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Ontario

BY E-MAIL

June 3, 2015

TO: All Licensed Electricity Distributors
All Other Interested Parties

RE: Allowance for Working Capital for Electricity Distribution Rate Applications

This letter provides an update to the OEB's policy for the calculation of the allowance for working capital for electricity rate applications.

Effective immediately, the OEB is a adopting a new default value of 7.5% of the sum of the cost of power and operating, maintenance and administration (OM&A) costs. As in the past, distributors who do not wish to use the default value can request approval for a distributor-specific working capital allowance supported by the appropriate evidence from a lead-lag study or equivalent analysis.

The OEB is also of the view that the use of the default value should only be implemented during a cost of service application, with a few exceptions as discussed further in this letter. For a custom incentive rate-setting (Custom IR) application distributors are expected to file robust evidence of costs and revenues, and the review of these applications is expected to require considerable resources from both the OEB and the distributor. It is therefore reasonable to expect distributors choosing this option to file evidence in support of their requested working capital allowance, rather than the use of a default value.

Background

Section 2.5.1.3 of the *Filing Requirements for Electricity Distribution Rate Applications* for the 2015 rate year, issued on July 18, 2014, provided for two approaches that an applicant could take for the calculation of the allowance for working capital: 1) the 13% allowance approach; or 2) the filing of a lead-lag study. The second of these

approaches has been optional for all utilities that have not been directed to conduct a lead-lag study by the OEB.

The OEB has been using a default value approach to calculating working capital allowance since the 1st Generation Rate Handbook was issued in 2000. At that time, the default value was established as 15% of the total of the cost of power and OM&A expenses. By letter dated April 12, 2012, the OEB reduced the default value to 13% after lead lag studies routinely produced results of less than 15%.

It has become apparent to the OEB that average working capital requirements have been lowered as a result of a number of technical changes that reduce the actual time between service provision and payment. These include: 1) the substantial completion of the smart meter rollout and advanced metering infrastructure, which reduces aggregate meter reading time ; 2) wider adoption of monthly billing, resulting in a shorter period from service to payment; 3) customer information system updates, which reduce time required to calculate customer bills; and 4) general process improvements. The adoption of mandatory monthly billing for all distributors by December 31, 2016, should result in further downward pressure on working capital requirements. Considering all of these current and forthcoming changes, the OEB determined that a review of its approach to working capital allowance was warranted.

Working Capital Allowance for the 2016 Rate Year

The OEB continues to believe that a default value approach is an efficient alternative for setting the working capital allowance. However, a default value should not result in a working capital allowance that is reasonably expected to be higher than what would result from the use of the more accurate and detailed approach of completing a lead-lag study. The OEB also considers that maintaining a default value that is too high does not incent a utility to study its business processes and improve productivity, which would be at odds with the principles embedded in its Renewed Regulatory Framework.

Therefore, the OEB has determined that, effective immediately, the default value for working capital allowance for electricity distributors will be 7.5% of the sum of cost of power and OM&A. The default value will be reflected in the 2015 edition of the *Filing Requirements for Electricity Distribution Rate Applications* for 2016 Rate Applications.

This determination is based on a review of a range of results for lead-lag studies filed by distributors, which showed that working capital allowance results have been declining. For the applications filed for 2015 rates, the results have ranged from 7.4% to 12.7% of the sum of the cost of power and OM&A. Given that many of the financial settlement

processes are common between distributors, and all distributors will be required to bill on a monthly basis by the end of 2016, the OEB is adopting a new default of 7.5%. In the OEB's judgment, this default reasonably reflects not only the range of inputs that distributors have reported to the OEB, but also the forthcoming policy changes regarding mandatory monthly billing. The adoption of this new lower default value reflects a goal that all distributors strive for best practices in their administrative processes while supporting a distributor's basic cash flow requirements.

Analysis

To support the OEB's consideration of a new default value, OEB staff reviewed eight lead-lag studies filed with the OEB since 2010 and evaluated the key factors in those studies. OEB staff also considered elements external to a distributor's own operations, such as the cost of power settlement process, and factored in the billing standards identified in the Distribution System Code, such as the identification of a minimum payment period of 16 days from the date on which a bill was issued to a customer. A summary of the results of the OEB staff analysis is attached to this letter as Appendix A. The analysis, which selected a combination of median inputs as well as values that reflect OEB policy, resulted in a calculation of a default value for the working capital allowance of 7.5%.

The OEB also commissioned a jurisdictional review to determine if there are other approaches to the funding of working capital requirements. This review is attached as Appendix B. All jurisdictions reviewed generally included an allowance for working capital to be treated as an asset, attracting a return. On this basis, the OEB does not believe that a fundamental change to its approach to funding working capital requirements is warranted.

The OEB will continue to monitor factors such as the elimination of the debt retirement charge for residential customers, the end of the Ontario Clean Energy Benefit and implementation of the Ontario Electricity Support Program as of January 1, 2016 to determine if they have an effect on cash flow.

Implementation

The new policy is effective immediately. Changes to working capital allowance costs will be implemented only in cost of service and Custom IR applications unless otherwise determined by the OEB in a prior decision. This will allow for all of a distributor's costs to be considered at the same time. The OEB adopted the same approach when it amended its cost of capital policy in 2009.

The OEB recognizes that a specific utility's own systems, processes and customer mix will influence its working capital needs. While there are similar settlement processes, lead-lag results are not directly interchangeable among utilities. Distributors can use a lead-lag study or equivalent analysis to support a request for a distributor-specific working capital allowance.

While the use of the default value will no longer be applicable to Custom IR applications, given the timing of this new policy, distributors that have filed a Custom IR application for rates effective January 1, 2016 may use the 7.5% default value to calculate their working capital allowance rather than file a lead-lag study as part of their application.

For questions relating to this amendment please contact IndustryRelations@ontarioenergyboard.ca.

Sincerely,

Original Signed By

Kirsten Walli
Board Secretary

Appendix A

Allowance for Working Capital for Electricity Distributors

June 3, 2015

Appendix A

The following is a summary of the results of OEB staff analysis, based on its review of eight lead-lag studies provided to the OEB since 2010.

		Revenue Periods (Lag Days)					Expenses (Lead Days)				
		Service	Billing	Collection	Processing	Total	Lead Days	Net Days	Weighting Factor	Weighted Lead/Lag Days	WCF***
Elements of Working Capital											
1	Cost of Power	15.2	17.5	22.0	1.4	56.1	(32.7)	23.40	82.8%	19.38	
2	Payroll etc.*	15.2	17.5	22.0	1.4	56.1	(9.4)	46.70	5.2%	2.43	
3	Other OM&A	15.2	17.5	22.0	1.4	56.1	(7.8)	48.30	2.8%	1.35	
4	PiLs, etc.**	15.2	17.5	22.0	1.4	56.1	(29.1)	27.00	9.2%	2.48	
5	Sub Total								100.0%	25.64	7.0%
6	HST								0.5%		0.5%
7	Total										7.5%

Element	Determination
Service Period	Reflects mandatory monthly billing: 365.25÷12÷2=15.22 days
Billing Period	Median based on observed range of 13.0 days to 19.0 days
Collection Period	Minimum payment period plus allowances for payments by mail as specified in s. 2.6 of the Distribution System Code. Observed sample range is 21.8 days to 29.1 days
Processing Period	Median based on observed range of 1.0 to 1.5 days
Lead Days	Median based on observed results for each expense element
HST	Median based on observed range of 0.3% to 1.4%
Weighting Factor	Reflects proportions of cost of power and OM&A expense categories based on median values from sample studies

*Payroll includes benefits. **PiLs also includes interest and debt repayment costs.

*** Working Capital Factor calculation: Weighted Lead/Lag Days ÷ 365.25 days per year + HST factor.

Appendix B

Allowance for Working Capital for Electricity Distributors

June 3, 2015

KPMG

cutting through complexity

New Policy Options for the Funding of Capital Investments: EB-2014-0219 – Treatment of Working Capital Excerpt

May 12, 2015

prepared for Ontario Energy Board

Draft

Contents

1 Introduction

The Ontario Energy Board (the "Board" or "OEB") has retained KPMG LLP ("KPMG") to provide regulatory advisory services in connection with the Board's June 20, 2014 consultation on New Policy Options for the Funding of Capital Investments EB-2014-0219. KPMG is to review the details of the half year rule, the make-up of the Incremental Capital Module ("ICM") Materiality Threshold Formula ("Materiality Threshold Formula") and how working capital is funded through distribution rates in other jurisdictions.

Specifically, KPMG has been engaged to conduct jurisdictional reviews:

- To determine whether rules or approaches, similar to the "half-year rule" for the determination of the return of and on capital in the first calendar year when capital assets enter service, are in use. If not, set out the approach used, including the logic supporting the approach and the mechanical operation of the approach. If so, set out the logic supporting the use of such an approach and mechanical operation of the approach. Analyze the extent to which the rule or approach is compensatory with respect to recovery of capital costs in rates (in cost of service and incentive rate ("IR")-based rate adjustment mechanisms) and discuss the consequences of the rule or approach on process/regulatory efficiency.

- To identify incentive ratemaking approaches, with a focus on:

    - Identifying the mechanisms used to fund new capital investments over the IR period; and

    - Explaining how rates are adjusted to reflect new capital expenditures over the IR period, if applicable.

- To determine how working capital is treated for the purpose of setting rates.

KPMG has also been asked to review the interaction and effect of key variables in the Materiality Threshold Formula, with a focus on:

- Setting out the theoretical and practical driver for the use of the growth factor and dead band variable in the calculation of the Materiality Threshold Formula;

- Determining whether there is a more accurate method of estimating or calculating the growth factor in the Materiality Threshold Formula; and

- Determining whether the transition to International Financial Reporting Standard ("IFRS") and use of Total Factor Productivity ("TFP") to inform the IR rate adjustment mechanism affect the appropriate dead band variable to be used.

1.1 Jurisdictional Reviews

KPMG considered the regulatory practice relating to the half-year rule, working capital and incentive ratemaking regimes in the following jurisdictions:

Canada:	Ontario electricity distribution, Ontario electricity transmission, Ontario natural gas distribution (Enbridge Gas Distribution Inc. and Union Gas Limited), Alberta, Nova Scotia (Nova Scotia Power Inc.), British Columbia (FortisBC Inc.), Newfoundland (Newfoundland Power Inc.), and Québec (Gaz Métro L.P.).
United States:	Alabama, California, Georgia, Louisiana, Maryland, Massachusetts, Mississippi, New York, and Pennsylvania.
United Kingdom:	Ofgem (RIIO for Electricity Transmission).

The full review for the target entities in each named jurisdiction are set out in the attached Appendices: Appendix 1: Canada; Appendix 2: United States; and Appendix: 3 United Kingdom.

1.2 Excerpt Draft Report on Working Capital Allowance

KPMG has also been asked to prepare Draft Report, which reflects our work as set out above. The Draft Report will also include options and recommendations with respect to changes that may be required to:

- The half year rule during the IR period;
- Use of the growth factor and dead band variable used in the Materiality Threshold Formula of the ICM; and
- Treatment of working capital allowance under cost of service and/or alternative forms of ratemaking.

On May 11, 2015, the OEB requested that KPMG also produce a stand-alone document that would include our work relating to the treatment of working capital allowance under cost of service and/or alternative forms of ratemaking.

This Excerpt Draft Report is designed to satisfy this latter request.

2 Treatment of Working Capital

The treatment of working capital is generally consistent in all of the Canadian and U.S. jurisdictions studied. In the North American jurisdictions reviewed, working capital is generally included in rate base and as such, attracts the weighted average cost of capital permitted by the relevant regulator and taxes/PILs. Working capital balances are not depreciated; however, in some jurisdictions, working capital may include regulatory deferrals and other amounts that may be subject to amortization. The related amortization expense is generally determined in a manner that is separate from the process used to determine depreciation expense and/or cumulative depreciation for assets in rate base.

The treatment of working capital pursuant to the RIIO framework in the U.K. is more unique, reflecting the distinct approach adopted for ratemaking purposes. In the RIIO model, as set out in Appendix 3, working capital is included in the "slow money" calculation that is used to inform the determination of real asset value, or RAV, that attracts a return of and on capital.

Table1 highlights the treatment of working capital in each jurisdiction reviewed, in cost of service and PBR.

Table 1. Treatment of Working Capital in Rate Setting Processes

Jurisdiction	Cost of Service	Incentive Regulation
Ontario Electricity Distribution	Working capital required for operations is included in the determination of rate base in the COS year.	Working capital is not specifically addressed in an IR application. It is embedded in base rates, as per the rebasing year COS proceeding.
Ontario Electricity Transmission	Working capital required for operations is included in the determination of rate base in the COS year.	N/A (No incentive regulation)
Enbridge Gas Distribution	Working capital required for operations is included in the determination of rate base in the COS year.	In Enbridge's 5-Year Custom IR Plan, rate base, including the provision for working capital, is effectively rebased annually.
Union Gas	Working capital required for operations is included in the determination of rate base in the COS year.	Working capital is not specifically addressed in an IR application. It is embedded in base rates, as per the rebasing year COS proceeding.
Alberta Natural Gas And Electricity Distribution	Working capital required for operations is included in in the determination of rate base in the COS year.	An allowance for working capital is not included in the revenue requirement calculation for the K factor rate adjustment.
Nova Scotia Power	Cash working capital is included in the calculation of average rate base for the test year.	N/A (No incentive regulation)

Jurisdiction	Cost of Service	Incentive Regulation
FortisBC	Allowance for working capital is included in the calculation of rate base.	In the Targeted PBR regime in use by FortisBC, rate base, including WC, is calculated annually.
Newfoundland Power	Cash working capital is included in the calculation of rate base in the COS test year.	N/A (No incentive regulation)
Gaz Métro	Working capital is included in the calculation of rate base in the COS test year.	N/A (No incentive regulation)
Alabama Power Company	Non-cash working capital is included in the calculation of rate base.	N/A (No incentive regulation)
Southern California Edison	Both cash and non-cash working capital are included in the calculation of rate base.	N/A (No incentive regulation)
Georgia Power	Both cash and non-cash working capital are included in the calculation of rate base.	N/A (No incentive regulation)
Entergy Louisiana	Both cash and non-cash working capital are included in the calculation of rate base.	N/A (No incentive regulation)
Maryland Public Service Commission	Both cash and non-cash working capital are included in the calculation of rate base.	N/A (No incentive regulation)
Massachusetts Electric	Non-cash working capital is included in the calculation of rate base.	N/A (No incentive regulation)
Mississippi Power	Non-cash working capital is included in the calculation of rate base.	N/A (No incentive regulation)
Consolidated Edison Company of New York	Both cash and non-cash working capital are included in the calculation of rate base.	N/A (No incentive regulation)
PECO Energy Company	Both cash and non-cash working capital are included in the calculation of rate base.	N/A (No incentive regulation)
Ofgem	Working Capital included in rate base through "slow money" calculation.	RIIO is a comprehensive, multi-year rate setting regime that is a hybrid of cost of service and IR rate regimes.

Source: KPMG Analysis

3 Recommendation

KPMG has been asked to include options and recommendations with respect to changes that may be required to:

- The half year rule during the IR period;
- Use of the growth factor and dead band variable used in the Materiality Threshold Formula of the ICM; and
- Treatment of working capital allowance under cost of service and/or alternative forms of ratemaking.

Our thoughts on those issues relating to: (i) the half year rule during the IR period and (ii) use of the growth factor and dead band variable used in the Materiality Threshold Formula of the ICM, are set out in our full Draft Report. For the purpose of this Excerpt Draft Report, we include only our thoughts relating to the treatment of working capital allowance under cost of service and/or alternative forms of ratemaking.

Our thoughts are as follows:

1. **Treatment of Working Capital:** Based on the jurisdictional review presented herein, we understand that working capital is reflected in rate base in all of the jurisdictions reviewed. As such, it attracts the weighted average cost of capital allowed by the regulator in each jurisdiction and these costs are reflected in both cost of service rates and rates in subsequent IR years. On this basis, it is not clear to us that there is a reasonable basis upon which an alternative treatment would be warranted.

KPMG thanks the Board for the opportunity to complete this mandate and would be pleased to discuss this Draft Excerpt Report, at the Board's convenience.

4 Bibliography

For a complete list of the resources used by KPMG to inform the jurisdictional analysis set out in this Excerpt Draft Report, please see the bibliography in the Draft Report prepared by KPMG entitled "New Policy Options for the Funding of Capital Investments: EB-2014-0219" and dated May 12, 2015.

Appendix 1 Canada Jurisdictional Review

Ontario Electricity Distribution

	Description
Treatment of Working Capital	**Working Capital** is the amount of funds required to finance the day-to-day operations of a regulated utility and is included as part of rate base for ratemaking purposes. It is comprised of two amounts: (1) cash working capital; and (2) mid-year materials and supplies inventory. The determination of cash working capital relies on a lead-lag study. In Chapter 2 (Cost of Service) of the Filing Requirements for Electricity Distribution Rate Applications - 2014 Edition for 2015 Rates Applications, the Board indicates that the applicant may take one of two approaches for the calculation of its allowance for working capital: (1) the 13% allowance approach; or (2) the filing of a lead/lag study. The only exception is if the application has been previously directed by the Board to undertake a lead/lag study on which its current working capital allowance is based. **13% Allowance Approach:** Cash working capital can be calculated to be 13% of the sum of the retail cost of power and controllable expenses (i.e., OM&A, capital and income taxes). **Lead/Lag Study:** A lead/lag study analysis for two time periods; namely: (1) the time between the date customers receive service and the date that the customers' payments are available to the distributor (the lag); and (2) the time between the date when the distributor receives goods and services from its supplies and vendors and the date that it pays for them (the lead). The leads and lags are measured in days and are generally dollar-weighted. The dollar-weighted net lag (i.e., lag minus lead) days is then divided by 365 (366 in a leap year) and then multiplied by the annual test year cash expenses to determine the amount of working capital required for operations. **Included In Rate Base:** Regardless of the method chosen to calculate cash working capital, the amount of working capital required for operations is included in the applicant's rate base determination. Rate base is the sum of: (1) **Working Capital Allowance** - as described previously; and (2) **Average Net Fixed Assets** - the average gross fixed assets (GFA) minus average accumulated depreciation (AD). Average GFA is the average of the opening GFA (beginning of the test year) and closing GFA (end of the test year). Average AD is equal to the sum of opening AD and closing AD, divided by 2. Closing AD is equal to: (1) opening AD; plus (2) depreciation associated with opening GFA; plus (2) depreciation associated with in-service capital additions divided by 2 (half-year application); less (3) depreciation associated with disposals; less (4) depreciation associated with retirements. Closing GFA is equal to: (1) opening GFA; plus (2) in-service capital additions; and

	Description
	less (3) capital retirements. Each of capital additions and capital retirements are "rebased" to capture any adjustments between the closing balance at the end of the prior year (t-1) and the beginning of the test year and any amount that will be closed to rate base during the test year. **ICM Calculation:** Working capital is not specifically addressed in an IR application. It is embedded in base rates, as per the cost of service proceeding. In the context of the ICM/ACM, working capital is included in the rate base used in the Threshold Test. The working capital percent metric is the Board-approved WCA from the distributor's last rebasing application. The Threshold Test is set out in Sheet E2.1 Threshold Test of the Incremental Capital Model for 2015 Filers on the Board's website. The calculation of Incremental Capital Adjustment found on Sheet E4.1 IncrementalCapitalAdjust in the same workbook does not include a provision for incremental working capital in the calculation. The additional revenue requirement associated with the ICM reflects: (i) return on rate base; (ii) amortization expense; (iii) grossed up PIL's; and (iv) Ontario capital tax.

	Description
Treatment of Working Capital	**Working Capital** is the amount of funds required to finance the day-to-day operations of a regulated utility and is included as part of rate base for ratemaking purposes. It is comprised of two amounts: (1) cash working capital; and (2) mid-year materials and supplies inventory. The determination of cash working capital relies on a lead-lag study.
	13% Allowance Approach: Not applicable.
	Lead/Lag Study: A lead/lag study analysis for two time periods is required; namely: (1) the time between the date customers receive service and the date that the customers' payments are available to the transmitter (the lag); and (2) the time between the date when the transmitter receives goods and services from its suppliers and vendors and the date that it pays for them (the lead). Leads and lags are measured in days and are generally dollar-weighted. The dollar-weighted net lag (i.e., lag minus lead) days is then divided by 365 (366 in a leap year) and then multiplied by the annual test year cash expenses to determine the amount of working capital required for operations.
	Included in Rate Base: The amount of working capital required for operations is included in the applicant's rate base determination.
	ICM Calculation: Not applicable.

	Description
Treatment of Working Capital	**Working Capital** is the amount of funds required to finance the day-to-day operations of a regulated utility and is included as part of rate base for ratemaking purposes. The determination of working capital relies on a lead-lag study to determine working cash allowance. Working cash allowance is one of a number of components that comprise the Allowance for Working Capital that is included in rate base. Other components include: (1) accounts receivable rebillable projects; (2) materials and supplies; (3) mortgage receivable; (4) customer security deposits; (5) prepaid expenses; and (6) gas in storage.
	13% Allowance Approach: Not applicable.
	Lead/Lag Study: A lead/lag study is conducted to determine working cash allowance. The study considers the time between when the utility has received a good or service and when payment is made, known as the Expense Lead and the time between when the utility has provided a good or service and when it receives payment, known as the Revenue Lag. The difference between the Expense Leads and the total Revenue Lags is the Net Lag. A monthly average for each of the components set out above, including working cash allowance, is calculated and an average of the monthly averages is calculated. The average of monthly averages is then summed and the total is added to rate base.
	Included in Rate Base: The amount of working capital required for operations is included in the applicant's rate base determination. Approved by the Board in July 2014, the plan is effectively a five year cost of service plan, in which rate base is an annual average of monthly asset continuity schedules. Rate base, including working capital, for each year of the Custom Incentive Rate-setting plan is set out in the Appendix A of the OEB's August 22, 2014 Decision and Rate Order.
	ICM Calculation: Not applicable. On July 3, 2013 Enbridge Gas Distribution applied for a Custom Incentive Rate-setting plan for the 2014 - 2018 rate years, inclusively. The Board approved the application, with modifications on July 17, 2014. The approved plan provides for an annual rate adjustment process and specific capital plans for each year. Rate base (including working capital), accumulated depreciation and asset continuity schedules are calculated using monthly average balances for each year during the term of the Custom IR period.

	Description
Treatment of Working Capital	**Working Capital** is the amount of funds required to finance the day-to-day operations of a regulated utility and is included as part of rate base for ratemaking purposes. The determination of working capital relies on a lead-lag study to determine cash working capital. Cash working capital is one of a number of components that comprise the Allowance for Working Capital that is included in rate base. Other components include: (1) average cost of gas in storage and line pack gas; (2) average cost of balancing gas; (3) average cost of ABC receivable (gas in storage); (4) average cost of inventory of stores and spare equipment; (5) average cost of prepaid and deferred expenses; (6) average customer deposits; and (7) average customer deposit interest.
	13% Allowance Approach: Not applicable.
	Lead/Lag Study: A lead/lag study is conducted to determine cash working capital. The study considers the time between when the utility has received a good or service and when payment is made, known as the Expense Lead and the time between when the utility has provided a good or service and when it receives payment, known as the Revenue Lag. The difference between the Expense Leads and the total Revenue Lags is the Net Lag. A monthly average for each of the components set out above, including cash working capital, is calculated and an average of the monthly averages is calculated. The average of monthly averages is then summed and the total is added to rate base.
	Included in Rate Base: The amount of working capital required for operations is included in the applicant's rate base determination.
	ICM Calculation: On July 31, 2013, Union Gas filed a multi-year Incentive Regulation Mechanism that will be used to set Union's regulated distribution, transportation and storage rates over the 2014 to 2018 period, inclusively. The IR parameters are the product of a comprehensive Settlement Agreement and the Settlement Agreement was approved by the Board on October 7, 2013. Working capital is not specifically addressed in the Settlement Agreement. It is embedded in base rates, as per Union's cost of service model approved by the Board in 2012 for rates effective January 1, 2013. There is a custom ICM mechanism set out in the comprehensive Settlement Agreement. It is unclear whether there is an adjustment for working capital in the cost of the assets that qualify for the capital pass-through mechanism.

	Description
Treatment of Working Capital	**Necessary Working Capital** represents the amount of funds required to sustain utility operations from the time expenditures are made until the time payment is received. It is also a component of the rate base for ratemaking purposes. The determination of necessary working capital relies on a lead-lag study. Components of necessary working capital include: operating expenses, income tax expense, materials and supplies inventory, unamortized computer system costs, rate case expense, GST, retailer deposits, depreciation expense, interest expense, preferred equity, and common equity (retained earnings and dividends).
	13%: Allowance Approach: Not applicable.
	Lead/Lag Study: The purpose of the study is to determine necessary working capital, the timing differences between when the distributor provides a good or service and when it receives payment (lead/revenue) and the time between when the distributor receives a good or service and when payment is made (lag/expenses). Leads and lags are measured in days and are dollar-weighted based on the most recent actual operating revenues and expenses data. Lead/lag days in the test period are also forecasted based on the most recent actual lead/lag day data available. Necessary working capital is calculated as follows: the dollar-weighted net lag days (i.e. lag minus lead) is divided by the number of days in the year and then multiplied by the forecast annual test cash expense for each component of working capital.
	Included in Rate Base: The calculated Necessary Working Capital is included in the rate base. Rate base is determined by adding: (1) necessary working capital - as described above; and (2) net mid-year PPE. Net mid-year PPE is calculated using the mid-year base convention (i.e., the average of adjusted prior year net PPE and test year net PPE). Opening gross PPE for the test year (t) is calculated by taking the adjusted gross PPE balance for the previous year (t-1) and adding planned capital additions and deducting retirements. Accumulated depreciation in the test year (t) is then calculated as follows: accumulated depreciation at the beginning of the test year plus forecast gross provision depreciation, retirements, net salvage and adjustments. Gross provision depreciation for the test year (t) is calculated by: (1) applying the full depreciation rate to the previous year's (t-1) net PPE; plus (2) applying the full depreciation rate to net capital additions closed to PPE during the test period and dividing by 2. Net PPE is the difference between gross PPE and accumulated depreciation. The rate base for the test year is used to determine the return the cost of capital to be recovered in rates.
	ICM Calculation: As set out below, the calculation of the K Factor rate adjustments will be similar to revenue requirement calculations under cost of service, except that the calculation will be limited to the depreciation, taxes and return associated with the incremental rate base for the expenditures that form the capital tracker. An allowance for working capital is not included in the revenue requirement calculation for the K Factor rate adjustment.

	Description
Treatment of Working Capital	**Cash Working Capital** allowance represents the average amount of capital provided by investors above and beyond investments in plant and other separately identified rate base items. These investments bridge the gap between the time expenditures are made and payment is received.
	13% Allowance Approach: Not applicable.
	Lead/Lag Study: The cash working capital allowance is determined using a lead/lag study, which analyzes cash flows arising from the utility's billing, payment, and collections procedures. The purpose of the analysis is to determine the average amount of outstanding working capital to be included in rate base. Rate base is calculated as set out below.
	Included in Rate Base: The cash working capital allowance is included in the calculation of average rate base for the test year. In the regulatory proceeding before the UARB rate base is calculated as sum of: net regulated plant in service, construction work in progress, deferred charges, allowance for working capital, and allowance for materials and supplies. The rate base for the test year is then added to the rate base calculation for the year prior to the test year (t-1) and an average is taken. This average rate base calculation is used to determine the cost of capital elements to be recovered in rates, using the mid-range cost of capital metrics approved by the UARB, which are: 9% ROE (range 8.75% to 9.25%) and deemed equity of 37.5% (range of 35% to 40%). Net regulated plant in service for the test year is calculated as: beginning gross plant at the commencement of the test year, plus additions, less retirements, and less depreciation.
	ICM Calculation: Not applicable. Nova Scotia Power Inc. is regulated on a two-year, forward test year basis where rates are determined using a cost of service methodology. The Nova Scotia Utility and Review Board (UARB) has used a rate base approach to rate setting since 2006.

	Description
Treatment of Working Capital	**Allowance for Working Capital** represents that lag between when revenue is earned and when the funds are received for that revenue, offset by when expenses are incurred and when the funds are released to pay for the expenses.
	13% Allowance Approach: Not applicable.
	Lead/Lag Study: The allowance for working capital is determined using a lead/lag study and represents the amounts required to compensate the utility for the timing difference between when expenditures are required to provide service and when collections are received for that service.
	Included in Rate Base: The Allowance for Working Capital is added to the Rate Base. Rate base is calculated as the sum of: Gross plant in service at the beginning of the test year plus net additions, CWIP not subject to AFUDC, plant acquisition adjustment and deferred and preliminary charges. Accumulated depreciation and amortization and contributions in aid of construction are then deducted. The remaining amount is called the Depreciated Rate Base. The Depreciated Rate Base for the test year (t) is then added to the Depreciated Rate Base for the prior year (t-1) and an average is taken. This is the Mean Depreciated Utility Rate Base. The allowance for working capital is added. A further adjustment for capital additions is also added or deducted, as discussed below. The final total is the Mid-Year Utility Rate Base. The Mid-Year Utility Rate Base is used to calculate the cost of capital recovered in rates. Depreciation expense for the test year is equal to the product of the relevant depreciation rate for the asset class and the asset balance at the end of the previous period (t-1). Accumulated depreciation reflected in the rate base calculation is the sum of depreciation expense for the test year, depreciation associated with utility plant adjustment, leasehold improvements, rate stabilization, less recoveries. The capital additions adjustment is the difference between total monthly weighted capital expenditures and the simple average of capital expenditures closed to rate base in the test year (total capital expenditures divided by 2). If monthly weighted capital expenditures are less than average capital expenditures, the difference is negative and this negative value is deducted from the Mean Depreciated Utility Rate Base for the test year, as set out previously.
	ICM Calculation: The allowance for working capital is included in the calculation of base rates, as set out below.

	Description
Treatment of Working Capital	**Cash Working Capital** allowance represents the average amount of capital provided above and beyond investments in plant and other separately identified rate base items. In the situation where the payment of an expense precedes the collection of its related revenue stream, the utility's investor must supply capital to finance the expense until the receipt of the related revenues. **13% Allowance Approach:** Not applicable. **Lead/Lag Study:** The cash working capital allowance is determined using a lead/lag study, which is informed by: (i) revenue lags; (ii) expense lags; and (iii) leads/lags associated with HST in the test years. Rate base is comprised of the sum of average net regulated plant in service, cash working capital as per the Lead/Lag Study, and a materials and supplies allowance. **Included in Rate Base:** The cash working capital allowance is included in the calculation of rate base for the test year. Net average plant investment is calculated as the opening plant investment at the commencement of the test year plus capital additions expected to close to rate base during the test year. This sum is the closing plant investment for the test year. This value is then added to the closing plant investment for the previous year (t-1) and an average is taken. The composite depreciation rate is then applied to the average plant investment to determine the depreciation expense to be reflected in rates for the test year. This amount is deducted from the average plant investment, resulting in the net average plant investment for the test year. Average rate base reflected in the test year is calculated as follows: Net average plant investment **plus** deferred charges, regulatory assets (defined benefit pension plans), cost recovery deferrals, customer finance programs, **less** weather normalization reserve, other post employee benefits, customer security deposits, accrued pension obligation, future income taxes, and demand management incentive amount. To this amount, described as Average Rate Base Before Allowances, the cash working capital allowance and materials and supplies allowance are added, resulting in the Average Rate Base at Year End. With the exception of the cash working capital and materials and supplies allowances, all other balances are expressed on an average basis (for the test year). The Average Rate Base at Year End is used to determine the cost of capital to be recovered in test year rates.

	Description
	ICM Calculation: Not applicable. Newfoundland Power is regulated on a forward test year basis where rates are determined using an Asset Rate Base Method. The Asset Rate Base Method was approved for use by the Board of Commissioners of Public Utilities in conjunction with the utility's 2008 general rate application. Pursuant to this approach, the utility is able to include allowances for deferred charges, regulatory assets, customer finance programs, and other cost recovery deferral amounts in rate base. Deductions from rate base include weather normalization reserve, OPEBs, customer security deposits, accrued pension obligation, and demand management incentive amounts. These amounts are included in the calculation of average rate base to which the cash working capital and materials and supplies allowances are added.

	Description
Treatment of Working Capital	**Working Capital** is comprised of cash working capital and materials and gas inventories. Cash working capital is calculated using a lead/lag study, as described below. Materials and gas inventories are averaged by taking the sum of balances at the beginning of the year and the end of each12-month period during the test year and dividing by 13.
	13% Allowance Approach: Not applicable.
	Lead/Lag Study: Cash working capital is determined using a lead/lag study. Leads and lags are measured in days. Expense lead is the time between the date when the distributor receives goods and services from its suppliers and vendors and the date that is pays for them. Revenue lag is the time between the date customers receive service and the date that customers' payments are available to the distributor. The net lag is calculated by subtracting the lead from the lag. Net lag is divided by the number of days in a given year and multiplied by forecast expenses to determine cash working capital.
	Included in Rate Base: Working capital is included in the calculation of rate base. Rate base is calculated as follows: net PPE less net customer contributions plus working capital plus unamortized costs (including rate stabilization accounts, commercial programs, and deferred natural gas costs). Average rate base is calculated by taking the sum of: (1) rate base on the first day of the fiscal year (October 1); and (2) rate base in each month of the fiscal year (October to September) divided by 13. Net PPE is calculated as: (1) gross assets; minus (2) accumulated depreciation.
	ICM Calculation: Not applicable. Rates are currently set using a cost of service approach. The GazMétro-QDA incentive mechanism, in effect since October 1, 2007, expired on September 30, 2012. A new incentive mechanism has not yet been approved by the Régie de l'énergie.

Appendix 2 U.S. Jurisdictional Review

Alabama Public Service Commission – Alabama Power Company

	Description
Treatment of Working Capital	**Working Capital** Cash component is not included in rate filings Non-cash component is measured on same basis as rate base (see "ICM Calculation" below) and consists of an projected 13-month average balance from three accounts: • Fuel Stock (Account 151) • Materials and Supplies (Account 154) • Merchandise (Account 155)
	13% Allowance Approach: Not applicable.
	Lead/Lag Study: see "cash" component of working capital above
	Included in Rate Base: Non-cash working capital is included in the calculation of rate base. Rate base is the sum of: (1) Electric Plant in Service, (2) Electric Plant Held for Future Use, (3) Construction Work in Progress, (4) Nuclear Fuel, (5) Non-utility property, (6) Non-cash working capital).

	Description
Treatment of Working Capital	**Working Capital** Cash component is based on a comprehensive lead-lag approach involving separate estimates of days outstanding for revenues and detailed O&M expenses. Operational cash requirements (e.g., minimum bank balances, special deposits and prepayments) are added to this amount. Non-cash component is measured on same basis as rate base (see "ICM Calculation" below) and consists of a 13-month average balance from two accounts: • Materials and Supplies • Emission Credits
	13% Allowance Approach: Not applicable.
	Lead/Lag Study: see "cash" component of working capital above
	Included in Rate Base: Both cash and non-cash working capital are included in the calculation of rate base. Rate base is the sum of: (1) Electric Plant in Service, (2) Capitalized software, (3) Other intangibles, (4) Non-cash working capital (see above). Accumulated Deferred Income Taxes and Depreciation and Amortization are subtracted from the previous summed amount.

	Description
Treatment of Working Capital	**Working Capital** Cash component is based on a comprehensive lead-lag approach involving separate estimates of days outstanding for revenues and detailed O&M expenses. Operational cash requirements (e.g., minimum bank balances, special deposits and prepayments) are added to this amount. Non-cash component is measured on same basis as rate base (see "ICM Calculation" below) and consists of a 13-month average balance for several accounts: • Fuel inventory • Materials and Supplies • Prepaid pension assets **13% Allowance Approach:** Not applicable. **Lead/Lag Study:** see "cash" component of working capital above **Included in Rate Base**: Both cash and non-cash working capital are included in the calculation of rate base. Rate base is the sum of: (1) Electric Plant in Service, (2) Nuclear fuel, (3) Electric Plant Held for Future Use, (4) Non-cash working capital (see above). Accumulated Deferred Income Taxes, Customer Deposits and Depreciation and Amortization are subtracted from the previous summed amount.

	Description
Treatment of Working Capital	**Working Capital** Cash component is based on a comprehensive lead-lag approach involving separate estimates of days outstanding for revenues and detailed O&M expenses over the 12-month historic test year ending June 30, 2012. Non-cash component is also comprised of a 13-month average. It is comprised of: • Fuel inventory • Materials and Supplies • Prepayments including property insurance reserve, injuries and damages reserves, unfunded pension, commercial litigation and environmental reserves **13% Allowance Approach:** Not applicable. **Lead/Lag Study:** see "cash" component of working capital above **Included in Rate Base**: Both cash and non-cash working capital are included in the calculation of rate base. Rate base is the sum of: (1) Plant in Service, (2) Plant Held for Future Use, (3) Plant Acquisition Adjustment (4) Rate case expenses and (5) Working capital (see above). Accumulated Deferred Income Taxes, Customer Deposits and Depreciation and Amortization are subtracted from the previous summed amount.

	Description
Treatment of Working Capital	**Working Capital** Cash component is based on a comprehensive lead-lag approach involving separate estimates of days outstanding for revenues and detailed O&M expenses using information from the 12-months of calendar year 2009. The leads and lags are then applied to 12-month test year revenues and operating expenses. Non-cash component is also comprised of a 13-month average. It is comprised solely of materials and supplies
	13% Allowance Approach: Not applicable.
	Lead/Lag Study: see "cash" component of working capital above
	Included in Rate Base: Both cash and non-cash working capital are included in the calculation of rate base. Rate base is the sum of: (1) Utility plant in service, (2) Construction work in progress, (3) Property held for future use, (4) Unamortized environmental costs, (5) Unamortized deferred conservation program expenditures and (6) Working capital (see above). Accumulated deferred income taxes, Customer deposits, Customer contributions in aid of construction and Depreciation and Amortization are subtracted from the previous summed amount.

	Description
Treatment of Working Capital	**Working Capital** Cash component is based on a comprehensive lead-lag approach involving separate estimates of days outstanding for revenues and detailed O&M expenses over the 12-month adjusted year ending December 31, 2010. The adjusted year is derived from historic test year data for the 12 month period ending December 31, 2008. Non-cash component is also comprised of a 12-month adjusted year ending December 31, 2010 that is derived from historic test year data for the 12 month period ending December 31, 2008. It is comprised solely of Materials and Supplies.
	13% Allowance Approach: Not applicable.
	Lead/Lag Study: see "cash" component of working capital above
	Included in Rate Base: Non-cash working capital is included in the calculation of rate base. Rate base equals (1) Plant in Service Plus (2) Working Capital Less (3 Contributions in Aid of Construction, (4) Accumulated Depreciation and Amortization, (5) Accumulated Deferred Income Taxes and (5) Customer Deposits.

	Description
Treatment of Working Capital	**Working Capital** Cash component is not included in working capital. Currently, a small amount – for compensating bank balances and working funds – is included Non-cash component is included on a 13-month average basis for the test year. It is comprised of: • Fuel stock • Materials and Supplies • Prepayments
	13% Allowance Approach: Not applicable.
	Lead/Lag Study: not applicable because no cash working capital is included
	Included in Rate Base: Non-cash working capital is included in the calculation of rate base. Rate base is the sum of: (1) Gross Electric Plant, (2) Construction Work in Progress, (3) Plant Held for Future Use and (4) Working capital (see above). Accumulated Deferred Income Taxes, Customer Advances, Customer Deposits, Injuries & Damages Reserve, and Depreciation and Amortization are subtracted from the previous summed amount.

New York Public Service Commission – Consolidated Edison Company of New York (Con Edison) 2013 rate case

	Description
Treatment of Working Capital	**Working Capital** Cash component is based on the application of the FERC formula – one eighth of O&M expenses (also known as "the 45-day rule"). Con Edison removes the following expenses from O&M before applying the formula: • Purchased power and fuel • System benefit charges • Renewable portfolio charges • Interdepartmental rents • Uncollectibles Non-cash component is included on an historical 12-month average basis for the test year and on a projected 12-month average basis for the rate year. It is comprised of: • Materials and Supplies (including liquid fuel inventories) • Prepayments
	13% Allowance Approach: Not applicable.
	Lead/Lag Study: not applicable; see "cash" component of working capital above
	Included in Rate Base: Both cash and non-cash working capital are included in the calculation of rate base. Rate base is the sum of: (1) Book Cost of Plant, (2) Non-Interest Bearing Construction Work in Progress (CWIP), (3) Unamortized Debt Discount/Premium/Expense (4) Unbilled Revenues (excluding deferred fuel), (5) Deferred Fuel – Net of Tax and (6) Working capital (see above). Accumulated Deferred Income Taxes, Customer Advances for Construction, and Depreciation and Amortization are subtracted from the previous summed amount.

	Description
Treatment of Working Capital	**Working Capital** Cash component is based on a comprehensive lead-lag approach involving separate estimates of days outstanding for revenues and detailed O&M expenses. Non-cash component is included on a projected 12-month future test year that is derived from a 13-month average for the historical test year. It is comprised of: • Materials and Supplies • Prepaid Expenses **13% Allowance Approach:** Not applicable. **Lead/Lag Study:** see "cash" component of working capital above **Included in Rate Base**: Both cash and non-cash working capital are included in the calculation of rate base. Rate base is the sum of: (1) Utility Plant and (2) Working capital (see above). Accumulated Deferred Income Taxes, Customer Deposits, Customer Advances for Construction, and Depreciation and Amortization are subtracted from the previous summed amount.

Appendix 3 U.K. Jurisdictional Review

Ofgem

	Description
Treatment of Working Capital	**Working Capital** is not calculated.
	13% Allowance Approach: Not applicable.
	Lead/Lag Study: Not applicable.
	Included In Rate Base: Real Asset Value (RAV) is a key building block for the price control review. RAV is the basis upon which the rate regulated entity receives a depreciation allowance and earns a return on capital pursuant with the regulatory cost of capital. Additions to RAV are based on the proportion of Total Expenditure (Totex) allowed as "slow money". Total expenditures are comprised of: (1) controllable operating expenditures; (2) load related capital expenditures; (3) asset replacement capital expenditures; (4) other capital expenditures; and (5) non-operational capital expenditures. The annual net additions to RAV is calculated as a percentage of Totex. Ofgem's approved capitalization percentage of Totex is 85%. In other words, 85% of Totex is considered "slow money" and added to the RAV balance. The closing balance of RAV in year (t) is calculated as: Closing RAV in year (t-1) **plus** transfers **plus** net additions (i.e. "slow money" or 85% of Totex in year (t)) **minus** accumulated depreciation. The full depreciation for capital additions in the test year (t) are applied in year (t+1).
	ICM Calculation: The RIIO price control framework applies an eight year period (1 test year and 7 years in IRM). Under the RIIO, Ofgem asks companies to submit well justified business plans detailing how they intend to meet the RIIO framework objectives. The process starts with the publication of a strategy document in which Ofgem sets out the framework against which the various rate regulated entities will develop their plans. RIIO places a strong emphasis on stakeholder engagement and companies must get stakeholders' input and demonstrate how this has been used to develop their plans. Ofgem reviews these plans to determine what levels of proportionate treatment to apply. The Price Control Financial Model (PCFM) for RIIO price controls is the financial model which derives the incremental changes to the base revenue during the RIIO price control period. It does this by recalculating base revenues based on a limited number of updated variables. These variables fall into four broad categories: the annual cost of corporate debt, Totex components sufficient to apply the Totex incentive mechanism, new or amended allowances on uncertainty

	Description
	mechanisms, and certain financial adjustments (e.g. pension variables, tax variables and legacy adjustments). The Totex Incentive Mechanism (TIM) applies adjustments to the Totex figure used in the fast/slow money modelling of recalculated base revenue figures under the Annual Iteration Process. The adjustments reflect the amount of under or over expenditure by the licensee against Totex allowances and the Totex Incentive Strength Rate (incentive strength) for each licensee. The incentive strength is a percentage figure specified in Special Condition 6C for each licensee. It represents the percentage that a licensee bears in respect of an overspend against allowances or retains in respect of an underspend against allowances. The adjustment that is made to the Totex figures is the Funding Adjustment Rate (often called the 'sharing factor') which is calculated as 1 – incentive strength. Applying the Funding Adjustment Rate to the over (or under spend) gives the amount that is added to (or subtracted from) the Totex allowances included in recalculated base revenues. The TIM uses the actual Totex expenditure values reported to Ofgem by 31 July each year (subject to any revisions that may be required for corrections of data or for expenditure that is not regarded as efficient) and adjusts revenues in the following Relevant Year via the MOD term. The incentive mechanism therefore operates with a two year lag.

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