

A Determination of the Working Capital Requirements of Hydro One Networks' Distribution Business

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Section I: Introduction and Overview

Summary

In the EB-2005-0378 and EB-2006-0501 Decisions With Reasons, the Ontario Energy Board (the “Board”) accepted Hydro One’s (the “Company”) 2006 distribution and 2007-08 transmission related requests for working cash allowances consistent with the amount recommended in lead-lag study reports prepared by Navigant Consulting, Inc. (“NCI”). In preparation for a 2010-11 distribution rate filing before the Board, the Company retained NCI to prepare an update to its prior studies. This report provides the results of the update and the working capital requirements of the Company’s distribution business.

Listed below are key findings and conclusions from this study:

1. In terms of lead lag days, the results from this study are generally consistent with results from the Company’s 2006 and 2007-08 distribution and transmission studies respectively. Where there are differences, they have been identified, explained, and their impact on working capital requirements quantified.
2. The approach and method are generally consistent, in terms of lead and lag items, with other studies relating to the determination of working capital both in Ontario and other Canadian jurisdictions.
3. Results from the lead-lag study applied to the Company’s test year distribution expenses identify that working capital amounts of \$305 million in 2010 and \$309 million in 2011 respectively will be required by the Company. These amounts represent approximately 11.7 percent and 11.9 percent of the Company’s Operations, Maintenance, and Administration (“OM&A”) expenses including cost of power. These results compare well with the 11.6 percent identified as the working capital requirement for the Company in its 2006 distribution study and accepted by the OEB.
4. If the OEB’s guideline of 15% of OM&A including cost of power were to have been used verbatim by the Company, the result would have been a working capital requirement of approximately \$390 million for both 2010 and 2011 compared with amounts identified in this study that are in the order of \$80-85 million per year less.

Working Capital

Working capital is the amount of funds required to finance the day-to-day operations of a regulated utility and are included as part of a rate base for ratemaking purposes. A lead-lag study is the most accurate basis for determination of working capital and was used by NCI for this purpose.

A lead-lag study analyzes the time between the date customers receive service and the date that customers’ payments are available to the Company (or “lag”) together with the time between which the Company receives goods and services from its vendors and pays for them at a later date (or “lead”)¹. “Leads” and “Lags” are both measured in days and are generally dollar-weighted. The dollar-weighted

¹ A positive lag (or lead) indicates that payments are received (or paid for) after the provision of a good or service.

net lag (i.e., lag minus lead) days is then divided by 365 (or 366 if a leap year is selected) and then multiplied by the annual test year cash expenses to determine the amount of working capital required for operations. The resulting amount of working capital is then included as part of the Company’s rate base for the purpose of deriving revenue requirements.

Key Concepts

Two key concepts need to be defined up-front as they surface throughout the lead-lag study described in this report:

Mid-Point Method: When a service is provided to (or by) the Company over a period of time, the service is deemed to have been provided (or received) evenly over the midpoint of period, unless specific information regarding the provision (or receipt) of that service is available indicating otherwise. If both the service end date (“Y”) and the service start date (“X”) are known, the mid-point of a service period can be calculated using the formula:

$$\text{Mid-Point} = \frac{([Y-X]+1)}{2}$$

When specific start and end dates are unknown but it is known that a service is evenly distributed over the mid-point of a period, an alternative formula that is typically used is shown below. The formula uses the number of days in a year (A) and the number of periods in a year (B):

$$\text{Mid-Point} = \frac{A/B}{2}$$

Statutory Approach: In conjunction with the use of the mid-point method, it is important to note that not all areas of this study may utilize dates on which actual payments were made by the Company. In some instances, particularly the Goods and Services Tax (“or GST”), the due date for payments are established by statute or by regulation with significant penalties in place for missing the due date. In these instances, the due date established by statute has been used in lieu of when payments were actually made.

Method

Performing a lead-lag study requires two key undertakings:

1. Developing an understanding of how the regulated business works, i.e., in terms of products and services sold to customers or purchased from vendors and the collections and payment policies and procedures that govern such transactions; and
2. Modeling such operations using data from a relevant period of time and a representative data set. It is important to ascertain and factor into the study whether (or not) there are known changes to existing business policies and procedures going forward. Where such changes are known and material, they should be factored into the study.

To develop an understanding of Hydro One's operations, interviews with personnel within the regulated utility's Accounts Payable, Customer Service, Wholesale Market Operations, Human Resources, Payroll, Treasury, and Tax Departments were conducted. Some key questions that were addressed during the course of the interviews included:

- a. What is being sold (or bought)? If a service is being provided (purchased), over what time period was the service provided (or purchased)?
- b. Who are the buyers (sellers)?
- c. What are the terms for payment? Are the terms for payment driven by industry norms or by company policy? Is there flexibility in the terms for payment?
- d. Are any changes expected to the terms for payment either driven by industry or internally by the Company? What is the basis for such changes (if any)?
- e. How is payment made (e.g., cash, check, electronic funds transfer)?

Except where otherwise noted, a calendar year 2008 data set was used in the analysis. Development of the data set entailed gathering raw data from the utility's General Accounting, Accounts Payable, Customer Service, Payroll, and Tax Systems. Once the raw data had been gathered from the multiple in-house systems, sampling and data validation was performed to the extent necessary and appropriate. Standard statistical sampling techniques were used, and validation generally took the form of comparing actual invoices or bills with data from the utility's systems to ensure accuracy.

Organization of the Report

Section II of this report discusses the lags associated with the Company's collections of revenues. Included in Section II is a description of the sources of such revenues and how they were treated for the purposes of deriving an overall revenue lag as it affects the Company's distribution operations.

Section III presents a description of the various expenses and their attendant lead times. Included in the discussion on expense leads are the lead times on Cost of Power, OM&A costs, removal costs, environmental remediation costs, interest on long-term debt, Capital and Income Taxes, and the GST. The methods used to calculate the expense lead times associated with each of the items as well as the results from the application of the methods are described.

Section IV presents the cash working capital requirements of Hydro One's distribution business including the working capital requirement associated with the GST.

Finally, Section V presents a summary comparison of the results from the 2009 study with results from prior Hydro One studies. Differences between the two have been noted, explained, and their impacts on working capital quantified. Also included within Section V is an update to the high-level benchmarking of Hydro One's lead-lag studies with other studies that have been conducted in Canada. The question addressed in the benchmarking effort is have other studies within Canada considered the various elements of revenues and expenses considered by the Company. The intent of presenting the discussion in Section V is:

- To demonstrate that the approach used in this study is reasonable when compared with the Company's 2006 distribution study and captures the current operations of the Company;
- To show that the approach used in this study is consistent with similar studies in Canada; and,
- To emphasize that the overall result is a balance between the expectations of investors and rate-payers in terms of working capital.

Section II: Revenue Lags

An investor owned utility providing service to its customers generally derives its revenue from bills paid for service by customers. A *revenue lag* represents the number of days from the date service is rendered by the Company until the date payments are received from the customers and such funds are available to the Company.

Hydro One Distribution receives funds from three sources:

- a. Retail customers;
- b. The Independent Electric System Operator (or "IESO"), and
- c. Other sources including municipalities, electricity retailers, and for miscellaneous services such as jobbing and contracting work performed by the Company.



Based on the Company's records for calendar year 2008, approximately 94.2 percent of the Company's revenues are realized from its retail customers, with about 4.2 percent being provided by the IESO as part of a Rural or Remote Rate Program ("RRRP"). The remainder originates from a variety of sources including customer related jobbing and revenue from other electricity retailers. This is shown in Figure 1.

The revenue lag associated with the provisioning of service to retail customers typically consists of four components:

- a. Service Lag;
- b. Billing Lag;
- c. Collections Lag; and
- d. Payment Processing Lag (including Bank Float).

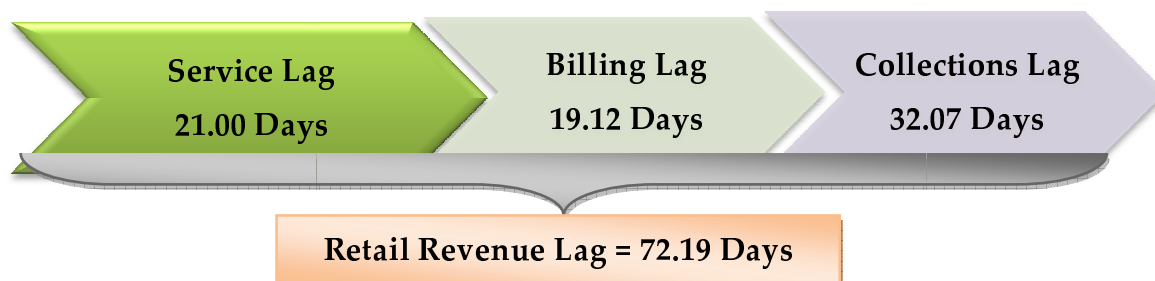
When considered together, this study indicates that these four components of the retail revenue lag total 72.19 lag days. The retail revenue lag time of 72.19 days is applicable to approximately 94.2 percent of the Company's retail revenues (retail revenues and revenue from other electricity distributors within the Province). The IESO's RRRP remittances, which account for about 4.2% of total revenues, have a lag time of 32.67 days consistent with the expense lead time associated with the cost of power. Finally, other revenues, which account for about 1.6% of total revenues, have a lag time of 38.35 days. When all sources of the Company's retail revenues are weighted, the result is an overall revenue lag time of 69.99 days. The information is provided in Table 1.

Table 1. Calculation of Total Revenue Lag

Description	Un-weighted Lag Days	Weighting Factor % of Revenues	Weighted Lag Days
(A)	(B)	(C)	(D)
Retail Revenues	72.19	94.20%	68.01
IESO RRRP Remittances (discussion provided under "Cost of Power")	32.67	4.24%	1.39
Other Revenue	38.35	1.55%	0.60
TOTAL - Revenue Lag		100.00%	69.99

Each of the components of the Company’s retail revenue lag shown in Figure 2 is discussed separately below. The revenue lag associated with the IESO’s RRRP Program is discussed in the section entitled “Cost of Power”.

Figure 2². Components of Retail Revenue Lag



Retail Revenue Lag - Service

The Service Lag covers the period between the time the Company provides service and the time customers’ meters are read. The Company’s customers, who can be categorized into those that are demand billed, acquired (from other distribution companies), seasonal, and all others, may have their meters read on a monthly, bi-monthly, quarterly, or annual basis. Based on this information and using data on number of customer accounts from the Company’s Customer Service System (“CSS”) for 2008, a weighted average service lag time of 21.00 days was determined.

Retail Revenue Lag - Billing

Billing lag refers to the average number of days from the date a customer’s meter is read until the customer’s bill is mailed. The amount of time that it takes the Company to bill a customer depends on the:

² Note that service, billing, and collections only are shown in Figure 2. Payment Processing and Bank Float has been excluded from Figure 2 since there is no lag associated with such activities. A brief discussion is provided later in this section.

1. Time taken to read a customer's meter and for the resulting download of the meter read data to the Company's billing system. As with most utilities that use the Customer Service System ("CSS") to bill customers, this could take up to 4 business days; and
2. Time taken to receive IESO price information to include on interval metered Hydro One customer bills. Per the IESO's business rules, preliminary statements for a particular trade day are made available to market participants 10 business days after a trade day (or 11 business days).

Taking these two steps into account and using data from calendar year 2008 an overall billing lag of approximately 19.12 calendar days was determined.

Retail Revenue Lag - Collections

The collections lag refers to the average amount of time from the date the Company mails a bill to the date that the Company receives the customer's payment. This information is tracked by the Company using reports that indicate aging of accounts receivables segregated into four intervals: Current (or 0-21 days), 22-59 days, 60-119 days, and finally, greater than or equal to 120 days. Using balances by month within each of these aging intervals for calendar year 2008 and the mid-point approach defined at the outset of this report, a weighted average collections lag time of 32.07 days was determined.

Retail Revenue Lag - Payment Processing and Bank Float

Based on interviews with the Company's Customer Service Department and the Company's Treasury operations, NCI determined that customer payments to the Company are typically in the form of checks, electronic payments, internet payments, direct debit payments, or payments via credit card. Under any of these customer payment options, the Company deposits all payments into its account on the same day. Therefore, there is no payment processing time associated with the Company's receipt of customer payments. Finally, once the deposits are made to the Company's bank account, all deposits are immediately available. Thus, there is no bank float associated with the Company's deposits. Therefore, no additional lag time for payment processing or bank float was considered in this study.

Other Revenue Lag

The lag time associated with other revenues was estimated using a weighted average of energy (see discussion on collections lag above) and non-energy related accounts receivables of the Company. When balances by aging intervals for both categories of accounts receivables were weighted together, a revenue lag time of 38.35 days was determined.³

³ Using data from calendar year 2008, the weighted average lag time relating to energy only accounts receivables was determined to be 32.07 days [discussion under Retail Revenue Lag – Collections]. From records supplied by the Company, the weighted average lag time associated with non-energy related accounts receivable was determined to be 44.63 days. When both the energy and non-energy related accounts receivable are considered together, the result is 38.35 days.

Section III: Expense Leads

As mentioned at the outset, a determination of working capital requires both a measurement of the lag in the collection of revenues for services provided by Hydro One's distribution business, and the lead times associated with payments for services provided to the Company. Therefore, in conjunction with the calculation of the revenue lag, expense lead times were calculated for the following items:

- Cost of Power;
- OM&A Expenses;
- Removal Costs;
- Environmental Remediation;
- Interest on Long Term Debt;
- Income and Capital Taxes; and
- GST.

Cost of Power

The Company purchases the vast majority of its power supply requirements from the IESO. Based on the IESO's billings to the Company and the Company's payments (or receipts) during 2008, a weighted expense lead time of 32.67 days was derived for the cost of power. This estimate of expense lead time includes both a service lead time component, generally a half month using the mid-point approach described at the outset, as well as a payment lead time. The payment lead time was calculated using the IESO invoicing and payment schedules for 2008, i.e., payments due on or by the 12th business day following the end of a delivery month. The calculation is shown in Table 2 below.

Table 2. Expense Lead Time Associated With Purchased Power

Delivery Month	Payment Amounts	Date of Payment (Receipt) Amounts	Service Lead Time	Payment Lead Time	Total Lead Time	Weighting Factor	Weighted Expense Lead Time (Days)
(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)
January	195,453,099	2/18/2008	15.50	18.00	33.50	10.22%	3.42
February	178,177,740	3/18/2008	14.50	18.00	32.50	9.31%	3.03
March	178,757,340	4/16/2008	15.50	16.00	31.50	9.34%	2.94
April	150,759,843	5/16/2008	15.00	16.00	31.00	7.88%	2.44
May	141,311,673	6/17/2008	15.50	17.00	32.50	7.39%	2.40
June	138,052,862	7/17/2008	15.00	17.00	32.00	7.22%	2.31
July	154,229,697	8/19/2008	15.50	19.00	34.50	8.06%	2.78
August	154,959,499	9/17/2008	15.50	17.00	32.50	8.10%	2.63
September	146,073,249	10/17/2008	15.00	17.00	32.00	7.64%	2.44
October	145,204,851	11/19/2008	15.50	19.00	34.50	7.59%	2.62
November	165,065,859	12/16/2008	15.00	16.00	31.00	8.63%	2.67
December	165,065,859	1/19/2009	15.50	19.00	34.50	8.63%	2.98
TOTAL	1,913,111,570					100.00%	32.67

OM&A Expenses

For the purpose of the distribution lead-lag study, OM&A expenses were considered to consist of payments made by Hydro One to its vendors in the following categories:

- a. Payroll and Benefits expenses;
- b. Payments made to Consulting and Contract Staff;
- c. Payments made to Inergi;
- d. Lease Payments made on the Trinity Office Building;
- e. Property Taxes;
- f. Corporate Procurement Card payments; and
- g. Other (Miscellaneous) Operations and Maintenance related payments.

Expense lead times were calculated individually for each of the items (a) – (g) listed above and then dollar-weighted to derive a composite expense lead time of 22.92 days for OM&A expenses.

Payroll and Benefits Expenses

The following items were considered under the umbrella of Payroll and Benefits.

- a. Four types of payroll including basic, trades, management, and board of directors payroll;
- b. Three types of payroll withholdings including the Canada Pension Plan, Employment Insurance, and Income Tax withholdings;
- c. Contributions made by the Company to the Hydro One Pension Plan;
- d. Group Health, Dental, and Life Insurance related administrative fees and claims;

- e. Payments made by the Company on account of the Employer Health Tax (or “EHT”); and
- f. Payments made by the Company to the Worker Safety Improvement Board (WSIB).

When all payroll, withholdings, and benefits were dollar-weighted using actual payment data for calendar year 2008, the weighted average expense lead time associated with payroll and benefits was determined to be 22.79 days (see Table 3 below).

Table 3. Expense Lead Time Associated With Payroll and Benefits

Line	Category	Total Company Payment Amounts (000s)	Expense Lead Time	Weighting Factor	Weighted Expense Lead Time (Days)
	(A)	(B)	(C)	(D)	(E)
1	Pensions	98,820	45.28	12.82%	5.80
2	Group Health and Dental - ASO	5,857	43.38	0.76%	0.33
3	Group Life Insurance Premiums	4,499	55.50	0.58%	0.32
4	Group Health and Dental - Claims	44,945	6.84	5.83%	0.40
5	Employer Health Tax:	12,240	30.87	1.59%	0.49
6	WSIB Payments:	4,217	44.42	0.55%	0.24
7	Basic Payroll	251,285	18.73	32.60%	6.10
8	Management Payroll	46,282	(0.68)	6.00%	(0.04)
9	Trades Payroll	102,347	11.78	13.28%	1.56
10	Board of Directors (BOD) Payroll	359	60.76	0.05%	0.03
11	Withholding – All Except BOD	199,849	29.05	25.93%	7.53
12	Withholding - BOD Payroll	135	64.19	0.02%	0.01
13	Total	\$770,833			22.79

Payments Made to Consulting and Contract Staff

Hydro One Networks engages consulting and contract staff to provide assistance in the areas of engineering, environmental services, receivables management, accounting, and general consulting. A dollar-weighted expense lead time of 60.36 days was determined based on a review of a sample of invoices rendered and payments made by the Company for the twelve months ending March 31, 2008. As with other categories of expense, this dollar-weighted expense lead time took into account the relevant service period over which services were provided to the Company.

Payments to Inergi

Inergi (a division of CapGemini) provides a spectrum of services to Hydro One including (and not limited to) customer service operations, finance, human resources, accounts payable, information technology, IESO settlements, and supply management services. Per its contract, Hydro One is generally

required to make payments in the current month for the current month. Based on a review of a sample of payments made by the Company for the twelve months ending March 31, 2008, and using a ½ month of service lead time (since payments are made monthly), a dollar-weighted expense lead time of 2.59 days was determined.

Trinity Lease Payments

The Company leases its office space in the Bell Trinity Square Building from an outside party. The Company generally makes its lease payments at the end of the month prior for the current month. Taking this information into account and using a sample of actual invoices and payments for the period ended May 31, 2008, a dollar-weighted expense **lag** time of 18.71 days was determined. Note that since lease payments are generally required to be made before the fact, the result is an expense lag rather than an expense lead. Again, since lease payments are made monthly, the calculated dollar-weighted expense lag time includes ½ month of service lead time.

Property Taxes

The Company makes property tax payments to a number of municipalities and taxing authorities in the Province of Ontario. These payments are made in the current year for the current year and are typically made in two installments; an estimate and a final. Using actual payment dates and amounts associated with the Company's distribution business for calendar year 2008, a dollar-weighted expense lead time of 10.28 days was determined. Since property tax payments are for the current year, a ½ year was used as indicative of the service lead time associated with property taxes.

Procurement Card Payments

Procurement (or charge) cards are used by the Company's employees for a variety of Company-related reasons including, and not limited to, purchases of materials in the field, incidental expenses, and to settle charges for travel and accommodation. Based on a sample of actual invoices for the twelve months ending March 31, 2008 from the Company's charge card provider and payments made by the Company, a dollar-weighted expense lead time of 33.52 days was determined. Since the Company receives a monthly bill for service, the dollar-weighted expense lead time includes an additional ½ month of service lead time.

Other (Miscellaneous) Operations and Maintenance Expenses

This category of expense includes a sample of items from the Company's accounts payable system that were invoiced and paid in 2008.⁴ The sample was selected in a manner that reflected a reasonable mix of vendors – both small and large – and products and services. Based on a sample of approximately 568 invoices which included product purchases, equipment rentals, and provision of general services to the Company, a dollar-weighted expense lead time of 34.84 days was derived. A mid-point approach using

⁴ Note that this category of expense **excludes** payments to the IESO, payroll and benefits, payments to Inergi, payments to consulting and contract staff, payments relating to the Company's lease of the Trinity Office Building, all categories of taxes, payments relating to the Company's procurement card, and payments related to interest on long term debt.

data for the twelve months ending March 31, 2008 was used in the determination of the expense lead time associated with the delivery of both products and services to the Company.

Removal Costs

The Company incurs costs when removing or replacing equipment from existing sites or rights of way. While these costs are required to be reported as a depreciation and amortization expense for accounting purposes, there is a cash flow impact associated with the Company's expenditures on such removals. The Company estimates that 40% of total removal costs relate to the Company's labor; the balance relates to materials and services required to implement removals, i.e., other (miscellaneous) operations and maintenance expenses. Taking this information into account, a weighted expense lead time of 30.02 days was determined.⁵

Environmental Remediation

The Company incurs an expense when it is required to perform environmental remediation of its existing sites. As with removals, such remediation costs are recorded on the Company's books as a depreciation and amortization expense. However, since the process of remediation involves the procurement of general materials and services, there is a cash flow impact associated with it. Thus, an expense lead time identical to that used for other (miscellaneous) operations and maintenance expenses was assigned to environmental remediation, i.e., 34.84 days.

Interest on Long Term Debt

The Company makes interest payments on its long term debt outstanding out of current year revenues. Such payments are generally made twice a year. Taking into account the various bonds and other long term debt instruments outstanding as of December 31, 2008, the dollar-weighted expense lead time associated with the Company's interest payments on its long term debt was calculated to be 52.87 days. The analysis used a calendar year approach to calculate the weighted-expense lead time associated with interest payments relative to the mid-point of the year.

Income and Capital Tax

The Company makes income, and capital tax payments in monthly installments to the Federal Government. Using actual payment data from calendar year 2008, a dollar-weighted expense lead time of 13.58 days was determined for Capital Tax. The corresponding value for Income Tax was 17.17 days. Both estimates include the appropriate service lead times in the calculation, since payments are made for the year in monthly installments.

When capital and income taxes are dollar weighted together using actual payments amounts in 2008, the resulting value for the three was 16.51 days.

⁵ The derivation of the expense lead time associated with removals used the following approach:
 $(40\% * \text{Payroll and Expense Benefit Lead Time}) + (60\% * \text{Other (Miscellaneous) Operations and Maintenance Expense Lead Time})$

Goods and Services Tax (GST)

The expense lead times associated with the following items that attract GST were considered in the NCI update to the distribution lead-lag study:

- a. Retail Revenues;
- b. Payments to the IESO for Power Supply;
- c. Payments for the Corporate Credit Card;
- d. Payments for the lease of the Trinity Office Building;
- e. Payments to Inergi;
- f. Payments for Other (Miscellaneous) Operations and Maintenance Expenses;
- g. Payments made to Consulting and Contract Staff; and
- h. Payments for Environmental Remediation, Removals, and Capital.

A summary of the expense lead times associated with each of the above items is provided in Table 4. Note that the statutory approach described at the outset was used to determine the expense lead times associated with the Company's remittances and disbursements of GST, i.e., both remittances and collections are generally on the last day of the month following the date of the applicable invoice.

Table 4. Expense Lead Times Associated With GST

Line	GST Category	Expense Lead (Lag) Time Days
	(A)	(B)
1	GST - Retail Revenues	(18.23)
2	GST - Cost of Power	46.50
3	GST - Corporate Credit Card	15.75
4	GST - Payments for Lease of the Trinity Building	39.19
5	GST - Inergi Contract	46.00
6	GST - Other Operations and Maintenance	43.95
7	GST - Consulting and Contract Staff	42.09
8	GST - Environmental Remediation	43.95
9	GST - Removals	43.95
10	GST - Capital	43.95

The expense lead times associated with the GST payments on the Corporate Procurement Card, the Trinity Building Lease, Inergi, Consulting and Contract Staff, and Other (Miscellaneous) Operations and Maintenance Expenses were then aggregated on a weighted basis into a single expense lead time using estimated GST payments made in 2008. The aggregation resulted in a weighted lead time of 36.59 days and is used in the calculation of GST costs or benefits as discussed in the next section.

With respect to the GST, it should be noted that the Ontario government has announced its intention to harmonize the Ontario Retail Sales Tax with the federal GST into a harmonized single sales tax effective July 1, 2010. No detailed information on the implementation of the proposed harmonized single sales tax has yet been released by either taxing authority. Accordingly, no changes to the current schedule of both remittances and receipts of the GST have been considered in this study.

Section IV: Hydro One Distribution – Working Capital Requirements

Having calculated the revenue lag, expense lead, and the net lag times, the next step in the process was to calculate the Company's working capital requirement. Using the results described under the discussion of revenue lags and expense leads, and applying them to the Company's proposed distribution expenses for the test years 2010 and 2011, the Company's working capital requirements are \$305 million in 2010 and \$309 million in 2011. These amounts represent 11.7 percent, and 11.9 percent of the distribution business' OM&A expenses respectively. A summary of the Company's distribution business working capital requirements is provided in Table 5. Included within the working capital amounts shown in Table 5 are GST amounts of \$8.6 million, and \$8.2 million for the period 2010-2011. The derivation of these amounts is shown in Table 6.

Table 5. Working Capital Requirements Associated With Distribution Operations

Line No.	Description	Revenue Lag Days	Expense Lead Days	Net Lag (Lead) Days	2010 Budget \$000s	2011 Budget \$000s
	(A)	(B)	(C)	(D)	(E)	(F)
1	<u>EXPENSES</u>					
2	Cost of Power	69.99	32.67	37.32	2,008,400	1,994,600
3	OM&A Expenses	69.99	22.92	47.07	591,000	606,200
4	Removal costs	69.99	30.02	39.97	33,000	35,700
5	Environmental Remediation	69.99	34.84	35.15	12,800	16,900
6	Interest on Long term debt	69.99	52.87	17.12	154,900	164,600
7	Income and Capital Taxes	69.99	16.51	53.48	16,500	39,600
8	Total				2,816,600	2,857,600
9	GST (see Table 6)				25,489	32,248
10	Total amounts paid/accrued				2,842,089	2,889,848
11	<u>WORKING CAPITAL REQUIRED</u>					
12	Cost of Power				205,331	203,920
13	OM&A Expenses				76,212	78,172
14	Removal costs				3,614	3,909
15	Environmental Remediation				1,233	1,627
16	Interest on Long term debt				7,265	7,720
17	Income and Capital Taxes				2,418	5,803
18	Total				296,073	301,152
19	GST (see Table 6)				8,644	8,170
20	Net working cash required				304,717	309,323
21	Working Capital as a % of OM&A including Cost of Power				11.7%	11.9%

Table 6. GST Related Working Capital Requirements – Distribution Operations

All Data in \$000s unless otherwise noted

Line	Description	TEST YEAR 2010		TEST YEAR 2011	
		<u>BUDGET</u>	<u>GST PROJECTION</u> <u>Assuming 5% GST</u>	<u>BUDGET</u>	<u>GST PROJECTION</u> <u>Assuming 5% GST</u>
			Rate		Rate
(A)	(B)	(C)	(D)		
1	<u>GST CATEGORY</u>				
2	Revenues	3,189,300	159,465	3,288,700	164,435
3	Cost of Power	2,008,400	(100,420)	1,994,600	(99,730)
4	OM&A Expenses	224,580	(11,229)	230,356	(11,518)
5	Removal costs	33,000	(1,650)	35,700	(1,785)
6	Environmental Remediation	12,800	(640)	16,900	(845)
7	Capital	400,740	(20,037)	366,180	(18,309)
			\$25,489		\$32,248
		GST (Lead) Lag Days	GST (Benefit) Cost	GST (Lead) Lag Days	GST (Benefit) Cost
		(E)	(F) = Col (E)/365 X Col (B)	(G)	(H)= Col (G)/365 X Col (D)
8	<u>GST (BENEFIT) COST</u>				
9	Revenue	(18.23)	(7,963)	(18.23)	(8,211)
10	Cost of Power	46.50	12,793	46.50	12,705
11	OM&A Expenses	36.59	1,126	36.59	1,155
12	Removal costs	43.95	199	43.95	215
13	Environmental Remediation	43.95	77	43.95	102
14	Capital	43.95	2,412	43.95	2,204
15	GST (BENEFIT) COST		\$8,644		\$8,170

Section V: Findings and Conclusions

The purpose of this section is to demonstrate that:

- The results from this study are generally consistent with results from the Company's 2006 and 2007-08 distribution and transmission studies respectively and that the current operations of the Company are fully captured;
- The approach used in this study is consistent with similar studies in Canada; and
- The overall result is a balance between the expectations of investors and rate-payers, i.e., a working capital requirement lower than the OEB's guideline (15% of OM&A including cost of power) in conjunction with compensation to investors for funding activities outside of the areas specified by the OEB's guidelines.

Comparison with Hydro One's Prior Transmission and Distribution Studies

In terms of the overall working capital requirements of the Company, results from this study (11.7% and 11.9% of OM&A expenses including cost of power) are generally consistent with what was identified in the 2006 distribution study (11.6% of OM&A expenses including cost of power).

In terms of specific lead-lag days and, for the most part, results from the current lead-lag study are generally consistent with either the 2006 distribution study performed in 2005 or the 2007-08 transmission study performed in 2006 with a few exceptions. The discussion below highlights each of the exceptions and provides an estimate of its impact on the Company's otherwise applicable working capital requirement.

Collections lag: Using data on accounts receivables received from the Company, this study notes that the lag time associated with collections from retail customers has increased from an estimated 30.22 days in the 2006 distribution study to about 32.07 days in the current study. The driver of this change is an increase in amounts within the 60 days and greater aging interval compared with the prior study. The impact of this change is that it **increases** the Company's working capital requirements by approximately \$14.2 million and \$14.5 million in 2010 and 2011 respectively.

Other Revenue Lag: The lag time associated with collections of other revenues has decreased from 70.30 days in the 2006 distribution study to 38.35 days in the current study. The major driver of this decrease is that the lag time associated with non-energy related collections has decreased significantly since the 2006 distribution study. The impact of this change is that it **decreases** the Company's working capital requirements by about \$3.8 million and \$3.9 million in 2010 and 2011 respectively.

Operations, Maintenance, and Administrative ("OM&A") Expenses: The expense lead time associated with OM&A expenses has increased from 16.45 days in the 2006 study to 22.92 days in the current study. Factors driving this increase include payments made to consulting and contract staff, payments to Inergi, and finally, property tax payments. The net effect of this increase is that it **decreases** the otherwise

applicable working capital requirements of the Company by \$10.5 million and \$10.7 million in 2010 and 2011 respectively.

Interest on Long Term Debt: While the expense lead time associated with interest on long term debt has decreased significantly compared with the 2006 distribution study (52.87 days compared with 74.66 days), results from the current study are generally consistent with the expense lead time identified in the Company’s 2006 transmission study (52.87 days compared with 53.30 days). The driver of the difference is a change in the mix of bonds outstanding and their attendant interest payment dates – bonds outstanding currently and their respective interest payment due dates are more in line with the state of affairs at the Company when the 2007-08 transmission study was developed. The impact of this change is that it **increases** the Company’s working capital requirements by about \$9.3 million and \$9.8 million in 2010 and 2011 respectively.

Capital and Corporate Income Tax: The expense lead time associated with capital and corporate income taxes has increased from 15.61 days in the 2006 distribution study to 16.51 days in the current study. This increase, driven by true-up payments made in the year following the current year, results in a decrease of otherwise applicable working capital requirements by \$40,000 and \$97,000 for 2010 and 2011 respectively.

Table 7 below compares the results of the current study (in terms of days) with Hydro One’s distribution study accepted by the Board in 2006 and the transmission study accepted in 2007 in each of the areas discussed above.

Table 7. Current Study vs. Hydro One’s Accepted 2006 Distribution Study and Accepted 2007 Transmission Study

Note that the Impacts shown in the Table below are derived using 2010 and 2011 Budgets and **not** the amounts used in the 2006 Distribution Rate Application

	Number of Days			Impact (\$M)	
	From Distribution Study Dated July 2005	From Transmission Study Dated July 2006	From Current Distribution Study	2010	2011
	(A)	(B)	(C)	(D)	(E)
Collections Lag	30.22		32.07	+14.2	+14.5
Other Revenue Lag	70.30		38.35	-3.8	-3.9
OM&A	16.45	19.21	22.92	-10.5	-10.7
Interest on Long Term Debt	74.66	53.30	52.87	+9.3	+9.8
Capital Tax and Corporate Income LCT	15.61	15.68	16.51	-0.04	-0.07

Comparison with Other Canadian Studies – Update from 2006 Transmission Study

As identified in the Company’s 2006 transmission working capital study accepted by the Board, Hydro One’s current distribution lead-lag study is generally consistent with studies that have been performed for other utilities both in the Province of Ontario and within other Canadian jurisdictions. Table 8 presents a high-level summary of the various elements of a lead-lag study and whether or not they have been considered in other Canadian jurisdictions involving Great Lakes Power (or “GLP”), Enbridge,

Union Gas, FortisBC, ATCO, Direct Energy, Altalink, FortisAlberta, Terrasen Gas, Newfoundland Power, Ontario Power Generation, Pacific Northern, and EPCOR.. To the extent that certain elements of Hydro One's distribution study do not apply to others (e.g., in the instance of natural gas companies), they have been so noted within Table 8.

From a review of the information in Table 8, it is clear that the items considered in the current Hydro One distribution lead-lag study are consistent with items that have been considered in other lead-lag studies within Canada. To the extent that there are differences, they can be explained as not being relevant to an electric distribution company's operations or to the operations of an electric company for that matter.

In concluding therefore:

1. The results from this study are generally consistent with results from the Company's 2006 and 2007-08 distribution and transmission studies respectively and that the current operations of the Company are fully captured;
2. When compared with other studies relating to the determination of working capital in Ontario and other Canadian jurisdictions, there is similarity; and
3. Finally, and most important, the overall result points to an overall savings to the rate-payer. If the OEB's guideline of 15% of OM&A including cost of power were to have been applied verbatim, the result would have been a working capital requirement of approximately \$390 million for both 2010 and 2011 compared with the \$305 million and \$309 million in working capital requirements identified in this study.

Table 8. Comparison of Hydro One 2009 Distribution Study With Other Canadian Studies

Name of Utility	Jurisdiction	Type of Service	Customer /Retail Revenues	IESO/ISO Revenues	Other Revenues	Payroll and Withholdings	Employee Benefits	Cost of Power	Cost of Other Fuels	Other OM&A	Income and Related Taxes	GST	Interest Expense
(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)	(N)
GLP	Ontario	Electric Transmission	N/A	Yes	Yes	Yes	Yes	N/A	N/A	Yes		Yes	
<i>Hydro One Distribution - 2009</i>	<i>Ontario</i>	<i>Electric Distribution</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>N/A</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>
Enbridge	Ontario	Gas	Yes	N/A		Yes	Yes	N/A	Yes	Yes		Yes	
Union	Ontario	Gas	Yes	N/A		Yes	Yes	N/A	Yes	Yes		Yes	
Manitoba Hydro	Manitoba	Electric (Integrated)				Yes	Yes		Yes	Yes		Yes	
BCTC	BC	Electric TX				Yes	Yes		Yes	Yes		Yes	
FortisBC	BC	Electric	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
ATCO	Alberta	Gas	Yes	N/A	Yes	Yes	Yes	N/A	Yes	Yes	Yes	Yes	Yes
Direct Energy	Alberta	Electric	N/A	N/A		Yes	Yes	Yes	N/A	Yes		Yes	
AltaLink	Alberta	Electric TX	Yes	Yes	Yes	Yes	Yes	Yes	N/A	Yes	Yes	Yes	Yes
Fortis Alberta	Alberta	Electric TX	Direct Connect Customers and Marketers	Yes	Yes	Yes	Yes	N/A	N/A	Yes	Yes	Yes	Yes
Pacific Northern	BC	Gas	Yes	N/A	Yes	Yes	Yes	N/A	Yes	Yes	Yes	Yes	
EPCOR	Alberta	Electric TX	N/A	Yes		Yes	Yes	N/A	N/A	Yes		Yes	Yes
Terrasen Gas	BC	Gas	Yes	N/A	Yes	Yes	Yes	N/A	Yes	Yes	Yes	Yes	
Newfoundland Power	Newfoundland	Electric	Yes	N/A	Yes	Yes	Yes	Yes	N/A	Yes	Yes	Yes	
Ontario Power Generation	Ontario	Electric	N/A	Yes	Yes	Yes	Yes	N/A	Yes	Yes	Yes	Yes	