not obligated to relocate the plant. However, the distributor shall resolve the issue in a fair and reasonable manner. Resolution in a fair and reasonable manner shall include a response to the requesting party that explains the feasibility or infeasibility of the relocation and a fair and reasonable charge for relocation based on cost recovery principles.

- A communication system utilized for MIST meters shall be in accordance with the distributor's requirements.
- A communication line shall be required in the case of inside or restricted access meters.

5.1.6 A distributor shall identify in its Conditions of Service the type of meters that are available to a customer, the process by which a customer may obtain such meters and the types of charges that would be levied on a customer for each meter type.

5.1.7 For the purposes of sections 5.1.2 to 5.1.5 inclusive, a smart meter is not an interval meter.

5.1.8 Section 5.1.7 ceases to have effect in relation to a distributor on the date determined for that purpose by the Board.

5.1.9 When requested by either:

(a) the board of directors of a condominium corporation; or

(b) the developer of a building, in any stage of construction, on land for which a declaration and description is proposed or intended to be registered pursuant to section 2 of the *Condominium Act, 1998*,

a distributor shall install smart metering that meets the functional specification of Ontario Regulation 425/06–*Criteria and Requirements for Meters and Metering Equipment, Systems and Technology* (made under the Electricity Act).

5.2 Metering Requirements for Generating Facilities

5.2.1 A distributor shall require that an embedded retail generator whose embedded generation facility has a gross name-plate capacity of more than 10 MW install a four-quadrant interval meter. A distributor shall require that a net metered generator (as defined in section 6.7.1) and an embedded retail generator whose embedded generation facility has a gross name-plate capacity of 10 MW or less install such metering as may reasonably be required having regard to:

a. the meter data requirements necessary to enable the distributor to settle amounts owing to or from the embedded retail generator; and

APPENDIX B

Methodology and Assumptions for

An Economic Evaluation

Last Revised October 21, 2009

APPENDIX B - METHODOLOGY AND ASSUMPTIONS FOR AN OFFER TO CONNECT ECONOMIC EVALUATION

B.1 COMMON ELEMENTS OF THE DISCOUNTED CASH FLOW MODEL

To achieve consistent business principles for the development of the elements of an economic evaluation model, the following parameters for the approach are to be followed by all distributors.

The discounted cash flow (DCF) calculation for individual projects will be based on a set of common elements and related assumptions listed below.

Revenue Forecasting

The common elements for any project will be as follows:

(a) Total forecasted customer additions over the Customer Connection Horizon, by class as specified below;

(b) Customer Revenue Horizon as specified below;

(c) Estimate of average energy and demand per added customer (by project) which reflects the mix of customers to be added – for various classes of customers, this should be carried out by class;

(d) Customer additions, as reflected in the model for each year of the Customer Connection Horizon; and

(e) Rates from the approved rate schedules for the particular distributor reflecting the distribution (wires only) rates.

Capital Costs

Common elements will be as follows:

(a) An estimate of all capital costs directly associated with the expansion to allow forecast customer additions.

(b) For expansions to the distribution system, costs of the following elements, where applicable, should be included:
- distribution stations;
- distribution lines;
- distribution transformers;

- secondary busses;
- services; and
- land and land rights.

Note that the "Ownership Demarcation Point" as specified in the distributor's Condition of Service would define the point of separation between a customers' facilities and distributor's facilities.

(c) Estimate of incremental overheads applicable to distribution system expansion.

(d) A per kilowatt enhancement cost estimate – the per kilowatt enhancement cost estimate shall be set annually and shall be based on a historical three to five year rolling average of actual enhancement costs incurred in system expansions.

(d.1) paragraph (d) shall cease to apply to a distributor as of the date on which the distributor's rates are set based on a cost of service application for the first time following the 2010 rate year.

(e) For residential customers, the amount the cost of the basic connection referred to in section 3.1.4 of the Code.

(f) For non-residential customers, if the distributor has chosen to recover the non-residential basic connection charge as part of its revenue requirement, a description of, and the amount for, the connection charges referred to in section 3.1.5 of the Code that have been factored into the economic evaluation.

Expense Forecasting

Common elements will be as follows:

(a) Attributable incremental operating and maintenance expenditures - any incremental attributable costs directly associated with the addition of new customers to the system would be included in the operating and maintenance expenditures.

(b) Income and capital taxes based on tax rates underpinning the existing rate schedules.

(c) Municipal property taxes based on projected levels.

Specific Parameters/Assumptions

APPENDIX B - METHODOLOGY AND ASSUMPTIONS FOR AN OFFER TO CONNECT ECONOMIC EVALUATION

Specific parameters of the common elements include the following:

(a) A maximum customer connection horizon of five (5) years, calculated from the energization date of the facilities.[1]

(b) A maximum customer revenue horizon of twenty five (25) years, calculated from the in service date of the new customers.[2]

(c) A discount rate equal to the incremental after-tax cost of capital, based on the prospective capital mix, debt and preference share cost rates, and the latest approved rate of return on common equity.

(d) Discounting to reflect the true timing of expenditures. Up-front capital expenditures will be discounted at the beginning of the project year and capital expended throughout the year will be mid-year discounted. The same approach to discounting will be used for revenues and operating and maintenance expenditures.[3]

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1 For customer connection periods of greater than 5 years an explanation of the extension of the period will be provided to the Board

2 For example, that the revenue horizon for customers connected in year 1, is 25 years while for those connected in year 3, the revenue horizon is 22 years.

3 For certain projects Capital Expenditures may be staged and can occur in any year of the five year Connection Horizon.

B.2 DISCOUNTED CASH FLOW (DCF) METHODOLOGY

Net Present Value ("NPV")	=	Present Value ("PV") of Operating Cash Flow + PV of CCA Tax Shield - PV of Capital
1. PV of Operating Cash Flow	=	P V of Net Operating Cash (before taxes) - P V of Taxes
a) PV of Net Operating Cash	=	PV of Net Operating Cash Discounted at the Company's discount rate for the customer revenue horizon. Mid-year discounting is applied. Incremental after tax weighted average cost of capital will be used in discounting.
Net (Wires) Operating Cash	=	(Annual(Wires) Revenues - Annual (Wires) O&M)
Annual (Wires) Revenue	=	Customer Additions * [Appropriate (Wires) Rates * Rate Determinant]
Annual (Wires) O&M	=	Customer Additions * Annual Marginal (Wires) O&M Cost/customer
b) PV of Taxes	=	PV of Municipal Taxes + PV of Capital Taxes + PV of Income Taxes (before Interest tax shield)
Annual Municipal Tax	=	Municipal Tax Rate * (Total Capital Cost)
Total Capital Cost	=	Distribution Capital Investment + Customer Related Investment + overheadsd at the project level
Annual Capital Taxes	=	(Capital Tax Rate) * (Closing Undepreciated Capital Cost Balance)
Annual Capital Tax	=	(Capital Tax Rate) * (Net Operating Cash - Annual Municipal Tax B Annual Capital Tax)

The Capital Tax Rate is a combination of the Provincial Capital Tax Rate and the Large Corporation Tax (Grossed up for income tax effect where appropriate).

Note: Above is discounted, using mid-year discounting, over the customer revenue horizon.

2. PV of Capital	=	P V of Total Annual Capital Expenditures

a) PV of Total Annual Capital Expenditures

Total Annual Capital Expenditures over the customer's revenue horizon discounted to time zero

Total Annual Capital Expenditure	=	(for New Facilities and/or Reinforcement Investments + Customer Specific Capital + Overheads at the project level). This applies for implicated system elements at the utility side of the "Ownership Demarcation Line".

Note: Above is discounted to the beginning of year one over the customer addition horizon

3. PV of CCA Tax Shield

P V of the CCA Tax Shield on [Total Annual Capital]

The PV of the perpetual tax shield may be calculated as:

PV at time zero of: $$\frac{[(\text{Income tax Rate}) * (\text{CCA Rate}) * \text{Annual Total Capital}]}{(\text{CCA Rate} + \text{Discount Rate})}$$

or,

Calculated annually and present valued in the PV of Taxes calculation.

Note: An adjustment is added to account for the ½ year CCA rule.

4. Discount Rate

PV is calculated with an incremental, after-tax discount rate.

TAB 7

January 29, 2009

toronto hydro
electric system

Residences of Avonshire Inc. and
K & G Oakburn Apartments I Ltd.
299 Rochampton Avenue
Toronto, Ontario M4P 1S2

Attention: Mark Gallow

Dear Sir:

Re: Residences of Avonshire Inc. development of 100, & 115 Harrison Garden Boulevard
and 5, 7 & 9 Oakburn Crescent
as legally described in PIN Nos. 10104-1613 (LT), 10104-1614 (LT), 10104-1622 (LT) and 10104-1624 (LT) ("Property")
K & G Oakburn Apartments I Ltd. development of 105 Harrison Garden Boulevard
as legally described in PIN Nos. 10104-1623 (LT) and 10104-1625 (LT) ("Property")
748 high-rise residential units (748 Toronto Hydro suite meters)
41 townhouses
792 connections
Toronto Hydro Customer Class 4
Toronto Hydro Project No. P0016652 Work Order No. 158422 ("Project")

Toronto Hydro-Electric System Limited ("Toronto Hydro") acknowledges receipt of Residences of Avonshire Inc.'s and K & G Oakburn Apartments I Ltd. ("Customer") written request for connection of the Project to the Toronto Hydro main distribution system.

The Customer has represented to Toronto Hydro that 789 residential units will be constructed and connected to the Toronto Hydro main distribution system and the estimated increased demand load attributable to the Project will be 1,900 kW ("Estimated Incremental Demand").

In order to connect the Project, an expansion to the Toronto Hydro main distribution system will be needed.

Based on the plans dated January 22, 2008 ("Plans") this document, including all Schedules attached, is Toronto Hydro's firm Offer to Connect ("Offer to Connect") as required by the Distribution System Code ("Distribution System Code") established by the Ontario Energy Board ("OEB").

In addition to the obligations set forth in this Offer to Connect, the Customer shall be bound by and required to comply with all provisions of the Conditions of Service filed by Toronto Hydro with the OEB. A copy of the Conditions of Service can be obtained at www.torontohydro.com.

Terms used in this Offer to Connect shall have the meaning ascribed thereto in the Distribution System Code and the Conditions of Service unless otherwise defined herein.

The following Schedules attached hereto form a part of this Offer to Connect:

Schedule A – Connection Work and Fees;
Schedule B – Expansion Work and Fees;
Schedule C – Capital Contribution Requirements and Economic Evaluation;
Schedule D – Expansion Deposit;
Schedule E – Alternative Bid Process and Contestable Work;
Schedule F – General Terms and Conditions.

A Capital Contribution, as described in Schedule C, will be required from the Customer.

An Expansion Deposit, as described in Schedule D, will be required from the Customer.

This Offer to Connect includes Contestable Work for which the Customer may obtain an alternative bid as described in Schedule E.

Based on the Plans and information provided to Toronto Hydro, as of the date of this Offer to Connect, an easement will be required to connect the Project. General easement requirements are set out under the heading "Easements" in Schedule F, General Terms and Conditions.

If the terms and conditions of this Offer to Connect are acceptable to the Customer, a duly authorized officer of the Customer shall sign the duplicate copy and return it to Toronto Hydro within 60 days of the date set forth above. If a signed copy is not returned to Toronto Hydro within that time period, Toronto Hydro reserves the right to revoke this Offer to Connect without further notice to the Customer. The Customer is advised that Toronto Hydro requires a minimum of 24 weeks, if not more ("lead time") to complete the Project, after receiving the signed Offer to Connect from the Customer, and, if necessary the Customer should make arrangements to return the signed Offer to Connect earlier, to accommodate the required lead time.

If the expansion work for this Project has not commenced within one (1) year from the date set forth above, Toronto Hydro has the right to terminate this Offer to Connect in accordance with its rights of termination as set out herein.

Any notice, communication, inquiry and payment regarding this Offer to Connect shall be directed as follows:

To: Toronto Hydro-Electric System Limited
Asset Management – 3rd Floor, 500 Commissioners Street
Toronto, Ontario M4M 3N7
Attention: Jim Trgachef, Supervisor
Standards and Policy Planning
Telephone (416) 542-2514, Facsimile: (416) 542-2731

To: The Customer at the address set forth below:
Residences of Avonshire Inc. and
K & G Oakburn Apartments I Ltd.
299 Roehampton Avenue
Toronto, Ontario M4P 1S2
Attention: Mark Gallow
Telephone: (416) 487-2844, Facsimile: (416) 487-7550

All payments and security as may be required hereunder shall be due and payable, or deliverable, upon acceptance of this Offer to Connect by the Customer.

Each of Residences of Avonshire Inc. and K & G Oakburn Apartments I Ltd. shall be jointly and severally liable for all the obligations in this Offer to Connect.

Please sign in the appropriate place below and return one signed copy, and all payments and security as may be required, to the address indicated above.

Yours truly,

Toronto Hydro-Electric System Limited

Per: _____
Name: Anthony Haines,
Title: President
I have authority to bind the Corporation.

Residences of Avonshire Inc. and K & G Oakburn Apartments I Ltd. each acknowledges its understanding of, accepts, agrees jointly and severally to comply with, and be bound by, all of the terms and conditions of this Offer to Connect, which include the provisions set forth above and all of the Schedules attached. Each acknowledges that by accepting this Offer to Connect a binding agreement is created and, upon signing, this Offer to Connect constitutes a legally valid and binding obligation, enforceable in accordance with its terms.

Residences of Avonshire Inc. and K & G Oakburn Apartments I Ltd. each confirms that it will not be obtaining alternative bids for the Contestable Work described in Schedule E.

Residences of Avonshire Inc.

Per:_____ Date:_____
Name:
Title:
I have authority to bind the Corporation.

K & G Oakburn Apartments I Ltd.

Per:_____ Date:_____
Name:
Title:
I have authority to bind the Corporation.

OR

Residences of Avonshire Inc. and K & G Oakburn Apartments I Ltd. each confirms it is not accepting Toronto Hydro's Offer to Connect and it will be proceeding by way of an alternative bid process for the Contestable Work, as described in Schedule E.

Residences of Avonshire Inc.

Per:_____ Date:_____
Name:
Title:
I have authority to bind the Corporation.

K & G Oakburn Apartments I Ltd.

Per:_____ Date:_____
Name:
Title:
I have authority to bind the Corporation.

SCHEDULE A
CONNECTION WORK and FEES

1. Connection Assets are the assets between the point of connection to the Toronto Hydro main distribution system and the ownership demarcation point as defined in Table 1.3 of Toronto Hydro's Conditions of Service.

2. The Connection Work and Connection Fees to supply and install the Connection Assets for the Project are described below.

3. Toronto Hydro shall recover costs associated with the installation of Connection Assets through:
   (a) Basic Connection Fees which are part of the Economic Evaluation; and
   (b) Variable Connection Fees collected directly from the Customer. The variable Connection Fees arise from the Variable Connection Work and are in addition to the Basic Connection Fees.

4. The Variable Connection Fees are payable by the Customer to Toronto Hydro pursuant to this Offer to Connect upon acceptance of this Offer to Connect by the Customer, or, if the Customer pursues an alternative bid process described in Schedule E, to the Customer's qualified contractor.

Connection Work shall mean the following:

- All necessary engineering design and inspections;
- Supply & Install:
  - U/G road crossing and primary cable.
- Supply:
  - The necessary switching and isolations required to connect the Customer to the Toronto Hydro distribution system;
  - Primary connections and terminations in transformer vault and to the Toronto Hydro distribution system;
  - All transformation, switchgear and termination as required.

NOTE:

- Customer is responsible for:
  - Trenching, supplying and installing a 2Wx2H concrete encased duct structure on private property from street line to transformer building vaults.

Connection Fees:

a) Basic Connection Fees of $1,310.00 per meter connection and $850.00 per meter connection have been included in Toronto Hydro's Economic Evaluation.

b) Variable Connection Fees

Variable Connection Fees	$193,930.60
GST 5%	$ 9,696.53
TOTAL CONNECTION FEES, GST	**$203,627.13**
Less Deposit and GST received	**- $ 0**
BALANCE OUTSTANDING	**$203,627.13**

The Connection Fees are based on the Connection Work being done during non-winter conditions. If the Customer requires the Connection Work to be done during winter conditions that would result in additional costs, Toronto Hydro will advise the Customer of the estimated additional costs and if the Customer provides a written request to Toronto Hydro to proceed, a Project Invoice will be issued and payment must be received by Toronto Hydro prior to the commencement of any of the applicable work.

SCHEDULE B
EXPANSION WORK AND FEES

1. The Uncontestable Expansion Work and Contestable Expansion Work that must be performed to connect the Project to the Toronto Hydro main distribution system, and corresponding Fees and Total Expansion Fees ("Total Expansion Fees") are described below.

2. The Customer will also be responsible for the payment of the operating, maintenance and administration costs ("OM&A Costs") of the Project, including applicable taxes. The OM&A Costs are included in the Economic Evaluation.

3. The Expansion Fees and OM&A Costs are recovered by Toronto Hydro by way of Capital Contribution if applicable, as described in Schedule C and the increased distribution revenues attributable to the Project, which are received by Toronto Hydro ("Incremental Revenues").

Uncontestable Expansion Work shall mean the following:

- All necessary engineering design and inspections;
- Supply & install:
  - Primary terminations and connections to the existing Toronto Hydro distribution system;
  - The necessary switching and outage arrangements to allow connections to existing distribution system.

Uncontestable Expansion Fees:	
Enhancement Costs (1,900 x $260 per kW)	$ 494,000.00
Materials	$ 24,500.00
Labour (engineering design, inspections)	$ 32,500.00
Equipment	$ 1,500.00
Basic Connection Charge (3 x $1,310.00 and 41 x $850.00, per meter connection)	$ 38,780.00
Overhead (including administration)	$ 63,326.08
TOTAL UNCONTESTABLE EXPANSION FEES	**$ 654,606.08**

Contestable Expansion Work shall mean the following:

- Supply & install:
  - All necessary duct structures, cable chambers, tap boxes, splice vaults, submersible transformer vaults, switchgear foundations on Harrison Garden extension and Oakburn Crescent to Avondale Avenue cable riser poles.

Contestable Expansion Fees:	
Materials	$ 358,759.09
Labour (construction)	$ 198,380.43
Equipment	$ 26,793.96
Overhead (including administration)	$ 62,539.28
TOTAL CONTESTABLE EXPANSION FEES	**$ 646,472.76**
TOTAL UNCONTESTABLE EXPANSION FEES	**$ 654,606.08**
TOTAL EXPANSION FEES (CONTESTABLE AND UNCONTESTABLE)	**$1,301,078.84**
GST (5%)	**$ 65,053.94**
TOTAL EXPANSION FEES, GST	**$1,366,132.78**

The Expansion Fees are based on the Expansion Work being done during non-winter conditions. If the Customer requires the Expansion Work to be done during winter conditions that would result in additional costs, Toronto Hydro will advised the Customer of the estimated additional costs and if the Customer provides a written request to Toronto Hydro to proceed, a Project Invoice will be issued and payment must be received by Toronto Hydro prior to the commencement of any applicable work.

SCHEDULE C
CAPITAL CONTRIBUTION REQUIREMENTS and ECONOMIC EVALUATION

1. The Customer acknowledges that it has represented to Toronto Hydro that the estimated increased demand load attributable to the Project will be 1,900 kW ("Estimated Incremental Demand") and that 789 residential units will be connected to the Toronto Hydro main distribution system.

2. To determine the amount of Capital Contribution that is required from the Customer for this Project, Toronto Hydro has performed, as described in Appendix B of the Distribution System Code, an economic evaluation ("Initial Economic Evaluation"). A copy of the Initial Economic Evaluation, including the calculation used to determine the amount of the Capital Contribution to be paid by the Customer, including all of the assumptions and inputs used to produce the Initial Economic Evaluation, is included with this Offer to Connect.

3. As a result of Toronto Hydro's Initial Economic Evaluation of the Project, the Customer shall pay to Toronto Hydro, upon acceptance of this Offer to Connect, a Capital Contribution in the amount set forth below:

Capital Contribution	**$92,981.00**
GST (5%)	**$ 4,649.05**
Capital Contribution and GST	**$97,630.05**

SCHEDULE D
EXPANSION DEPOSIT

1. An Expansion Deposit is intended to ensure that Toronto Hydro is held harmless in respect of the Expansion Fees and OM&A Costs by securing payment of the Total Expansion Fees in the event the Estimated Incremental Demand does not materialize. The Expansion Deposit shall be in the form of cash, or an irrevocable commercial letter of credit issued by a Schedule 1 bank as defined in the Bank Act, or a surety bond. The form of security must expressly provide for its use to cover the events for which it is held as a deposit. Any portion of the Expansion Deposit held as cash, which is returned to the Customer, shall include interest on the returned amount from the date of receipt of the full amount of the Expansion Deposit, at the Prime Business Rate set by the Bank of Canada less two (2) percent.

2. The Customer is required to post an Expansion Deposit, upon acceptance of this Offer to Connect, for the difference between the actual Expansion Fees and GST and the amount of the Capital Contribution and GST paid by the Customer, in accordance with Toronto Hydro's Initial Economic Evaluation of the Project.

3. This Expansion Deposit is in addition to any other charges that may be payable to Toronto Hydro under this Offer to Connect, or the Conditions of Service, or otherwise.

4. The amount of the Expansion Deposit is set out below.

5. After the facilities are energized, the Expansion Deposit shall be reduced, at the end of each 365-day period, by an amount calculated by multiplying the original Expansion Deposit by a percentage derived by dividing the actual connections completed or materialized in that 365-day period, by the total number of connections contemplated in this Offer to Connect. For information about reduction in the amount of the Expansion Deposit after each 365 day period, please contact Carrie Matthew at (416) 542-3100 ext. 32076.

6. If after five (5) years from the energization date of the facilities, the total number of connections contemplated by the original Offer to Connect have not materialized, Toronto Hydro shall retain any cash held as an Expansion Deposit, or to be entitled to realize on any letter of credit or bond held as an Expansion Deposit and retain any cash resulting therefrom, with no obligation to return any portion of such monies to the Customer at any time.

EXPANSION DEPOSIT:

TOTAL EXPANSION FEES AND GST	**$1,366,132.78**
LESS CAPITAL CONTRIBUTION AND GST	**-$ 97,630.05**
EXPANSION DEPOSIT	**$1,268,502.73**

SCHEDULE E
ALTERNATIVE BID PROCESS AND CONTESTABLE WORK

1. Toronto Hydro advises the Customer that part of the work that will be required for the expansion and connection to the existing distribution facilities includes work for which the Customer may obtain an alternative bid i.e. work that would not involve work with existing Toronto Hydro assets. The work for which the Customer may obtain alternative bid, "Contestable Work" is described below.

2. The Customer must use a contractor for the Contestable Work qualified by Toronto Hydro in accordance with its Conditions of Service. To qualify, contractors shall submit a "Contractor Qualification Application" and meet the requirements posted at:
http://www.torontohydro.com/electricsystem/customer_care/cond_of_services/index.cfm
at least 30 business days prior to their selection by the Customer to undertake Contestable Work. The Customer shall not be entitled to start performance of the Contestable Work until the contractor has completed its qualification by Toronto Hydro and has been qualified for no less than 30 business days.

3. Toronto Hydro does not make any representation or warranty regarding any contractor selected by the Customer to do any work regardless of whether the contractor has been qualified by Toronto Hydro or not and shall have no liability to the Customer in respect of such work.

4. If the Customer decides to hire a qualified contractor to perform the Contestable Work, the Customer will be required to select, hire and pay the contractor's costs for such work and to assume full responsibility for the construction of all of the Contestable Work.

5. The Customer shall ensure that the Contestable Work is done in accordance with Toronto Hydro's design and technical standards and specifications.

6. The Customer and his qualified contractor shall only use materials that meet the same specifications as Toronto Hydro approved materials (i.e. same manufacturers and same part numbers). Once the Customer has hired a qualified contractor, the Customer may request and obtain from Toronto Hydro the listing of approved materials that may be required for the Contestable Work.

7. The Customer will be required to pay for administering the contract with the qualified contractor, or if agreed by Toronto Hydro, pay Toronto Hydro a fee for performing this activity on its behalf. Upon request if Toronto Hydro is agreeable to performing such activity, Toronto Hydro will advise the Customer of the amount of the fee. Administering the contract includes, among other things, acquiring all permissions, permits and easements.

8. Toronto Hydro shall have the right to inspect and approve all aspects of the facilities constructed by the qualified contractor as part of its system commissioning activities, prior to connecting the expanded facilities to the Toronto Hydro main distribution system. If all of Toronto Hydro's requirements for the Contestable Work, including but not limited to, those set out in Sections 5, 6, and 7 above, have not been completed satisfactorily to Toronto Hydro, acting reasonably, the Project will not be energized, until the Contestable Work is in compliance with all of Toronto Hydro's requirements.

9. If the Customer decides to pursue an alternative bid for the Contestable Work, Toronto Hydro may charge the Customer costs, including, but not limited to, the following, for:
   (a) additional design, engineering or installation of facilities required to complete the Project that are required in addition to the original Offer to Connect; and,
   (b) inspection or approval of the work performed by the contractor hired by the Customer; and
   (c) making the final connection of the new facilities to the Toronto Hydro distribution system.
   ("Additional Costs for Alternative Bid Work").

10. If the Customer decides to hire a qualified contractor to perform the Contestable Work, the Customer must:
    1. Sign an Alternative Bid Agreement;
    2. Hire a qualified contractor;
    3. Pay to Toronto Hydro, the firm amount of Toronto Hydro's Additional Costs for Alternative Bid Work, as set out below;
    4. Provide the Alternative Bid Expansion Deposit as set out below.

11. After the Customer has performed the Contestable Work and Toronto Hydro has inspected and approved the constructed facilities, the Customer shall transfer the expansion facilities that were constructed under the alternative bid option to Toronto Hydro and Toronto Hydro shall pay to the Customer, a transfer price, ("Transfer Price") to be determined, as hereinafter set out.

12. The Transfer Price for the Contestable Work shall be the lower of the Customer's Costs or the amount set out in this Offer to Connect of the Contestable Work. The Customer's Costs shall mean:
    (a) the costs the Customer paid to have the Contestable Work performed, excluding the Variable Connection Work, as provided by evidence satisfactory to Toronto Hydro;
    (b) the Additional Costs for Alternative Bid Work charged by Toronto Hydro.
    Toronto Hydro shall be satisfied that all Customer's Costs shall have been properly incurred.

13. If the Customer does not provide the calculation setting out the Customer's Costs to Toronto Hydro within 30 days of all new facilities being energized, then the amount of the Transfer Price shall be the amount set out in this Offer to Connect for the Contestable Work.

14. Toronto Hydro shall carry out a final economic evaluation after the facilities are energized ("Final Economic Evaluation"). The Final Economic Evaluation shall be based on the amounts used in this Offer to Connect for costs and forecasted revenues, and the amount of the Transfer Price to be paid by Toronto Hydro to the Customer for the Contestable Work, where applicable. A copy of the Final Economic Evaluation shall be provided to the Customer.

15. Any amount payable by the Customer to Toronto Hydro, may be deducted from the Transfer Price owing to the Customer by Toronto Hydro.

16. If the Customer pursues an Alternative Bid, the Customer shall post an Alternative Bid Expansion Deposit in the amount of 10% of the Expansion Deposit as set out in Schedule D.

17. Toronto Hydro will retain the Alternative Bid Expansion Deposit for a warranty period of up to two years. The warranty begins at the end of the Realization Period, defined below.

18. The Realization Period for a Project ends, upon the first to occur of:
    (i) the materialization of the last forecasted connection in the expansion project, or
    (ii) Five (5) years after energization of the new facilities.

19. Toronto Hydro shall be entitled to retain and use the Alternative Bid Expansion Deposit to complete, repairing or bring up to standard the facilities constructed by the Customer, including Toronto Hydro's costs to ensure that the expansion is completed to the proper design, technical standards and specifications, using approved materials and that the facilities operate properly when energized.

20. Toronto Hydro shall return to the Customer the unapplied portion of the Alternative Bid Expansion Deposit, if any, at the end of the two-year warranty period.

21. Upon receipt of notice from the Customer that it intends to hire an alternative bid contractor, Toronto Hydro will provide an Alternative Bid Agreement.

Contestable Work shall mean the following:

Note:

- All Customer-supplied materials must be submitted to Toronto Hydro for approval prior to installation and meet Toronto Hydro Distribution Construction Standards;
- All equipment and underground plant installed must be inspected and approved prior to connection to the Toronto Hydro distribution system;
- Customer is responsible for applying for and obtaining any necessary City road cut permits.

Description of Work to Be Completed by the Customer:

- Supply & install:
  - All necessary duct structures, cable chambers, tap boxes, splice vaults, submersible transformer vaults, switchgear foundations on Harrison Garden extension and Oakburn Crescent to Avondale Avenue cable riser poles;
  - All primary cables complete with terminations thereof, except final connection to the Toronto Hydro distribution system;
  - All secondary cables complete with terminations thereof, except final connection to the Toronto Hydro distribution system;
  - All switchgears, submersible transformers;
  - All cable risers completed to the installation of the first section of U-Guard on the termination poles.

Description of Work to Be Completed by Toronto Hydro:

- All necessary engineering design and inspections and material approvals;
- Primary cable termination connections to the existing Toronto Hydro distribution system on Harrison Garden Blvd;
- The necessary switching and outage arrangements to allow connection to existing distribution system.

Toronto Hydro's Additional Costs for Alternative Bid Work	**$ 9,800.00**
GST (5%)	**$ 490.00**
TOTAL ADDITIONAL COSTS FOR ALTERNATIVE BID WORK, GST	**$ 10,290.00**
ALTERNATIVE BID EXPANSION DEPOSIT	**$126,850.27**

SCHEDULE F
GENERAL TERMS AND CONDITIONS
of OFFER TO CONNECT

1. ASSIGNMENT

1.1 Neither party may assign this Offer to Connect without the prior written consent of the other party, such consent not to be unreasonably withheld.

2. DEMARCATION POINTS

2.1 The ownership and operational demarcation points of the Project shall be identified as such by Toronto Hydro on the as-constructed drawings.

2.2 In accordance with Toronto Hydro's Conditions of Service, the Customer is responsible for maintaining, repairing and replacing, in a safe condition satisfactory to Toronto Hydro, all the Customer's civil infrastructure on private property that is deemed required by Toronto Hydro to house Toronto Hydro's Connection Assets, including but not limited to poles, underground conduits, cable chambers, cable pull rooms, transformer rooms, transformer vaults and transformer pads.

3. DISPUTE RESOLUTION

3.1 Any controversy between the parties arising under this Offer to Connect not resolved by discussions between the parties shall be determined by an arbitration tribunal convened pursuant to a notice of submission given either by Toronto Hydro or the Customer.

3.2 The notice shall name one arbitrator.

3.3 The party receiving the notice shall, within 10 days of notice to the other, name the second arbitrator or, if it fails to do so, the party giving the notice of submission shall name the second arbitrator.

3.4 The two arbitrators appointed shall name the third arbitrator within 10 days, or if they fail to do so within that time period, either party may make application to the applicable court for appointment of the third arbitrator.

3.5 Any arbitrator selected to act under this Offer to Connect shall be qualified by education, training and experience to pass on the particular question in dispute and shall have no connection to either of the parties other than acting in previous arbitrations.

3.6 The arbitration shall be conducted in accordance with the provisions of *The Arbitration Act, 1991* S.O. c-17, as amended.

3.7 The decisions of the arbitration tribunal shall be made in writing and shall be final and binding on the parties as to the questions submitted and the parties shall have no right of appeal therefrom.

4. EASEMENTS

4.1 Upon request by Toronto Hydro, the Customer shall, at its own expense, execute, register and provide a solicitor's opinion on title in a form acceptable to Toronto Hydro, within the time period specified by Toronto Hydro, and subject only to those encumbrances permitted in writing by Toronto Hydro, such easement agreements as Toronto Hydro may require for the installation and continued existence of any electrical or telecommunication plants or access to same for the life of such plant or as otherwise required to perform its responsibility as a distribution company.

4.2 The customer acknowledges that in order for an easement to be registered, it shall be required, at its expense, to arrange for and register any necessary documentation required by the appropriate Land Registry Office, including a Reference Plan, prepared by an Ontario Land Surveyor, describing the extent of the lands required for the easement.

5. FORCE MAJEURE

5.1 Force Majeure means any act, event, cause or condition that is beyond Toronto Hydro's reasonable control, including wind, ice, lightning or other storms, earthquakes, landslides, floods, washouts, fires, explosions, contamination, breakage of equipment or machinery, delays in transportation, strikes, lockouts or other labour disturbances, civil disobedience or disturbances, war, acts of sabotage, blockades, insurrections, vandals, riots, epidemics, loss of any relevant license or a declaration of force majeure by Hydro One Networks Inc., or any successor, under any agreement which Hydro One Networks Inc., or any successor, has with Toronto Hydro in connection with any work to be performed by Toronto Hydro under this Offer to Connect.

5.2 If by reason of Force Majeure, Toronto Hydro is unable, wholly or partially, to perform or comply with any or all of its obligations under, this Offer to Connect, it shall be relieved of such obligations, and any liability (including liability for any injury, damage or loss to the Customer caused by such event of Force Majeure) for failing to perform or comply with such obligations, during the continuance of Force Majeure.

6. LIMITATION OF LIABILITY

6.1 Toronto Hydro shall not be responsible for the acts or omissions of the Customer or its employees, contractors, subcontractors or agent.

6.2 Neither Toronto Hydro nor any of its employees, agents, officers, directors or other representatives ("Representatives") shall be liable for any loss, injury or damage to persons or property caused in whole or in part by negligence or fault of the Customer, or any of the Customer's Representatives, contractors or subcontractors.

6.3 Notwithstanding any other provision in this Offer to Connect, or any applicable statutory provision Toronto Hydro and its Representatives shall only be liable for any damages which arise directly out of the wilful misconduct or negligence of Toronto Hydro or its Representatives.

6.4 Neither Toronto Hydro nor any of its Representatives shall be liable under any circumstances whatsoever for any loss of profits or revenues, business interruption losses, loss of contract or loss of goodwill, or for any indirect, consequential, incidental or special damages, including but not limited to punitive or exemplary damages, arising from any breach of this Offer to Connect, fundamental or otherwise, or from any tortious acts, including the negligence or willful misconduct of it or its Representatives, however arising.

6.5 No action arising out of this Offer to Connect, regardless of the form thereof, may be brought by either party more than two (2) years following the date the cause of action arose, provided however that, subject to any applicable law, Toronto Hydro may bring an action for non-payment of amounts, or non-delivery of Expansion Deposits, required to be paid or delivered by the Customer under this Offer to Connect at any time.

6.6 The Customer shall indemnify and save harmless Toronto Hydro and its Representatives from any action, claim, penalty, damages, losses, judgements, settlements, costs and expenses or other remedy brought by any party or governmental authority, arising out of or resulting from any negligent act or failure to act or any willful misconduct by the Customer or any of its Representatives.

6.7 All of the provisions of Sections 6.1, 6.2, 6.3, 6.4, 6.5 and 6.6 shall survive the termination of this Offer to Connect.

7. NOTICE

7.1 Any notice to be given under this Offer to Connect shall be in writing and delivered by prepaid registered mail, hand, courier or facsimile to the contact for the parties as set forth in the Offer to Connect.

7.2 Delivery by facsimile shall be deemed received on the day following transmittal provided the facsimile is received as confirmed by the issuance of a confirmation receipt at the point of transmission.

7.3 Delivery by hand or courier shall be deemed received on the date delivered.

7.4 Delivery by prepaid registered mail shall be deemed received on the 5th business day after mailing.

7.5 Either party may change its address for notice by providing written notice of that change to the other party.

8. REVISED PLANS

8.1 If the Customer submits revised plans or requires additional design work, Toronto Hydro may provide, at cost, a new offer based on the revised plans or the additional design work.

8.2 If the Plans are revised at any time, after acceptance of this Offer to Connect shall be withdrawn or terminated immediately, despite any acceptance by the Customer. A new Offer to Connect will only be provided to the Customer upon payment in the amount of $3,500.00 that must be paid prior to the new Offer to Connect being provided to the Customer.

9. SECURITY INTEREST

9.1 As security for its obligation under this Offer to Connect, the Customer grants to Toronto Hydro a present and continuing security interest in, and lien on (and right of set-off against), and assignment of all money, cash collateral and cash equivalent collateral and any and all proceeds resulting therefrom or the liquidation thereof, delivered as an Expansion Deposit or otherwise pursuant to the terms of this Offer to Connect, or for the benefit of Toronto Hydro.

9.2 The Customer agrees to take such action as Toronto Hydro reasonably requires in order to perfect Toronto Hydro's first-priority security interest in, and lien on (and right of set-off against), such collateral and any and all proceeds resulting therefrom or from the liquidation thereof.

9.3 Toronto Hydro shall apply the proceeds of the collateral realized upon the exercise of any such rights or remedies to reduce Customer's obligations under this Offer to Connect (Customer remaining liable for any amounts owing to Toronto Hydro after such application), subject to Toronto Hydro's obligation to return any surplus proceeds remaining after such obligations are satisfied in full.

10. TAXES

10.1 Unless specified, none of the amounts payable or deliverable under the Offer to Connect include goods and services taxes or any other taxes that may be payable.

10.2 The Customer shall pay all such taxes in accordance with applicable laws.

11. TERMINATION

11.1 Each of the following shall constitute an event of default ("Event of Default"):

(i) the Customer fails to make any payment at the time specified for payment in this Offer to Connect and such failure has not been remedied within 4 days notice of such failure;

(ii) the Customer fails to deliver any Expansion Deposit, including a renewal, or additional Expansion Deposit within the time period specified for delivery in this Offer to Connect;

(iii) the Customer fails to execute and deliver any agreement, or deliver any other document, within the time period specified for execution and/or delivery;

(iv) the Customer fails to commence the Expansion Work within 1 year from the date of this Offer to Connect;

(v) the Customer cancels the Project for any reason;

(vi) the Customer fails to comply with any other covenant or obligation in this Offer to Connect and such failure has not been remedied (where it is possible to remedy such failure) within 15 days of the initial failure to perform;

(vii) a resolution has passed, or documents filed at an office of public record, for the merger, amalgamation, dissolution, termination of existence, liquidation or winding-up of the Customer, unless the prior consent of Toronto Hydro has been obtained;

(viii) a receiver, manager, receiver-manager, liquidator, monitor or trustee in bankruptcy of the Customer or any of its property is appointed by any government authority, and such receiver, manager, receiver-manager, liquidator, monitor or trustee is not discharged within 30 days of appointment; or, if by decree of any government authority, the Customer is adjudicated bankrupt or insolvent, or any substantial part of its property is taken, and such decree is not discharged within 30 days after the entry thereof; or, if a petition to declare bankruptcy or to reorganize such party pursuant to any applicable law is filed against the Customer and is not dismissed within 30 days of such filing;

(ix) the Customer files, or consents to the filing of, a petition in bankruptcy or seeks, or consents to, an order or other protection under any provision of any legislation relating to insolvency or bankruptcy ("Insolvency Legislation"); or files, or consents to the filing of, a petition, application,

answer or consent seeking relief or assistance in respect of itself under provision of any Insolvency Legislation; or files, consents to the filing of, an answer admitting the material allegations of a petition filed against it in any proceeding described herein; or makes an assignment for the benefit of its creditors; or admits in writing its inability to pay its debts generally as they become due; or consents to the appointment of a receiver, trustee, or liquidator over any, or all, of its property.

11.2 Upon the occurrence of an Event of Default, Toronto Hydro may, at its sole option, do any one or more of the following:

(i) exercise any of the rights and remedies of a secured party including any such rights and remedies under law then in effect;

(ii) exercise its rights of set-off against any and all property of the Customer in the possession of Toronto Hydro;

(iii) declare the full amounts of the Expansion Fees and OM&A Costs that are unpaid and unrecovered as due and owing ("Accelerated Amounts");

(iv) draw on any cash, or draw under any letter of credit, then held by or for the benefit of Toronto Hydro as an Expansion Deposit or Capital Contribution or otherwise, free from any claim or right of any nature whatsoever of the Customer, including any equity or right of purchase or redemption by the Customer, to cover all costs incurred on, or prior to, the date of termination, including costs for materials ordered for the expansion, storage costs and facilities removal costs and any amounts owing under this Offer to Connect, including the Accelerated Amounts; and/or

(v) terminate this Offer to Connect, provided that, any termination shall not affect any obligations incurred prior to the effective date of termination or any other rights that Toronto Hydro may have arising out of any rights or obligations that are expressed to survive termination of this Offer to Connect.

12. TITLE AND RISK OF LOSS

12.1 Notwithstanding that Toronto Hydro may install equipment and materials under this Offer to Connect to which title is intended to pass to the Customer, title to such equipment or materials shall be transferred to the Customer, and risk of loss shall be assumed by the Customer, upon delivery to the Property.

12.2 Toronto Hydro shall be entitled to receive reasonable compensation for storing any materials or equipment not delivered to the Customer due to a delay caused by the Customer and such equipment or materials shall be held at the Customer's risk.

13. WARRANTIES

13.1 Toronto Hydro warrants that the services it provides are in accordance with Good Utility Practice.

13.2 Except as expressly set forth in this Offer to Connect, Toronto Hydro provides no warranties, for fitness for purpose or otherwise, and whether statutory or otherwise, to the Customer.

14. MISCELLANEOUS

14.1 This Offer to Connect, including the Schedules attached, shall constitute the entire agreement between the parties, and there are no other agreements or understandings, either written or oral, to conflict with, alter or enlarge this Offer to Connect unless agreed to in writing between the parties subsequent to the effective date of this Offer to Connect.

14.2 Failure or delay by Toronto Hydro in enforcing any right under, or provision of this Offer to Connect shall not be deemed a waiver of such provision or right with respect to the instant, or any previous, or subsequent, breach.

14.3 This Offer to Connect shall be governed by the laws of the Province of Ontario and the laws of Canada as applicable.

14.4 Toronto Hydro shall be entitled to access at all reasonable times to any of the Customer's properties to perform the services in this Offer to Connect.

14.5 Interest on unpaid amounts shall bear interest at the rate of 1.5 percent calculated and compounded monthly (19.56 percent per annum) at and from the due date up to and including the date of payment in full of such amount, together with all interest accrued to the date of payment.

14.6 Toronto Hydro and the Customer agree to execute and deliver such further documents as may be required for either party to fulfill its obligations and enforce its rights under this Offer to Connect.

14.7 If any provision of this Offer to Connect is declared illegal, invalid or unenforceable for any reason whatsoever, to the extent permitted by law, such illegality, invalidity or unenforceability shall not affect the legality, validity or enforceability of any of the other provisions.

14.8 This Offer to Connect and the obligations of the parties under it are subject to all applicable present and future laws, rules, regulations and orders of any regulatory or legislative body or other duly constituted authority having jurisdiction over Toronto Hydro or the Customer.

14.9 Time shall be of the essence.

14.10 If there is a conflict between this Offer to Connect and Toronto Hydro's Conditions of Service, this Offer to Connect shall govern.

	A	B	C	D	E	F	G	H	I	J	K
1	REQUEST FOR ECONOMIC EVALUATION (NPV CALCULATION)										
2	January 23, 2007 Version										
3											
4	Important: Enter Data in Yellow Boxes only, including zero values										
5											
6											
7	Requested by:	DAN STANOEV						Date:		nov 20 2008	
8											
9	Tel. Ext:	27818									
10											
11	Supervisor Approval:	Dave Graham									
12											
13	Project Information:										
14	Address	AVONSHIRE COMMUNITY - PHASE 1						WO Number		168422	
15											
16	Service Type (as applicable)	(key 'x'		Res		x		Commercial			Industrial
17											
18						4,900	Power Factor - PF%				
19											
20	Transformer Size	2000.0	kVA		Incremental Load	2000.0	kVA		Total Load	2000.0	kVA
21											
22											
23	Customer Class	14			Expected In-Service Date					Jun-09	
24											
25	Type of									No. of	
26	Account Meter	Monthly demand > 1000 kW and up to 5000 kW								Meters Installed	7pz
27											
28											
29											
30											
31	EXPANSION PLUS ENHANCEMENT COSTS										
32		kW				Avg Charges ($)					
33											
34	OH and U/G	4,900			X	$260.00			=		494,000.00
35											
36											
37											
38	Enhancement Costs								=		494,000.00
39											
40	NETWORK VAULT COST SHARING								=		
41											
42	IMPARTED EXPANSION COST								=		494,000.00
43											
44	MATERIALS										383,258.09
45	LABOUR EXPENSE: ENG & CONSTRUCTION										230,890.43
46	EQUIPMENT										28,293.96
47	SAMD CONNECTION FEE CONNECTION TRANSFORMATION COST										38,780.00
48	TRANSPORTATION										
49	Additional Cost										
50	ADMINISTRATION OH COST								=		125,843.36
51	GRAND TOTAL										(307,076.84)
52											
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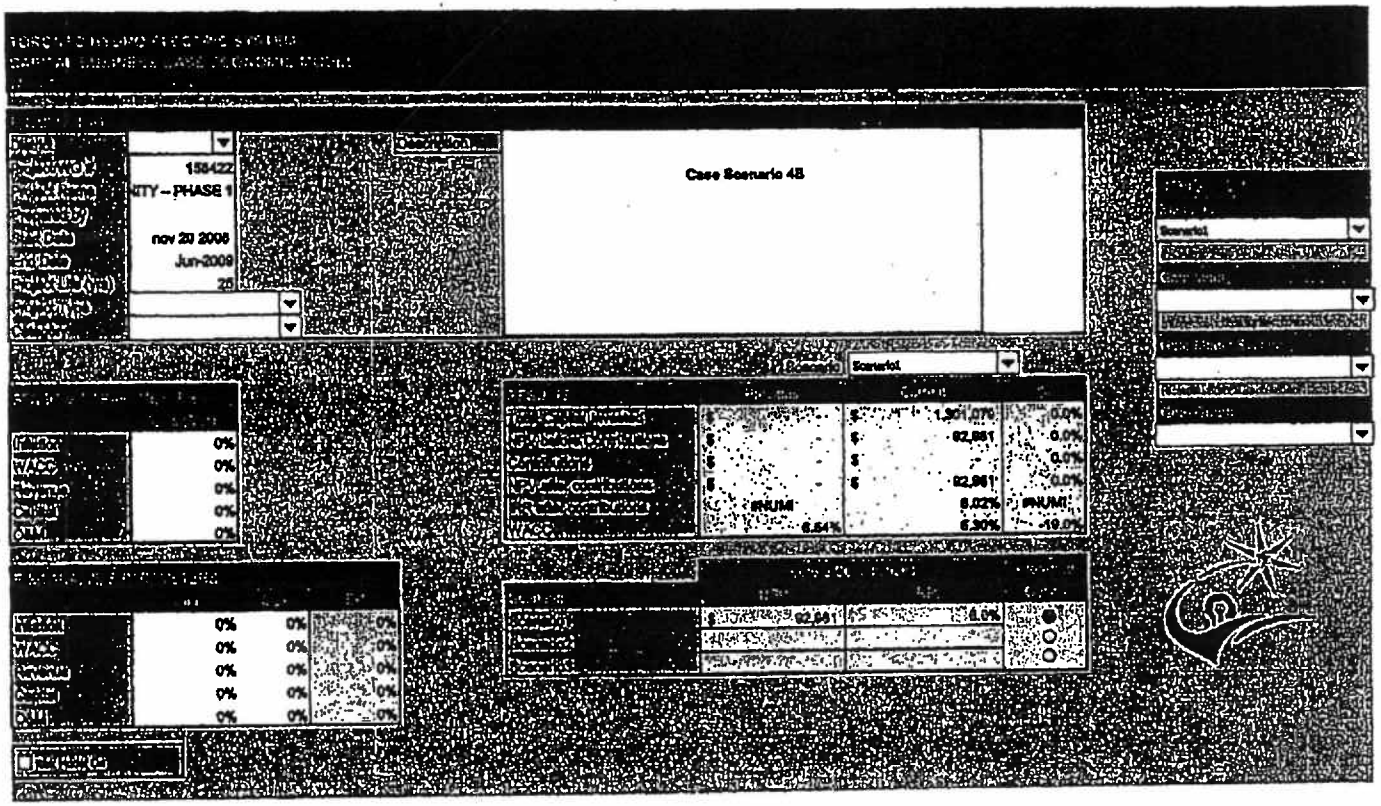
59											
60											
61											
62											
63											
64											
65	Customer Connection Forecast - Number of Installed Meter										
66											
67	Residential										
68	General Service (< 50 kW)										
69	General Service (50 - 999 kW)										
70	General Service (1000 - 4999 kW)										
71	Large User (5000+ kW)										
72											
73	Total Customer Monthly Peak Demand - kva - (Class 3, 4 and/or 8)										
74											
75	Residential										
76	General Service (< 50 kW)										
77	General Service (50 - 999 kW)										
78	General Service (1000 - 4999 kW)										
79	Large User (5000+ kW)										
80											
81	Notes:										
82											


Case Scenario 4B
nov 20 2008
Jun-2009
Scenario1
Scenario1

TAB 8

ONTARIO ENERGY BOARD STAFF INTERROGATORIES

INTERROGATORY 4.7:

Reference(s): D1/Tab 8/Schedule 4

The description of the Distribution Capital plan for metering is found in this exhibit. In regards to Table 1: Metering Capital Investments Summary:

a) Regarding the expenditure of $12.9 million in 2008, $16.5 million in 2009, $14.2 million in 2010 in Metering, please provide the breakdowns for the following categories
   i) Wholesale meter,
   ii) "Bulk-metered" conversion to Smart Meter, and
   iii) Replacement of the largest customers' facilities

b) Please provide capital expenditures for wholesale meters for the 2006 historical year.

RESPONSE:

a) Please see Table in Appendix A of this Schedule.

b) Please see Table in Appendix A of this Schedule.

	2006 Historical			2007 Bridge			2008 Test			2009 Test			2010 Test		
	Units	$/Unit	Total	Units	$/Unit	Total	Units	$/Unit	Total	Units	$/Unit	Total	Units	$/Unit	Total
Wholesale Meter Installation Upgrades - LV Metering	6	133,833	$803	18	160,000	$2,880	14	160,000	$2,240	16	160,000	$2,560	14	160,000	$2,240
Wholesale Meter Installation [2, 4] Upgrades - HV Metering	0	0	$0	N/A	N/A	$1,000	N/A	N/A	$6,000	N/A	N/A	$7,000	N/A	N/A	$1,000
Conversion of bulk-metered [3] buildings	0	0	$0	1,920	550	$1,056	3,549	564	$2,000	8,060	558	$4,500	9,420	563	$5,300
Replacement of existing interval meters	340	2,100	$714	525	2,100	$1,103	630	2,100	$1,323	610	2,100	$1,281	735	2,100	$1,544
Other															
Total ($,000)			$1,517			$6,039			$11,563			$15,341			$10,084
Rate Application Totals ($,000)			$1,517			$8,057			$12,964			$16,539			$14,188
Variance ($,000)			$0			$2,019			$1,401			$1,198			$4,105

Notes:

1. All totals are in thousands of dollars.
2. The HV portion of the Wholesale Meter Installation Upgrades is one project and units are not applicable. This project will avoid upgrading 71 individual metering points.
3. 2008-2010 variances are due to a reduction in the estimated number of individual suite meters since the rate application dated August 2, 2007. On August 18, 2007 the final Ontario Regulation 442/07 was printed in The Ontario Gazette. This represented a significant change from the proposed draft regulation that would have required all condominium buildings be converted to individual suite metering by the end of 2010. The final regulation does not have this requirement, and therefore Toronto Hydro's estimates of the number of individual suite meters we expect to install has been reduced.
4. IESO approval is pending for the installation of wholesale metering points on the high voltage transmission circuits that supply power to much of the Toronto service territory.

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INTERROGATORY 4.8:

Reference(s): D1/Tab 8/Schedule 4

a) Please identify the documentation according to which the IESO requires the meter upgrades, as mentioned at page 1 lines 9-11.

b) Please identify the basis for HONI holding responsibility for the costs of metering changes for feeds from the Grid, as mentioned at page 2 line 12.

c) At page 2 the application indicates that two power transformers are being upgraded by HONI, and that THESL is responsible for the upgrade of the metering. Please explain why THESL has the responsibility for the metering.

d) Have estimates for metering upgrades on the feeds from the HONI grid been on the basis of competitive bidding? If not please explain.

e) At page 3, upper paragraph, line 8, the application indicates that THESL is anticipating to be requested to provide metering service for condominium loads which are not THESL customers.

   i) Why would THESL not be able to recover costs from the party to whom the service is being provided?

   ii) Provide a table identifying the number of such requests, the average cost of each, the capital contribution expected from other parties and the net capital requirements.

f) At page 3, last paragraph, the application indicates that 2,500 customers have interval meters which are smart meters but do not satisfy IESO requirements.

   i) If these meters are by definition smart meters, in what way do they not meet the smart meter definition?

   ii) If these meters are in fact smart meters why are they not considered part of the smart meters initiative?

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RESPONSE:

a) IESO Wholesale Revenue Metering Standard – Hardware (MDP_STD_0004).

b) THESL will hold responsibility for the costs of metering changes for feeds from the Grid.

c) By IESO market rules, THESL is the registered Metered Market Participant for all the wholesale meters that deliver power to Toronto, and is responsible for the costs of maintaining compliant wholesale metering systems.

d) The estimates from HONI have not been obtained through a competitive process. In most cases, competitive bidding is not feasible because HONI staff are required to perform the work due to the proximity and connectedness of related equipment in the terminal stations. Where HONI staff are not required to perform the work, and where they have provided lower estimates, work has been awarded to Rodan Energy & Metering Solutions Inc.

e)

i) The condominium buildings under discussion are currently THESL customers, but only at the bulk suite metering point, that provides the billing measurements for the entire condominium. The Condominium Corporation that manages the building is typically the THESL account holder for the bulk point, and is responsible for all billing and settlement activities.

THESL anticipates that a number of these buildings will request that their

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bulk suite metering point be converted to individual suite metering points for each suite owner, in accordance with Ontario Regulation 442/07. In these cases, each suite owner will become a THESL customer and residential account holder.

In this manner, THESL will recover ongoing costs from the individual suite owners through the regulated monthly customer service charge process, but not the original capital costs.

ii)

Condominium Suite Metering Retrofit Installations	2008	2009	2010
Anticipated Number of Requests	1500	6000	7500
Average Cost of Each Request	$550	$550	$550
Capital Contribution Expected	0	0	0
Net Capital Requirement	$825,000	$3,300,000	$4,125,000

f)

i) Please note that the application (page 3, lines 21 through 26 inclusive) does not make reference to IESO requirements, but rather states that obsolete meters will be upgraded to be compliant with the minimum functionality requirements of the smart meter initiative. The meter upgrades will be incorporated into planned work programs such as Measurement Canada seal expiry changes. Upgrade objectives will include faster modems to ensure data is delivered in a timely manner, increased number of data channels and units

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of measure, improved time synchronization, replacement of pulse recorders with meters, and extended in-service seal periods.

ii) THESL considers the smart meter initiative to include the replacement of installed traditional meters with smart meters. Since many of the obsolete meters already provide much or all of the required smart meter functionality, THESL did not view their planned replacement as necessarily being required in order to be smart meter initiative compliant. The meter upgrade is required to ensure that meters installed for THESL's largest customers are able to satisfy the performance requirements of the initiative, to provide accurate and timely data to THESL's billing system, and to provide reliable data to customers and retailers who regularly receive consumption data from these meters.