

1 **COST OF CAPITAL/CAPITAL STRUCTURE**
2

3 **1. INTRODUCTION**
4

5 The purpose of this evidence is to summarize the method and cost of financing Hydro
6 One Transmission’s capital requirements for the rebasing year 2020.
7

8 The cost of capital as described in this Exhibit has been reflected in the revenue
9 requirements for each year of this Application. Hydro One anticipates updating the
10 revenue requirement for the 2020 to 2022 test years when the Board releases its 2020 cost
11 of capital parameters, reflecting: (a) the Board-approved 2020 return on equity and short-
12 term debt rates; and (b) a long-term debt rate based on Hydro One’s actual 2019 debt
13 issuances to-date and the September 2019 Consensus Forecast. Hydro One proposes that
14 the 2020 cost of capital parameters established at that time be used to determine the final
15 revenue requirements for 2020 to 2022 test years.
16

17 **2. CAPITAL STRUCTURE**
18

19 Hydro One Transmission’s deemed capital structure for rate-making purposes is 60%
20 debt and 40% common equity of utility rate base. This capital structure was approved by
21 the Board, most recently as part of its Decision on Hydro One Transmission’s 2017 and
22 2018 Rate Application (EB-2016-0160) and Hydro One Distribution’s 2018-2022 Rate
23 Application (EB-2017-0049). This is consistent with the report of the Board on the Cost
24 of Capital for Ontario’s Regulated Utilities, dated December 11, 2009, (EB-2009-0084),
25 and its subsequent Review of the Existing Methodology of the Cost of Capital for
26 Ontario’s Regulated Utilities, dated January 14, 2016. The 60% debt component is
27 comprised of 4% deemed short-term debt and 56% long-term debt.

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1 **3. RETURN ON COMMON EQUITY**

2
3 Hydro One Transmission’s evidence reflects a return on equity (“ROE”) of 8.98% as a
4 placeholder for 2020 to 2022 based on the Cost of Capital Parameters released by the
5 OEB on November 22, 2018, for rates effective January 1, 2019. It is calculated as per
6 the Board’s formulaic approach in Appendix B of the Cost of Capital for Ontario’s
7 Regulated Utilities report, dated December 11, 2009, (EB-2009-0084).

8
9 As set out above, Hydro One will update the equity cost of capital for the 2020 to 2022
10 test years using the 2020 ROE to be calculated and released by the Board in the fall of
11 2019.

12
13 **4. DEEMED SHORT-TERM DEBT**

14
15 The Board has determined that the deemed amount of short-term debt that should be
16 factored into rate-setting be fixed at 4% of rate base. The deemed short-term rate of
17 2.82% is being used by Hydro One as a placeholder for 2020 to 2022. This rate is based
18 on the September 2018 average 3-month bankers’ acceptance rate of 1.923% and the
19 0.9% average annual spread from the Cost of Capital Parameters released by the OEB on
20 November 22, 2018, for rates effective January 1, 2019.

21
22 Hydro One will update the short-term debt rate for the 2020 to 2022 test years based on
23 the 2020 deemed short-term debt rate to be calculated and released by the Board in the
24 fall of 2019.

1 **5. LONG-TERM DEBT**

2
3 The Board has determined that the deemed amount of long-term debt that should be
4 factored into rate-setting be fixed at 56% of rate base. The long-term debt rate is
5 calculated to be 4.57% for 2020 to 2022. The long-term debt rate is calculated as the
6 weighted average rate on embedded debt, new debt, and forecast debt planned to be
7 issued in 2020, as discussed in Exhibit G, Tab 1, Schedule 2. Details of Hydro One
8 Transmission's long-term debt rate calculation for the 2020 rebasing year are identified at
9 Exhibit G, Tab 1, Schedule 4. A detailed discussion of Hydro One Transmission's debt
10 and forecast interest rate is provided at Exhibit G, Tab 1, Schedule 2.

11
12 Historical long-term debt cost information is available at Exhibit G, Tab 1, Schedule 4.

13
14 As discussed in this Exhibit, Hydro One proposes updating the long-term debt rate for
15 2020 to 2022 based on Hydro One's actual 2019 debt issuances to-date and the
16 September 2019 Consensus Forecast, consistent with the proposed update of the return on
17 common equity and deemed short-term interest rate.

18
19 As Hydro One Transmission has a market-determined cost of debt, the weighted average
20 long-term debt rate is also applied to any notional debt that is required to match the actual
21 amount of long-term debt to the deemed amount of long-term debt, consistent with the
22 Board's Decisions in EB-2016-0160 and EB-2017-0049.

1 **6. COST OF CAPITAL SUMMARY**

2

3 Historical, bridge, test and 2018 OEB approved debt and equity summary schedules are
4 available at Exhibit G, Tab 1, Schedule 3.

1 **COST OF THIRD PARTY LONG-TERM DEBT**

2
3 **1. HYDRO ONE TRANSMISSION LONG-TERM DEBT**

4
5 The debt portfolio for Hydro One Transmission is detailed in Exhibit G, Tab 1, Schedule
6 4. Hydro One Transmission is allocated a portion of the debt issued by Hydro One
7 Networks Inc. to Hydro One Inc. Hydro One Networks Inc. issues debt to Hydro One
8 Inc. to reflect debt issued by Hydro One Inc. to third-party public debt investors.

9
10 Third-party public debt investors hold all of the long-term debt issued by Hydro One Inc.
11 Hydro One Inc.'s debt financing strategy takes into consideration the objectives of cost
12 effectiveness, distributing debt maturities evenly over time, and ensuring the term of the
13 debt portfolio is compatible with the long life of the Company's assets.

14
15 Hydro One Inc. has a Medium Term Note ("MTN") Program that provides ready access
16 to issue debt with a term greater than one year into the Canadian debt capital markets.
17 The standard maturity terms of five, ten and thirty years are preferred by investors and
18 represent the main financing that Hydro One Inc. utilizes to execute its financing strategy
19 and raise the required funds. The short form base shelf prospectus for the current \$4.0
20 billion MTN Program is provided in Exhibit A, Tab 6, Schedule 5.

21
22 As noted in Exhibit G, Tab 1, Schedule 1, Hydro One proposed to update the long-term
23 debt rate. In this exhibit, Hydro One has updated the debt rates for 2019 and 2020 to
24 reflect the September 2018 consensus forecast and October 2018 long term consensus
25 forecast. These will be further updated as part of the draft rate order process to include
26 Hydro One's actual 2019 debt issuances to-date and the September 2019 Consensus
27 Forecast.

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1 **2. CREDIT RATINGS**

2
3 Credit ratings are a requirement because Hydro One Inc. issues medium term notes in the
4 Canadian public debt markets. Table 1 lists the credit ratings of Hydro One Inc.'s debt
5 obligations by DBRS, Moody's Investors Service and Standard & Poor's Rating
6 Services:

7 **Table 1: Credit Ratings for Hydro One Inc.**

Rating Agency	Short-term Debt	Long-term Debt
Standard & Poor's Rating Services (S&P)	A-1(low)	A-
DBRS	R-1(low)	A(high)
Moody's Investors Service (Moody's)	Prime-2	Baa1

8
9 The most recent rating agency reports are provided in Exhibit A, Tab 6, Schedule 3.

10
11 **3. COST OF LONG-TERM DEBT**

12
13 The long-term debt rate is calculated as the weighted average cost rate on embedded debt,
14 new debt (debt issued after the last OEB-approved rate application) and forecast debt
15 planned to be issued in 2019 and 2020. The weighted average rate on long-term debt is
16 4.65% for 2019 and 4.57% for 2020. Details of Hydro One Transmission's long-term
17 debt rate calculation for the 2019 bridge year and 2020 test year are identified at Exhibit
18 G, Tab 1, Schedule 4.

19
20 The amount of each Hydro One Networks Inc. debt issue that is allocated to the
21 Transmission business is based on its most recent forecast of borrowing requirements.
22 Borrowing requirements are driven mainly by debt retirement, capital expenditures net of
23 internally generated funds, and the maintenance of its capital structure. For example, in
24 June 2018, Hydro One Inc. issued \$750 million of 31-year notes with a 3.63% coupon

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1 rate. Hydro One Transmission was allocated \$468 million, as shown on line 33 of
2 Exhibit G, Tab 1, Schedule 4, page 4. The coupon rates of debt issues allocated to the
3 Transmission business, as shown in Exhibit G, Tab 1, Schedule 4, are equal to the actual
4 interest rates on debt issued by Hydro One Networks Inc. to Hydro One Inc., and by
5 Hydro One Inc. to third-party public debt investors.

6
7 **3.1 EMBEDDED DEBT**

8
9 The Board has determined in its Cost of Capital Report that for embedded debt, the rate
10 approved in prior Board decisions shall be maintained for the life of each active
11 instrument, unless a new rate is negotiated, in which case it will be treated as new debt.
12 Hydro One Transmission's embedded long-term debt, which was issued during the period
13 from 2000 to 2016, is shown on lines 1 to 36 of Exhibit G, Tab 1, Schedule 4, page 2.
14 The effective cost rates on these embedded debt issues were approved by the Board as
15 part of EB-2016-0160.

16
17 **3.2 NEW DEBT**

18
19 The Board has determined in its Cost of Capital Report that the rate for new debt that is
20 held by a third-party public debt investor will be the prudently negotiated contract rate.
21 This would include recognition of premiums and discounts.

22
23 In June of 2018, Hydro One Inc. issued \$350 million of seven-year notes with a 2.97%
24 coupon rate, of which \$218.4 million was mapped to Hydro One Transmission, as shown
25 on lines 34 of Exhibit G, Tab 1, Schedule 4, page 4.

26
27 In June 2018, Hydro One Inc. also issued three-year notes worth \$300 million. At the
28 time of the issue, Hydro One entered into a \$300 million notional principal amount fixed

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1 to floating interest rate swap to convert this note into floating rate or short-term debt
2 paying an effective interest rate of three-month bankers' acceptance plus a spread. This
3 short-term debt is being used to finance the deemed short-term debt amount equal to 4%
4 of rate base.

1 **3.3 FORECAST DEBT**

2
3 Hydro One Transmission's forecast borrowing requirements are \$1,278.5 million for
4 2019 and \$495.1 million for 2020.

5
6 Table 2 lists the fixed rate MTN's that Hydro One Transmission plans to issue in 2019, as
7 shown in lines 35 to 37 of Exhibit G, Tab 1, Schedule 4, page 5.

8
9 **Table 2: Forecast Debt Issues for 2019**

Year	Principal Amount (\$Millions)	Term (Years)	Coupon
2019	426.2	5	3.45%
	426.2	10	3.81%
	426.2	30	4.19%

10
11 Table 3 lists the fixed rate MTN's which Hydro One Transmission plans to issue in 2020,
12 as shown on lines 37 to 39 of Exhibit G, Tab 1, Schedule 4, page 6.

13
14 **Table 3: Forecast Debt Issues for 2020**

Year	Principal Amount (\$Millions)	Term (Years)	Coupon
2020	165.0	5	3.85%
	165.0	10	4.21%
	165.0	30	4.59%

15
16 **3.4 INTEREST RATES FOR 2019 AND 2020 FORECAST DEBT ISSUES**

17
18 Transmission business borrowing will be financed at market rates applicable to Hydro
19 One Inc. Table 4 summarizes the derivation of the forecast Hydro One Inc. yield for each
20 of the planned issuance terms for 2019 and 2020.

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Table 4: Forecast Yield for 2019-2020 Issuance Terms

	2019			2020		
	5-year	10-year	30-year	5-year	10-year	30-year
Government of Canada	2.61%	2.70%	2.71%	3.01%	3.10%	3.11%
Hydro One Spread	0.84%	1.11%	1.48%	0.84%	1.11%	1.48%
Forecast Hydro One Yield	3.45%	3.81%	4.19%	3.85%	4.21%	4.59%

Each rate is comprised of the forecast Government of Canada bond yield plus the Hydro One Inc. credit spread applicable to that term. The ten-year Government of Canada bond yield forecast for 2019 is based on the average of the three-month and 12-month forecast from the September 2018 Consensus Forecast. The ten-year Government of Canada bond yield forecast for 2020 is based on the October 2018 Long Term Consensus Forecast. The five-year Government of Canada bond yield forecasts are derived by subtracting the September 2018 average spreads (five-year to ten-year for the five-year forecast) from the ten-year Government of Canada bond yield forecast. The thirty-year Government of Canada bond yield forecasts are derived by adding the September 2018 average spreads (30-year to ten-year for the 30-year forecast) to the ten-year Government of Canada bond yield forecast. Hydro One's credit spreads over the Government of Canada bonds are based on the average of indicative new issue spreads for September 2018 obtained from the Company's MTN dealer group for each planned issuance term.

Hydro One assumes that, for rates effective January 1, 2020, the forecast interest rate for Hydro One Transmission debt issues will be based on the September 2019 Consensus Forecasts and the average of indicative new issue spreads for September 2019 that will be obtained from the Company's MTN dealer group for each planned issuance term. In

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1 addition, Hydro One assumes that long-term debt rate will be updated to reflect the actual
2 issuances of debt since the time of original application, consistent with the OEB's
3 Decision on Hydro One Transmission's 2017 to 2018 rate application in EB-2016-0160,
4 and changes in the interest rate forecast.

6 **3.5 TREASURY OM&A COSTS**

8 Treasury OM&A costs are incurred to:

- 9 • execute borrowing plans and issue commercial paper and long-term debt;
- 10 • ensure compliance with securities regulations, bank and debt covenants;
- 11 • manage Hydro One's daily liquidity position, control cash, and manage the
12 company's bank accounts;
- 13 • settle all transactions and manage relationships with creditors; and
- 14 • communicate with debt investors, banks and credit rating agencies.

15
16 Treasury OM&A costs are provided in the long-term debt schedules for the bridge and
17 test years in Exhibit G, Tab 1, Schedule 4 and are summarized in Table 5:

18
19 **Table 5: Forecast Treasury OM&A Costs**

Year	Amount (\$Millions)	Line	Page
2019	1.8	39	5
2020	1.9	41	6

21 **3.6 OTHER FINANCING-RELATED FEES**

22
23 Column (e) of Exhibit G, Tab 1, Schedule 4 ("Premium, Discount and Expenses")
24 represents the costs of issuing debt. These costs are specific to each debt issue and

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1 include commissions, legal fees, debt discounts or premiums on issues or re-openings of
2 issues relative to par, and hedge gains or losses.

3

4 Other financing-related fees include the Transmission allocation of Hydro One Inc.'s
5 standby credit facility, annual credit rating agency, filing fees to security regulators, letter
6 of credit, banking, custodial and trustee fees. The amount of these fees are summarized
7 in Table 6 below and are also provided in the long term debt schedules for the bridge and
8 test years in Exhibit G, Tab 1, Schedule 4:

9

10

Table 6: Forecast Other Financing-Related Fees

Year	Amount (\$Millions)	Line	Page
2019	5.4	40	5
2020	5.3	42	6

HYDRO ONE NETWORKS INC.
TRANSMISSION
Debt and Equity Summary
 Historical Years (2015, 2016, 2017, 2018) and Bridge Year (2019)
 As at December 31
 (\$ Millions)

Updated Line No.	Particulars	Amount Outstanding 2015	Amount Outstanding 2016	Amount Outstanding 2017	Amount Outstanding 2018	Amount Outstanding 2019
		Actual (a)	Actual (b)	Actual (c)	Actual (d)	Bridge (e)
1	Long-term debt *	4,819.1	5,489.1	5,084.1	5,358.0	6,046.4
2	Short-term debt	915.9	649.9	1,507.9	1,635.0	472.6
3	Preference shares	-	-	-	-	-
4	Common equity	4,125.0	4,273.0	4,458.0	4,728.6	4,726.0

* Includes debt payable within one year; excludes variable rate debt, unamortized debt premiums/discount, hedging gains/losses and marks to market

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HYDRO ONE NETWORKS INC.
TRANSMISSION

Summary of Cost of Capital
Test Year 2020
Utility Capital Structure
Year Ending December 31
(\$ Millions)

Line No.	Particulars	2020			
		(\$M)	%	Cost Rate (%)	Return (\$M)
		(a)	(b)	(c)	(d)
1	Long-term debt	6,806.2	55.0%	4.57%	311.0
2	Short-term debt	495.0	4.0%	2.82%	14.0
3	Deemed long-term debt	123.5	1.0%	4.57%	5.6
4	Total debt	7,424.7	60.0%	4.45%	330.6
5	Common equity	4,949.8	40.0%	8.98%	444.5
6	Total rate base	<u>12,374.5</u>	<u>100.0%</u>	<u>6.26%</u>	<u>775.0</u>

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HYDRO ONE NETWORKS INC.
TRANSMISSION
Summary of Cost of Capital
Last Board-approved year (2018)
Utility Capital Structure
Year Ending December 31
(\$ Millions)

Line No.	Particulars	2018			
		(\$M)	%	Cost Rate (%)	Return (\$M)
		(a)	(b)	(c)	(d)
1	Long-term debt	5468.1	49.05%	4.68%	255.8
2	Short-term debt	445.9	4.00%	2.29%	10.2
3	Deemed long-term debt	774.8	6.95%	4.68%	36.2
4	Total debt	6688.8	60.00%	4.52%	302.3
5	Common equity	4459.2	40.00%	9.00%	401.3
6	Total rate base	11,148.0	100.00%	6.31%	703.6

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HYDRO ONE NETWORKS INC.
TRANSMISSION
Cost of Long-Term Debt Capital
Historic Year (2015)
Year ending December 31

Line No.	Offering Date	Coupon Rate	Maturity Date	Principal Amount Offered (\$Millions)	Premium Discount and Expenses (\$Millions)	Net Capital Employed		Effective Cost Rate	Total Amount Outstanding		Avg. Monthly Averages (\$Millions)	Carrying Cost (\$Millions)	Projected Average Embedded Cost Rates (m)
						Total Amount (\$Millions)	Per \$100 Principal Amount (Dollars)		at 12/31/14 (\$Millions)	at 12/31/15 (\$Millions)			
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	
1	3-Jun-00	7.350%	3-Jun-30	278.4	4.5	273.9	98.4	7.49%	278.4	278.4	278.4	20.8	
2	22-Jun-01	6.930%	1-Jun-32	109.3	1.3	107.9	98.8	7.03%	109.3	109.3	109.3	7.7	
3	17-Sep-02	6.930%	1-Jun-32	58.0	(2.1)	60.1	103.6	6.65%	58.0	58.0	58.0	3.9	
4	31-Jan-03	6.350%	31-Jan-34	126.0	1.0	125.0	99.2	6.41%	126.0	126.0	126.0	8.1	
5	22-Apr-03	6.590%	22-Apr-43	145.0	1.1	143.9	99.3	6.64%	145.0	145.0	145.0	9.6	
6	25-Jun-04	6.350%	31-Jan-34	72.0	(0.2)	72.2	100.2	6.33%	72.0	72.0	72.0	4.6	
7	20-Aug-04	6.590%	22-Apr-43	39.0	(3.1)	42.1	107.9	6.06%	39.0	39.0	39.0	2.4	
8	24-Aug-04	6.350%	31-Jan-34	39.0	(1.4)	40.4	103.5	6.09%	39.0	39.0	39.0	2.4	
9	19-May-05	5.360%	20-May-36	228.9	8.7	220.2	96.2	5.62%	228.9	228.9	228.9	12.9	
10	3-Mar-06	4.640%	3-Mar-16	210.0	1.0	209.0	99.5	4.70%	210.0	210.0	210.0	9.9	
11	24-Apr-06	5.360%	20-May-36	187.5	2.5	185.0	98.7	5.45%	187.5	187.5	187.5	10.2	
12	22-Aug-06	4.640%	3-Mar-16	60.0	0.8	59.2	98.7	4.80%	60.0	60.0	60.0	2.9	
13	19-Oct-06	5.000%	19-Oct-46	30.0	0.2	29.8	99.3	5.04%	30.0	30.0	30.0	1.5	
14	13-Mar-07	4.890%	13-Mar-37	240.0	1.3	238.7	99.4	4.93%	240.0	240.0	240.0	11.8	
15	18-Oct-07	5.180%	18-Oct-17	225.0	0.8	224.2	99.6	5.23%	225.0	225.0	225.0	11.8	
16	3-Mar-08	5.180%	18-Oct-17	180.0	(3.1)	183.1	101.7	4.95%	180.0	180.0	180.0	8.9	
17	3-Mar-09	6.030%	3-Mar-39	195.0	1.2	193.8	99.4	6.07%	195.0	195.0	195.0	11.8	
18	16-Jul-09	5.490%	16-Jul-40	210.0	1.4	208.6	99.4	5.53%	210.0	210.0	210.0	11.6	
19	15-Mar-10	5.490%	24-Jul-40	120.0	(0.7)	120.7	100.6	5.45%	120.0	120.0	120.0	6.5	
20	15-Mar-10	4.400%	4-Jun-20	180.0	0.8	179.2	99.5	4.46%	180.0	180.0	180.0	8.0	
21	13-Sep-10	2.950%	11-Sep-15	150.0	0.6	149.4	99.6	3.03%	150.0	0.0	103.8	3.1	
22	13-Sep-10	5.000%	19-Oct-46	150.0	(0.4)	150.4	100.2	4.98%	150.0	150.0	150.0	7.5	
23	26-Sep-11	4.390%	26-Sep-41	205.0	1.3	203.7	99.3	4.43%	205.0	205.0	205.0	9.1	
24	22-Dec-11	4.000%	22-Dec-51	70.0	0.4	69.6	99.5	4.03%	70.0	70.0	70.0	2.8	
25	13-Jan-12	3.200%	13-Jan-22	154.0	0.8	153.2	99.5	3.26%	154.0	154.0	154.0	5.0	
26	22-May-12	3.200%	13-Jan-22	165.0	(1.6)	166.6	101.0	3.08%	165.0	165.0	165.0	5.1	
27	22-May-12	4.000%	22-Dec-51	68.8	0.3	68.4	99.5	4.02%	68.8	68.8	68.8	2.8	
28	31-Jul-12	3.790%	31-Jul-62	52.5	0.3	52.2	99.5	3.81%	52.5	52.5	52.5	2.0	
29	16-Aug-12	3.790%	31-Jul-62	141.0	1.1	139.9	99.2	3.83%	141.0	141.0	141.0	5.4	
30	9-Oct-13	4.590%	9-Oct-43	239.3	1.4	237.9	99.4	4.63%	239.3	239.3	239.3	11.1	
31	9-Oct-13	2.780%	9-Oct-18	412.5	1.7	410.8	99.6	2.87%	412.5	412.5	412.5	11.8	
32	29-Jan-14	4.290%	29-Jan-64	30.0	0.2	29.8	99.4	4.32%	30.0	30.0	30.0	1.3	
33	3-Jun-14	4.170%	3-Jun-44	198.0	1.2	196.8	99.4	4.21%	198.0	198.0	198.0	8.3	
34		Subtotal							4969.1	4819.1	4922.9	242.6	
35		Treasury OM&A costs										1.4	
36		Other financing-related fees										3.5	
37		Total							4969.1	4819.1	4922.9	247.4	5.03%

Witness: Samir Chhelavda

HYDRO ONE NETWORKS INC.
TRANSMISSION
Cost of Long-Term Debt Capital
Historic Year (2016)
Year ending December 31

Line No.	Offering Date	Coupon Rate	Maturity Date	Principal Amount Offered (\$Millions)	Premium Discount and Expenses (\$Millions)	Net Capital Employed		Effective Cost Rate	1/1/2015 Total Amount Outstanding		1/1/2016 Avg. Monthly Averages (\$Millions)	Carrying Cost (\$Millions)	Projected Average Embedded Cost Rates
						Total (\$Millions)	Per \$100 Principal (Dollars)		at 12/31/15 (\$Millions)	at 12/31/16 (\$Millions)			
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	
1	3-Jun-00	7.350%	3-Jun-30	278.4	4.5	273.9	98.4	7.49%	278.4	278.4	278.4	20.8	
2	22-Jun-01	6.930%	1-Jun-32	109.3	1.3	107.9	98.8	7.03%	109.3	109.3	109.3	7.7	
3	17-Sep-02	6.930%	1-Jun-32	58.0	(2.1)	60.1	103.6	6.65%	58.0	58.0	58.0	3.9	
4	31-Jan-03	6.350%	31-Jan-34	126.0	1.0	125.0	99.2	6.41%	126.0	126.0	126.0	8.1	
5	22-Apr-03	6.590%	22-Apr-43	145.0	1.1	143.9	99.3	6.64%	145.0	145.0	145.0	9.6	
6	25-Jun-04	6.350%	31-Jan-34	72.0	(0.2)	72.2	100.2	6.33%	72.0	72.0	72.0	4.6	
7	20-Aug-04	6.590%	22-Apr-43	39.0	(3.1)	42.1	107.9	6.06%	39.0	39.0	39.0	2.4	
8	24-Aug-04	6.350%	31-Jan-34	39.0	(1.4)	40.4	103.5	6.09%	39.0	39.0	39.0	2.4	
9	19-May-05	5.360%	20-May-36	228.9	8.7	220.2	96.2	5.62%	228.9	228.9	228.9	12.9	
10	3-Mar-06	4.640%	3-Mar-16	210.0	1.0	209.0	99.5	4.70%	210.0	0.0	48.5	2.3	
11	24-Apr-06	5.360%	20-May-36	187.5	2.5	185.0	98.7	5.45%	187.5	187.5	187.5	10.2	
12	22-Aug-06	4.640%	3-Mar-16	60.0	0.8	59.2	98.7	4.80%	60.0	0.0	13.8	0.7	
13	19-Oct-06	5.000%	19-Oct-46	30.0	0.2	29.8	99.3	5.04%	30.0	30.0	30.0	1.5	
14	13-Mar-07	4.890%	13-Mar-37	240.0	1.3	238.7	99.4	4.93%	240.0	240.0	240.0	11.8	
15	18-Oct-07	5.180%	18-Oct-17	225.0	0.8	224.2	99.6	5.23%	225.0	225.0	225.0	11.8	
16	3-Mar-08	5.180%	18-Oct-17	180.0	(3.1)	183.1	101.7	4.95%	180.0	180.0	180.0	8.9	
17	3-Mar-09	6.030%	3-Mar-39	195.0	1.2	193.8	99.4	6.07%	195.0	195.0	195.0	11.8	
18	16-Jul-09	5.490%	16-Jul-40	210.0	1.4	208.6	99.4	5.53%	210.0	210.0	210.0	11.6	
19	15-Mar-10	5.490%	24-Jul-40	120.0	(0.7)	120.7	100.6	5.45%	120.0	120.0	120.0	6.5	
20	15-Mar-10	4.400%	4-Jun-20	180.0	0.8	179.2	99.5	4.46%	180.0	180.0	180.0	8.0	
21	13-Sep-10	5.000%	19-Oct-46	150.0	(0.4)	150.4	100.2	4.98%	150.0	150.0	150.0	7.5	
22	26-Sep-11	4.390%	26-Sep-41	205.0	1.3	203.7	99.3	4.43%	205.0	205.0	205.0	9.1	
23	22-Dec-11	4.000%	22-Dec-51	70.0	0.4	69.6	99.5	4.03%	70.0	70.0	70.0	2.8	
24	13-Jan-12	3.200%	13-Jan-22	154.0	0.8	153.2	99.5	3.26%	154.0	154.0	154.0	5.0	
25	22-May-12	3.200%	13-Jan-22	165.0	(1.6)	166.6	101.0	3.08%	165.0	165.0	165.0	5.1	
26	22-May-12	4.000%	22-Dec-51	68.8	0.3	68.4	99.5	4.02%	68.8	68.8	68.8	2.8	
27	31-Jul-12	3.790%	31-Jul-62	52.5	0.3	52.2	99.5	3.81%	52.5	52.5	52.5	2.0	
28	16-Aug-12	3.790%	31-Jul-62	141.0	1.1	139.9	99.2	3.83%	141.0	141.0	141.0	5.4	
29	9-Oct-13	4.590%	9-Oct-43	239.3	1.4	237.9	99.4	4.63%	239.3	239.3	239.3	11.1	
30	9-Oct-13	2.780%	9-Oct-18	412.5	1.7	410.8	99.6	2.87%	412.5	412.5	412.5	11.8	
31	29-Jan-14	4.290%	29-Jan-64	30.0	0.2	29.8	99.4	4.32%	30.0	30.0	30.0	1.3	
32	3-Jun-14	4.170%	3-Jun-44	198.0	1.2	196.8	99.4	4.21%	198.0	198.0	198.0	8.3	
33	24-Feb-16	3.910%	24-Feb-46	175.0	1.1	173.9	99.36	3.95%	0.0	175.0	148.1	5.8	
34	24-Feb-16	2.770%	24-Feb-26	245.0	1.1	243.9	99.56	2.82%	0.0	245.0	207.3	5.8	
35	24-Feb-16	1.840%	24-Feb-21	250.0	0.9	249.1	99.63	1.92%	0.0	250.0	211.5	4.1	
36	18-Nov-16	3.720%	18-Nov-47	270.0	1.4	268.7	99.50	3.75%	0.0	270.0	41.5	1.6	
37		Subtotal							4819.1	5489.1	5219.8	246.9	
38		Treasury OM&A costs										1.7	
39		Other financing-related fees										4.6	
40		Total							4819.1	5489.1	5219.8	253.2	4.85%

Witness: Samir Chhelavda

HYDRO ONE NETWORKS INC.
TRANSMISSION
Cost of Long-Term Debt Capital
Historic Year (2017)
Year ending December 31

Line No.	Offering Date	Coupon Rate	Maturity Date	Principal Amount Offered (\$Millions)	Premium Discount and Expenses (\$Millions)	Net Capital Employed		Effective Cost Rate	1/1/2016 Total Amount Outstanding		1/1/2017 Avg. Monthly Averages (\$Millions)	Carrying Cost (\$Millions)	Projected Average Embedded Cost Rates
						Total Amount (\$Millions)	Per \$100 Principal Amount (Dollars)		at 12/31/16 (\$Millions)	at 12/31/17 (\$Millions)			
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	
1	3-Jun-00	7.350%	3-Jun-30	278.4	4.5	273.9	98.4	7.49%	278.4	278.4	278.4	20.8	
2	22-Jun-01	6.930%	1-Jun-32	109.3	1.3	107.9	98.8	7.03%	109.3	109.3	109.3	7.7	
3	17-Sep-02	6.930%	1-Jun-32	58.0	(2.1)	60.1	103.6	6.65%	58.0	58.0	58.0	3.9	
4	31-Jan-03	6.350%	31-Jan-34	126.0	1.0	125.0	99.2	6.41%	126.0	126.0	126.0	8.1	
5	22-Apr-03	6.590%	22-Apr-43	145.0	1.1	143.9	99.3	6.64%	145.0	145.0	145.0	9.6	
6	25-Jun-04	6.350%	31-Jan-34	72.0	(0.2)	72.2	100.2	6.33%	72.0	72.0	72.0	4.6	
7	20-Aug-04	6.590%	22-Apr-43	39.0	(3.1)	42.1	107.9	6.06%	39.0	39.0	39.0	2.4	
8	24-Aug-04	6.350%	31-Jan-34	39.0	(1.4)	40.4	103.5	6.09%	39.0	39.0	39.0	2.4	
9	19-May-05	5.360%	20-May-36	228.9	8.7	220.2	96.2	5.62%	228.9	228.9	228.9	12.9	
10	24-Apr-06	5.360%	20-May-36	187.5	2.5	185.0	98.7	5.45%	187.5	187.5	187.5	10.2	
11	19-Oct-06	5.000%	19-Oct-46	30.0	0.2	29.8	99.3	5.04%	30.0	30.0	30.0	1.5	
12	13-Mar-07	4.890%	13-Mar-37	240.0	1.3	238.7	99.4	4.93%	240.0	240.0	240.0	11.8	
13	18-Oct-07	5.180%	18-Oct-17	225.0	0.8	224.2	99.6	5.23%	225.0	0.0	173.1	9.0	
14	3-Mar-08	5.180%	18-Oct-17	180.0	(3.1)	183.1	101.7	4.95%	180.0	0.0	138.5	6.9	
15	3-Mar-09	6.030%	3-Mar-39	195.0	1.2	193.8	99.4	6.07%	195.0	195.0	195.0	11.8	
16	16-Jul-09	5.490%	16-Jul-40	210.0	1.4	208.6	99.4	5.53%	210.0	210.0	210.0	11.6	
17	15-Mar-10	5.490%	24-Jul-40	120.0	(0.7)	120.7	100.6	5.45%	120.0	120.0	120.0	6.5	
18	15-Mar-10	4.400%	4-Jun-20	180.0	0.8	179.2	99.5	4.46%	180.0	180.0	180.0	8.0	
19	13-Sep-10	5.000%	19-Oct-46	150.0	(0.4)	150.4	100.2	4.98%	150.0	150.0	150.0	7.5	
20	26-Sep-11	4.390%	26-Sep-41	205.0	1.3	203.7	99.3	4.43%	205.0	205.0	205.0	9.1	
21	22-Dec-11	4.000%	22-Dec-51	70.0	0.4	69.6	99.5	4.03%	70.0	70.0	70.0	2.8	
22	13-Jan-12	3.200%	13-Jan-22	154.0	0.8	153.2	99.5	3.26%	154.0	154.0	154.0	5.0	
23	22-May-12	3.200%	13-Jan-22	165.0	(1.6)	166.6	101.0	3.08%	165.0	165.0	165.0	5.1	
24	22-May-12	4.000%	22-Dec-51	68.8	0.3	68.4	99.5	4.02%	68.8	68.8	68.8	2.8	
25	31-Jul-12	3.790%	31-Jul-62	52.5	0.3	52.2	99.5	3.81%	52.5	52.5	52.5	2.0	
26	16-Aug-12	3.790%	31-Jul-62	141.0	1.1	139.9	99.2	3.83%	141.0	141.0	141.0	5.4	
27	9-Oct-13	4.590%	9-Oct-43	239.3	1.4	237.9	99.4	4.63%	239.3	239.3	239.3	11.1	
28	9-Oct-13	2.780%	9-Oct-18	412.5	1.7	410.8	99.6	2.87%	412.5	412.5	412.5	11.8	
29	29-Jan-14	4.290%	29-Jan-64	30.0	0.2	29.8	99.4	4.32%	30.0	30.0	30.0	1.3	
30	3-Jun-14	4.170%	3-Jun-44	198.0	1.2	196.8	99.4	4.21%	198.0	198.0	198.0	8.3	
31	24-Feb-16	3.910%	24-Feb-46	175.0	1.1	173.9	99.36	3.95%	175.0	175.0	175.0	6.9	
32	24-Feb-16	2.770%	24-Feb-26	245.0	1.1	243.9	99.56	2.82%	245.0	245.0	245.0	6.9	
33	24-Feb-16	1.840%	24-Feb-21	250.0	0.9	249.1	99.63	1.92%	250.0	250.0	250.0	4.8	
34	18-Nov-16	3.720%	18-Nov-47	270.0	1.4	268.7	99.50	3.75%	270.0	270.0	270.0	10.1	
35		Subtotal							<u>5489.1</u>	<u>5084.1</u>	<u>5395.7</u>	<u>250.6</u>	
36		Treasury OM&A costs										1.5	
37		Other financing-related fees										4.3	
38		Total							<u>5489.1</u>	<u>5084.1</u>	<u>5395.7</u>	<u>256.5</u>	<u>4.75%</u>

Witness: Samir Chhelavda

HYDRO ONE NETWORKS INC.
TRANSMISSION
Cost of Long-Term Debt Capital
Historic Year (2018)
Year ending December 31

Line No.	Offering Date (a)	Coupon Rate (b)	Maturity Date (c)	Principal Amount Offered (\$Millions) (d)	Premium Discount and Expenses (\$Millions) (e)	Net Capital Employed		Effective Cost Rate (h)	1/1/2017 Total Amount Outstanding		1/1/2018 Avg. Monthly Averages (\$Millions) (k)	Carrying Cost (\$Millions) (l)	Projected Average Embedded Cost Rates (m)	
						Total Amount (\$Millions) (f)	Per \$100 Principal Amount (Dollars) (g)		at 12/31/2017 (\$Millions) (i)	at 12/31/2018 (\$Millions) (j)				
1	3-Jun-00	7.350%	3-Jun-30	278.4	4.5	273.9	98.37	7.49%	278.4	278.4	278.4	20.8		
2	22-Jun-01	6.930%	1-Jun-32	109.3	1.3	107.9	98.78	7.03%	109.3	109.3	109.3	7.7		
3	17-Sep-02	6.930%	1-Jun-32	58.0	(2.1)	60.1	103.57	6.65%	58.0	58.0	58.0	3.9		
4	31-Jan-03	6.350%	31-Jan-34	126.0	1.0	125.0	99.21	6.41%	126.0	126.0	126.0	8.1		
5	22-Apr-03	6.590%	22-Apr-43	145.0	1.1	143.9	99.26	6.64%	145.0	145.0	145.0	9.6		
6	25-Jun-04	6.350%	31-Jan-34	72.0	(0.2)	72.2	100.22	6.33%	72.0	72.0	72.0	4.6		
7	20-Aug-04	6.590%	22-Apr-43	39.0	(3.1)	42.1	107.89	6.06%	39.0	39.0	39.0	2.4		
8	24-Aug-04	6.350%	31-Jan-34	39.0	(1.4)	40.4	103.48	6.09%	39.0	39.0	39.0	2.4		
9	19-May-05	5.360%	20-May-36	228.9	8.7	220.2	96.19	5.62%	228.9	228.9	228.9	12.9		
10	24-Apr-06	5.360%	20-May-36	187.5	2.5	185.0	98.68	5.45%	187.5	187.5	187.5	10.2		
11	19-Oct-06	5.000%	19-Oct-46	30.0	0.2	29.8	99.29	5.04%	30.0	30.0	30.0	1.5		
12	13-Mar-07	4.890%	13-Mar-37	240.0	1.3	238.7	99.45	4.93%	240.0	240.0	240.0	11.8		
13	3-Mar-09	6.030%	3-Mar-39	195.0	1.2	193.8	99.41	6.07%	195.0	195.0	195.0	11.8		
14	16-Jul-09	5.490%	16-Jul-40	210.0	1.4	208.6	99.36	5.53%	210.0	210.0	210.0	11.6		
15	15-Mar-10	5.490%	24-Jul-40	120.0	(0.7)	120.7	100.58	5.45%	120.0	120.0	120.0	6.5		
16	15-Mar-10	4.400%	4-Jun-20	180.0	0.8	179.2	99.55	4.46%	180.0	180.0	180.0	8.0		
17	13-Sep-10	5.000%	19-Oct-46	150.0	(0.4)	150.4	100.25	4.98%	150.0	150.0	150.0	7.5		
18	26-Sep-11	4.390%	26-Sep-41	205.0	1.3	203.7	99.35	4.43%	205.0	205.0	205.0	9.1		
19	22-Dec-11	4.000%	22-Dec-51	70.0	0.4	69.6	99.47	4.03%	70.0	70.0	70.0	2.8		
20	13-Jan-12	3.200%	13-Jan-22	154.0	0.8	153.2	99.47	3.26%	154.0	154.0	154.0	5.0		
21	22-May-12	3.200%	13-Jan-22	165.0	(1.6)	166.6	100.97	3.08%	165.0	165.0	165.0	5.1		
22	22-May-12	4.000%	22-Dec-51	68.8	0.3	68.4	99.51	4.02%	68.8	68.8	68.8	2.8		
23	31-Jul-12	3.790%	31-Jul-62	52.5	0.3	52.2	99.47	3.81%	52.5	52.5	52.5	2.0		
24	16-Aug-12	3.790%	31-Jul-62	141.0	1.1	139.9	99.20	3.83%	141.0	141.0	141.0	5.4		
25	9-Oct-13	4.590%	9-Oct-43	239.3	1.4	237.9	99.42	4.63%	239.3	239.3	239.3	11.1		
26	9-Oct-13	2.780%	9-Oct-18	412.5	1.7	410.8	99.59	2.87%	412.5	0.0	317.3	9.1		
27	29-Jan-14	4.310%	29-Jan-64	30.0	0.2	29.8	99.44	4.34%	30.0	30.0	30.0	1.3		
28	3-Jun-14	4.190%	3-Jun-44	198.0	1.2	196.8	99.40	4.23%	198.0	198.0	198.0	8.4		
29	24-Feb-16	3.910%	24-Feb-46	175.0	1.1	173.9	99.36	3.95%	175.0	175.0	175.0	6.9		
30	24-Feb-16	2.770%	24-Feb-26	245.0	1.1	243.9	99.56	2.82%	245.0	245.0	245.0	6.9		
31	24-Feb-16	1.840%	24-Feb-21	250.0	0.9	249.1	99.63	1.92%	250.0	250.0	250.0	4.8		
32	18-Nov-16	3.720%	18-Nov-47	270.0	1.4	268.7	99.50	3.75%	270.0	270.0	270.0	10.1		
33	26-Jun-18	3.630%	25-Jun-49	468.0	2.4	465.6	99.48	3.66%	0.0	468.0	252.0	9.2		
34	26-Jun-18	2.970%	26-Jun-25	218.4	0.9	217.5	99.60	3.03%	0.0	218.4	117.6	3.6		
35	Subtotal									5084.1	5358.0	5358.5	244.8	
36	Treasury OM&A costs												1.8	
37	Other financing-related fees												4.9	
38	Total									5084.1	5358.0	5358.5	251.5	4.69%

Witness: Samir Chhelavda

HYDRO ONE NETWORKS INC.
TRANSMISSION
Cost of Long-Term Debt Capital
Bridge Year (2019)
Year ending December 31

Line No.	Offering Date (a)	Coupon Rate (b)	Maturity Date (c)	Principal Amount Offered (\$Millions) (d)	Premium Discount and Expenses (\$Millions) (e)	Net Capital Employed		Effective Cost Rate (h)	1/1/2018 Total Amount Outstanding at 12/31/2018 (\$Millions) (i)		1/1/2019 Total Amount Outstanding at 12/31/2019 (\$Millions) (j)		1/1/2019 Avg. Monthly Averages (\$Millions) (k)	Carrying Cost (\$Millions) (l)	Projected Average Embedded Cost Rates (m)
						Total Amount (\$Millions) (f)	Per \$100 Principal (Dollars) (g)		at 12/31/2018 (\$Millions) (i)	at 12/31/2019 (\$Millions) (j)					
1	3-Jun-00	7.350%	3-Jun-30	278.4	4.5	273.9	98.37	7.49%	278.4	278.4	278.4	20.8			
2	22-Jun-01	6.930%	1-Jun-32	109.3	1.3	107.9	98.78	7.03%	109.3	109.3	109.3	7.7			
3	17-Sep-02	6.930%	1-Jun-32	58.0	(2.1)	60.1	103.57	6.65%	58.0	58.0	58.0	3.9			
4	31-Jan-03	6.350%	31-Jan-34	126.0	1.0	125.0	99.21	6.41%	126.0	126.0	126.0	8.1			
5	22-Apr-03	6.590%	22-Apr-43	145.0	1.1	143.9	99.26	6.64%	145.0	145.0	145.0	9.6			
6	25-Jun-04	6.350%	31-Jan-34	72.0	(0.2)	72.2	100.22	6.33%	72.0	72.0	72.0	4.6			
7	20-Aug-04	6.590%	22-Apr-43	39.0	(3.1)	42.1	107.89	6.06%	39.0	39.0	39.0	2.4			
8	24-Aug-04	6.350%	31-Jan-34	39.0	(1.4)	40.4	103.48	6.09%	39.0	39.0	39.0	2.4			
9	19-May-05	5.360%	20-May-36	228.9	8.7	220.2	96.19	5.62%	228.9	228.9	228.9	12.9			
10	24-Apr-06	5.360%	20-May-36	187.5	2.5	185.0	98.68	5.45%	187.5	187.5	187.5	10.2			
11	19-Oct-06	5.000%	19-Oct-46	30.0	0.2	29.8	99.29	5.04%	30.0	30.0	30.0	1.5			
12	13-Mar-07	4.890%	13-Mar-37	240.0	1.3	238.7	99.45	4.93%	240.0	240.0	240.0	11.8			
13	3-Mar-09	6.030%	3-Mar-39	195.0	1.2	193.8	99.41	6.07%	195.0	195.0	195.0	11.8			
14	16-Jul-09	5.490%	16-Jul-40	210.0	1.4	208.6	99.36	5.53%	210.0	210.0	210.0	11.6			
15	15-Mar-10	5.490%	24-Jul-40	120.0	(0.7)	120.7	100.58	5.45%	120.0	120.0	120.0	6.5			
16	15-Mar-10	4.400%	4-Jun-20	180.0	0.8	179.2	99.55	4.46%	180.0	180.0	180.0	8.0			
17	13-Sep-10	5.000%	19-Oct-46	150.0	(0.4)	150.4	100.25	4.98%	150.0	150.0	150.0	7.5			
18	26-Sep-11	4.390%	26-Sep-41	205.0	1.3	203.7	99.35	4.43%	205.0	205.0	205.0	9.1			
19	22-Dec-11	4.000%	22-Dec-51	70.0	0.4	69.6	99.47	4.03%	70.0	70.0	70.0	2.8			
20	13-Jan-12	3.200%	13-Jan-22	154.0	0.8	153.2	99.47	3.26%	154.0	154.0	154.0	5.0			
21	22-May-12	3.200%	13-Jan-22	165.0	(1.6)	166.6	100.97	3.08%	165.0	165.0	165.0	5.1			
22	22-May-12	4.000%	22-Dec-51	68.8	0.3	68.4	99.51	4.02%	68.8	68.8	68.8	2.8			
23	31-Jul-12	3.790%	31-Jul-62	52.5	0.3	52.2	99.47	3.81%	52.5	52.5	52.5	2.0			
24	16-Aug-12	3.790%	31-Jul-62	141.0	1.1	139.9	99.20	3.83%	141.0	141.0	141.0	5.4			
25	9-Oct-13	4.590%	9-Oct-43	239.3	1.4	237.9	99.42	4.63%	239.3	239.3	239.3	11.1			
26	29-Jan-14	4.310%	29-Jan-64	30.0	0.2	29.8	99.44	4.34%	30.0	30.0	30.0	1.3			
27	3-Jun-14	4.190%	3-Jun-44	198.0	1.2	196.8	99.40	4.23%	198.0	198.0	198.0	8.4			
28	24-Feb-16	3.910%	24-Feb-46	175.0	1.1	173.9	99.36	3.95%	175.0	175.0	175.0	6.9			
29	24-Feb-16	2.770%	24-Feb-26	245.0	1.1	243.9	99.56	2.82%	245.0	245.0	245.0	6.9			
31	24-Feb-16	1.840%	24-Feb-21	250.0	0.9	249.1	99.63	1.92%	250.0	250.0	250.0	4.8			
32	18-Nov-16	3.720%	18-Nov-47	270.0	1.4	268.7	99.50	3.75%	270.0	270.0	270.0	10.1			
33	26-Jun-18	3.630%	25-Jun-49	468.0	2.4	465.6	99.48	3.66%	468.0	468.0	468.0	17.1			
34	26-Jun-18	2.970%	26-Jun-25	218.4	0.9	217.5	99.60	3.03%	218.4	218.4	218.4	6.6			
35	15-Mar-19	4.195%	15-Mar-49	426.2	2.1	424.1	99.50	4.22%	0.0	426.2	327.8	13.8			
36	15-Jun-19	3.814%	15-Jun-29	426.2	2.1	424.1	99.50	3.87%	0.0	426.2	229.5	8.9			
37	15-Sep-19	3.447%	15-Sep-24	426.2	2.1	424.1	99.50	3.56%	0.0	426.2	131.1	4.7			
38		Subtotal							5358.0	6636.5	6046.4	274.1			
39		Treasury OM&A costs										1.8			
40		Other financing-related fees										5.4			
41		Total							5358.0	6636.5	6046.4	281.4	4.65%		

Witness: Samir Chhelavda

HYDRO ONE NETWORKS INC.
TRANSMISSION
Cost of Long-Term Debt Capital
Test Year (2020)
Year ending December 31

Line No.	Offering Date (a)	Coupon Rate (b)	Maturity Date (c)	Principal Amount Offered (\$Millions) (d)	Premium Discount and Expenses (\$Millions) (e)	Net Capital Employed		Effective Cost Rate (h)	1/1/2019 Total Amount Outstanding at 12/31/2019 (\$Millions) (i)		1/1/2020 Total Amount Outstanding at 12/31/2020 (\$Millions) (j)		Avg. Monthly Averages (\$Millions) (k)	Carrying Cost (\$Millions) (l)	Projected Average Embedded Cost Rates (m)
						Total Amount (\$Millions) (f)	Per \$100 Principal (Dollars) (g)		12/31/2019 (\$Millions) (i)	12/31/2020 (\$Millions) (j)					
1	3-Jun-00	7.350%	3-Jun-30	278.4	4.5	273.9	98.37	7.49%	278.4	278.4	278.4	20.8			
2	22-Jun-01	6.930%	1-Jun-32	109.3	1.3	107.9	98.78	7.03%	109.3	109.3	109.3	7.7			
3	17-Sep-02	6.930%	1-Jun-32	58.0	(2.1)	60.1	103.57	6.65%	58.0	58.0	58.0	3.9			
4	31-Jan-03	6.350%	31-Jan-34	126.0	1.0	125.0	99.21	6.41%	126.0	126.0	126.0	8.1			
5	22-Apr-03	6.590%	22-Apr-43	145.0	1.1	143.9	99.26	6.64%	145.0	145.0	145.0	9.6			
6	25-Jun-04	6.350%	31-Jan-34	72.0	(0.2)	72.2	100.22	6.33%	72.0	72.0	72.0	4.6			
7	20-Aug-04	6.590%	22-Apr-43	39.0	(3.1)	42.1	107.89	6.06%	39.0	39.0	39.0	2.4			
8	24-Aug-04	6.350%	31-Jan-34	39.0	(1.4)	40.4	103.48	6.09%	39.0	39.0	39.0	2.4			
9	19-May-05	5.360%	20-May-36	228.9	8.7	220.2	96.19	5.62%	228.9	228.9	228.9	12.9			
10	24-Apr-06	5.360%	20-May-36	187.5	2.5	185.0	98.68	5.45%	187.5	187.5	187.5	10.2			
11	19-Oct-06	5.000%	19-Oct-46	30.0	0.2	29.8	99.29	5.04%	30.0	30.0	30.0	1.5			
12	13-Mar-07	4.890%	13-Mar-37	240.0	1.3	238.7	99.45	4.93%	240.0	240.0	240.0	11.8			
13	3-Mar-09	6.030%	3-Mar-39	195.0	1.2	193.8	99.41	6.07%	195.0	195.0	195.0	11.8			
14	16-Jul-09	5.490%	16-Jul-40	210.0	1.4	208.6	99.36	5.53%	210.0	210.0	210.0	11.6			
15	15-Mar-10	5.490%	24-Jul-40	120.0	(0.7)	120.7	100.58	5.45%	120.0	120.0	120.0	6.5			
16	15-Mar-10	4.400%	4-Jun-20	180.0	0.8	179.2	99.55	4.46%	180.0	0.0	83.1	3.7			
17	13-Sep-10	5.000%	19-Oct-46	150.0	(0.4)	150.4	100.25	4.98%	150.0	150.0	150.0	7.5			
18	26-Sep-11	4.390%	26-Sep-41	205.0	1.3	203.7	99.35	4.43%	205.0	205.0	205.0	9.1			
19	22-Dec-11	4.000%	22-Dec-51	70.0	0.4	69.6	99.47	4.03%	70.0	70.0	70.0	2.8			
20	13-Jan-12	3.200%	13-Jan-22	154.0	0.8	153.2	99.47	3.26%	154.0	154.0	154.0	5.0			
21	22-May-12	3.200%	13-Jan-22	165.0	(1.6)	166.6	100.97	3.08%	165.0	165.0	165.0	5.1			
22	22-May-12	4.000%	22-Dec-51	68.8	0.3	68.4	99.51	4.02%	68.8	68.8	68.8	2.8			
23	31-Jul-12	3.790%	31-Jul-62	52.5	0.3	52.2	99.47	3.81%	52.5	52.5	52.5	2.0			
24	16-Aug-12	3.790%	31-Jul-62	141.0	1.1	139.9	99.20	3.83%	141.0	141.0	141.0	5.4			
25	9-Oct-13	4.590%	9-Oct-43	239.3	1.4	237.9	99.42	4.63%	239.3	239.3	239.3	11.1			
26	29-Jan-14	4.310%	29-Jan-64	30.0	0.2	29.8	99.44	4.34%	30.0	30.0	30.0	1.3			
27	3-Jun-14	4.190%	3-Jun-44	198.0	1.2	196.8	99.40	4.23%	198.0	198.0	198.0	8.4			
28	24-Feb-16	3.910%	24-Feb-46	175.0	1.1	173.9	99.36	3.95%	175.0	175.0	175.0	6.9			
29	24-Feb-16	2.770%	24-Feb-26	245.0	1.1	243.9	99.56	2.82%	245.0	245.0	245.0	6.9			
30	24-Feb-16	1.840%	24-Feb-21	250.0	0.9	249.1	99.63	1.92%	250.0	250.0	250.0	4.8			
31	18-Nov-16	3.720%	18-Nov-47	270.0	1.4	268.7	99.50	3.75%	270.0	270.0	270.0	10.1			
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33	26-Jun-18	2.970%	26-Jun-25	218.4	0.9	217.5	99.60	3.03%	218.4	218.4	218.4	6.6			
34	15-Mar-19	4.195%	15-Mar-49	426.2	2.1	424.1	99.50	4.22%	426.2	426.2	426.2	18.0			
35	15-Jun-19	3.814%	15-Jun-29	426.2	2.1	424.1	99.50	3.87%	426.2	426.2	426.2	16.5			
36	15-Sep-19	3.447%	15-Sep-24	426.2	2.1	424.1	99.50	3.56%	426.2	426.2	426.2	15.2			
37	15-Mar-20	4.595%	15-Mar-50	165.0	0.8	164.2	99.50	4.63%	0.0	165.0	126.9	5.9			
38	15-Jun-20	4.214%	15-Jun-30	165.0	0.8	164.2	99.50	4.28%	0.0	165.0	88.9	3.8			
39	15-Sep-20	3.847%	15-Sep-25	165.0	0.8	164.2	99.50	3.96%	0.0	165.0	50.8	2.0			
40	Subtotal									6636.5	6951.6	6806.2	303.7		
41	Treasury OM&A costs												1.9		
42	Other financing-related fees												5.3		
43	Total									<u>6636.5</u>	<u>6951.6</u>	<u>6806.2</u>	<u>311.0</u>		<u>4.57%</u>