

Exhibit 5:

Cost of Capital

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5.1 CAPITAL STRUCTURE

5.1.1 OVERVIEW

The purpose of this Exhibit is to summarize the method and cost of financing capital requirements for the 2017 Test Year.

Thunder Bay Hydro has followed the Report of the Board on *Cost of Capital for Ontario's Regulated Utilities* (the "Cost of Capital Report") dated December 11, 2009, to determine its capital structure and relied on the Board's letter titled *Cost of Capital Parameter Updates for 2016 Applications* dated October 15, 2015 for the cost of capital parameters.

TABLE 5-1: COST OF CAPITAL

Line No	Cost of Capital Parameter	Value for Applications for Rate Changes in 2017
1	ROE	9.19%
2	Deemed LT Debt Rate	4.54%
3	Deemed ST Debt Rate	1.65%

Thunder Bay Hydro acknowledges these rates are subject to update at such time as the 2017 Cost of Capital parameters are issued by the Board.

Thunder Bay Hydro has prepared this Application with a deemed capital structure of 56% Long Term Debt, 4% Short Term Debt and 40% Equity to comply with the Cost of Capital Report. Previous to 2013 Thunder Bay Hydro funded capital investment internally. The Corporation of the City of Thunder Bay does not require dividend or debt payments from the utility. Equity is retained in the corporation to fund capital and operations. As a result, existing debt is below is the Board's deemed debt and existing equity is considerably higher than the deemed equity. Since 2013 Thunder Bay Hydro's capital investment program has exceeded the internally generated funding and as such, necessitated external financing to enable Thunder Bay Hydro to achieve the required level of capital infrastructure replacement. Although annual financing will be incurred for the foreseeable future, no significant changes in this mix are expected.

Overall, Thunder Bay Hydro is requesting a deemed interest expense of \$1,391,750 and a deemed return on equity of \$4,124,396 for a total regulated return on capital of \$5,516,146 for its 2017 Test Year. Attachment 5-A for rate base calculation, which is consistent with Board Appendix 2-OA.

5.2 COST OF CAPITAL

As required, Thunder Bay Hydro has included its Municipal Promissory Note in Attachment 5-B.

5.2.1 COST OF DEBT: LONG TERM

As documented in the Distribution System Plan, Thunder Bay Hydro's investment in property, plant and equipment for the next several years is anticipated to be in excess of the capital contributions, depreciation and net income reinvestment level. As such financing is expected to be incurred annually. Thunder Bay Hydro has used the actual long term debt rate for all existing debt; 3.58% representing the May 12, 2016 indicative lending rate as posted by Infrastructure Ontario for a 30 year term loan for the 2016 financing expected to be in place September 15, 2016 and the deemed long term debt rate of 4.54% for the test year financing planned to be debentured April 1, 2017. Thunder Bay Hydro understands the 3.58% is a place holder rate. Before final 2017 rates are approved Thunder Bay Hydro expects to have the 2016 financing requirements in place. At the time final rates are determined, Thunder Bay Hydro proposes to use the actual debt rate for the actual 2016 debt instrument in the calculation of weighted average cost of long term debt for the 2017 test year.

Thunder Bay Hydro will be taking a construction advance January 1, 2017 for the full amount of the 2017 financing; however, will be converting such to a term loan April 1, 2017. Given such, Thunder Bay Hydro has prorated the 2017 financing to reflect the anticipated timing of placement of the debt. Details of Thunder Bay Hydro's long-term debt instruments can be found in Attachment 5-C and is consistent with Board Appendix 2-OB. Thunder Bay Hydro's use of a Return on Long Term Debt of 4.54% is without prejudice to any revised Long Term Debt rate that may be adopted by the OEB in early 2017.

5.2.2 COST OF DEBT: SHORT TERM

Thunder Bay Hydro is requesting a return on Short Term Debt for the 2017 Test Year of 1.65% in accordance with the Cost of Capital Parameter Updates for 2016 Cost of Service Applications issued by the OEB on October 15, 2015. Thunder Bay Hydro understands that the OEB will be finalizing the return on short term debt for 2017 rates based on January 2017 market interest rate information. Thunder Bay Hydro's use of a Return on Short Term Debt of 1.65% is without prejudice to any revised Short Term Debt rate that may be adopted by the OEB in early 2017.

5.2.3 PREFERENCE SHARES

Thunder Bay Hydro currently has no preferred shares in its equity structure, and has no plans to issue any preferred shares in 2017 and beyond.

5.2.4 COMMON EQUITY

An unlimited number of common shares and Class A common shares are authorized for issue. As of December 31, 2015, 951,000 common shares and 7,000,000 Class A common shares were issued and fully paid. On April 19, 2013, The Corporation of the City of Thunder Bay converted \$7,000,000 of the Promissory Note to Class A common shares to reflect the Debt and Capital Cost Structure as per Board Decision for the 2013 Cost of Service. In January 2014, \$950,000 common shares were issued to the parent company, Thunder Bay Hydro Corporation, for cash consideration. The \$950,000 represents the equity investment of the renewable generation (solar PV) business activity.

5.2.5 RETURN ON EQUITY

Thunder Bay Hydro is requesting a return on equity ("ROE") for the 2017 Test Year of 9.19%. Thunder Bay Hydro's use of a Return on Equity of 9.19% is without prejudice to any revised Return on Equity rate that may be adopted by the OEB in early 2017.

5.2.6 NOTIONAL DEBT

Thunder Bay Hydro's deemed debt is \$62,830,836 and the actual debt is \$53,004,311. Thunder Bay Hydro has applied the weighted average cost versus the current deemed long-term debt rate issued by the OEB. Thunder Bay Hydro has a positive notional debt as a result of reinvested retained earnings as per the Shareholder Declaration, specifically the Rate Minimization Model section as follows:

Rate Minimization Model means a Shareholder philosophy of minimizing electricity rates for customers of DistributionCo by having these rates reflect the Shareholder forgoing its allowable regulated return on shareholder equity from DistributionCo and forgoing payment of interest or principal on long term debt held in DistributionCo by the Shareholder.

5.2.7 WEIGHTED AVERAGE COST OF CAPITAL

Thunder Bay Hydro is applying for a Long Term Debt cost rate for the 2017 Test Year of 2.1% which is the weighted average of Thunder Bay Hydro's existing and forecasted debt instruments as outlined in Table 5-2 below.

TABLE 5-2 – WEIGHTED AVERAGE COST OF DEBT – 2017

Line No.	Description	Debt Holder	Affiliated with LDC?	Date of Issuance	Principal	Term (Years)	Rate%	Interest Cost
1	Promissory Note	The Corporation of the City of Thunder Bay	Y	9-Apr-13	\$26,490,500	0	0.00%	\$0
2	Credit Facility Agreement	TD Commercial Bank	N	3-Jul-09	\$4,822,104	15	5.27%	\$254,125
3	Promissory Note	Infrastructure Ontario	N	17-Jun-13	\$5,424,319	30	4.04%	\$219,142
4	Promissory Note	Infrastructure Ontario	N	15-Oct-14	\$5,926,275	30	3.96%	\$234,680
5	Promissory Note	Infrastructure Ontario	N	15-Mar-16	\$3,963,384	30	3.75%	\$148,627
6	Promissory Note	Unknown	N	15-Sep-16	\$3,594,562	30	3.58%	\$128,685
7	Promissory Note	Unknown	N	1-Apr-17	\$2,783,167	30	4.54%	\$126,356
8	2017 Total Long Term Debt				\$53,004,311	Total Interest Cost		\$1,111,616
9								
10					Weighted Debt Cost Rate-2017		2.10%	

5.3 NOT FOR PROFIT CORPORATIONS

This filing requirement is not applicable as Thunder Bay Hydro is a for profit corporation.

ATTACHMENT 5 – A

Capital Structure

Board Appendix 2-OA

File Number:	EB-2016-0105
Exhibit:	5
Tab:	
Attachement:	5-A
Page:	
Date:	09-Sep-16

Appendix 2-OA Capital Structure and Cost of Capital

This table must be completed for the last Board-approved year and the test year.

Year: 2017

Line No.	Particulars	Capitalization Ratio		Cost Rate	Return
		(%)	(\$)	(%)	(\$)
	Debt				
1	Long-term Debt	56.00%	\$62,830,836	2.10%	\$1,317,699
2	Short-term Debt	4.00% (1)	\$4,487,917	1.65%	\$74,051
3	Total Debt	60.0%	\$67,318,753	2.07%	\$1,391,750
	Equity				
4	Common Equity	40.00%	\$44,879,168	9.19%	\$4,124,396
5	Preferred Shares		\$ -		\$ -
6	Total Equity	40.0%	\$44,879,168	9.19%	\$4,124,396
7	Total	100.0%	\$112,197,921	4.92%	\$5,516,146

Notes
(1)

4.0% unless an applicant has proposed or been approved for a different amount.

Year: 2013 Board Approved

Line No.	Particulars	Capitalization Ratio		Cost Rate	Return
		(%)	(\$)	(%)	(\$)
	Debt				
1	Long-term Debt	56.00%	\$52,269,908	1.53%	\$797,185
2	Short-term Debt	4.00% (1)	\$3,733,565	2.07%	\$77,285
3	Total Debt	60.0%	\$56,003,473	1.56%	\$874,470
	Equity				
4	Common Equity	40.00%	\$37,335,649	7.00%	\$2,613,495
5	Preferred Shares		\$ -	0.00%	\$ -
6	Total Equity	40.0%	\$37,335,649	7.00%	\$2,613,495
7	Total	100.0%	\$93,339,122	3.74%	\$3,487,965

Notes

(1)

4.0% unless an applicant has proposed or been approved for a different amount.

ATTACHMENT 5 – B

Municipal Promissory Note

DEMAND PROMISSORY NOTE

CDN \$26,490,500.00

Thunder Bay, Ontario
Note Date: April 9, 2013

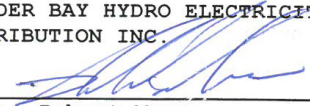
FOR VALUE RECEIVED, the undersigned, THUNDER BAY HYDRO ELECTRICITY DISTRIBUTION INC., a corporation existing under the laws of the Province of Ontario, (the "**Promisor**"), hereby promises to pay to or to the order of THE CORPORATION OF THE CITY OF THUNDER BAY (the "**Holder**") the principal amount of TWENTY-SIX MILLION, FOUR HUNDRED AND NINETY THOUSAND, FIVE HUNDRED DOLLARS (CDN \$26,490,500.00) (the "**Principal Amount**") in lawful money of Canada on the following terms:

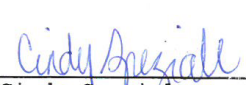
1. The Promisor shall repay the Principal Amount to the holder on demand.
2. The Promisor shall not pay any interest to the Holder in connection with the Principal Amount hereunder.
3. The Promisor shall have the right to prepay at any time the Principal Amount, in whole or in part, without notice, bonus or penalty.
4. The Promisor hereby waives diligence, presentment, demand, protest, notice of any kind whatsoever and any other condition precedent to action against the Promisor for the repayment of this Promissory Note.
5. If the Promisor is required by law to make any deduction or withholding from any payment hereunder, it shall do so and the amount due from the Promisor in respect of such payment shall be increased to the extent necessary to ensure that, after making such deduction or withholding, the Holder receives a net amount equal to the amount it would have received had no deduction or withholding been required to be made. The Promisor shall promptly notify the holder if at any time either Promisor is required by law to make any such deduction or withholding.
6. No change, modification, alteration or rescission of any terms of this Promissory Note shall be binding on the Holder or the Promisor unless made in writing and signed by both of them.
7. This Promissory Note shall be binding upon and enure to the benefit of the Promisor and the Holder and their respective successors and permitted assigns. This Promissory Note and the rights and obligations hereunder may not be assigned by the Promisor except with the written consent of the Holder.

8. This Promissory Note shall be governed by and construed in accordance with the laws of the Province of Ontario.

IN WITNESS WHEREOF the Promisor has caused this Promissory Note to be executed on the date noted above.

THUNDER BAY HYDRO ELECTRICITY
DISTRIBUTION INC.

Per: 
Name: Robert Mace
Title: President

Per: 
Name: Cindy Speziale
Title: Vice-President Finance

We have authority to bind the Corporation

ATTACHMENT 5 – C

Debt Instruments

Board Appendix 2-OB

File Number: EB-2016-0105
 Exhibit: 5
 Tab:
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 Page:
 Date: 09-Sep-16

Appendix 2-OB Debt Instruments

This table must be completed for all required historical years, the bridge year and the test year.

Year 2017

Row	Description	Lender	Affiliated or Third-Party Debt?	Fixed or Variable-Rate?	Start Date	Term (years)	Principal (\$)	Rate (%) ²	Interest (\$) ¹	Additional Comments, if any
1	Non-interest bearing Promissory Note	The Corporation of the City of Thunder Bay	Affiliated		\$ 41,373	-	\$ 26,490,500	0.00%	\$ -	Note (1)
2	Credit Facility Agreement	TD Commercial Bank	Third-Party	Fixed Rate	\$ 39,997	15	\$ 4,822,104	5.27%	\$ 254,125	
3	Promissory Note	Infrastructure Ontario	Third-Party	Fixed Rate	\$ 41,442	30	\$ 5,424,319	4.04%	\$ 219,142	
4	Promissory Note	Infrastructure Ontario	Third-Party	Fixed Rate	\$ 41,927	30	\$ 5,926,275	3.96%	\$ 234,680	
5	Promissory Note	Infrastructure Ontario	Third-Party	Fixed Rate	\$ 42,444	30	\$ 3,963,384	3.75%	\$ 148,627	
6	Promissory Note	Unknown	Third-Party	Fixed Rate	\$ 42,628	30	\$ 3,594,562	3.58%	\$ 128,685	Infrastructure Ontario Lending Rate posted as at May 5th 2016.
7	Promissory Note	Unknown	Third-Party	Fixed Rate	\$ 42,826	30	\$ 2,783,167	4.54%	\$ 126,356	Construction draw January 2, 2017, with debenture to be April 1, 2017
Total							\$ 53,004,311	2.10%	\$ 1,111,616	

Year 2016

Row	Description	Lender	Affiliated or Third-Party Debt?	Fixed or Variable-Rate?	Start Date	Term (years)	Principal (\$)	Rate (%) 2	Interest (\$) 1	Additional Comments, if any
1	Non-interest bearing Promissory Note	The Corporation of the City of Thunder Bay	Affiliated		\$ 41,373	-	\$ 26,490,500	0.00%	\$ -	Note (1)
2	Credit Facility Agreement	TD Commercial Bank	Third-Party	Fixed Rate	\$ 39,997	15	\$ 5,326,206	5.27%	\$ 280,691	
3	Promissory Note	Infrastructure Ontario	Third-Party	Fixed Rate	\$ 41,442	30	\$ 5,537,074	4.04%	\$ 223,698	
4	Promissory Note	Infrastructure Ontario	Third-Party	Fixed Rate	\$ 41,927	30	\$ 6,095,703	3.96%	\$ 241,390	
5	Promissory Note	Infrastructure Ontario	Third-Party	Fixed Rate	\$ 42,444	30	\$ 4,000,000	3.75%	\$ 118,350	
6	Promissory Note	Unknown	Third-Party	Fixed Rate	\$ 42,628	30	\$ 3,594,562	3.58%	\$ 128,685	Infrastructure Ontario Lending Rate posted as at May 5th 2016
Total							\$ 51,044,045	1.95%	\$ 992,814	

Year 2015

Row	Description	Lender	Affiliated or Third-Party Debt?	Fixed or Variable-Rate?	Start Date	Term (years)	Principal (\$)	Rate (%) 2	Interest (\$) 1	Additional Comments, if any
1	Non-interest bearing Promissory Note	The Corporation of the City of Thunder Bay	Affiliated		\$ 41,373	-	\$ 26,490,500	0.00%	\$ -	Note (1)
2	Credit Facility Agreement	TD Commercial Bank	Third-Party	Fixed Rate	\$ 39,997	15	\$ 5,804,478	5.27%	\$ 305,896	
3	Promissory Note	Infrastructure Ontario	Third-Party	Fixed Rate	\$ 41,442	30	\$ 5,645,409	4.04%	\$ 228,075	
4	Promissory Note	Infrastructure Ontario	Third-Party	Fixed Rate	\$ 41,927	30	\$ 6,150,000	3.96%	\$ 243,540	
5	Promissory Note	Infrastructure Ontario	Third-Party	Variable Rate	\$ 42,109		\$ 4,000,000	1.76%	\$ 70,400	Construction Draw
Total							\$ 48,090,387	1.76%	\$ 847,911	

Year 2014

Row	Description	Lender	Affiliated or Third-Party Debt?	Fixed or Variable-Rate?	Start Date	Term (years)	Principal (\$)	Rate (%) 2	Interest (\$) 1	Additional Comments, if any
1	Non-interest bearing Promissory Note	The Corporation of the City of Thunder Bay	Affiliated		\$ 41,373	-	\$ 26,490,500	0.00%	\$ -	Note (1)
2	Credit Facility Agreement	TD Commercial Bank	Third-Party	Fixed Rate	\$ 39,997	15	\$ 6,258,244	5.27%	\$ 329,809	
3	Promissory Note	Infrastructure Ontario	Third-Party	Fixed Rate	\$ 41,442	30	\$ 5,749,497	4.04%	\$ 232,280	
4	Promissory Note	Infrastructure Ontario	Third-Party	Fixed Rate	\$ 41,927	30	\$ 6,150,000	3.96%	\$ 120,690	Construction draw #1 \$5.5M taken our Feb 3, 2014 and #2 \$650K on October 15, 2014
Total							\$ 44,648,241	1.53%	\$ 682,779	

Year 2013

Row	Description	Lender	Affiliated or Third-Party Debt?	Fixed or Variable-Rate?	Start Date	Term (years)	Principal (\$)	Rate (%) 2	Interest (\$) 1	Additional Comments, if any
1	Non-interest bearing Promissory Note	The Corporation of the City of Thunder Bay	Affiliated		\$ 41,373		\$ 26,490,500		\$ -	Note (1)
2	Credit Facility Agreement	TD Commercial Bank	Third-Party	Fixed Rate	\$ 39,997	15	\$ 6,688,761	5.27%	\$ 352,498	
3	Promissory Note	Infrastructure Ontario	Third-Party	Fixed Rate	\$ 41,442	30	\$ 5,800,000	4.04%	\$ 117,160	
Total							\$ 38,979,261	1.20%	\$ 469,658	

Notes

(1) Original Note was issued upon incorporation in 2000. The amount was most recently revised April 9, 2013 as \$7M of the shareholder debt was converted to Class A common shares.

Year 2016

Row	Description	Lender	Affiliated or Third-Party Debt?	Fixed or Variable-Rate?	Start Date	Term (years)	Principal (\$)	Rate (%) ²	Interest (\$) ¹	Additional Comments, if any
1	Non-interest bearing Promissory Note	The Corporation of the City of Thunder Bay	Affiliated		\$ 41,373	-	\$ 26,490,500	0.00%	\$ -	Note (1)
2	Credit Facility Agreement	TD Commercial Bank	Third-Party	Fixed Rate	\$ 39,997	15	\$ 5,326,206	5.27%	\$ 280,691	
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Total							\$ 51,044,045	1.95%	\$ 992,814	

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Year

2014

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Year

2013

Row	Description	Lender	Affiliated or Third-Party Debt?	Fixed or Variable-Rate?	Start Date	Term (years)	Principal (\$)	Rate (%) 2	Interest (\$) 1	Additional Comments, if any
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