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Ontario Energy Board Cost of Capital – Review of recent macroeconomic developments

prepared for the Ontario Energy Board by London Economics International LLC

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London Economics International LLC (“LEI”) was retained by the Ontario Energy Board (“OEB”) to monitor macroeconomic conditions to ensure the cost of capital parameters for 2020 rates (issued by the OEB on October 31st, 2019) reflect current outlooks. As part of this quarterly review, for illustrative purposes, LEI conducted updated calculations of the return on equity (“ROE”), the deemed long-term debt rate (“DLTDR”), and the deemed short-term debt rate (“DSTDR”) using data as of December 31st, 2019. This resulted in an ROE of 8.46%, with deemed long-term and short-term debt rates of 3.08% and 2.82% respectively. LEI has determined that these changes do not differ materially from the published cost of capital parameters for 2020 rates of 8.52% (ROE), 3.21% (DLTDR), and 2.75% (DSTDR) calculated using data as of September 30th, 2019.

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1 Executive summary

This quarterly report seeks to update the Ontario Energy Board (“OEB”) on recent macroeconomic trends on a global, North American, and provincial scale since its publication of the 2020 cost of capital parameters (published on October 31st, 2019). Specifically, this report outlines:

- the short-term global outlooks for GDP growth and interest rates, which have stabilized since LEI’s previous briefing note;
- the outlook for the Canadian economy, whereby growth is expected to stabilize in the near-term following an unexpected rebound in the second quarter of 2019, and interest rates are similarly projected to stabilize following a recent (December 2019) Bank of Canada announcement maintaining the overnight rate at 1.75%; and
- the short-term forecast for Ontario GDP growth, which is anticipated to stabilize to 1.73% in 2020, following the 1.77% GDP growth rate achieved in 2019.¹

In addition to the review of macroeconomic developments, LEI has cross-checked the cost of capital parameters with data as of December 31st, 2019. The results of this exercise are summarized in Figure 1 below. While the return on equity (“ROE”) and deemed long-term debt rate (“DLTDR”) have decreased slightly, the deemed short-term debt rate (“DSTDR”) has increased, reflecting stabilizing short-term macroeconomic outlooks for 2020. Given the minimal movements in all three cost of capital parameters since the OEB’s 2020 update, LEI has determined these changes to be immaterial.

Figure 1. 2020 cost of capital parameters using data from September 2019 and December 2019

Cost of capital parameter	Value based on September 2019 data	Value based on December 2019 data	Difference
Return on equity	8.52%	8.46%	-0.06%
Deemed long-term debt rate	3.21%	3.08%	-0.13%
Deemed short-term debt rate	2.75%	2.82%	0.07%

Having noted the above, LEI reiterates its recommendation (from its October 2019 report) that the OEB consider requiring utilities to report the rates for their actual short-term (3-month) debt issuances (including 3-month future contracts, if any) for the year. This data would allow the OEB to have more accurate information on the actual cost of short-term debt relative to the Bankers’ Acceptance (“BA”) rate, enabling the Board to set a rate consistent with the actual cost of short-term borrowing for utilities. The data from utilities can be corroborated with the confidential bank survey to be conducted in September 2020.

¹ Note values are taken as an average of estimates compiled from various economic outlooks, including those published by BMO, RBC, and TD. (Sources: BMO Capital Markets Economic Research. *Provincial Monitor*. December 2, 2019; RBC Economics. *Provincial Outlook*. December 2019; TD Economics. *Provincial Economic Forecast*. December 17, 2019).

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2 Recap and recent macroeconomic developments

In this section, LEI briefly summarizes its previous briefing note, and describes recent macroeconomic developments since the publication of the Letter from the Board outlining the 2020 cost of capital parameters, released on October 31st, 2019.

2.1 Cost of capital – 2019 recap

In LEI's first briefing note to the OEB, submitted on October 17th, 2019, the general short-term outlook for both global economic growth and interest rates for 2020 was declining, driven primarily by trade tensions between major global economies (notably the US and China), which in turn was causing uncertainty and delaying investment decisions.² As for Canada, the outlook for 2020 was relatively more stable, as uncertainty with regards to trade tensions was generally offset by an unexpected economic rebound in the second quarter of 2019, which was anticipated to continue in the near-term.³ Even more granularly, the short-term outlook for Ontario saw declining growth on the horizon as a result of the province's fiscal policy stance aimed at tackling its deficit through a reduction in government spending,⁴ as well as a cooling housing market.⁵

Combined, these market forces resulted in a decline in all three 2020 cost of capital parameters relative to the previous year. The calculated ROE declined by 46 basis points to 8.52%, the DLTDR declined by 92 basis points to 3.21%, and the DSTDR declined by 7 basis points to 2.75%. The decline in all three parameters was in line with expectations given the prevailing macroeconomic conditions and was primarily driven by declines in the actual and forecasted long-term bond yields (for 10- and 30-year Government of Canada bonds).

2.2 Recent macroeconomic developments

Since LEI's first briefing note to the OEB, short-term forecasts for 2020 have somewhat stabilized, as outlined in Figure 2. Generally, while trade tensions and political uncertainty remain significant risk factors to macroeconomic outlooks, positive forces are stemming from:

- improved performance in emerging economies, which acts to stabilize the global economy;
- increased government spending and a strengthening housing market, which are contributing to a stable Canadian economy; and

² International Monetary Fund. *World Economic Outlook: Growth Slowdown, Precarious Recovery (Update)*. July 23, 2019.

³ RBC Economic Research. *Economic and Financial Market Outlook*. June 2019.

⁴ Ontario Ministry of Finance. *2019 Ontario Budget: Protecting What Matters Most*. April 11, 2019.

⁵ RBC Economic Research. *Provincial Outlook*. June 7, 2019.

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- a firming housing market and labour market which are working to stabilize the province's economy.

Figure 2. Summary of macroeconomic outlooks for 2020

Region	Growth trend relative to previous briefing note	Interest rates trend relative to previous briefing note	Key factors
Global	Stable	Stable	Trade tensions have slowed manufacturing output, but this is somewhat offset by expected improvements in the performance of emerging economies
US	Declining	Stable	Trade tensions and political uncertainty from the impeachment trial and upcoming elections are significant risk factors, countered somewhat by low unemployment
Canada	Stable	Stable	Increased federal spending and strengthening housing market offset by weak business investment and exports
Ontario	Stable	N/A	Uncertainty from trade tensions and cuts to provincial spending should be counteracted by a strong labour market and firming housing market

Sources: International Monetary Fund; BMO; RBC; TD; Bank of Canada.

2.2.1 Global and North American outlook update for 2020

Global economic activity is forecast to somewhat stabilize, although this outlook “remains precarious” due to continued trade tensions which have dragged on the global economy, including slowing manufacturing activity, which has reached lows “not seen since the global financial crisis.”⁶ The International Monetary Fund’s global growth forecast for 2019 was downgraded to 3% in its October 2019 release, down from 3.6% as predicted in its July 2019 publication.⁷ However, growth is expected to pick up slightly in 2020 to 3.4% (although this again is a downgraded prediction from its previous publication), with improved performance in emerging markets being dragged by the continued trade disputes.⁸

Forecasts for the US economy remain materially unchanged from the previous briefing note, with GDP growth expected on average to decline to 1.87% in 2020 (previously forecast at 1.73%),⁹ down

⁶ International Monetary Fund. *World Economic Outlook: Global Manufacturing Downturn, Rising Trade Barriers*. October 2019.

⁷ Ibid.

⁸ Ibid.

⁹ 2020 forecasts taken as an average of estimates published by BMO, RBC, and TD. (Sources: BMO Capital Markets Economic Research. *North American Outlook*. December 20, 2019; RBC Economics. *Macroeconomic Outlook*. December 2019; TD Economics. *Quarterly Economic Forecast*. December 17, 2019).

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from 2.30% in 2019, amid continued uncertainty surrounding trade tensions with China, as well as political uncertainty stemming from the presidential impeachment trial and upcoming presidential elections in November.¹⁰ The US Federal Reserve's Fed Funds rate is anticipated to stabilize, following rate cuts in 2019 (July, September, and October), on the heels of low unemployment and the US economy growing close to its long-run potential.¹¹

2.2.2 Canadian outlook update for 2020

As for the Canadian outlook, following the unexpected rebound in the second quarter of 2019 led by a surge in exports, growth slowed in the third quarter to 1.3%, with moderate consumer spending and housing activity offsetting contracting exports of mainly non-energy commodities.¹² A stable Canadian economy is forecasted in 2020, with GDP growth estimated at 1.67% on average (down slightly from previous 2020 forecasts of 1.80%),¹³ driven by a fiscal lift from increased federal government spending and a strengthening housing market,¹⁴ but offset by weak business investment and exports.¹⁵

The Bank of Canada maintained the overnight target rate at 1.75% on December 4th, 2019, confirming a continued expectation for a stable Canadian economy.¹⁶ As part of the announcement, the Bank discussed evidence of a stabilizing global economy, supported by continued central bank actions (namely maintaining low interest rates) despite ongoing trade conflicts, which remain the primary source of risk to global economic growth.¹⁷

To provide further context to the macroeconomic outlook in Canada, LEI has also tracked movements in consumer credit levels and business confidence, as reported by Statistics Canada and the Bank of Canada, respectively.

According to Statistics Canada's quarterly release of the 'national balance sheet and financial flow accounts', consumer credit rose to \$7.2 billion in the third quarter of 2019, up \$1.8 billion from the previous quarter and 11% above the average consumer credit levels seen over the 2008-2019

¹⁰ BMO Capital Markets Economic Research. *North American Outlook*. December 20, 2019.

¹¹ RBC Economics. *Macroeconomic Outlook*. December 2019.

¹² TD Economics. *Quarterly Economic Forecast*. December 17, 2019.

¹³ 2020 forecasts taken as an average of estimates published by BMO, RBC, and TD. (Sources: BMO Capital Markets Economic Research. *North American Outlook*. December 20, 2019; RBC Economics. *Macroeconomic Outlook*. December 2019; TD Economics. *Quarterly Economic Forecast*. December 17, 2019).

¹⁴ BMO Capital Markets Economic Research. *North American Outlook*. December 20, 2019.

¹⁵ RBC Economics. *Macroeconomic Outlook*. December 2019.

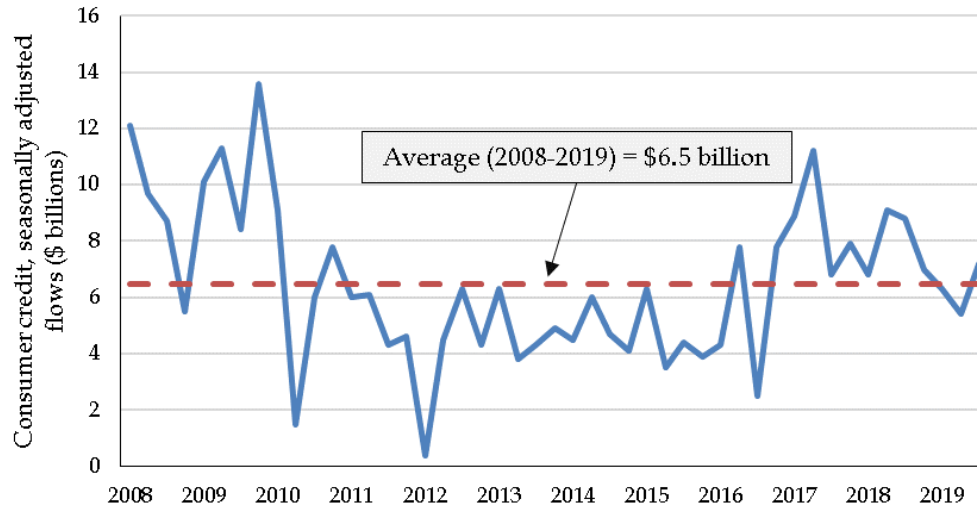
¹⁶ Bank of Canada. *Bank of Canada maintains overnight rate target at 1 ¾ percent*. December 4, 2019.

¹⁷ Ibid.

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period.¹⁸ These movements are shown in Figure 3 below. This aligns with the stable short-term outlook for the Canadian economy discussed above, with consumer sentiment improving as households begin to spend and borrow more.

Figure 3. Consumer credit, 2008 Q1 – 2019 Q3



Source: Statistics Canada. CANSIM Table 38-10-0238-01.

As for business confidence, LEI analyzed the results of the Bank of Canada’s Business Outlook Survey (“BOS”) for the Winter 2019-20 period, along with historical movements in the survey’s main indicator, the BOS indicator, as depicted in Figure 4.¹⁹ After falling below zero in early 2019, the January 2020 release indicated modest improvements in business confidence as the indicator continued to edge up to reach 0.74 by the close of 2019 (up from -1.06 in the opening quarter of 2019).²⁰ This is in line with prevailing macroeconomic conditions, where outlooks for Canada have stabilized at least in the short-term.

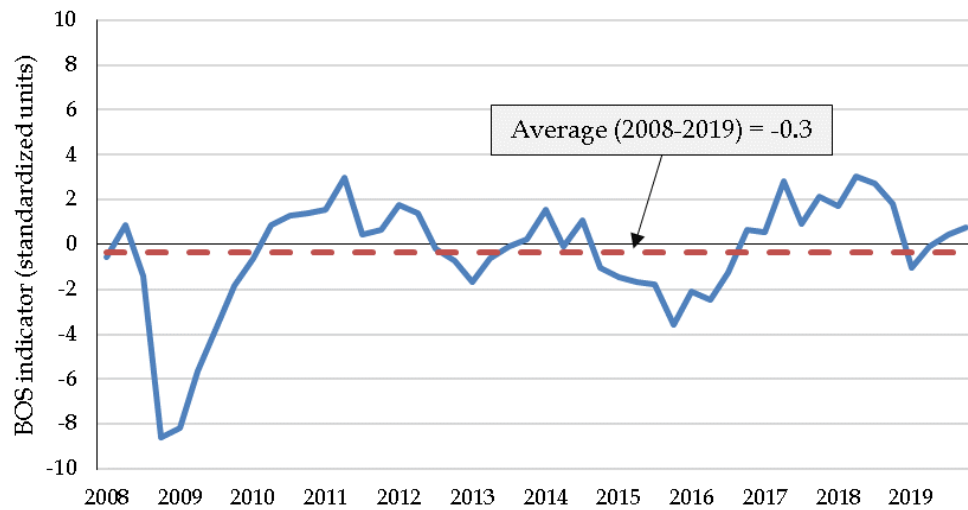
¹⁸ Statistics Canada. “The Daily: National Balance Sheet and Financial Flow Accounts, Third Quarter 2019.” December 13, 2019. <<https://www150.statcan.gc.ca/n1/daily-quotidien/191213/dq191213a-eng.htm>>

¹⁹ The BOS is a quarterly survey summarizing the interviews conducted by the Bank’s regional offices with the senior management of about 100 firms selected in accordance with the composition of the gross domestic product of Canada’s business sector. The Winter 2019-20 survey was conducted from November 13th to December 9th, 2019. The BOS indicator is a summary measure that captures common movements from the main BOS questions and is above zero when business confidence is above its historical average. (Source: <<https://www.bankofcanada.ca/2019/10/business-outlook-survey-autumn-2019/>>)

²⁰ Bank of Canada. “Business Outlook Survey – Winter 2019-20.” January 13, 2020. <<https://www.bankofcanada.ca/2020/01/business-outlook-survey-winter-2019-20/>>

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Figure 4. Business confidence, 2008 Q1 – 2019 Q4



Source: Bank of Canada. “Business Outlook Survey – Winter 2019-20.” January 13, 2020. <https://www.bankofcanada.ca/2020/01/business-outlook-survey-winter-2019-20/>

Note: The BOS indicator is above zero when business confidence is above its historical average. <https://www.bankofcanada.ca/2019/10/business-outlook-survey-autumn-2019/>

2.2.3 Ontario outlook update for 2020

Ontario’s GDP growth is expected on average to steady to 1.73% in 2020 (up from previous forecasts of 1.70%),²¹ from 1.77% in 2019, driven by strengthening housing and labour markets.²² It is important to note that although short-term outlooks for the province have picked up slightly since LEI’s previous briefing note, GDP growth is down from the average growth rate experienced over the prior five years of 2.4%.²³ Again, industry analysts cite trade tensions as the primary risk factor for expected growth,²⁴ with cuts in provincial government spending acting as a further drag on growth.²⁵

²¹ 2020 forecasts taken as an average of estimates published by BMO, RBC, and TD. (Sources: BMO Capital Markets Economic Research. *Provincial Monitor*. December 2, 2019; RBC Economics. *Provincial Outlook*. December 2019; TD Economics. *Provincial Economic Forecast*. December 17, 2019).

²² BMO Capital Markets Economic Research. *Provincial Monitor*. December 2, 2019.

²³ Ibid.

²⁴ RBC Economics. *Provincial Outlook*. December 2019.

²⁵ TD Economics. *Provincial Economic Forecast*. December 17, 2019.

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3 Cost of capital parameters – Q4 2019 update

The OEB conducts its annual cost of capital parameter update using data as of September 30th of that year, with rates becoming effective on January 1st of the following year. As part of this quarterly review, LEI has conducted an internal update of the cost of capital parameters using data as of December 31st, 2019, where possible.

Overall, both the ROE and DLTDR declined from the previous update, while the DSTDR increased. This follows the macroeconomic trends discussed in Section 2.2, where although short-term outlooks have stabilized, long-term forecasts remain precarious due to trade tensions and political uncertainty in the world's largest economies.

3.1 Return on equity

The ROE is the allowed return on shareholders' invested capital that is comparable to the return that investors would expect to earn from other investments with similar levels of business risk. Using data as of December 31st, 2019 from the Bank of Canada, Consensus Economics, and Bloomberg, LEI calculated the ROE as **8.46%**, down 6 basis points from the published 2020 cost of capital parameter update. See Appendix A for a detailed illustration of this calculation.

3.2 Deemed long-term debt rate

The DLTDR reflects the interest rate that would be charged to an A-rated commercial business customer for a long-term (30-year) commercial loan. Following LEI's internal update of the OEB's cost of capital parameter calculations, the deemed long-term debt rate was determined to be **3.08%**, down 13 basis points compared to the 2020 cost of capital parameters. See Appendix A for a detailed illustration of this calculation.

3.3 Deemed short-term debt rate

Finally, the DSTDR reflects the interest rate that would be charged to an A-rated commercial business customer for a short-term (3-month) loan by a commercial bank. Note that the DSTDR calculation incorporates the results of a confidential survey of prime Canadian banks, conducted by OEB Staff, whereby estimates for the spread of short-term debt issuances over Bankers' Acceptance ("BA") rates are provided. As this confidential survey is conducted once annually, LEI utilized the data from the September 2019 survey for its internal update.

The calculated deemed short-term debt rate is **2.82%**, up from 2.75% in the previous update. See Appendix A for a detailed illustration of this calculation. This increase is driven by a rise in the BA rate for 3-month loans, which increased from 1.83% in September to 1.91% in December.

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4 Appendix A: Cost of capital parameter calculations

Consistent with the OEB methodology detailed in the annual update to parameters, LEI has calculated the values for ROE, DLTDR and DSTDR as illustrated in Figure 5 and Figure 6 below, using data as of December 31st, 2019.

Figure 5. ROE and DLTDR calculation

Cost of Capital Parameter Calculations (For rate changes effective in 2020)									
Step 1: Analysis of Business Day Information in the Month					Step 2: 10-Year Government of Canada Bond Yield Forecast				
Month:	December 2019	Bond Yields %			Bond Yield Spreads %		Source: Consensus Forecasts		
	Day	Govt. of Canada	A-rated Utility		30-yr. Govt. over	30-yr. Util. over	Survey Date:	December 9, 2019	
		10-yr	30-yr	30-yr	10-yr Govt.	30-yr Govt.	December 2019	3-month	12-month
								1.600	1.700
									Average
									1.650 %
1	1-Dec-19								
2	2-Dec-19	1.53	1.61	3.00	0.08	1.39			
3	3-Dec-19	1.45	1.55	2.94	0.10	1.39			
4	4-Dec-19	1.54	1.62	3.01	0.08	1.39			
5	5-Dec-19	1.60	1.68	3.06	0.08	1.38			
6	6-Dec-19	1.58	1.68	3.05	0.10	1.37			
7	7-Dec-19								
8	8-Dec-19								
9	9-Dec-19	1.59	1.71	3.08	0.12	1.37			
10	10-Dec-19	1.60	1.70	3.07	0.10	1.37			
11	11-Dec-19	1.58	1.68	3.04	0.10	1.36			
12	12-Dec-19	1.66	1.75	3.11	0.09	1.36			
13	13-Dec-19	1.58	1.68	3.03	0.10	1.35			
14	14-Dec-19								
15	15-Dec-19								
16	16-Dec-19	1.63	1.73	3.08	0.10	1.35			
17	17-Dec-19	1.63	1.72	3.06	0.09	1.34			
18	18-Dec-19	1.69	1.75	3.08	0.06	1.33			
19	19-Dec-19	1.65	1.71	3.03	0.06	1.32			
20	20-Dec-19	1.61	1.66	2.99	0.05	1.33			
21	21-Dec-19								
22	22-Dec-19								
23	23-Dec-19	1.63	1.67	2.99	0.04	1.32			
24	24-Dec-19	1.61	1.67	2.98	0.06	1.31			
25	25-Dec-19								
26	26-Dec-19								
27	27-Dec-19	1.59	1.66	2.97	0.07	1.31			
28	28-Dec-19								
29	29-Dec-19								
30	30-Dec-19	1.64	1.71	3.03	0.07	1.32			
31	31-Dec-19	1.70	1.76	3.08	0.06	1.32			
		1.60	1.69	3.03	0.08	1.35			
Sources:		Bank of Canada	Bloomberg						
Step 3: Long Canada Bond Forecast					Step 4: Return on Equity (ROE) Forecast				
10-yr Govt. of Canada Bond Forecast (from Step 2)					Initial ROE				
					9.75 %				
Actual Spread of 30-year over 10-year Government of Canada Bond Yield (from Step 1)					Change in Long Canada Bond Yield Forecast from September 2009				
					LCBF (December 2019) (from Step 3)				
					1.731 %				
					Base LCBF				
					4.250 %				
					Difference				
					-2.520 %				
					0.5 x Difference				
					-1.260 %				
					Change in A-rated Utility Bond Yield Spread from September 2009				
					A-rated Utility Bond Yield Spread				
					1.350 %				
					(December 2019) (from Step 1)				
					Base A-rates Utility Bond Spread				
					1.415 %				
					Difference				
					-0.065 %				
					0.5 x Difference				
					-0.033 %				
					Return on Equity based on December 2019 data				
					8.46 %				
Step 5: Deemed Long Term Debt Rate Forecast									
Long Canada Bond Forecast for December 2019 (from Step 3)					1.731 %				
A-rated Utility Bond Yield Spread December 2019 (from Step 1)					1.350 %				
Deemed Long-term Debt Rate based on December 2019 data					3.08 %				

Source: OEB. "Cost of Capital Parameter Updates." <<https://www.oeb.ca/industry/rules-codes-and-requirements/cost-capital-parameter-updates>>

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Figure 6. DSTDR calculation

Cost of Capital Parameter Calculations (For rate changes effective in 2020)			
Step 1: Average annual spread over Banker's Acceptance		Step 2: Average 3-month Banker's Acceptance Rate	
A.	Average Spread over 90-day Bankers Acceptance	Month:	December 2019
		Day	Bankers' Acceptance Rate (%) 3-month
	Bank 1		
	Bank 2		
	Bank 3		
	Bank 4		
	Bank 5		
	Bank 6		
B.		1	1-Dec-19
Discard high and low estimates		2	2-Dec-19
If less than 4 estimates, take average without discarding high and low.		3	3-Dec-19
Number of estimates	4	4	4-Dec-19
High estimate	100 bps	5	5-Dec-19
Low estimate	80 bps	6	6-Dec-19
C.		7	7-Dec-19
Average annual spread	91.25 bps	8	8-Dec-19
		9	9-Dec-19
		10	10-Dec-19
		11	11-Dec-19
		12	12-Dec-19
		13	13-Dec-19
		14	14-Dec-19
		15	15-Dec-19
		16	16-Dec-19
		17	17-Dec-19
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		22	22-Dec-19
		23	23-Dec-19
		24	24-Dec-19
		25	25-Dec-19
		26	26-Dec-19
		27	27-Dec-19
		28	28-Dec-19
		29	29-Dec-19
		30	30-Dec-19
		31	31-Dec-19
			1.91%
Step 3: Deemed Short-Term Debt Rate Calculation			
Average annual spread	0.91%		
Average Banker's Acceptance Rate	1.91%		
Deemed Short Term Debt Rate	2.82%		

Source: OEB. "Cost of Capital Parameter Updates." <<https://www.oeb.ca/industry/rules-codes-and-requirements/cost-capital-parameter-updates>>

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