

REFERENCE:

Tab 4

PREAMBLE TO IR (IF ANY):

QUESTION:

- a) Please extend Figures 4.9, 4.10, 4.17, 4.18, 4.19, 4.20 to 20 year horizon instead of 10 years. Also please provide Figure 4.16 out to 20 years, if available.
- b) At page 19, line 20-21, Manitoba Hydro indicates that “The impact of varying interest rates is +/- \$170 million or 2% of the budget in-service cost” for Keeyask. Please confirm this relates to interest rate changes occurring during construction affecting capital costs via capitalized Interest During Construction. If not confirmed, please provide a full explanation.
- c) Re: Figure 4.14, Please indicate what other factors in Keeyask’s costs (if any) other than IDC are affected in the modelled scenario.

RATIONALE FOR QUESTION:

RESPONSE:

- a) Please see attached Figures which have been extended to 2035/36. The data to extend Figure 4.16 out 20 years is not available.
- b) Confirmed.
- c) The interest rate sensitivity shown in Figure 4.14 isolated the effects of only interest rate variation. No other factor or assumption was modified in the sensitivity.

Figure 4.9 Average Export Price

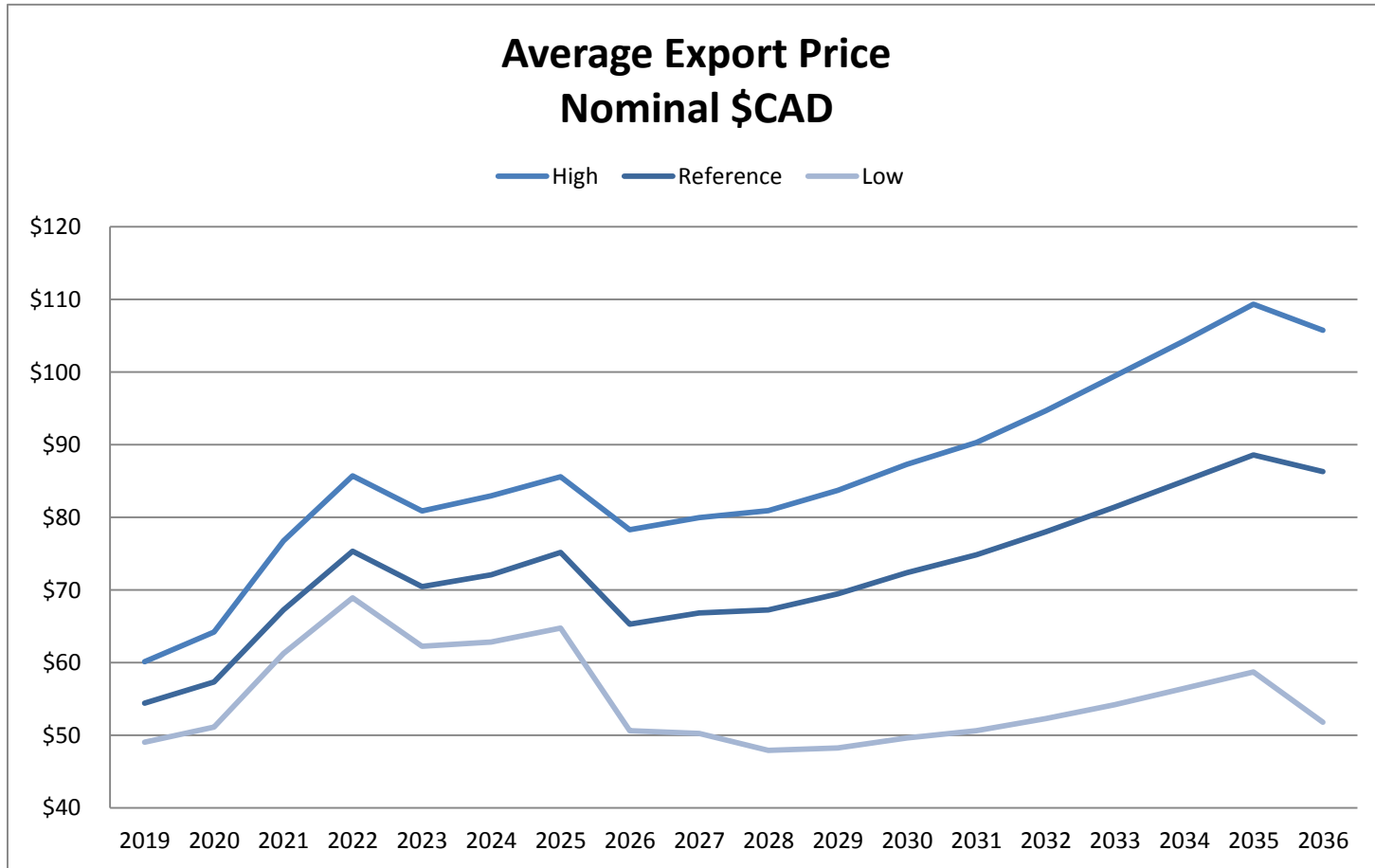


Figure 4.10 Net Export Revenue Variability

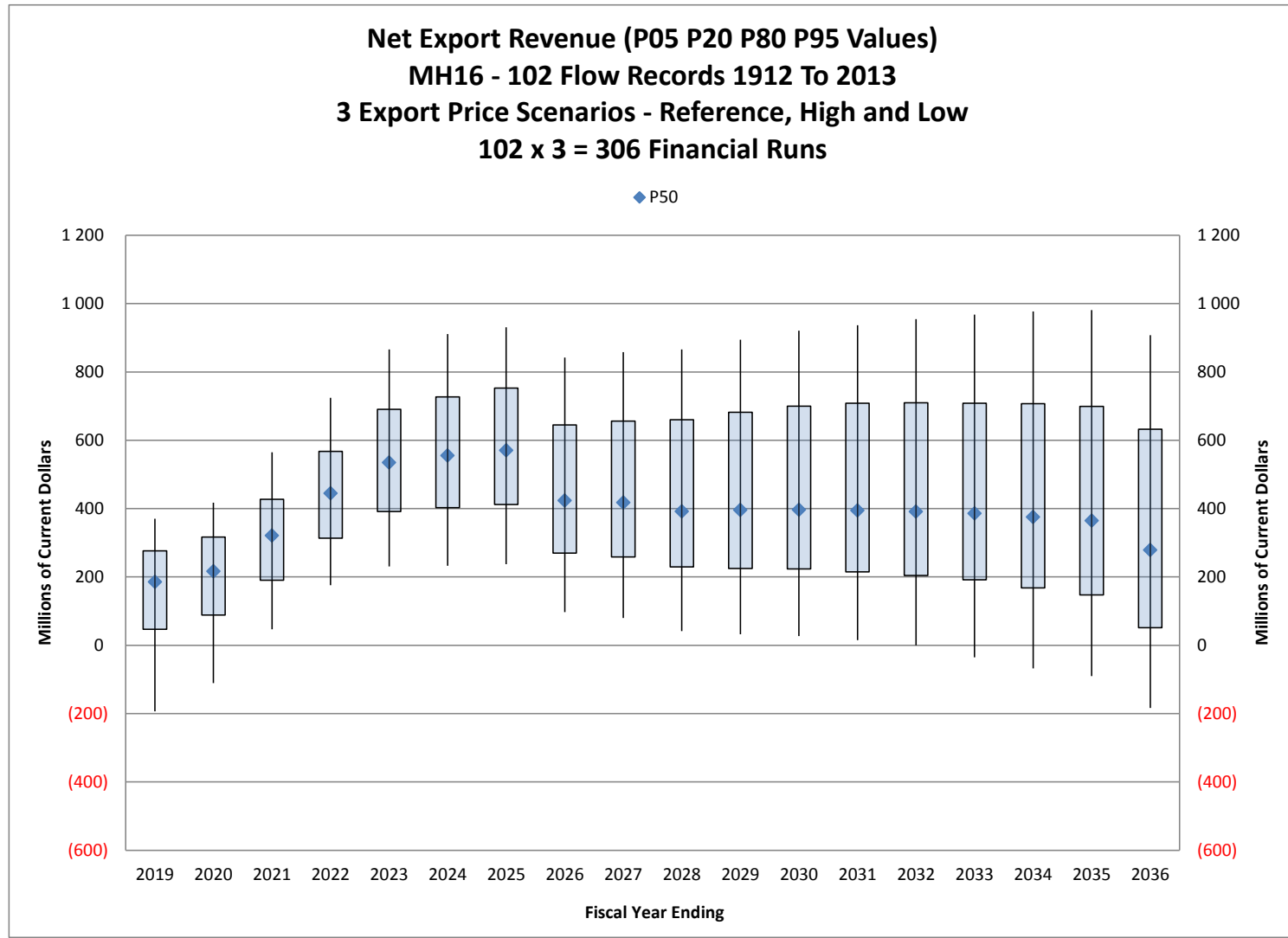


Figure 4.17 Comparison of Equity Ratio Variability

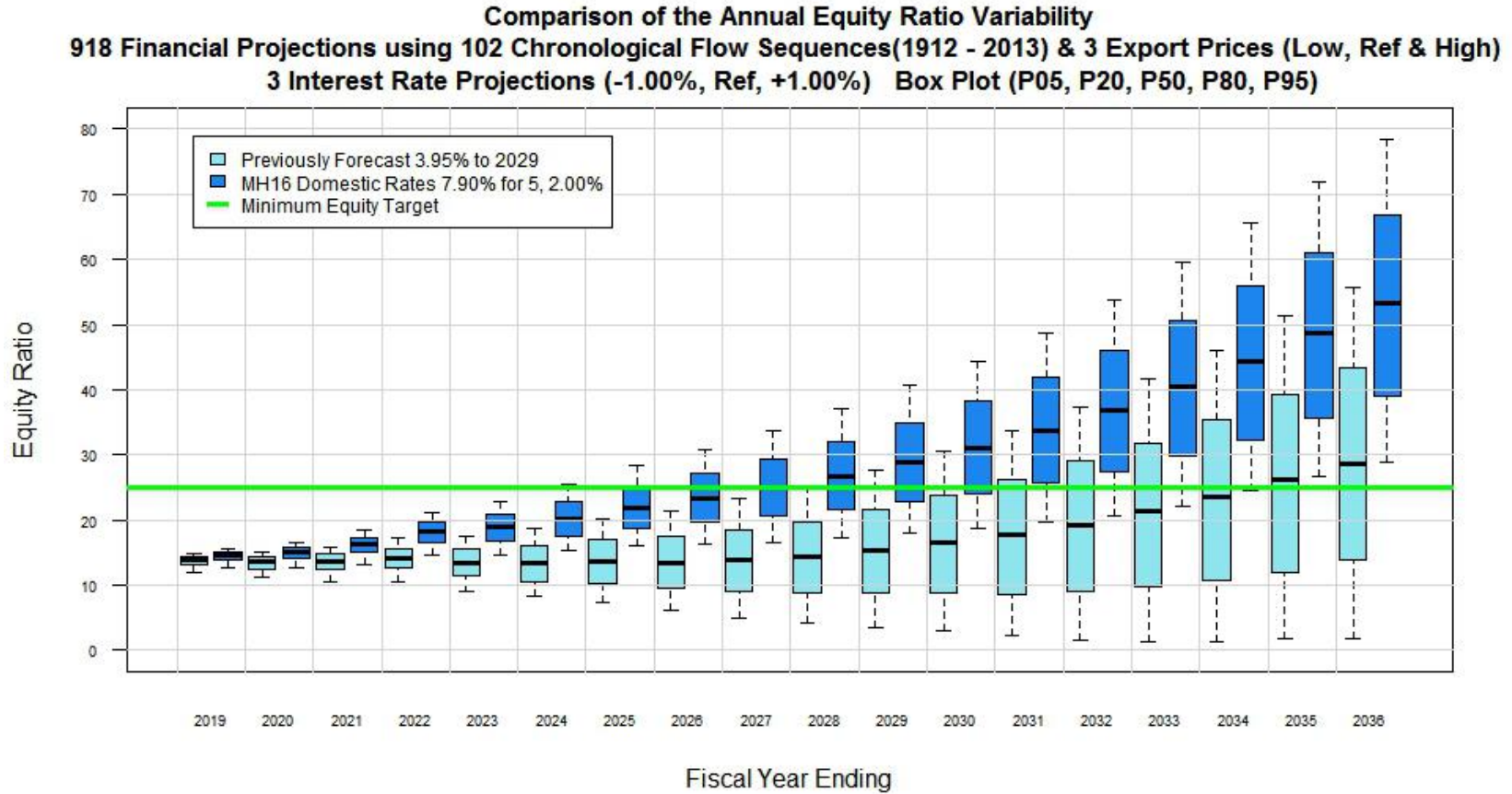


Figure 4.18 Comparison of Net Income Variability

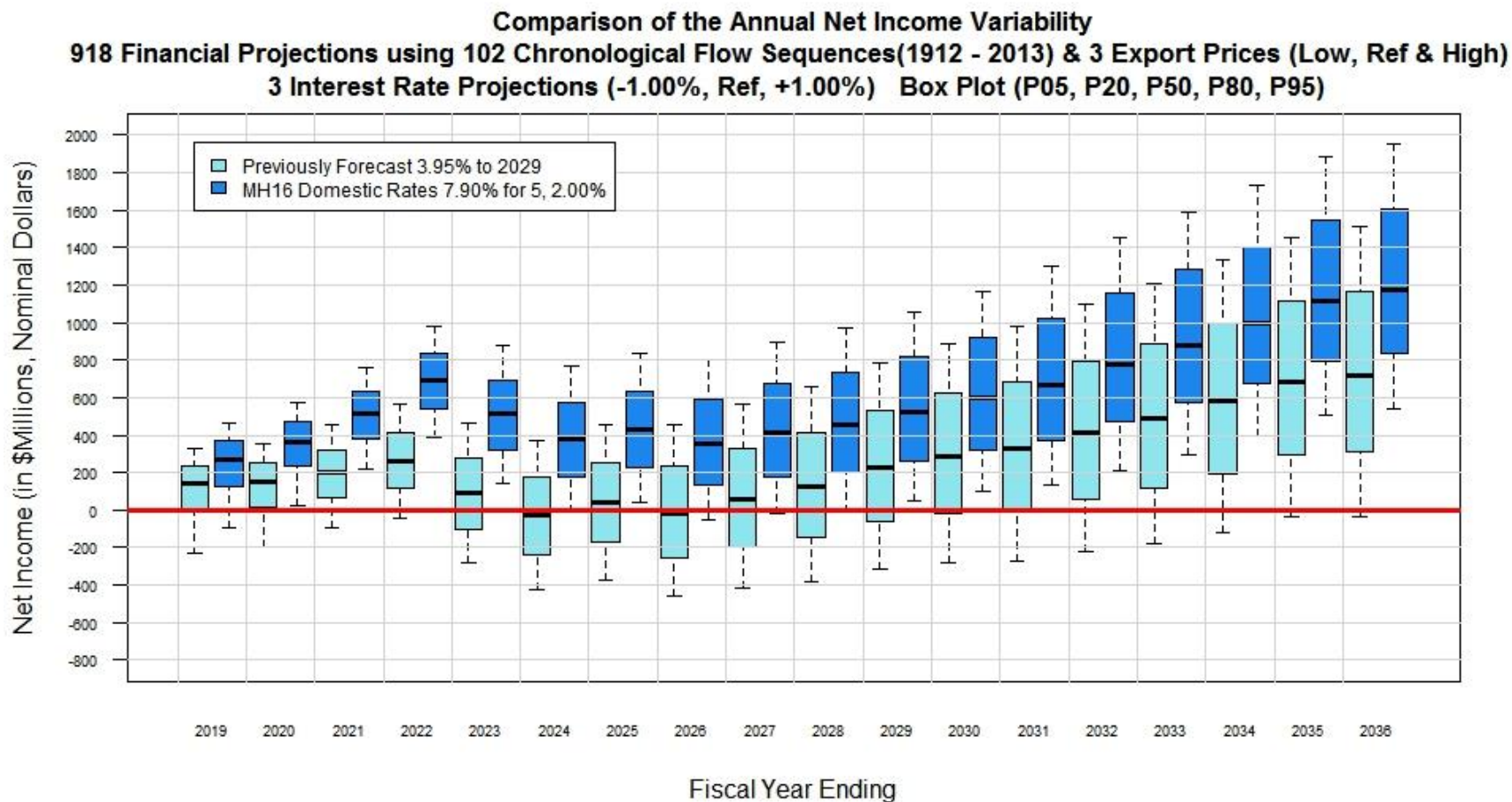


Figure 4.19 Comparison of Net Debt Variability

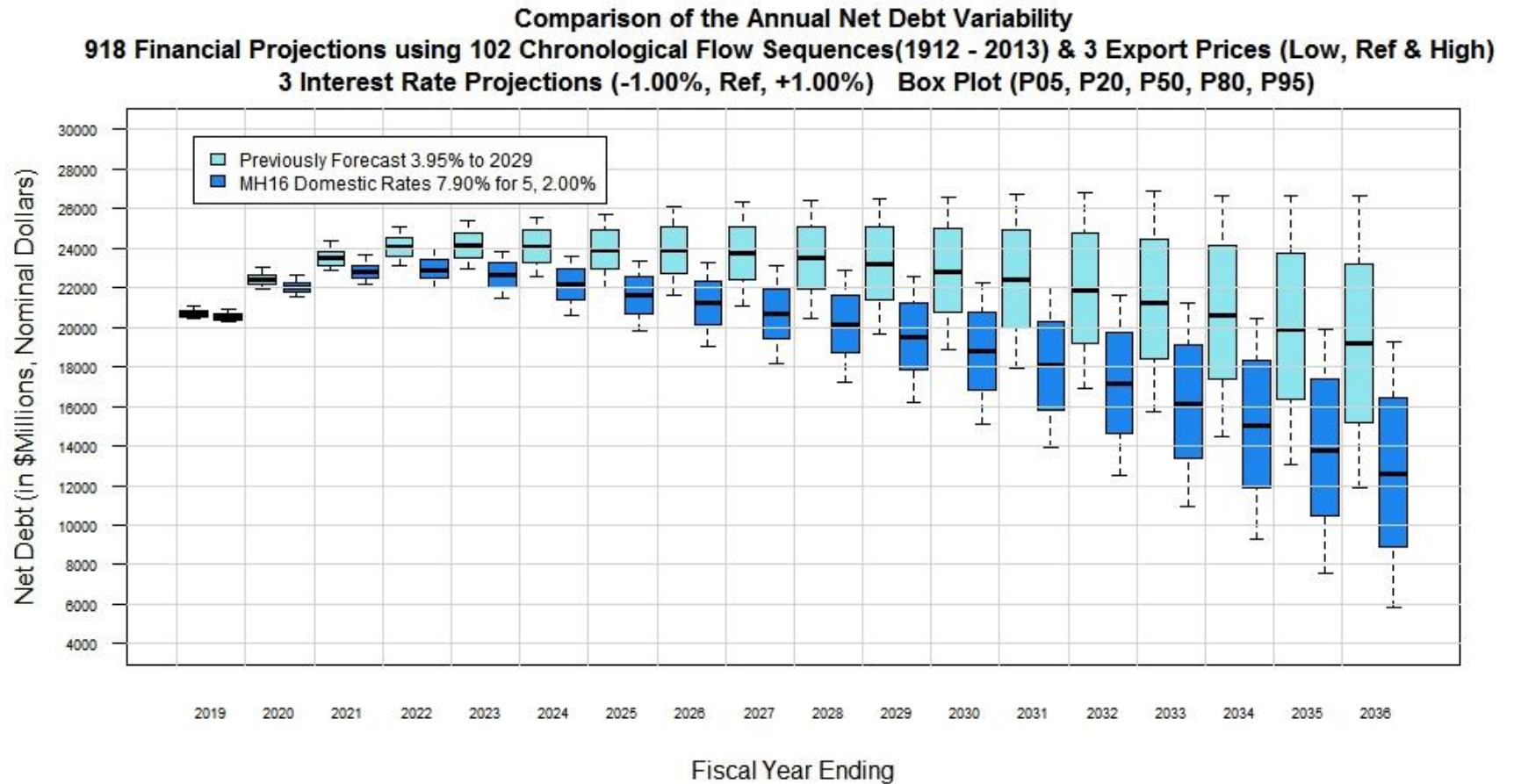
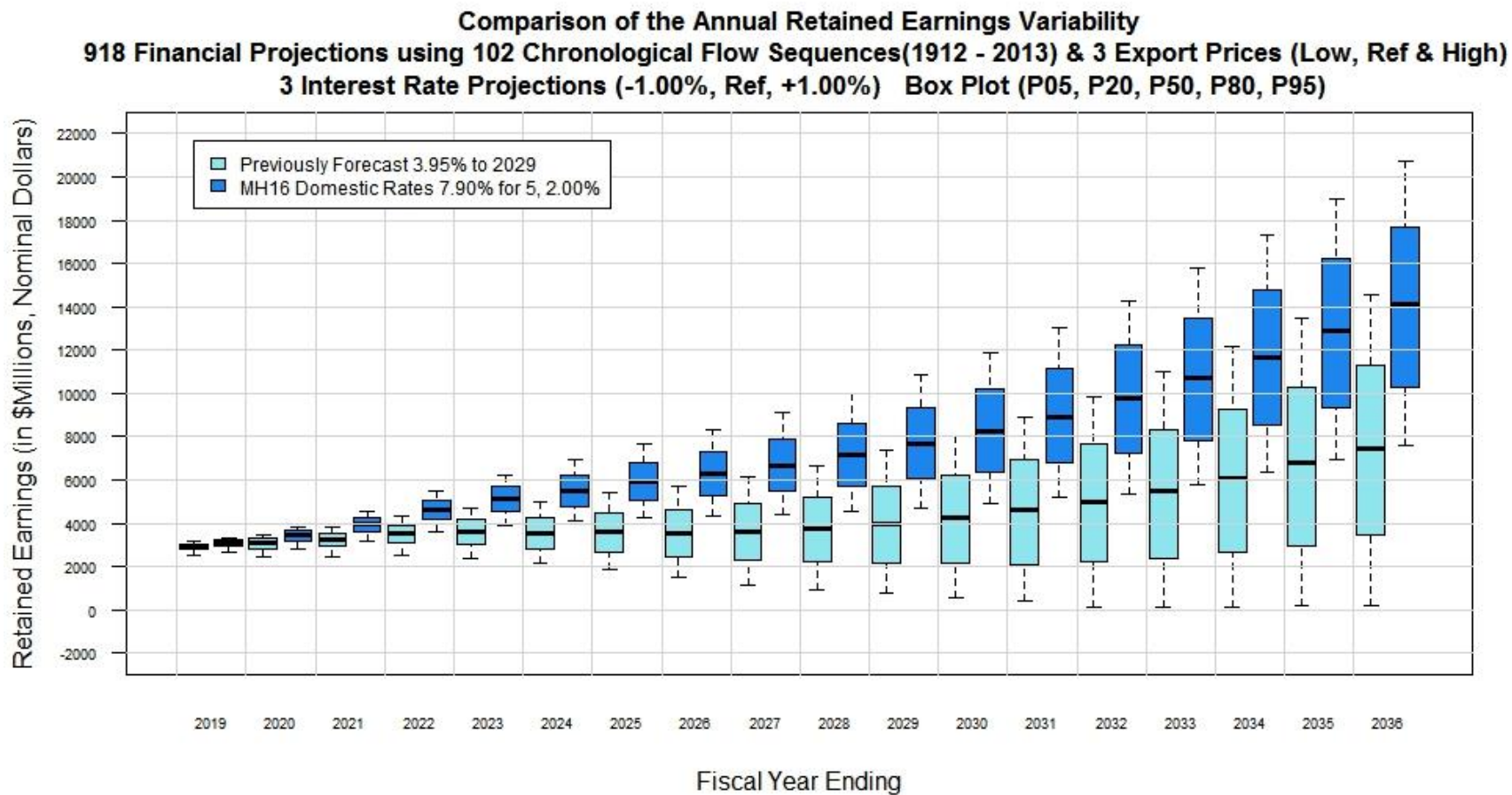


Figure 4.20 Comparison of Retained Earnings Variability



REFERENCE:

Tab 2, Page 29

PREAMBLE TO IR (IF ANY):

Manitoba Hydro notes that “In Manitoba Hydro’s view, a financial plan that returns the Corporation to a 25% equity level over almost 20 years is not credible as a commitment to being a self-supporting entity.”

The PUB, in the report on NFAT (page 28-19), noted as follows:

“Manitoba Hydro’s financial targets determine how rates are set. Targets include a self-imposed 75/25 debt-to-equity ratio. Manitoba Hydro’s financial forecasts are premised on rates being increased sufficiently to allow the debt-to-equity ratio to recover to the target level over a 20-year time period, followed by lesser rate increases thereafter. During the NFAT Review, Manitoba Hydro also provided alternate suggested rate methodologies that would increase rates more gradually, with the result of pushing back the date at which financial targets will fully recover.

A doubling of rates will have a significant effect on all ratepayers. This includes not just residential customers, but also commercial and industrial ratepayers, the latter of which are sensitive to price increases as it can affect their competitive position. The Panel supports a relaxation of Manitoba Hydro’s 75/25 debt-to-equity ratio to smooth out rate increases and the Panel concludes that Manitoba Hydro would still be left with sufficient retained earnings if the equity level was decreased.” (emphasis added).

QUESTION:

- a) Manitoba Hydro states at Tab 2 page 28 lines 8-10 that “In Manitoba Hydro’s view, a financial plan that returns the Corporation to a 25% equity level over almost 20 years is not credible as a commitment to being a self-supporting entity.” Please indicate whether Manitoba Hydro considers that the Preferred Development Plan and the PUB’s recommendations on that plan were established based on Hydro not being a self-

supporting entity? Please provide specific reference to materials in the NFAT filings and PUB report that indicate either party was indifferent to Hydro being a self-supporting entity.

- b) Referencing Manitoba Hydro's current view, per part (a) above, please indicate the analytical basis and timing for the change to Hydro's view from that filed at NFAT, namely that 20 years (or longer) to reattain 75:25 was acceptable.

RATIONALE FOR QUESTION:

RESPONSE:

Please see Manitoba Hydro's responses to Coalition/MH I-15 and Coalition/MH I-16.

REFERENCE:

Tab 2, Page 29

PREAMBLE TO IR (IF ANY):

Manitoba Hydro notes that “In Manitoba Hydro’s view, a financial plan that returns the Corporation to a 25% equity level over almost 20 years is not credible as a commitment to being a self-supporting entity.”

The PUB, in the report on NFAT (page 28-19), noted as follows:

“Manitoba Hydro’s financial targets determine how rates are set. Targets include a self-imposed 75/25 debt-to-equity ratio. Manitoba Hydro’s financial forecasts are premised on rates being increased sufficiently to allow the debt-to-equity ratio to recover to the target level over a 20-year time period, followed by lesser rate increases thereafter. During the NFAT Review, Manitoba Hydro also provided alternate suggested rate methodologies that would increase rates more gradually, with the result of pushing back the date at which financial targets will fully recover.

A doubling of rates will have a significant effect on all ratepayers. This includes not just residential customers, but also commercial and industrial ratepayers, the latter of which are sensitive to price increases as it can affect their competitive position. The Panel supports a relaxation of Manitoba Hydro’s 75/25 debt-to-equity ratio to smooth out rate increases and the Panel concludes that Manitoba Hydro would still be left with sufficient retained earnings if the equity level was decreased.” (emphasis added).

QUESTION:

- c) Please provide a calculation of CFO:Capex, by year, for the NFAT Preferred Development Plan that Manitoba Hydro recommended which MIPUG understands is Plan 14 Base Level DSM (MH Exhibit 104-12-4 starting at pdf page 1). Show all values underlying the calculation.

- d) If Manitoba Hydro does not agree that part (c) represents the best REF-REF-REF baseline scenario for what Hydro recommended at the final Preferred Development Plan in NFAT, please provide a reference for the scenario that MH sees as the best representation of the Preferred Development Plan, and also provide the CFO:Capex for that scenario. Show all values underlying the calculation.
- e) Please provide a calculation of CFO:Capex, by year, for the NFAT baseline scenario for what the PUB recommended in their NFAT Report (which MIPUG understands is best represented by Plan 5 DSM 2 - MH Exhibit 104-12-4 starting at pdf page 37). Show all values underlying the calculation.
- f) If Manitoba Hydro does not agree that part (e) represents the best REF-REF-REF baseline scenario for what the Board recommended in NFAT, please provide a reference for the scenario that MH sees as the best baseline and also provide the CFO:Capex for that scenario. Show all values underlying the calculation.

RATIONALE FOR QUESTION:

RESPONSE:

- c) Consistent with the CFO to Capex calculation as provided in PUB MFR 51 Updated, the CFO to Capex ratio for the NFAT Plan 14 Base Level DSM (MH Exhibit 104-12-4 starting at pdf page 1) can be found below.

It should be noted that the cash flows projected in these development plan scenarios are a reflection of the projected annual rate increases incorporated in the projected financial statements. For each of the development plans submitted in Manitoba Hydro's 2013 NFAT Application, the projected annual rate increases were determined mechanistically for the purposes of making fair and objective comparisons between the plans (NFAT Transcript page 2767).

It was noted at NFAT Transcript page 2768 that the mechanistic approach to rate setting could result in rate increases that were volatile and that "actual rate increases would vary from those [projected at NFAT], and will depend on many other factors...not just the choice of development plan [but also] due to changing water flows, weather and costs to maintain the system, and economic variables (NFAT Transcript page 2769).

Manitoba Hydro further noted at NFAT Transcript page 2776 that the annual rate increases projected for comparative purposes could be higher than even 3.95% in order to mitigate several years of financial losses. As a result, caution should be used in reliance on the cash flows provided below.

CASH FLOW FROM OPERATIONS TO CAPITAL EXPENDITURES
PDP (14) - BASE DSM MAIN SUBMISSION RATE METHODOLOGY
(Millions of Dollars)

For the year ended March 31

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Cash Receipts from Customers	1 692	1 819	1 861	1 919	2 039	2 170	2 274	2 413	2 796	3 013	3 153	3 283
Cash Paid to Suppliers and Employees	(782)	(810)	(857)	(904)	(940)	(983)	(1 013)	(1 042)	(1 126)	(1 163)	(1 191)	(1 220)
Interest Paid	(467)	(483)	(512)	(543)	(599)	(695)	(814)	(814)	(1 082)	(1 182)	(1 160)	(1 161)
Add Back Total CEF Capitalized Interest	(104)	(108)	(159)	(249)	(319)	(341)	(333)	(415)	(261)	(234)	(310)	(385)
Gross Interest	(571)	(592)	(671)	(792)	(918)	(1 036)	(1 146)	(1 229)	(1 343)	(1 416)	(1 470)	(1 546)
Deduct Capitalized Interest on Major Projects*	84	64	69	104	157	227	321	403	248	220	293	361
Interest Received	28	17	24	25	30	37	40	38	35	32	18	20
CASH FLOW FROM OPERATIONS (Restated)	451	499	427	353	367	414	476	583	609	686	802	898
Electric PP&E from Cash Flow Statement	1 311	1 955	2 280	2 197	2 154	2 139	2 075	2 143	1 726	1 927	1 804	1 804
Less: Capitalized Interest Included in PP&E Above	(104)	(108)	(159)	(249)	(319)	(341)	(333)	(415)	(261)	(234)	(310)	(385)
CEF Cash Flows including Deferrals	1 207	1 847	2 120	1 948	1 835	1 798	1 743	1 728	1 465	1 693	1 494	1 419
Deduct Major Projects Capex**	(417)	(912)	(1 342)	(1 346)	(1 327)	(1 348)	(1 254)	(1 301)	(981)	(1 125)	(866)	(778)
CAPITAL EXPENDITURES	791	934	778	602	507	449	489	426	484	568	627	641
CFO to CAPEX RATIO	0.57	0.53	0.55	0.59	0.72	0.92	0.97	1.37	1.26	1.21	1.28	1.40
Surplus Available to Retire Debt / (Deficiency)	(340)	(436)	(351)	(249)	(141)	(35)	(13)	156	125	118	175	256

* Includes Incremental Development Plan Capital excluding BP111

** Includes Incremental Development Plan Capital including BP111

CASH FLOW FROM OPERATIONS TO CAPITAL EXPENDITURES
PDP (14) - BASE DSM MAIN SUBMISSION RATE METHODOLOGY
(Millions of Dollars)

For the year ended March 31

	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
Cash Receipts from Customers	3 405	3 476	3 808	4 227	4 504	4 681	4 870	5 085	4 234	4 264	4 316	4 339
Cash Paid to Suppliers and Employees	(1 255)	(1 274)	(1 305)	(1 321)	(1 362)	(1 384)	(1 400)	(1 427)	(1 452)	(1 477)	(1 501)	(1 514)
Interest Paid	(1 162)	(1 141)	(1 268)	(1 551)	(1 761)	(1 737)	(1 758)	(1 666)	(1 635)	(1 617)	(1 601)	(1 593)
Add Back Total CEF Capitalized Interest	(458)	(545)	(501)	(259)	(65)	(80)	(35)	(27)	(38)	(36)	(11)	(15)
Gross Interest	(1 621)	(1 686)	(1 769)	(1 810)	(1 826)	(1 817)	(1 793)	(1 693)	(1 674)	(1 653)	(1 612)	(1 607)
Deduct Capitalized Interest on Major Projects*	430	518	467	223	5	-	-	-	-	-	-	-
Interest Received	29	34	44	61	79	88	101	81	100	74	67	67
CASH FLOW FROM OPERATIONS (Restated)	989	1 068	1 245	1 379	1 401	1 568	1 777	2 046	1 209	1 207	1 269	1 285
Electric PP&E from Cash Flow Statement	1 762	2 402	1 769	1 264	1 100	1 018	959	822	798	829	830	869
Less: Capitalized Interest Included in PP&E Above	(458)	(545)	(501)	(259)	(65)	(80)	(35)	(27)	(38)	(36)	(11)	(15)
CEF Cash Flows including Deferrals	1 304	1 857	1 268	1 005	1 035	937	924	795	759	793	819	854
Deduct Major Projects Capex**	(659)	(1 181)	(613)	(200)	1	-	-	-	-	-	-	-
CAPITAL EXPENDITURES	644	676	656	805	1 035	937	924	795	759	793	819	854
CFO to CAPEX RATIO	1.53	1.58	1.90	1.71	1.35	1.67	1.92	2.57	1.59	1.52	1.55	1.50
Surplus Available to Retire Debt / (Deficiency)	345	392	589	574	366	631	853	1 251	450	415	450	431

* Includes Incremental Development Plan Capital excluding BP III

** Includes Incremental Development Plan Capital including BP III

- d) Plan 14 Base Level DSM (MH Exhibit 104-12-4 starting at pdf page 1) represents the best REF-REF-REF baseline scenario for what Hydro submitted as the Preferred Development Plan in NFAT. It should be noted, however, over the NFAT process timeline, the capital costs of Keeyask and Conawapa increased and the forecasts for load and export prices deteriorated significantly, consequently impacting the economics of Conawapa. As a result, Manitoba Hydro's view of the Preferred Development Plan evolved over the NFAT process to protect Conawapa as an option with a future final decision date and supported the Plan 5 provided in part e) below. Manitoba Hydro, however, did not formally modify its application with respect to Conawapa.
- e) Consistent with the CFO to Capex calculation as provided in PUB MFR 51 Updated, the CFO to Capex ratio for the NFAT Plan 5 DSM 2 - MH Exhibit 104-12-4 starting at pdf page 37) can be found below.

Please also see the note in part c) above with respect to the rate increase assumptions underlying the cash flows below and reliance on them.

CASH FLOW FROM OPERATIONS TO CAPITAL EXPENDITURES
KEYYASK - GAS (5) - DSM LEVEL 2 MAIN SUBMISSION RATE METHODOLOGY
(Millions of Dollars)

For the year ended March 31

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Cash Receipts from Customers	1 692	1 819	1 854	1 906	2 017	2 142	2 240	2 368	2 735	2 938	3 060	3 172
Cash Paid to Suppliers and Employees	(782)	(810)	(857)	(904)	(939)	(980)	(1 005)	(1 027)	(1 104)	(1 133)	(1 154)	(1 174)
Interest Paid	(467)	(483)	(527)	(570)	(633)	(733)	(866)	(878)	(1 154)	(1 265)	(1 235)	(1 235)
Add Back Total CEF Capitalized Interest	(104)	(108)	(145)	(225)	(290)	(305)	(275)	(312)	(103)	(14)	(18)	(24)
Gross Interest	(571)	(592)	(672)	(795)	(923)	(1 037)	(1 141)	(1 189)	(1 257)	(1 278)	(1 253)	(1 258)
Deduct Capitalized Interest on Major Projects*	84	64	56	81	128	190	264	299	89	-	-	-
Interest Received	28	17	24	25	30	37	40	38	35	32	18	18
CASH FLOW FROM OPERATIONS (Restated)	451	498	405	313	312	352	397	489	498	558	671	758
Electric PP&E from Cash Flow Statement	1 311	1 964	2 279	2 189	2 132	2 050	1 547	1 190	1 019	673	672	692
Less: Capitalized Interest Included in PP&E Above	(104)	(108)	(145)	(225)	(290)	(305)	(275)	(312)	(103)	(14)	(18)	(24)
CEF Cash Flows including Deferrals	1 207	1 855	2 134	1 964	1 842	1 746	1 272	878	916	659	654	668
Deduct Major Projects Capex**	(417)	(912)	(1 314)	(1 313)	(1 239)	(1 239)	(721)	(405)	(397)	(65)	(0)	-
CAPITAL EXPENDITURES	791	943	820	651	603	507	551	474	520	594	654	668
CFO to CAPEX RATIO	0.57	0.53	0.49	0.48	0.52	0.69	0.72	1.03	0.96	0.94	1.03	1.13
Surplus Available to Retire Debt / (Deficiency)	(340)	(445)	(415)	(338)	(291)	(155)	(153)	15	(22)	(36)	17	90

* Includes Incremental Development Plan Capital excluding BP111

** Includes Incremental Development Plan Capital including BP111

CASH FLOW FROM OPERATIONS TO CAPITAL EXPENDITURES
KEYYASK - GAS (5) - DSM LEVEL 2 MAIN SUBMISSION RATE METHODOLOGY
(Millions of Dollars)

For the year ended March 31

	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
Cash Receipts from Customers	3 276	3 320	3 494	3 599	3 732	3 872	4 045	4 196	3 439	3 473	3 574	3 606
Cash Paid to Suppliers and Employees	(1 202)	(1 208)	(1 236)	(1 251)	(1 278)	(1 299)	(1 307)	(1 354)	(1 382)	(1 415)	(1 446)	(1 452)
Interest Paid	(1 242)	(1 244)	(1 224)	(1 231)	(1 209)	(1 174)	(1 198)	(1 125)	(1 111)	(1 111)	(1 146)	(1 163)
Add Back Total CEF Capitalized Interest	(28)	(27)	(34)	(37)	(60)	(83)	(46)	(29)	(38)	(36)	(11)	(15)
Gross Interest	(1 270)	(1 271)	(1 258)	(1 268)	(1 269)	(1 257)	(1 243)	(1 155)	(1 149)	(1 148)	(1 157)	(1 177)
Deduct Capitalized Interest on Major Projects*	-	-	-	-	0	3	10	2	-	-	-	-
Interest Received	27	30	40	53	66	69	77	51	64	67	70	68
CASH FLOW FROM OPERATIONS (Restated)	831	871	1 040	1 133	1 250	1 388	1 581	1 740	973	977	1 040	1 044
Electric PP&E from Cash Flow Statement	702	732	719	872	1 104	1 128	1 129	853	805	837	838	877
Less: Capitalized Interest Included in PP&E Above	(28)	(27)	(34)	(37)	(60)	(83)	(46)	(29)	(38)	(36)	(11)	(15)
CEF Cash Flows including Deferrals	673	705	685	836	1 044	1 044	1 083	824	767	800	827	863
Deduct Major Projects Capex**	-	-	-	-	(0)	(100)	(152)	(22)	-	-	-	-
CAPITAL EXPENDITURES	673	705	685	836	1 044	944	931	802	767	800	827	863
CFO to CAPEX RATIO	1.23	1.24	1.52	1.36	1.20	1.47	1.70	2.17	1.27	1.22	1.26	1.21
Surplus Available to Retire Debt / (Deficiency)	157	166	354	297	207	444	650	938	206	177	213	181

* Includes Incremental Development Plan Capital excluding BP111

** Includes Incremental Development Plan Capital including BP111

- f) The PUB did not specifically recommend one of Manitoba Hydro's development plans in its Need For And Alternatives To (NFAT) Review Final Report. However, based on a comparison of the PUB's recommendations with Manitoba Hydro's Plan 5 DSM 2 - MH Exhibit 104-12-4 (starting at pdf page 37), Plan 5 closely resembles the PUB's recommendations.

REFERENCE:

Tab 2, Page 30

PREAMBLE TO IR (IF ANY):

Manitoba Hydro notes that “In Manitoba Hydro’s view, a financial plan that returns the Corporation to a 25% equity level over almost 20 years is not credible as a commitment to being a self-supporting entity.”

The PUB, in the report on NFAT (page 28-19), noted as follows:

Manitoba Hydro’s financial targets determine how rates are set. Targets include a self-imposed 75/25 debt-to-equity ratio. Manitoba Hydro’s financial forecasts are premised on rates being increased sufficiently to allow the debt-to-equity ratio to recover to the target level over a 20-year time period, followed by lesser rate increases thereafter. During the NFAT Review, Manitoba Hydro also provided alternate suggested rate methodologies that would increase rates more gradually, with the result of pushing back the date at which financial targets will fully recover.

A doubling of rates will have a significant effect on all ratepayers. This includes not just residential customers, but also commercial and industrial ratepayers, the latter of which are sensitive to price increases as it can affect their competitive position. The Panel supports a relaxation of Manitoba Hydro’s 75/25 debt-to-equity ratio to smooth out rate increases and the Panel concludes that Manitoba Hydro would still be left with sufficient retained earnings if the equity level was decreased. (emphasis added).

QUESTION:

- g) Over the long-term (e.g., since 1980) please provide a list of the years where Manitoba Hydro’s total long-term debt (including current portion of long-term borrowings) decreased in absolute terms from year-to-year (i.e., was “paid down”) and show the values by year.

RATIONALE FOR QUESTION:**RESPONSE:**

The following table depicts the year to year changes in the total long term debt balance (in millions of dollars) from March 31, 1980 to March 31, 2017, with years where total long-term debt decreased highlighted.

Fiscal Year	LTD	Current Portion	Total LTD	Change
1980	2,404.4	48.6	2,453.0	
1981	2,439.8	67.2	2,507.0	54.0
1982	2,529.3	75.4	2,604.7	97.7
1983	2,608.0	172.8	2,780.8	176.1
1984	2,670.0	122.9	2,792.9	12.1
1985	2,553.7	210.5	2,764.2	(28.8)
1986	2,875.0	78.6	2,953.6	189.4
1987	3,027.3	153.1	3,180.4	226.8
1988	3,591.6	229.7	3,821.3	641.0
1989	3,746.2	314.3	4,060.5	239.2
1990	3,986.0	331.8	4,317.8	257.3
1991	4,341.7	314.6	4,656.3	338.5
1992	4,560.7	880.1	5,440.8	784.5
1993	4,809.3	162.1	4,971.4	(469.4)
1994	5,087.5	318.8	5,406.3	434.9
1995	4,938.6	96.5	5,035.1	(371.2)
1996	4,766.8	517.6	5,284.4	249.3
1997	4,246.6	928.2	5,174.8	(109.6)
1998	5,547.9	-	5,547.9	373.1
1999	5,883.0	-	5,883.0	335.1
2000	6,611.0	159.0	6,770.0	887.0
2001	6,968.0	496.0	7,464.0	694.0
2002	7,123.0	538.0	7,661.0	197.0
2003	6,925.0	343.0	7,268.0	(393.0)
2004	7,114.0	276.0	7,390.0	122.0
2005	7,048.0	156.0	7,204.0	(186.0)
2006	7,051.0	118.0	7,169.0	(35.0)
2007	6,822.0	405.0	7,227.0	58.0
2008	7,218.0	353.0	7,571.0	344.0
2009	7,668.0	519.0	8,187.0	616.0
2010	8,228.0	310.0	8,538.0	351.0
2011	8,617.0	30.0	8,647.0	109.0
2012	9,101.0	281.0	9,382.0	735.0
2013	9,329.0	656.0	9,985.0	603.0
2014	10,460.0	408.0	10,868.0	883.0
2015	12,303.0	377.0	12,680.0	1,812.0
2016	14,201.0	326.0	14,527.0	1,847.0
2017	16,102.0	336.0	16,438.0	1,911.0

*Utilizing restated data from annual reports where applicable

REFERENCE:

Tab 2, Page 31

PREAMBLE TO IR (IF ANY):

Manitoba Hydro notes that “In Manitoba Hydro’s view, a financial plan that returns the Corporation to a 25% equity level over almost 20 years is not credible as a commitment to being a self-supporting entity.”

The PUB, in the report on NFAT (page 28-19), noted as follows:

“Manitoba Hydro’s financial targets determine how rates are set. Targets include a self-imposed 75/25 debt-to-equity ratio. Manitoba Hydro’s financial forecasts are premised on rates being increased sufficiently to allow the debt-to-equity ratio to recover to the target level over a 20-year time period, followed by lesser rate increases thereafter. During the NFAT Review, Manitoba Hydro also provided alternate suggested rate methodologies that would increase rates more gradually, with the result of pushing back the date at which financial targets will fully recover.

A doubling of rates will have a significant effect on all ratepayers. This includes not just residential customers, but also commercial and industrial ratepayers, the latter of which are sensitive to price increases as it can affect their competitive position. The Panel supports a relaxation of Manitoba Hydro’s 75/25 debt-to-equity ratio to smooth out rate increases and the Panel concludes that Manitoba Hydro would still be left with sufficient retained earnings if the equity level was decreased.” (emphasis added).

QUESTION:

- h) Please provide a history of the changes to Manitoba Hydro’s financial targets, starting with the initial adoption of the three targets in the mid 1990s. Include all changes in metrics and definitions.
- i) Please confirm that the most recent proposed changes to the Interest Coverage Ratio (to use an EBITDA approach rather than a Net Income and EBIT focused approach) in

effect changes the target from a net income focus to a cash flow focus. Please confirm that this effectively means Hydro now has one balance sheet related target (debt:equity) and three cash flow targets cited in the GRA (Interest Coverage, Capital Coverage, CFO:Capex) and no targets based on the traditional Income Statement presentation (i.e., based on Net Income or earnings after depreciation, traditional Revenue Requirement measures, etc.).

- j) Please confirm that the Hydro Interest Coverage target (both the previously used EBITDA target and the new EBIT version) adjusts for Capitalized Interest (per PUB MFR-17).
- k) Please provide an update to Figure 3-1 from the KPMG report (Appendix 4.1) to add scenarios for IFF15, IFF16 and Updated MH16, retaining the 2034 end date.
- l) Please provide a 20 year scenario for the MH-16 (Updated) using the rate increases shown in Appendix 3.4 (the MH15 Projected Increases). Also please provide an update to PUB MFR-17 for this scenario.

RATIONALE FOR QUESTION:

RESPONSE:

- h) Figure 1 below provides a history of changes made to Manitoba Hydro's financial targets.

Figure 1:

Year	Consolidated Financial Target
1995	75:25 debt equity ratio by 2005/06, interest coverage ratio (EBIT) of 1.20 to 1.35 and fund all capital expenditures, except major new facilities, from internally generated funds
2001	Achieve 75:25 debt equity ratio by 2005/06, minimum interest coverage ratio (EBIT) of 1.20 and fund all capital expenditures, except major new facilities, from internally generated funds
2002	Achieve 75:25 debt equity ratio by 2011/12, minimum interest coverage ratio (EBIT) of 1.10 and fund all capital expenditures, except major new facilities, from internally generated funds
2005	Achieve 75:25 debt equity ratio by 2011/12, minimum interest coverage ratio (EBIT) of 1.20 and fund all capital expenditures, except major new facilities, from internally generated funds
2009	Maintain a minimum debt equity ratio of 75:25, minimum interest coverage ratio (EBIT) of 1.20 and maintain a capital coverage ratio of greater than 1.20, except major new facilities, from internally generated funds
2015	Achieve and maintain a minimum equity ratio of 25%, minimum interest coverage ratio (EBITDA) of 1.80 and maintain a capital coverage ratio of greater than 1.20, except major new facilities, from internally generated funds

Figure 2 below provides a history of the changes to Manitoba Hydro’s financial targets metrics and definitions, starting with the initial adoption of two targets in 1993. All ratios presented throughout the Application and Information Requests are consistent with the following.

Figure 2:

	Debt Ratio	Interest Coverage Ratio	Capital Coverage Ratio
1993 - 2003	Represents debt (long-term debt plus notes payable minus temporary investments) divided by debt plus retained earnings plus contributions in aid of construction	Represents net income (loss) plus interest on debt divided by interest on debt	
2004	No change	No change	MH adopts Capital Coverage Ratio as its 3 rd financial target. This target represents internally generated funds divided by capital expenditures net of expenditures for new generation and transmission
2005 - 2007	No change	No change	No change
2008	MH adopted CICA Section 3865 Hedges which transferred previously unrealized deferred U.S. foreign exchange gains on long-term debt in an effective cash flow hedge with future U.S. export revenues to Accumulated Other Comprehensive Income (AOCI). The debt ratio calculation had historically included deferred foreign exchange gains as a component of debt and continued to include AOCI as a component of debt.	No change	No change
2009	Changed from debt ratio to equity and removes AOCI from the equity ratio calculation. Equity ratio represents equity (retained earnings plus contributions in aid of construction) divided by equity plus debt (long-term debt plus notes payable minus temporary investments).	No change	No change
2010 – 2012	Changed from equity ratio to debt ratio and adds AOCI as a component of equity in the calculation, Debt ratio represents debt (long-term debt plus notes payable minus sinking fund investments and temporary investments) divided by debt plus equity plus contributions in aid of construction.	No change	No change

	Debt Ratio	Interest Coverage Ratio	Capital Coverage Ratio
2013 - 2015	Changed from debt ratio to equity ratio. No change in the calculation. Equity ratio represents equity (retained earnings plus accumulated other comprehensive income plus contributions in aid of construction plus non-controlling interest) divided by equity plus debt (long-term debt plus notes payable minus sinking fund investments and temporary investments).	No change	No change
2016 - 2017	MH adopted IFRS which requires experience gains or losses on pension assets and actuarial gains or losses on pension obligations be recognized in other comprehensive income (OCI) in the period which they occur. As such, these gains or losses are a component of equity in the calculation.	Changed interest coverage ratio to an "EBITDA" interest coverage ratio, Interest coverage represents earnings before finance expense and depreciation and amortization divided by finance expense.	No change

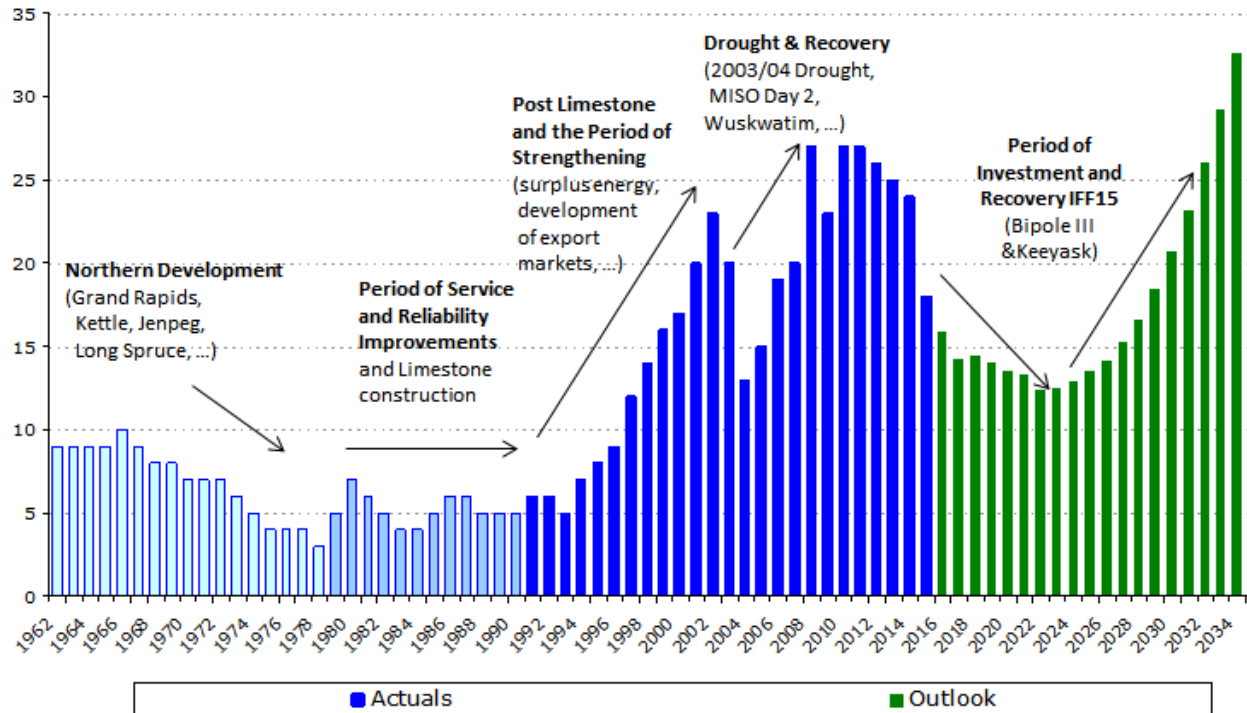
- i) Manitoba Hydro does not consider an EBITDA to interest coverage ratio to be a cash flow ratio in that it does not consider an important charge on cash flow which is the annual capital and deferred expenditures required to be funded in cash to support the ongoing operation of the business and the electricity network. Manitoba Hydro considers the EBITDA interest coverage ratio a solvency ratio and all of the underlying components of the ratio are contained within the income statement with the exception of capitalized interest which can be found, in the audited financial statements, in a note to Finance Expense on the income statement.

In December 2015, Manitoba Hydro formally adopted the EBITDA interest coverage ratio with a minimum target of 1.80 which in effect replaced the EBIT interest coverage ratio. The EBITDA interest coverage ratio is a better measure compared to the EBIT interest coverage ratio of how much cushion the Corporation has on a cash basis before it is necessary to borrow to make interest payments and sustaining capital expenditures, as well as allowing for better peer and credit rating comparisons. However, the EBITDA interest coverage ratio is not without limitations particularly as an electricity utility has less flexibility than other types of business to slow or delay capital expenditures that renew and protect core operations. An EBITDA to interest ratio may appear healthy but to the extent the cash flow remaining after all interest payments is not sufficient to fund necessary reinvestment in the system, a significant financial issue is still present

- j) Confirmed.
- k) Provided below is Figure 3-1 from the KPMG report (Appendix 4.1), updated to include MH15, MH16, and MH16 Update with Interim.

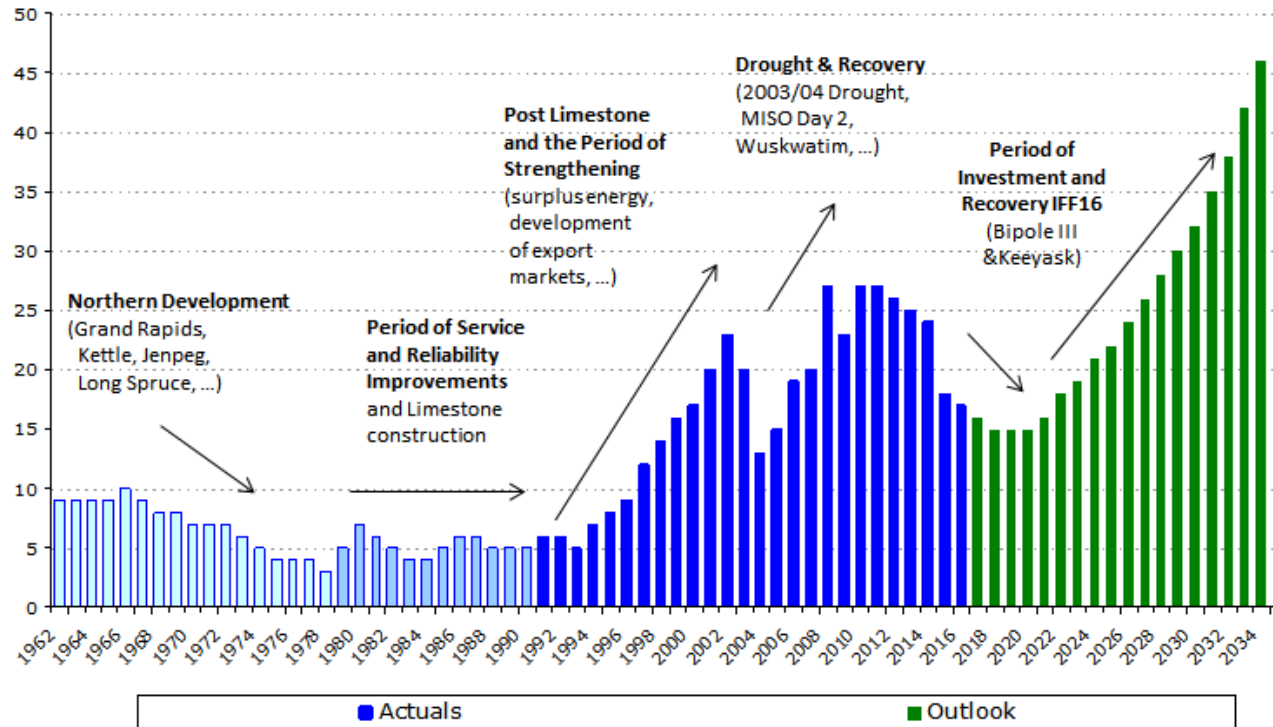
Manitoba Hydro's Equity Ratio

from 1962 – 2034 – Updated for IFF15



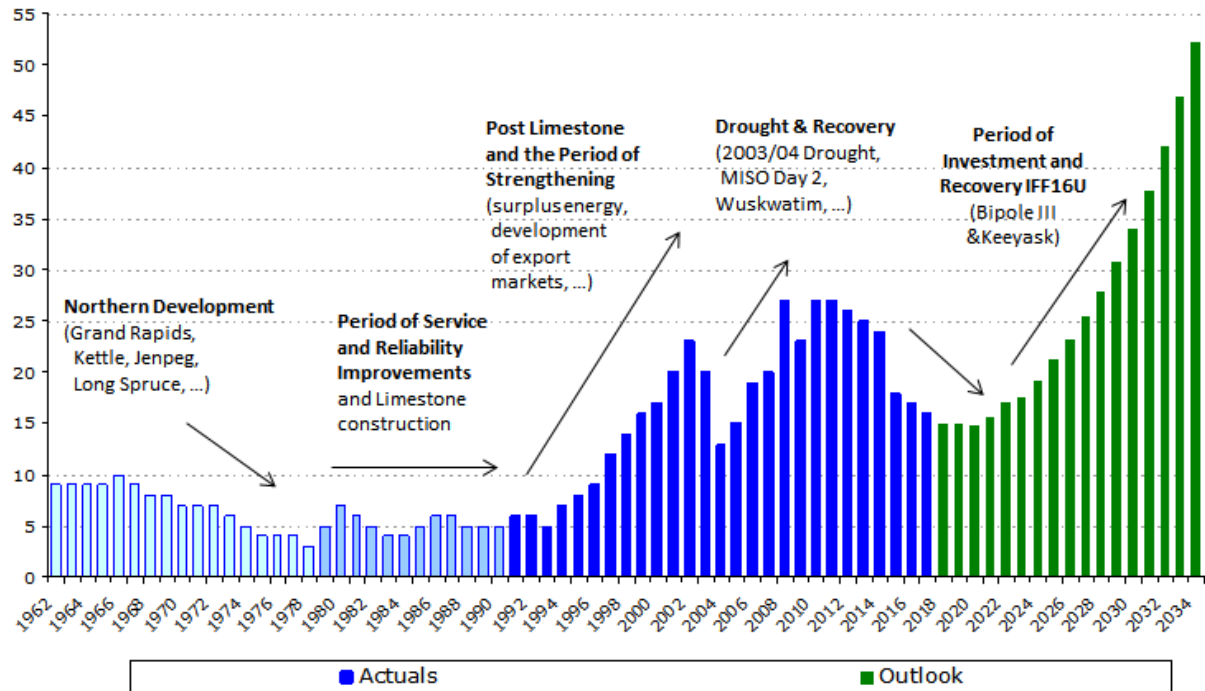
Manitoba Hydro's Equity Ratio

from 1962 – 2034 – Updated for IFF16



Manitoba Hydro's Equity Ratio

from 1962 – 2034 – Updated for IFF16 Update with Interim



- l) Please see Manitoba Hydro's response to PUB/MH I-34 Attachment 2, which provides an updated Appendix 3.4 reflecting the MH16 Update with the Interim rate increase followed by MH15 rate increases (3.95% 2019-2029, 2%).

The tables from PUB MFR 17 outlining details of the determination of each of the financial ratios have been updated below based on the MH16 Update with the Interim rate increase followed by MH15 rate increases (3.95% 2019-2029, 2%).

Figure 1. Debt Ratio Calculation

MH16 Update with Interim and MH15 Rate Increases

Debt Ratio
Electric
(\$ millions)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	(K-L+M-N) (E+H+J+K-L+M-N)
					(A-B-C-D)			(F-G)							
Fiscal Year Ended	Retained Earnings Consolidated	Retained Earnings Gas	Retained Earnings Subs	Adjustments and Eliminations	Retained Earnings	Unamortized Customer Contributions Consolidated	Unamortized Customer Contributions Gas	Unamortized Customer Contributions*	Accumulated Other Comprehensive Income	Non-Controlling Interest	Long-Term Debt	Sinking Fund Investment	Short-Term Debt	Short-Term Investments	Debt Ratio
2012	2 450	34	26		2 390	318	33	285	327	100	9 084	372	-	42	0.74
2013	2 542	42	32		2 468	340	33	307	299	95	9 690	352	-	24	0.75
2014	2 716	62	39		2 615	381	42	339	96	73	10 563	111	-	131	0.77
2015	2 779	66	48	6	2 659	457	42	415	(720)	120	12 375	114	-	482	0.83
2016	2 828	65	57	10	2 696	534	45	489	(776)	140	14 187	-	-	944	0.84
2017	2 899	69	69	12	2 749	651	45	606	(709)	170	16 078	-	-	634	0.85
2018					2 842			812	(699)	208	19 143	182	-	488	0.85
2019					2 990			835	(636)	257	21 705	400	-	498	0.86
2020					3 056			784	(580)	306	23 682	531	-	543	0.86
2021					3 181			727	(537)	346	24 760	501	-	542	0.86
2022					3 375			657	(497)	382	24 571	34	-	188	0.86
2023					3 368			587	(443)	87	24 948	98	-	292	0.87
2024					3 210			571	(351)	99	24 959	305	-	107	0.87
2025					3 106			582	(350)	102	24 939	225	-	167	0.88
2026					2 955			593	(349)	104	25 176	336	-	245	0.88
2027					2 879			603	(349)	108	24 990	356	-	57	0.88
2028					2 877			615	(349)	111	25 232	477	-	283	0.88
2029					2 992			624	(349)	107	25 165	694	-	199	0.88
2030					3 187			634	(349)	105	24 698	474	-	245	0.87
2031					3 418			644	(349)	103	24 295	224	-	400	0.86
2032					3 746			654	(349)	100	24 276	482	-	540	0.85
2033					4 143			665	(349)	99	23 629	520	-	342	0.83
2034					4 619			676	(349)	96	23 697	742	-	770	0.81
2035					5 189			687	(349)	94	23 514	1 004	-	938	0.79
2036					5 783			699	(349)	92	23 823	1 011	-	1 873	0.77

*Unamortized Customer Contributions includes a \$29M FMV adjustment for Centra Gas acquisition and an \$11M adjustment for intercompany contributions.

Figure 2. Long-Term Debt Calculation

MH16 Update with Interim and MH15 Rate Increases
Calculation of Long-Term Debt for input into Debt:Equity Ratio

	A	B	C (A-B)	D	E	F (D-E)	G (C+F)
Fiscal Year Ended	MHEB Long-Term Debt	Gas Long-Term Debt	Long-Term Debt*	MHEB Current Portion of Long-Term Debt	Gas Current Portion of Long-Term Debt	Current Portion of Long-Term Debt	Long-Term Debt
2012	9 101	235	8 866	281	63	218	9 084
2013	9 329	295	9 034	656	-	656	9 690
2014	10 460	270	10 190	408	35	373	10 563
2015	12 303	305	11 998	377	-	377	12 375
2016	14 201	340	13 861	326	-	326	14 187
2017	16 102	360	15 742	336	-	336	16 078
2018	18 541	400	18 141	1 002	-	1 002	19 143
2019	21 776	400	21 376	349	20	329	21 705
2020	22 809	420	22 389	1 293	-	1 293	23 682
2021	23 824	430	23 394	1 366	-	1 366	24 760
2022	23 890	440	23 450	1 141	20	1 121	24 571
2023	25 128	460	24 668	290	10	280	24 948
2024	25 007	460	24 547	412	-	412	24 959
2025	24 729	470	24 259	715	35	680	24 939
2026	24 483	485	23 998	1 178	-	1 178	25 176
2027	25 335	495	24 840	150	-	150	24 990
2028	25 677	505	25 172	60	-	60	25 232
2029	23 310	515	22 795	2 440	70	2 370	25 165
2030	20 827	525	20 302	4 396	-	4 396	24 698
2031	22 497	535	21 962	2 373	40	2 333	24 295
2032	22 471	545	21 926	2 390	40	2 350	24 276
2033	23 128	565	22 563	1 096	30	1 066	23 629
2034	22 855	575	22 280	1 487	70	1 417	23 697
2035	23 464	605	22 859	665	10	655	23 514
2036	23 968	625	23 343	540	60	480	23 823

*Long-Term Debt includes a \$17M FMV adjustment for Centra Gas acquisition.

Figure 3. EDITBA Interest Coverage Ratio Calculation

MH16 Update with Interim and MH15 Rate Increases
EBIDTA Interest Coverage
Electric
(\$ millions)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O			
	(A-B-C-D)				(F-G-H-I)											(K-L-M)		(E+J+N+O)/(J+O)
Fiscal Year Ended	Consolidated Net Income	Gas Net Income	Subs Net Income	Adjustments and Eliminations	Electric Net Income	Consolidated Net Finance Expense	Gas Finance Expense	Corporate Allocation	Subs Finance Expense	Electric Finance Expense*	Consolidated Depreciation Expense	Gas Depreciation Expense	Subs Depreciation Expense	Electric Depreciation Expense*	Electric Capitalized Interest	Electric EBITDA Interest Coverage		
2012	61	(6)	5		62	423	19	12		392					171	1.11		
2013	92	8	6		78	489	18	12		459					141	1.13		
2014	174	20	8		146	470	16	12		443					142	1.25		
2015	136	11	9	5	111	525	19	12	(2)	496	378	22	1	355	148	1.72		
2016	49	(1)	9	4	37	597	20	12	(1)	566	394	23	2	369	180	1.54		
2017	71	4	11	3	53	628	19	12	-	597	402	23	3	376	250	1.51		
2018					93					577				409	360	1.54		
2019					148					663				483	320	1.64		
2020					66					727				549	319	1.59		
2021					125					801				597	333	1.64		
2022					194					878				644	290	1.72		
2023					(6)					1 126				736	55	1.62		
2024					(158)					1 194				824	19	1.55		
2025					(105)					1 198				841	19	1.61		
2026					(151)					1 194				857	18	1.58		
2027					(76)					1 205				871	20	1.65		
2028					(2)					1 209				885	20	1.72		
2029					115					1 197				898	24	1.83		
2030					195					1 181				910	22	1.92		
2031					231					1 201				923	23	1.94		
2032					328					1 184				940	19	2.05		
2033					397					1 182				957	18	2.13		
2034					476					1 164				975	19	2.23		
2035					570					1 135				993	21	2.35		
2036					593					1 106				1 011	24	2.42		

*Presented gross of corporate allocation.

Figure 4. Capital Coverage Ratio Calculation

MH16 Update with Interim and MH15 Rate Increases
Capital Coverage Ratio
Excluding Major Generation
Electric
(\$ millions)

Fiscal Year Ended	A	B	C (A-B)	D	E	F (D-E)	C/F
	Consolidated Funds from Operations*	Gas Funds from Operations	Electric Funds from Operations	Consolidated Capital Expenditures**	Gas Capital Expenditures	Electric Capital Expenditures	Electric Capital Coverage
2012	567	49	518	503	31	472	1.10
2013	589	35	554	472	34	438	1.26
2014	691	29	662	511	35	476	1.39
2015	665	4	661	557	27	525	1.26
2016	791	75	716	579	40	534	1.34
2017	872	58	814	588	55	530	1.54
2018			734			526	1.40
2019			703			517	1.36
2020			621			516	1.20
2021			742			511	1.45
2022			850			499	1.70
2023			736			521	1.41
2024			722			544	1.33
2025			807			616	1.31
2026			773			640	1.21
2027			863			659	1.31
2028			959			671	1.43
2029			1080			697	1.55
2030			1166			688	1.70
2031			1221			727	1.68
2032			1339			734	1.82
2033			1425			748	1.90
2034			1529			760	2.01
2035			1637			835	1.96
2036			1675			852	1.97

*Includes subsidiary funds from operations.

**Includes gas meter compliance expenditures that are capitalized on consolidation.

REFERENCE:

Tab 2, Page 31

PREAMBLE TO IR (IF ANY):

Manitoba Hydro notes that “In Manitoba Hydro’s view, a financial plan that returns the Corporation to a 25% equity level over almost 20 years is not credible as a commitment to being a self-supporting entity.”

The PUB, in the report on NFAT (page 28-19), noted as follows:

“Manitoba Hydro’s financial targets determine how rates are set. Targets include a self-imposed 75/25 debt-to-equity ratio. Manitoba Hydro’s financial forecasts are premised on rates being increased sufficiently to allow the debt-to-equity ratio to recover to the target level over a 20-year time period, followed by lesser rate increases thereafter. During the NFAT Review, Manitoba Hydro also provided alternate suggested rate methodologies that would increase rates more gradually, with the result of pushing back the date at which financial targets will fully recover.

A doubling of rates will have a significant effect on all ratepayers. This includes not just residential customers, but also commercial and industrial ratepayers, the latter of which are sensitive to price increases as it can affect their competitive position. The Panel supports a relaxation of Manitoba Hydro’s 75/25 debt-to-equity ratio to smooth out rate increases and the Panel concludes that Manitoba Hydro would still be left with sufficient retained earnings if the equity level was decreased.” (emphasis added).

QUESTION:

m) Please confirm that the calculation of debt ratio per PUB MFR-17 effectively includes AOCI as a component of “equity”. Please discuss the reasonableness of this approach, given AOCI represents unrealized balances that have not yet met the test for recognition in net income, and once they meet this test they will be a component of calculating future retained earnings.

RATIONALE FOR QUESTION:

RESPONSE:

When calculating the debt ratio, Accumulated Other Comprehensive Income (AOCI) is effectively included as a component of equity. As noted in the response to Coalition/MH II-38a-c filed as part of the 2014/15 & 2015/16 General Rate Application, the objective of AOCI is to provide a transparent manner in which to report unrealized gains and losses on the balance sheet, and reflects the IFRS move towards fair value measurement at the balance sheet date. The inclusion of AOCI in the Debt-to-Equity ratio is reflective of this objective. The response also notes that rating agencies such as Moody's and S&P generally accept the inclusion of AOCI in the calculation of equity.

Further, page 61 of Appendix 4.1 – Financial Targets Review report prepared by KPMG, notes that “Of the Canadian utilities in the benchmarking group, all include Accumulated Other Comprehensive Income (“AOCI”) as part of their equity.”

While some components of AOCI may be recognized in the future through retained earnings when realized, this is not necessarily the case with all components and the inclusion of AOCI in equity properly reflects the fair value changes of balance sheet items that, while not currently included in current year income, are an essential part of equity. AOCI provides a manner to reflect events and items which are recognized as part of the balance sheet, but not realized through income. By virtue of their recognition criteria, these components are considered equity, though not realized through income.

REFERENCE:

Tab 2, Page 32

PREAMBLE TO IR (IF ANY):

Manitoba Hydro notes that “In Manitoba Hydro’s view, a financial plan that returns the Corporation to a 25% equity level over almost 20 years is not credible as a commitment to being a self-supporting entity.”

The PUB, in the report on NFAT (page 28-19), noted as follows:

Manitoba Hydro’s financial targets determine how rates are set. Targets include a self-imposed 75/25 debt-to-equity ratio. Manitoba Hydro’s financial forecasts are premised on rates being increased sufficiently to allow the debt-to-equity ratio to recover to the target level over a 20-year time period, followed by lesser rate increases thereafter. During the NFAT Review, Manitoba Hydro also provided alternate suggested rate methodologies that would increase rates more gradually, with the result of pushing back the date at which financial targets will fully recover.

A doubling of rates will have a significant effect on all ratepayers. This includes not just residential customers, but also commercial and industrial ratepayers, the latter of which are sensitive to price increases as it can affect their competitive position. The Panel supports a relaxation of Manitoba Hydro’s 75/25 debt-to-equity ratio to smooth out rate increases and the Panel concludes that Manitoba Hydro would still be left with sufficient retained earnings if the equity level was decreased. (emphasis added).

QUESTION:

n) Per Appendix 4.4, DBRS repeatedly reference at multiple places that debt ratio calculations are “Adjusted for other comprehensive income”. Please provide a full description of the calculations DBRS uses (and any calculations Manitoba Hydro provides DBRS) to implement this “adjustment”.

RATIONALE FOR QUESTION:

RESPONSE:

DBRS adjusts for other comprehensive income in their total debt in capital structure and return on equity ratios. It is Manitoba Hydro's understanding that DBRS utilizes data available in the Manitoba Hydro-Electric Board's Annual Report. Using fiscal year 2016 as an example, the ratios are calculated as follows:

Total Debt in Capital Structure

	<u>2016</u>
Long-term debt	14,201
Current portion of long-term debt	<u>326</u>
Adjusted total debt	14,527
Adjusted total debt	14,527
Equity attributable to Manitoba Hydro	2,052
Accumulated other comprehensive loss	776
Non-controlling interests	<u>140</u>
Adjusted total capital	17,495
Adjusted total debt	14,527
Adjusted total capital	<u>17,495</u>
Total Debt in Capital Structure	83%

Return on Equity

	<u>2016</u>
Opening:	
Equity attributable to Manitoba Hydro	2,059
Accumulated other comprehensive loss	720
Non-controlling interests	120
Adjusted opening equity	<u>2,899</u>
Ending:	
Equity attributable to Manitoba Hydro	2,052
Accumulated other comprehensive loss	776
Non-controlling interests	140
Adjusted ending equity	<u>2,968</u>
Opening adjusted equity	2,899
Ending adjusted equity	2,968
Adjusted average equity	<u>2,934</u>
Net income	39
Non-recurring item - Loss on disposal of PPE	6
Non-controlling interests	10
Net income before non-recurring items	<u>55</u>
Net income before non-recurring items	55
Adjusted average equity	2,934
Return on Equity	<u>1.9%</u>

REFERENCE:

Tab 2, Page 32

PREAMBLE TO IR (IF ANY):

Manitoba Hydro notes that “In Manitoba Hydro’s view, a financial plan that returns the Corporation to a 25% equity level over almost 20 years is not credible as a commitment to being a self-supporting entity.”

The PUB, in the report on NFAT (page 28-19), noted as follows:

Manitoba Hydro’s financial targets determine how rates are set. Targets include a self-imposed 75/25 debt-to-equity ratio. Manitoba Hydro’s financial forecasts are premised on rates being increased sufficiently to allow the debt-to-equity ratio to recover to the target level over a 20-year time period, followed by lesser rate increases thereafter. During the NFAT Review, Manitoba Hydro also provided alternate suggested rate methodologies that would increase rates more gradually, with the result of pushing back the date at which financial targets will fully recover.

A doubling of rates will have a significant effect on all ratepayers. This includes not just residential customers, but also commercial and industrial ratepayers, the latter of which are sensitive to price increases as it can affect their competitive position. The Panel supports a relaxation of Manitoba Hydro’s 75/25 debt-to-equity ratio to smooth out rate increases and the Panel concludes that Manitoba Hydro would still be left with sufficient retained earnings if the equity level was decreased. (emphasis added).

QUESTION:

- o) Per Manitoba Hydro’s 2016 Annual Report, AOCI as at March 31, 2015 changed from negative \$161 million, to negative \$720 million. Is the negative \$720 million AOCI as at March 31, 2015 entirely related to changed USD exchange rates on long-term debt that is unrealized and has an effective hedge against future USD export revenues? If not,

please indicate what other items are included and provide a quantification for March 31, 2015 and each year of Appendix 3.6.

RATIONALE FOR QUESTION:

RESPONSE:

The change in AOCI as at March 31, 2015 is entirely related to the accounting for employee pensions under IFRS. Under CGAAP, the corporation deferred and amortized actuarial gains and losses for the Manitoba Hydro Plan, Enhanced Hydro Benefit Plan and Centra Gas pension plans using the corridor method. The corridor approach has been eliminated under IAS 19 *Employee Benefits* requiring immediate recognition of experience gains or losses on the asset and actuarial gains and losses on the liability in Other Comprehensive Income in the period in which they occur. The adjustment of \$559 million reflects the cumulative adjustment (to March 31, 2015) to Other Comprehensive Income realized from the retrospective application of the elimination of the corridor method.

The following table provides a quantification of experience and actuarial gains and losses included in accumulated other comprehensive income to March 31, 2017. Experience and actuarial gains and losses are not forecasted. As such there are no forecast amounts available.

Accumulated Other Comprehensive Income (AOCI)

Experience/Actuarial Gains and Losses

	(\$ millions)
IFRS opening balance adjustments, April 1, 2014	(432)
Net experience/actuarial loss on pension, March 31, 2015	(127)
Net experience/actuarial loss on pension, March 31, 2016	(8)
Net experience/actuarial gain on pension, March 31, 2017	<u>94</u>
AOCI balance, relating to experience/actuarial gains and losses	<u>(473)</u>

REFERENCE:

Tab 2, Page 32

PREAMBLE TO IR (IF ANY):

Manitoba Hydro notes that “In Manitoba Hydro’s view, a financial plan that returns the Corporation to a 25% equity level over almost 20 years is not credible as a commitment to being a self-supporting entity.”

The PUB, in the report on NFAT (page 28-19), noted as follows:

Manitoba Hydro’s financial targets determine how rates are set. Targets include a self-imposed 75/25 debt-to-equity ratio. Manitoba Hydro’s financial forecasts are premised on rates being increased sufficiently to allow the debt-to-equity ratio to recover to the target level over a 20-year time period, followed by lesser rate increases thereafter. During the NFAT Review, Manitoba Hydro also provided alternate suggested rate methodologies that would increase rates more gradually, with the result of pushing back the date at which financial targets will fully recover.

A doubling of rates will have a significant effect on all ratepayers. This includes not just residential customers, but also commercial and industrial ratepayers, the latter of which are sensitive to price increases as it can affect their competitive position. The Panel supports a relaxation of Manitoba Hydro’s 75/25 debt-to-equity ratio to smooth out rate increases and the Panel concludes that Manitoba Hydro would still be left with sufficient retained earnings if the equity level was decreased. (emphasis added).

QUESTION:

- p) KPMG, at Appendix 4.1, notes the following: “Manitoba Hydro would be deemed to be no longer self-supporting once it reaches a position of near zero retained earnings and rates have increased in real terms such that Manitoba can no longer be considered a cost-competitive jurisdiction with respect to electricity rates.” (page 7, emphasis in original). Please compare and contrast this definition of “self supporting” with

Manitoba Hydro's use of the term at Tab 2 page 28, lines 8-10. Does Manitoba Hydro disagree with KPMG's definition?

RATIONALE FOR QUESTION:**RESPONSE:**

Please see Manitoba Hydro's response to PUB/MH I-61.

REFERENCE:

Tab 2, Page 33

PREAMBLE TO IR (IF ANY):

Manitoba Hydro notes that “In Manitoba Hydro’s view, a financial plan that returns the Corporation to a 25% equity level over almost 20 years is not credible as a commitment to being a self-supporting entity.”

The PUB, in the report on NFAT (page 28-19), noted as follows:

Manitoba Hydro’s financial targets determine how rates are set. Targets include a self-imposed 75/25 debt-to-equity ratio. Manitoba Hydro’s financial forecasts are premised on rates being increased sufficiently to allow the debt-to-equity ratio to recover to the target level over a 20-year time period, followed by lesser rate increases thereafter. During the NFAT Review, Manitoba Hydro also provided alternate suggested rate methodologies that would increase rates more gradually, with the result of pushing back the date at which financial targets will fully recover.

A doubling of rates will have a significant effect on all ratepayers. This includes not just residential customers, but also commercial and industrial ratepayers, the latter of which are sensitive to price increases as it can affect their competitive position. The Panel supports a relaxation of Manitoba Hydro’s 75/25 debt-to-equity ratio to smooth out rate increases and the Panel concludes that Manitoba Hydro would still be left with sufficient retained earnings if the equity level was decreased. (emphasis added).

QUESTION:

q) Please indicate whether, and how, the Minister’s request to Hydro that: “...the Manitoba Hydro-Electric Board review its current 75/25 debt-to-equity ratio target with the aim of moderating rates for consumers while ensuring strong financial health for the corporation including maintaining sufficient retained earnings” (MH Exhibit 45 from the

2015 GRA) was relayed to KPMG and taken into account in KPMG's scope and findings in Appendix 4.1 (if at all).

RATIONALE FOR QUESTION:

RESPONSE:

The Minister's request to Hydro that "...the Manitoba Hydro-Electric Board review its current 75/25 debt-to-equity ratio target with the aim of moderating rates for consumers while ensuring strong financial health for the corporation including maintaining sufficient retained earnings" was relayed to KPMG along with other information relevant to the review.

KPMG took into account the Minister's request to Hydro in the development of its recommendations.

In December 2014, Manitoba Hydro retained KPMG to undertake a review of its financial targets and outlined its objectives:

- Provide recommendations with respect to appropriate financial targets for Manitoba Hydro that align with the mandate of Manitoba Hydro and the interests of its stakeholders considering its operating and business outlook and associated risks.
- The financial target recommendations should consider at a minimum the following:
 - o The objective of maintaining rate stability for customers while at the same time maintaining safe and reliable service.
 - o The period of significant capital investment and infrastructure renewal that Manitoba Hydro is entering into.
 - o The maintenance of Manitoba Hydro's self-supporting status for credit rating purposes.
- Conduct scenario analysis to help address PUB's directive to Manitoba Hydro to review key operating and financial risks in order to assess the adequacy of financial reserves.

The scope of the work did not extend to reviewing broader policy questions associated with Manitoba Hydro's overall structure, governance framework, and business strategy. The

objective was to identify appropriate targets in light of Manitoba Hydro's current structure and plans.

Maintaining a healthy debt/equity ratio and minimizing deviations from its target value are important strategies for moderating rate impacts on consumers over the longer term. Manitoba Hydro is dependent upon retained earnings for equity; therefore positive cash flow and net income for a sustained period will be critical to generating equity and getting back to its target. Strong financial health for Manitoba Hydro minimizes the risk that rates will need to be increased rapidly in the event that Manitoba Hydro experiences a major drought event or experiences other financial set-backs. A reasonable equity ratio is also an important strategy for ensuring that interest rates paid by both Manitoba Hydro and its shareholder, the Manitoba government, remain at low levels. Increases in interest rates paid would have an adverse effect on Manitoba Hydro's ability to fund new capital investment in a cost-effective manner and would negatively impact consumers in the longer term. In parallel, because of the credit linkage between Manitoba Hydro and the Government of Manitoba, increases in interest rates will also affect Provincial borrowing costs. Accordingly, the debt/equity ratio of Manitoba Hydro has implications for costs borne by provincial taxpayers.

Manitoba Hydro notes with concern the fact that Standard and Poor's, in a 2016 ratings report, has already indicated that it no longer considers Manitoba Hydro's debt to be self-supporting. Moody's and DBRS have also expressed concerns about increasing debt levels.

REFERENCE:

Tab 4, Pages 7-26

PREAMBLE TO IR (IF ANY):

QUESTION:

- a) The 2015 Financial Target Review (Appendix 4.2) notes at page 4 that the scenarios for uncertainty analysis were given “equal probabilistic weighting” to determine the P95, P80, etc. values. Is this also the approach used in the updated uncertainty analysis in Tab 4?
- b) In the NFAT filings, three scenario levels were used for the 3 major variables, but the reference case was given a higher weighting than the low and high probabilities (50-55%, per NFAT Chapter 10, Figure 10.4, with low and high varying between 15% and 35%). Why was a similar approach not adopted for the Tab 4 uncertainty analysis instead of the equal weighting approach?
- c) Please produce a set of Tab 4 uncertainty figures for 4.17, 4.18, 4.19, and 4.20 for 20 year scenarios where the reference case is weighted 50% and the high and low cases are each weighted 25% for export prices. Ensure the response is clear as to which underlying IFF baseline was used (IFF16 versus MH16 Updated).
- d) Please provide Figure 4.10 based on IFF15.
- e) Please provide a version of Figure 4.13 based on 20 year average term to maturity. If the values are materially different between IFF16 and MH16 Updated, please also provide both figures for MH16 Updated.

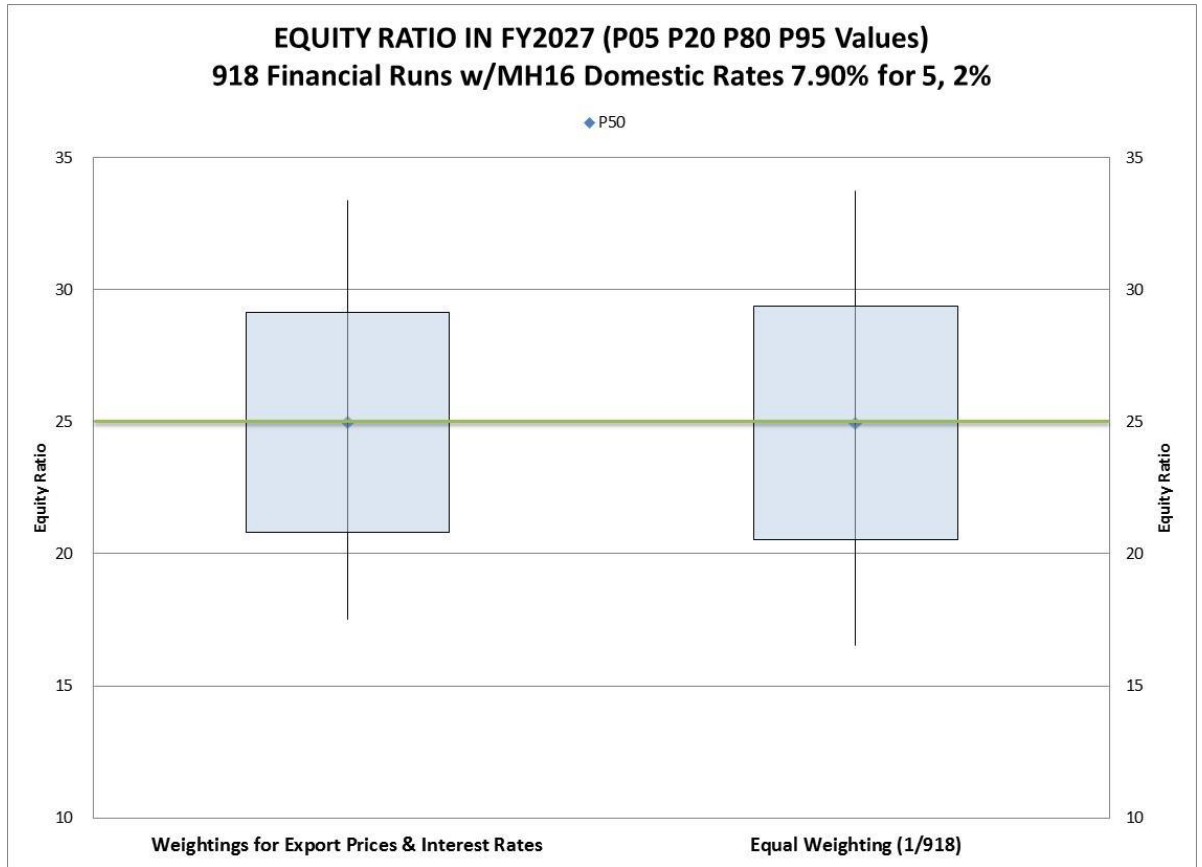
RATIONALE FOR QUESTION:

RESPONSE:

- a) Confirmed. Each of the 918 discrete financial projections included in the uncertainty analysis in Tab 4 were given an equal probabilistic weighting (Tab 4, page 21, lines 18-20), which is the same approach used in the 2015 Financial Target Review.

- b) For the NFAT, Manitoba Hydro engaged a consultant to assist with the development of the probabilities that were assigned to the reference, high and low forecasts used in that uncertainty analysis. The approach used for the NFAT is outlined in *Appendix 9.3 Economic Evaluation Documentation* of Manitoba Hydro's submission to the Public Utilities Board and was based on the estimates and views of the future at that time. For this forecast, Manitoba Hydro did not engage an external consultant to assist with estimating probabilities associated with the reference, high and low forecasts. In the time since NFAT, a similar or comparable approach would need to have been undertaken for the MH16 uncertainty analysis and would likely have produced different weightings. In the absence of such weightings, Manitoba Hydro assumed equal weightings to avoid introducing any subjectivity or bias.

The following figure compares the equity ratio variability in fiscal year 2027 using the equal weightings (1/918) presented in Tab 4 and the above mentioned probabilities for reference, high and low export prices and interest rates. The figure below demonstrates that the specific weightings outlined above do not materially impact the projected risk profile of the Corporation.



c) The following figures assume the reference case is weighted 50% and the high and low cases are each weighted 25% for both export prices and interest rates. The water flow cases continue to have an equal weighting of 0.98% (1/102). For example, the probability assigned to a discrete financial projection under reference export prices and either high or low interest rates would be calculated as follows: $50\% \times 25\% \times 0.98\% = 0.12\%$. The probability for the same discrete financial projection found in Tab 4 is 0.11%.

Figure 4.17 Equity Ratio with Export & Interest Rate Probabilities (50%/25%/25%)

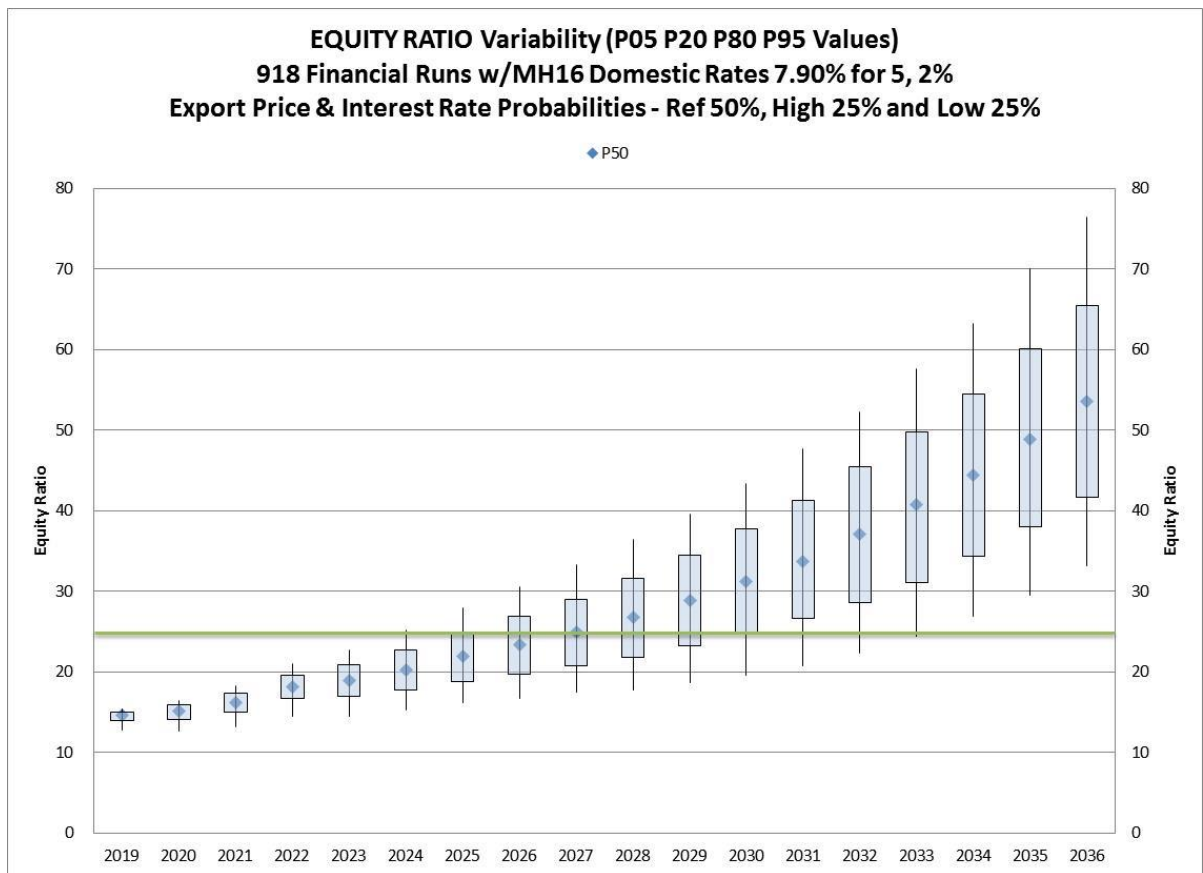


Figure 4.18 Net Income with Export & Interest Rate Probabilities (50%/25%/25%)

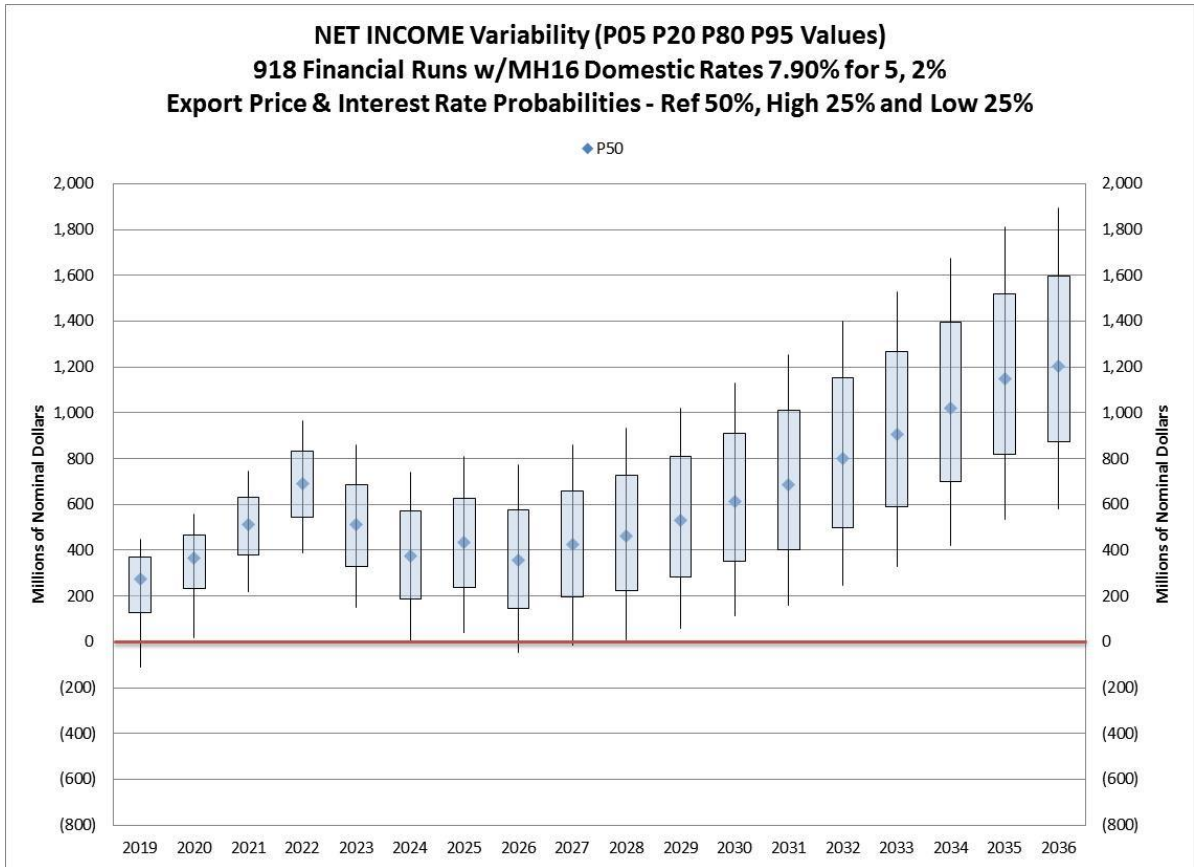


Figure 4.19 with Export & Interest Rate Probabilities (50%/25%/25%)

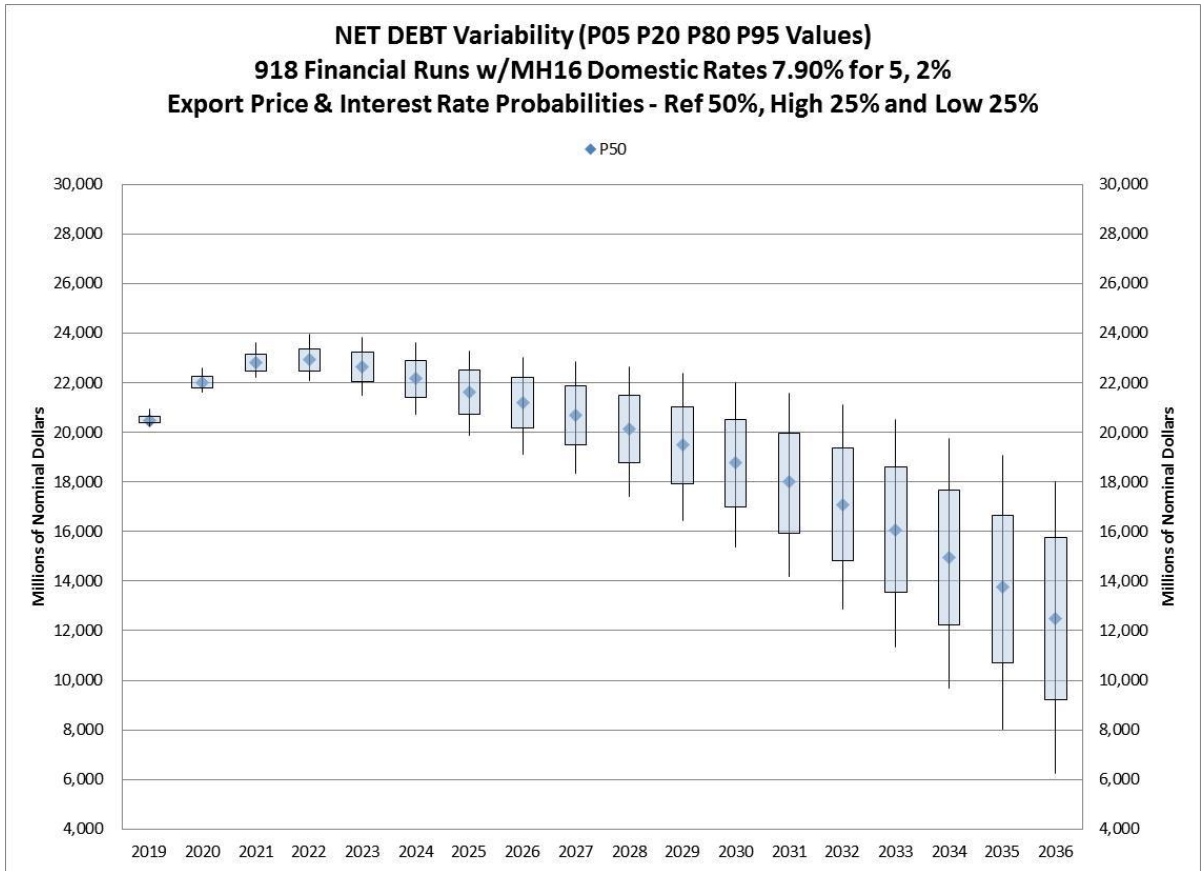
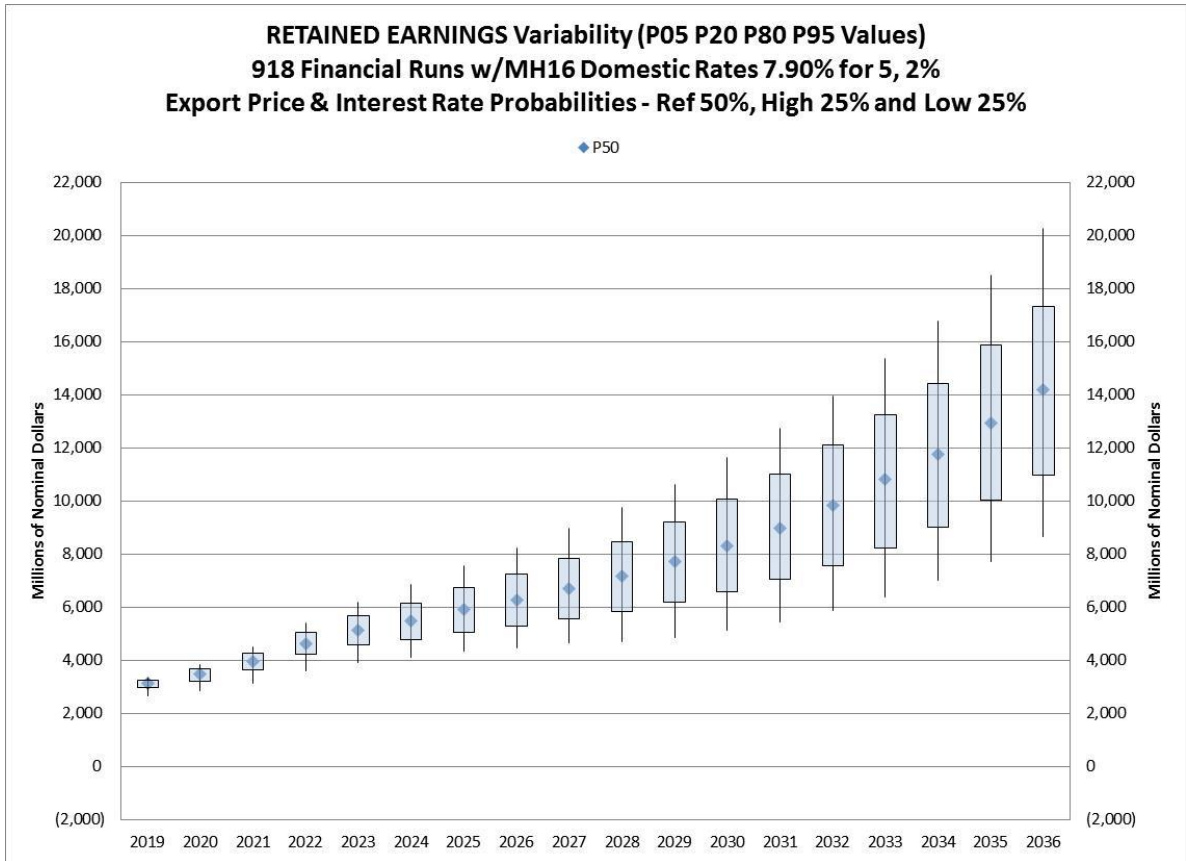
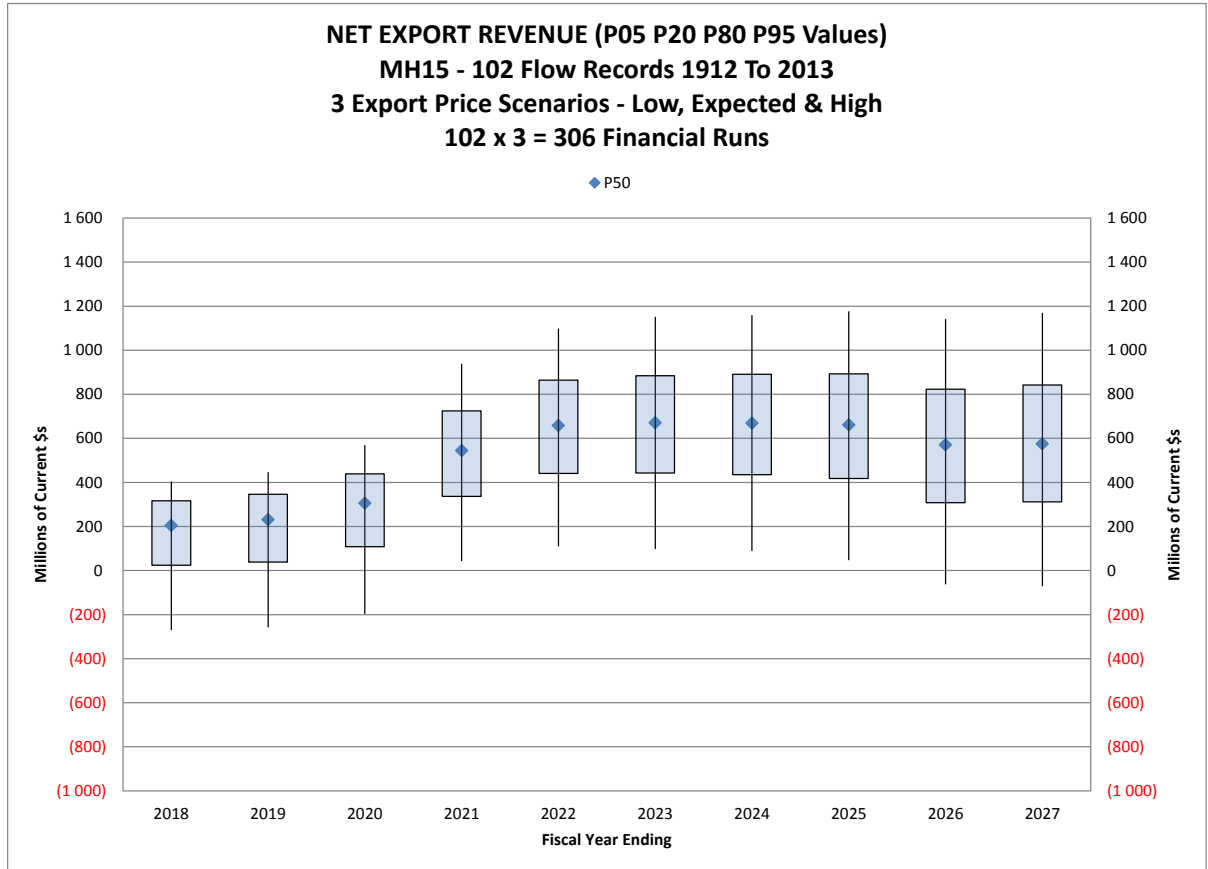


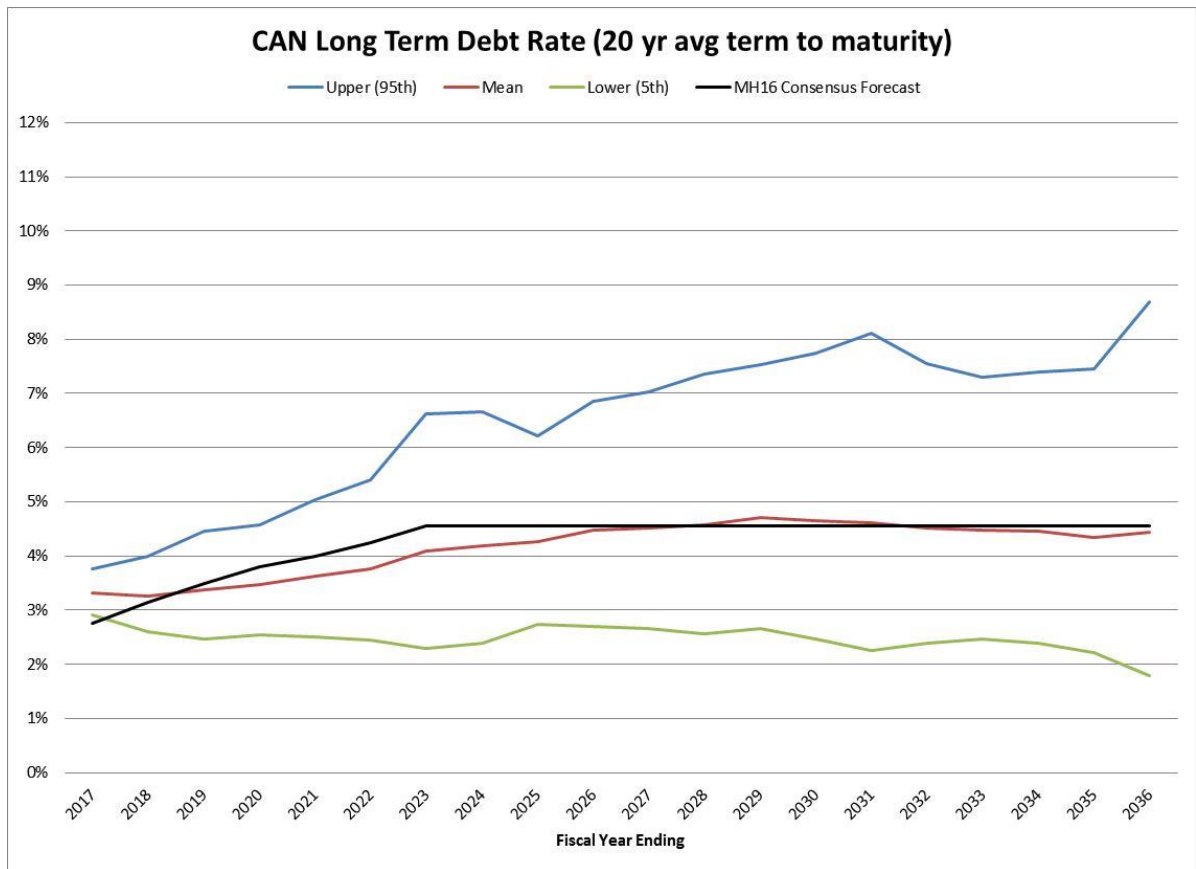
Figure 4.20 Retained Earnings with Export & Interest Rate Probabilities (50%/25%/25%)



d) Figure 4.10 based on IFF15



e) **Figure 4.13** based on a 20 year average term to maturity is provided below. This figure is based on the same underlying dataset used in Tab 4. The stochastic interest rate generator has not been updated and recalibrated with comparable market data to that underlying the MH16 Update.



REFERENCE:

Tab 8, Pages 8, 28-33

PREAMBLE TO IR (IF ANY):

QUESTION:

- a) Manitoba Hydro notes that of the MISO fees "...approximately \$5M are forecast to be incurred to administer Manitoba Hydro's Open Access Transmission Tariff requirements..." (Tab 8, page 5, lines 6-8). Please confirm the transmission tariff applies based on a revenue requirement comprising effectively all Manitoba Hydro AC transmission. Please provide the rationale for including the MISO fees as part of the US Interconnection sub-function if the transmission tariff is designed based primarily on lines other than the US Interconnection facilities.
- b) Please explain Figure 8.13, in regard to GSS-ND and rates being below cost (both customer and energy) for a class that has an RCC ratio of 112.5% (i.e., suggesting rates are above cost).
- c) For Figure 8.15 - RCC Range History (page 33), please confirm that a significant number of the cited PCOSS studies did not receive any form of review, nor endorsement or approval, of the Manitoba PUB.
- d) Please comment on the extent to which Figure 8.15 suggests that measures to date to implement the Order 51/96 decisions regarding addressing the "persistent problem of certain subclasses (e.g., Zone 3 Residential and General Service Large) being outside the Zone of Reasonableness" (page 68) have been inadequate. Please comment on the extent to which the RCC ratios remain outside the Zone of Reasonableness due to overuse of "across the board" rate changes.
- e) Please confirm that the Figure 8.14 Levelized Marginal Value for Generation is presented as being equal across the various classes, and has not been developed to take into account relevant aspects of marginal cost such as load shape, seasonality, degree of on-peak versus off-peak usage, and the greater degree of losses for customers served off of lower voltage systems.

RATIONALE FOR QUESTION:

RESPONSE:

- a) Please see Manitoba Hydro's response to Coalition/MH I-241 that confirms the transmission facilities included in the tariff, and provides the rationale for the sub-function used for the MISO fees.
- b) The 5.782 ¢/kWh rate shown in Figure 8.13 for GSS-ND represents the run-off rate charged for consumption in excess of 11,000 kWh per month. Over 90% of the class's consumption is billed at the 8.329 ¢/kWh first block rate which results in average revenues that are greater than the energy cost of 6.57 ¢/kWh.
- c) Please see Manitoba Hydro's response to PUB/MH I-137 regarding Manitoba Hydro's perspective on the PUB implicit approval of these results.
- d) PCOSS02 included measures related to Generation, Transmission and Exports which addressed the direction in Order 51/96 to solve the problem of certain subclasses that were persistently outside the Zone of Reasonableness. These proposed methodology changes were denied in Board Order 07/03. Subsequent studies, up to and including PCOSS14-Amended, incorporated some similar methodology approaches but to a much lesser extent. In those ten studies the classes furthest above and below the ZOR were the Residential class twice, GSS ND on three occasions, GSL >100kV seven times, and GSL 0-30kV on eight occasions.

The methodology changes as originally proposed would have moved the RCCs for both the Residential and GSL >100kV classes towards unity, reducing the RCC ranges on nine occasions.

These measures would not have moderated the results in the case of the GSS ND and GSL 0-30 kV classes. In these eleven cases differential rate increases would have been required to move the class RCCs towards unity.

- e) Confirmed. Figure 8.14 provides a simplified comparison of average class revenues to marginal costs. The results are expected to be directionally consistent with those of a more detailed marginal cost study that incorporates refinements such as adjustments for differential losses and time differentiation.

REFERENCE:

PREAMBLE TO IR (IF ANY):

Hydro does not propose to implement mandatory Time of Use (TOU) rates for industrial customers at this GRA. However, an optional TOU alternative may be a beneficial approach to mitigating rate impacts on certain customers.

QUESTION:

- a) Please provide a copy of the January 11, 2017 presentation on Time of Use rates.
- b) Please provide a revenue neutral TOU rate design for the GSL>100kV class consistent with the principles underlying “Example 1 – Illustrative TOU Rates” (slide 12) for the rates proposed to be in place as at April 1, 2018. Please provide a similar TOU rate design for the GSL 30-100kV class using the same principles.
- c) On the basis of comparing the rate in (b) above, please provide a comparison equivalent to slide 14 for “TOU Rate Impacts” for the GSL>100kV class and the GSL 30-100kV class.
- d) Please provide Hydro’s calculation of the maximum revenue loss from each of the GSL>100 kV class, and the GSL 30-100kV class in the event the rates in part (b) were implemented as an option for customers in this class, and all customers who would see lower bills under TOU rates opted for the TOU rate design. (Assume all customers who would see lower bills did not opt for the TOU rate design but kept with the rate design proposed in the GRA).
- e) Please confirm that under the illustrative TOU rate designs prepared to date (e.g., in the January 11, 2017 presentation), customers would have an increased ability to use off-peak energy at a price lower than under a flat rate design, which could have the benefit of increasing sales of lower value power for Hydro
- f) Please indicate the barriers Hydro would see if an optional TOU rate design were to be offered to GSL >100kV customers starting in 2018 under a rate design with principles comparable to the January 11, 2017 presentation.

RATIONALE FOR QUESTION:

RESPONSE:

- a) Please see Attachment 1 to this response.

On January 11, 2017 Manitoba Hydro met with representatives of MIPUG to brief them on the status of a TOU rate proposal, and provided a presentation that included a proxy TOU rate structure for discussion purposes only. During that meeting, Manitoba Hydro expressed its concerns that advancing rate design changes for customer classes in light of potential higher rate increases raised the risk that certain customers may be negatively impacted by the added effect of rate design changes on top of requested revenue increases. Manitoba Hydro offered to continue collaborative efforts with MIPUG members in further refining and developing a potential TOU proposal.

The proxy rate structure information provided in this presentation was a scenario for discussion purposes only, which was prepared in 2016 based on GSL >100 revenues and rates relative to August 1, 2016 approved rates.

- b) Manitoba Hydro is unable to provide the requested rate design. The information contained in Attachment 1 was prepared prior to the issuance of Order 164/16. Cost of service methodology changes directed in Order 164/16 dramatically changed the level of costs that are classified as energy versus demand. The adoption of a system load factor approach replacing the weighted energy allocator for the treatment of Generation costs produces a significantly different unit cost outcome, as shown in the table on the following page.

Manitoba Hydro has not had an opportunity to evaluate the implications of the change in unit cost outcomes from the cost of service study and the implications for the design of TOU rate structures.

Comparison of Unit Costs

Customer Class	Cost ¹	PCOSS14- Amended	PCOSS14 164/16	PCOSS18	Rates Aug 1, 2017
GSL 30-100kV	Demand (\$/KVA)	3.98	7.15	7.65	7.34
	Energy (¢/kWh)	3.49	2.39	2.30	3.448
GSL >100kV	Demand (\$/KVA)	2.62	6.85	7.51	6.53
	Energy (¢/kWh)	3.47	2.36	2.26	3.342

- c) The individual bill impacts associated with the proxy 2016 TOU rates are shown in the table below. This data corresponds to the bill impact scenario shown on slide 14 of the presentation.

Bill Impact TOU vs Standard GSL Rate Design
900,200
438,500
140,300
114,700
39,500
36,800
400
(29,700)
(70,800)
(96,900)
(103,800)
(221,500)
(294,400)
(711,000)

- d) Manitoba Hydro does not support the introduction of rate structure changes on an optional basis as the revenue losses associated with the self-selection of rates make it impossible for the Corporation to fully recover the revenues required from that customer class.

¹ GSL demand unit costs include recovery of customer costs

Please refer to the individual customer bill impacts shown in the table in part c) above. The data shows that seven customers may hypothetically benefit by lower bills under a TOU rate structure than on the standard rate structure. The proxy TOU rate structure produces approximately \$1.5 million less revenue for Manitoba Hydro than standard rate structure for those seven customers.

The other seven customers in the class would be required to pay higher bills under the proxy TOU rate structure than they would under the standard rate structure. In order for Manitoba Hydro to be revenue neutral, it would need to recover approximately \$1.5 million from those customers to offset the bill reductions afforded to those that benefit from the proxy TOU rate design.

If two rate designs were offered as options to customers in a given class, those that would experience higher bills on the proxy TOU rate structure would have no economic incentive to elect that rate structure. If this rate design was optional, they would likely elect to decline the TOU rate structure and remain on the standard rate design.

Customers that potentially benefit from an optional rate design would have an economic incentive to elect that option. Manitoba Hydro would not be able to recover the lost revenues from the customer that elected the optional TOU rate structure. As a result, Manitoba Hydro would experience a revenue shortfall of approximately \$1.5 million for the GSL > 100 class.

- e) TOU rate structures typically price on-peak energy at a higher level than the average rate and prices off-peak energy at a lower level than average energy rate in a standard two part rate structure. However, customers must be able to shift their consumption and load patterns away from on-peak hours to operate their loads more predominantly in the off-peak hours of the day in order to obtain the benefits of the lower off peak energy charge.
- f) The most significant barrier to an “optional” rate design as premised in the question, is that it fails to provide Manitoba Hydro with the opportunity to recover the full amount of revenues required from the GSL > 100 class and would result in a loss of income to Manitoba Hydro.

Time-of-Use Rates Stakeholder Presentation

January 11, 2017

Presentation Overview

- TOU Externalities & Influence
- Historic TOU Context
- Rate Structure Definitions
- Illustrative Time-of-Use Rate Structure
- Time-of-Use Rate Impacts
- Steps Forward

TOU Externalities/Influences

- Outcome of Cost-of-Service Review
 - Cost allocation methodology
- Changing Export Market Opportunities
 - Dynamic market with many externalities
- Review of Service Extension Policies
 - Included as a component of Order 112/09
- Influence of Capital Programs / Revenue Targets
 - Changing financial targets due to capital spending
- Changing Regulatory Priorities
 - Established by Public Utilities Board / Manitoba Hydro

Energy Intensive Industrial Rate

- PUB Board Order 112/09
 - Rejected Energy Intensive Rate Application (EIRR)
 - Directed an examination of Alternate Rate Structures
 - Non-industrial load (commercial/government)
 - Emphasis towards on-peak energy consumption
 - Need for ongoing baseline adjustments
 - Equity between new and existing customers
 - Influence on DSM conservation activities
 - Rate alternatives relative to export market pricing
 - Expanded stakeholder consultation (customers)

Stakeholder Consultation

- Seven(7) face-to-face meetings with MIPUG representatives over a six month period
 - Perception of regulatory risk (PUB process)
 - Impact on economic growth
 - Concern over baseline determination
 - Inequity of “formula-based” rate structures
 - Discrimination against industrial load growth
 - Recognition of the export market influence

Desired Rate Attributes

- Facilitate broad-based applicability across industrial, commercial, government accounts
- Provide fairness and equity for all participants in rate class
- Provide energy price signal related to market price signals, conservation objectives and consumption behavior
- Retain cost-based approach and overall revenue neutrality within rate classes
- Reduce impediments for customer efforts to manage energy costs through load shifting and batch processing

TOU Rate Attributes

- Clear Price Signal that Addresses all Energy Consumption
 - Equity for all rate class participants
 - Eliminates need for baseline determination
- Time-of-Use Price Signal relates to Market Pricing Behavior
 - Export market opportunity minus rate volatility
 - Cost allocation methodologies and cost-based rate setting
 - Predictable and uniform future rate projections
- Supports Positive Customer Consumption Behavior
 - Clear on-peak price signal supports customer engagement through conservation, load shifting, demand response...
 - Energy centric rate reduces influence of capacity charges
 - Compliments potential future alternative rate structures

TOU Rate Applications

- Original TOU Application – 11/12 GRA
 - Transmission and sub-transmission rate classes
 - Deferred by PUB pending Cost-of-Service review
 - Differentiated rate increases / TOU rates
- Subsequent TOU Application – 15/16 GRA
 - Transmission and sub-transmission rate classes
 - Deferred pending Cost-of-Service review

Time-of-Use Definitions

- On-Peak Hours
 - 6:00 am to 10:00 pm, Monday to Friday
 - Approx 45% of annual hours
- Off-Peak Hours
 - 10:00 pm to 6:00 am, Monday to Friday
 - 24 hours, Saturday to Sunday, Statutory Holidays
 - Approx 55% of annual hours
- Seasonal Periods
 - Winter Season, Four Months (Dec to Mar)
 - Summer Season, Eight Months (Apr to Nov)

TOU Hours / Seasons

Hours	Summer (Apr 1 - November 30)	Winter (December 1 - March 31)
Peak	Monday through Friday except Statutory Holidays from: 6:01 hours - 22:00 hours	Monday through Friday except Statutory Holidays from: 06:01 hours - 22:00 hours
Off-Peak	All night time hours from 22:01 hours - 06:00 hours incl Stat Holidays	

Summer:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Monday	Off-Peak					On-Peak																		
Tuesday																								
Wednesday	Off-Peak					On-Peak																		
Thursday																								
Friday	Off-Peak					On-Peak																		
Saturday																								
Sunday																								
Stat Holidays																								

Winter:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Monday	Off-Peak					On-Peak																		
Tuesday																								
Wednesday	Off-Peak					On-Peak																		
Thursday																								
Friday	Off-Peak					On-Peak																		
Saturday																								
Sunday																								
Stat Holidays																								

Illustrative TOU Rate Impacts

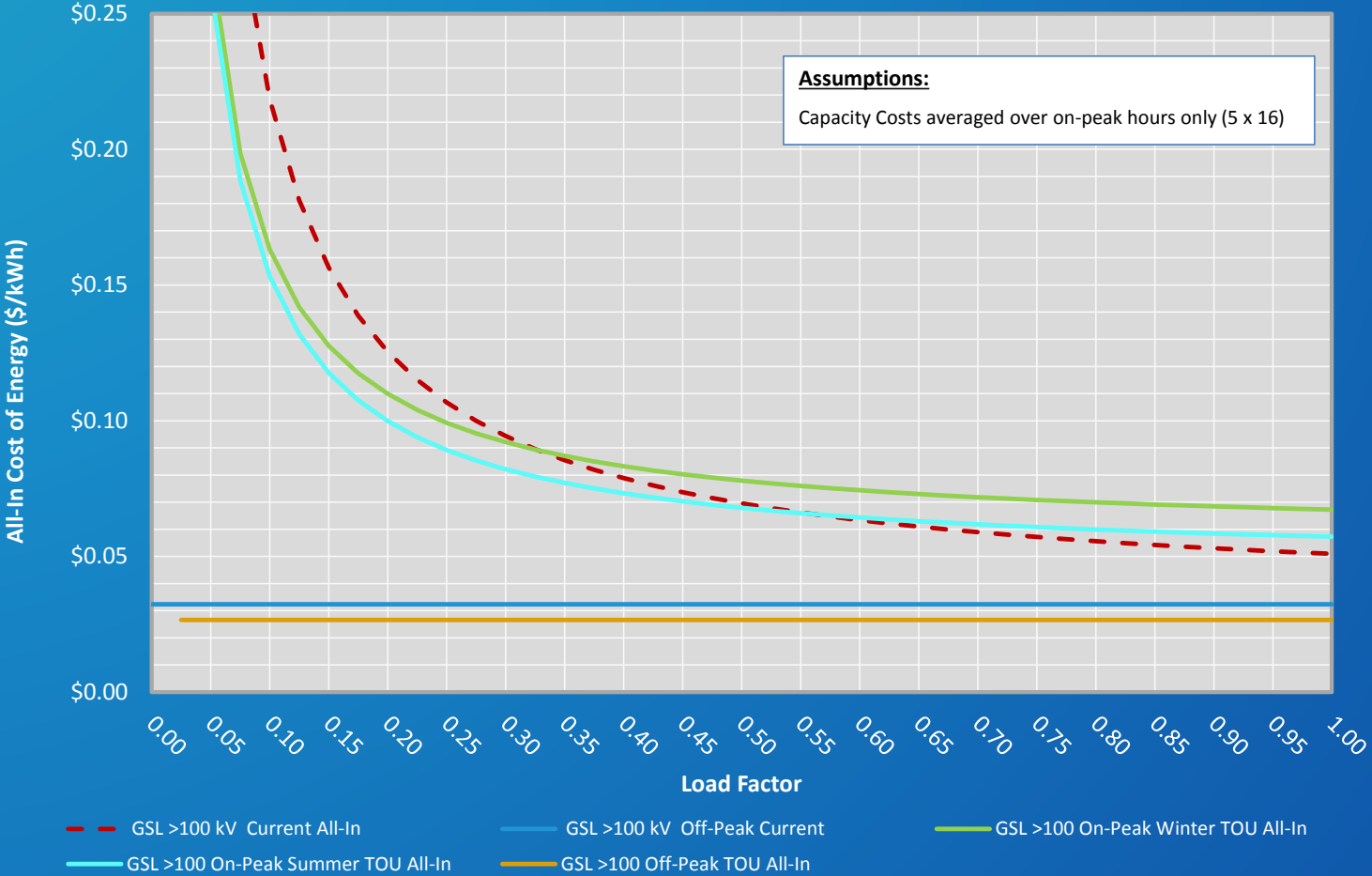
- On-Peak Load Consumption Factor
 - ratio of on-peak energy consumed to on-peak demand
- Current On-Peak / Off-Peak Demand Levels
 - on-peak demand serves as billing demand
- On-Peak/Off-Peak Energy Consumption Ratio
 - on-peak rates higher than off-peak rates
- Winter/Summer On-Peak Energy Consumption Ratio
 - winter on-peak rates higher summer on-peak rates
- Actual Demand / Contracted Capacity Ratio
 - minimum billing demand equal to 50% of contract demand

Example 1 - Illustrative TOU Rates

	Current Rates	Winter TOU (illustrative)		Summer TOU (illustrative)	
Energy Charges					
On-Peak (kWh)	\$0.0323	\$0.0566	75.1%	\$0.0466	44.1%
Off-Peak (kWh)	\$0.0323	\$0.0266	(17.7%)	\$0.0266	(17.7%)
Capacity Charges					
Demand (kVA)	\$6.32	\$3.48	(55%)	\$3.48	(55%)
Minimum Demand	25% Contract	50% Contract		50% Contract	

On-Peak Period All-In Cost of Energy .vs. Load Factor

Based on PUB-Approved General Service Large >100 kV Rates (effective August 1, 2016)



TOU Rate Impacts

Overall Energy/Capacity Cost Impact	Accounts (#)	Rate Impacts (\$)
Decrease > 5%	3	(\$1,226,862)
Decrease 3 – 5 %	2	(\$200,689)
Decrease 1 – 3 %	2	(\$100,506)
Increase/Decrease < 1%	2	\$140,702
Increase 1 – 3 %	3	\$1,378,199
Increase 3 – 5 %	2	\$151,528
Increase > 5 %	0	\$0
Total Customers	14	\$142,374

Example 2 - Illustrative TOU Rates

	Current Rates	Winter TOU (illustrative)	Summer TOU (illustrative)
Energy Charges			
On-Peak (kWh)	\$0.0323	\$0.0572	76.9%
Off-Peak (kWh)	\$0.0323	\$0.0272	(15.9%)
Capacity Charges			
Demand (kVA)	\$6.32	\$3.16	(50%)
Minimum Demand	25% Contract	50% Contract	50% Contract

Example 3 - Illustrative TOU Rates

	Current Rates	Winter TOU (illustrative)		Summer TOU (illustrative)	
Energy Charges					
On-Peak (kWh)	\$0.0323	\$0.0561	73.5%	\$0.0461	42.6%
Off-Peak (kWh)	\$0.0323	\$0.0261	(19.3%)	\$0.0261	(19.3%)
Capacity Charges					
Demand (kVA)	\$6.32	\$3.79	(60%)	\$3.79	(60%)
Minimum Demand	25% Contract	50% Contract		50% Contract	

REFERENCE:

PREAMBLE TO IR (IF ANY):

Hydro does not propose to implement mandatory Time of Use (TOU) rates for industrial customers at this GRA. However, an optional TOU alternative may be a beneficial approach to mitigating rate impacts on certain customers.

QUESTION:

- g) Please indicate if Hydro views the outcomes of the Cost of Service review (Order 164/16) as being prohibitive to or in any way complicating the possible introduction of TOU rates.
- h) Please indicate if implementation of an optional TOU rate design for industrial customers would have consequent rate design impacts on other classes outside of the industrial classes.

RATIONALE FOR QUESTION:

RESPONSE:

- g) Manitoba Hydro notes that Order 164/16 directed a number of significant and material changes to the assumptions and treatment of costs in Manitoba Hydro's Cost of Service Study. For example, the adoption of a System Load Factor methodology in place of the former weighted energy allocator for the classification and allocation of costs functionalized to Generation has resulted in two significant shifts. First, the amount of revenue requirement allocated to each customer class is changed and results in different RCC's than would otherwise have been generated by Manitoba Hydro's former COSS methodology. Secondly, the mix of those costs between those classified as Energy and those classified as Demand have changed significantly.

One measure of the appropriateness of a rate structure is the manner in which it reflects the embedded cost allocated to that customer class. In the setting of customer

charges and demand charges, for example, consideration is given to the Customer, Demand and Energy cost analysis resulting from the COSS.

Manitoba Hydro's past TOU rate structure proposals supported the recovery of costs being more influenced by energy than by demand, with those energy charges being differentiated between peak and off-peak hourly usage. Given the significant shift in embedded costs away from energy and into demand, the balance between energy and demand in a TOU rate structure is also significantly shifted, a factor which must be considered in light of the desire to set prices that place more emphasis on revenue collection through on-peak hourly energy charges.

- h) It is important to consider the difference between short-run outcomes and long-run outcomes of rate structure changes. A change in rate structure sends a different price signal to customers but customers need some time to assess the impact on their operations and to undertake operational changes to make beneficial use of the new rate structure. In some cases, such as with heating or lighting loads, there may be little opportunity to shift usage from on peak to off peak periods, in either the short term, or in the long term.

This concept is important as the benefits to the utility and therefore to other customer classes is dependent upon customers changing their usage characteristics to respond to the price signal sent by the TOU rate structure. Customers shifting large amounts of energy consumption away from on-peak periods to off-peak periods may essentially "free up" energy and possibly capacity to be sold into export markets. The financial benefit of Manitoba Hydro exporting more in the on-peak period is ultimately reflected back not just to the class that freed up the energy and capacity, but also to other customer classes that did not participate in the TOU rate structure.

REFERENCE:

PREAMBLE TO IR (IF ANY):

Hydro does not propose to implement mandatory Time of Use (TOU) rates for industrial customers at this GRA. However, an optional TOU alternative may be a beneficial approach to mitigating rate impacts on certain customers.

QUESTION:

- i) Please compare and reconcile the Example 1 rates from the January 11, 2017 presentation (on-peak winter energy at 5.66 cents/kW.h) with the marginal cost rate of 6.34 cents/kW.h for generation and 0.56 cents/kW.h for transmission shown in Tab 8 page 31. Is the TOU on-peak rate designed to be comparable marginal cost once the demand charge is also considered? What marginal cost value was used to derive the 5.66 cents/kW.h value?

RATIONALE FOR QUESTION:

RESPONSE:

The proxy TOU rates that were prepared in 2016 required balancing the levels of on-peak prices, off-peak prices, demand charges and contract demand thresholds so as to limit the bill increase to a maximum of 5% for the most negatively affected GSL customer. As such, the on-peak price was not indexed to a specific marginal cost of generation.

REFERENCE:

Tab 6, Pages 42-43

PREAMBLE TO IR (IF ANY):**QUESTION:**

- a) Please confirm that the Efficiency Manitoba Act specifies a default energy savings target (1.5% per year), but provides that the target can instead be specified by regulation (section 2, definition of “savings target”) on the basis of recommendations to the Minister by Efficiency Manitoba (section 4(b)(i)) or the PUB (section 11(5)).

RATIONALE FOR QUESTION:**RESPONSE:**

The Information Request seeks Manitoba Hydro’s legal opinion/interpretation which Manitoba Hydro respectfully declines to provide.

REFERENCE:

Tab 6, Pages 42-43

PREAMBLE TO IR (IF ANY):**QUESTION:**

- b) Please provide a version of Tab 6, Figure 6.30 for each of IFF16 and updated MH16 showing all values used to prepare the 20 year forecasts.

RATIONALE FOR QUESTION:**RESPONSE:**

Figure 6.30 has been updated below for both MH16 and MH16 Update with Interim, showing the 20 year forecasts.

Figure 1. Net Movement in Regulatory Deferral Accounts (MH16)

MANITOBA HYDRO (MH16)

NET MOVEMENT IN REGULATORY DEFERRAL ACCOUNTS

(000's)

	2016/17 Outlook	2017/18 Forecast	2018/19 Forecast	2019/20 Forecast	2020/21 Forecast	2021/22 Forecast	2022/23 Forecast	2023/24 Forecast	2024/25 Forecast	2025/26 Forecast
Additions of regulatory deferral accounts										
Power Smart programs	\$ (50 143)	\$ (55 678)	\$ (99 404)	\$ (94 251)	\$ (88 857)	\$ (86 929)	\$ (66 549)	\$ (60 271)	\$ (62 350)	\$ (66 576)
Conawapa Generation	-	-	-	(379 758)	-	-	-	-	-	-
Change in depreciation method	(32 562)	(33 952)	(39 506)	(42 869)	(44 702)	(47 924)	(56 279)	-	-	-
Deferred ineligible overhead	(20 200)	(20 200)	(20 200)	(20 200)	(20 200)	(20 200)	(20 200)	-	-	-
Loss on disposal of assets	(3 200)	-	-	-	-	-	-	-	-	-
Site restoration costs	(1 424)	(2 794)	(2 703)	(1 408)	(1 317)	(1 133)	(6)	-	-	-
Regulatory costs	(4 389)	(3 664)	(2 339)	(1 339)	(1 882)	(1 391)	(1 954)	(1 444)	(2 029)	(1 499)
Acquisition costs	-	-	-	-	-	-	-	-	-	-
Affordable Energy Fund	-	-	-	-	-	-	-	-	-	-
Total additions of regulatory deferral accounts	(111 918)	(116 288)	(164 151)	(539 825)	(156 958)	(157 576)	(144 988)	(61 715)	(64 379)	(68 075)
Amortization of regulatory deferral accounts										
Power Smart programs	34 937	35 742	36 512	43 052	49 322	55 368	61 329	65 308	68 737	71 825
Conawapa Generation	-	-	-	11 592	12 645	12 645	12 645	12 645	12 645	12 645
Affordable Energy Fund	705	449	480	563	545	511	489	454	322	147
Site restoration costs	4 106	4 106	3 990	3 855	3 559	2 990	2 629	2 234	2 170	1 991
Regulatory costs	2 723	2 942	3 666	2 884	2 495	1 883	1 400	1 657	1 684	1 721
Acquisition costs	692	692	692	692	692	692	692	692	692	692
Change in depreciation method	-	2 724	7 285	9 345	11 534	13 850	16 455	17 862	17 862	17 862
Loss on disposal of assets	-	288	577	577	577	577	577	577	577	577
Deferred ineligible overhead	-	1 768	4 545	5 555	6 565	7 575	8 585	9 090	9 090	9 090
Total amortization of regulatory deferral accounts	43 163	48 711	57 746	78 114	87 933	96 091	104 801	110 520	113 780	116 550
Total net movement in regulatory deferral balances	\$(68 755)	\$(67 577)	\$(106 405)	\$(461 711)	\$(69 025)	\$(61 486)	\$(40 186)	\$ 48 804	\$ 49 401	\$ 48 474
Year over year \$ change		\$ 1 178	\$ (38 828)	\$ (355 306)	\$392 685	\$ 7 540	\$ 21 299	\$ 88 991	\$ 596	\$ (926)
Year over year % change		-2%	57%	334%	-85%	-11%	-35%	-221%	1%	-2%

MANITOBA HYDRO (MH16)
NET MOVEMENT IN REGULATORY DEFERRAL ACCOUNTS
(000's)

	2026/27 Forecast	2027/28 Forecast	2028/29 Forecast	2029/30 Forecast	2030/31 Forecast	2031/32 Forecast	2032/33 Forecast	2033/34 Forecast	2034/35 Forecast	2035/36 Forecast
Additions of regulatory deferral accounts										
Power Smart programs	\$ (70 722)	\$ (74 678)	\$ (78 900)	\$ (82 801)	\$ (82 257)	\$ (83 893)	\$ (85 623)	\$ (87 367)	\$ (89 135)	\$ (90 933)
Conawapa Generation	-	-	-	-	-	-	-	-	-	-
Change in depreciation method	-	-	-	-	-	-	-	-	-	-
Deferred ineligible overhead	-	-	-	-	-	-	-	-	-	-
Loss on disposal of assets	-	-	-	-	-	-	-	-	-	-
Site restoration costs	-	-	-	-	-	-	-	-	-	-
Regulatory costs	(2 114)	(1 564)	(2 206)	(1 632)	(2 302)	(1 703)	(2 402)	(1 777)	(2 506)	(1 854)
Acquisition costs	-	-	-	-	-	-	-	-	-	-
Affordable Energy Fund	-	-	-	-	-	-	-	-	-	-
Total additions of regulatory deferral accounts	(72 836)	(76 243)	(81 106)	(84 433)	(84 558)	(85 596)	(88 025)	(89 144)	(91 640)	(92 787)
Amortization of regulatory deferral accounts										
Power Smart programs	73 101	75 159	77 059	75 008	73 863	73 203	72 900	74 807	77 517	80 195
Conawapa Generation	12 645	12 645	12 645	12 645	12 645	12 645	12 645	12 645	12 645	12 645
Affordable Energy Fund	97	95	-	-	-	-	-	-	-	-
Site restoration costs	1 826	1 724	1 514	1 334	1 046	891	616	433	295	188
Regulatory costs	1 749	1 789	1 821	1 866	1 900	1 947	1 982	2 031	2 068	2 120
Acquisition costs	692	692	692	678	300	300	199	6	-	-
Change in depreciation method	17 862	17 862	17 862	17 862	17 862	17 862	17 862	17 862	17 862	17 862
Loss on disposal of assets	577	577	577	577	577	577	577	577	577	577
Deferred ineligible overhead	9 090	9 090	9 090	9 090	9 090	9 090	9 090	9 090	9 090	9 090
Total amortization of regulatory deferral accounts	117 640	119 633	121 259	119 061	117 283	116 515	115 871	117 452	120 054	122 677
Total net movement in regulatory deferral balances	\$ 44 804	\$ 43 390	\$ 40 154	\$ 34 627	\$ 32 724	\$ 30 919	\$ 27 846	\$ 28 308	\$ 28 413	\$ 29 890
Year over year \$ change	\$ (3 670)	\$ (1 414)	\$ (3 236)	\$ (5 526)	\$ (1 903)	\$ (1 805)	\$ (3 073)	\$ 462	\$ 105	\$ 1 477
Year over year % change	-8%	-3%	-7%	-14%	-5%	-6%	-10%	2%	0%	5%

Figure 2. Net Movement in Regulatory Deferral Accounts (MH16 Update with Interim)

MANITOBA HYDRO (Updated MH16)
NET MOVEMENT IN REGULATORY DEFERRAL ACCOUNTS
(000's)

	2016/17 Actual	2017/18 Forecast	2018/19 Forecast	2019/20 Forecast	2020/21 Forecast	2021/22 Forecast	2022/23 Forecast	2023/24 Forecast	2024/25 Forecast	2025/26 Forecast
Additions of regulatory deferral accounts										
Power Smart programs	\$ (50 453)	\$ (57 184)	\$ (99 404)	\$ (94 251)	\$ (88 857)	\$ (86 929)	\$ (66 549)	\$ (60 271)	\$ (62 350)	\$ (66 576)
Conawapa Generation	-	-	-	(379 758)	-	-	-	-	-	-
Change in depreciation method	(31 386)	(33 952)	(39 506)	(42 869)	(44 702)	(47 924)	(56 279)	-	-	-
Deferred ineligible overhead	(20 200)	(20 200)	(20 200)	(20 200)	(20 200)	(20 200)	(20 200)	-	-	-
Loss on disposal of assets	(1 302)	-	-	-	-	-	-	-	-	-
Site restoration costs	(1 361)	(2 794)	(2 703)	(1 408)	(1 317)	(1 133)	(6)	-	-	-
Regulatory costs	(3 946)	(3 664)	(2 339)	(1 339)	(1 882)	(1 391)	(1 954)	(1 444)	(2 029)	(1 499)
Acquisition costs	-	-	-	-	-	-	-	-	-	-
Affordable Energy Fund	(63)	-	-	-	-	-	-	-	-	-
Total additions of regulatory deferral accounts	(108 712)	(117 794)	(164 151)	(539 825)	(156 958)	(157 576)	(144 988)	(61 715)	(64 379)	(68 075)
Amortization of regulatory deferral accounts										
Power Smart programs	34 937	35 742	36 662	43 202	49 473	55 519	61 480	65 459	68 888	71 976
Conawapa Generation	-	-	-	11 592	12 645	12 645	12 645	12 645	12 645	12 645
Affordable Energy Fund	224	449	480	563	545	511	489	454	322	147
Site restoration costs	4 070	4 106	3 990	3 855	3 559	2 990	2 629	2 234	2 170	1 991
Regulatory costs	2 358	2 942	3 665	2 884	2 495	1 883	1 400	1 657	1 684	1 721
Acquisition costs	692	692	692	692	692	692	692	692	692	692
Change in depreciation method	-	-	-	6 437	9 345	11 534	13 850	16 455	17 862	17 862
Loss on disposal of assets	-	288	577	577	577	577	577	577	577	577
Deferred ineligible overhead	-	1 768	4 545	5 555	6 565	7 575	8 585	9 090	9 090	9 090
Total amortization of regulatory deferral accounts	42 281	45 986	50 611	75 357	85 894	93 926	102 347	109 263	113 930	116 700
Total net movement in regulatory deferral balances	\$(66 431)	\$(71 808)	\$(113 540)	\$(464 468)	\$(71 064)	\$(63 651)	\$(42 641)	\$ 47 548	\$ 49 551	\$ 48 625
Year over year \$ change		\$ (5 377)	\$ (41 732)	\$ (350 928)	\$393 404	\$ 7 413	\$ 21 010	\$ 90 189	\$ 2 003	\$ (926)
Year over year % change		8%	58%	309%	-85%	-10%	-33%	-212%	4%	-2%

MANITOBA HYDRO (Updated MH16)
NET MOVEMENT IN REGULATORY DEFERRAL ACCOUNTS
(000's)

	2026/27 Forecast	2027/28 Forecast	2028/29 Forecast	2029/30 Forecast	2030/31 Forecast	2031/32 Forecast	2032/33 Forecast	2033/34 Forecast	2034/35 Forecast	2035/36 Forecast
Additions of regulatory deferral accounts										
Power Smart programs	\$ (70 722)	\$ (74 678)	\$ (78 900)	\$ (82 801)	\$ (82 257)	\$ (83 893)	\$ (85 623)	\$ (87 367)	\$ (89 135)	\$ (90 933)
Conawapa Generation	-	-	-	-	-	-	-	-	-	-
Change in depreciation method	-	-	-	-	-	-	-	-	-	-
Deferred ineligible overhead	-	-	-	-	-	-	-	-	-	-
Loss on disposal of assets	-	-	-	-	-	-	-	-	-	-
Site restoration costs	-	-	-	-	-	-	-	-	-	-
Regulatory costs	(2 114)	(1 564)	(2 206)	(1 632)	(2 302)	(1 703)	(2 402)	(1 777)	(2 506)	(1 854)
Acquisition costs	-	-	-	-	-	-	-	-	-	-
Affordable Energy Fund	-	-	-	-	-	-	-	-	-	-
Total additions of regulatory deferral accounts	(72 836)	(76 243)	(81 106)	(84 433)	(84 558)	(85 596)	(88 025)	(89 144)	(91 640)	(92 787)
Amortization of regulatory deferral accounts										
Power Smart programs	73 251	75 309	77 059	75 008	73 863	73 203	72 900	74 807	77 517	80 195
Conawapa Generation	12 645	12 645	12 645	12 645	12 645	12 645	12 645	12 645	12 645	12 645
Affordable Energy Fund	97	95	-	-	-	-	-	-	-	-
Site restoration costs	1 826	1 724	1 514	1 334	1 046	891	616	433	295	188
Regulatory costs	1 749	1 789	1 821	1 866	1 900	1 947	1 982	2 031	2 068	2 120
Acquisition costs	692	692	692	678	300	300	199	6	-	-
Change in depreciation method	17 862	17 862	17 862	17 862	17 862	17 862	17 862	17 862	17 862	17 862
Loss on disposal of assets	577	577	577	577	577	577	577	577	577	577
Deferred ineligible overhead	9 090	9 090	9 090	9 090	9 090	9 090	9 090	9 090	9 090	9 090
Total amortization of regulatory deferral accounts	117 790	119 783	121 259	119 061	117 283	116 515	115 871	117 452	120 054	122 677
Total net movement in regulatory deferral balances	\$ 44 955	\$ 43 541	\$ 40 154	\$ 34 627	\$ 32 724	\$ 30 919	\$ 27 846	\$ 28 308	\$ 28 413	\$ 29 890
Year over year \$ change	\$ (3 670)	\$ (1 414)	\$ (3 387)	\$ (5 526)	\$ (1 903)	\$ (1 805)	\$ (3 073)	\$ 462	\$ 105	\$ 1 477
Year over year % change	-8%	-3%	-8%	-14%	-5%	-6%	-10%	2%	0%	5%

REFERENCE:

Tab 6, Pages 42-43

PREAMBLE TO IR (IF ANY):**QUESTION:**

- c) For each of IFF16 and MH16 Updated for the 20 year forecasts, please provide a schedule showing the regulatory deferral balances by year (asset and liability) showing all transactions for the year including transfers, amortizations, etc. to derive the annual balance sheet values.

RATIONALE FOR QUESTION:**RESPONSE:**

Table 1 and 2 below provide a continuity schedule for the MH16 regulatory deferral debit and credit balances, respectively, from 2016/17 to 2035/36. Table 3 and 4 reflect the same for the MH16 Update with the Interim.

TABLE 1: MH16 REGULATORY DEFERRAL DEBIT BALANCE

in thousands of dollars

	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27
	Outlook	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast
Opening balance of regulatory deferral debit balance											
Power Smart programs	\$ 188 873	\$ 204 079	\$ 224 016	\$ 286 909	\$ 338 108	\$ 377 643	\$ 409 204	\$ 414 423	\$ 409 386	\$ 402 999	\$ 397 750
Change in depreciation method	59 441	92 002	123 229	155 450	188 974	222 142	256 217	296 042	278 180	260 318	242 456
Deferred ineligible overhead	40 400	60 600	79 033	94 688	109 333	122 968	135 593	147 208	138 118	129 028	119 938
Loss on disposal of assets	8 339	11 539	11 250	10 673	10 096	9 520	8 943	8 366	7 789	7 212	6 635
Site restoration costs	30 710	28 028	26 716	25 428	22 982	20 740	18 883	16 260	14 025	11 855	9 864
Regulatory costs	3 821	5 486	6 209	4 882	3 338	2 725	2 233	2 787	2 573	2 919	2 697
Acquisition costs	10 480	9 788	9 096	8 404	7 712	7 020	6 328	5 636	4 944	4 252	3 560
Affordable Energy Fund	4 324	3 619	3 169	2 689	2 126	1 581	1 071	581	128	(195)	(342)
Conawapa Generation	-	-	-	-	368 166	355 521	342 875	330 230	317 585	304 939	292 294
DSM deferral	43 600	43 600	43 600	43 600	43 600	43 600	43 600	43 600	43 600	43 600	43 600
	389 987	458 742	526 319	632 724	1 094 434	1 163 460	1 224 945	1 265 132	1 216 328	1 166 927	1 118 453
Additions to regulatory deferral debit balance											
Power Smart programs	\$ 50 143	\$ 55 678	\$ 99 404	\$ 94 251	\$ 88 857	\$ 86 929	\$ 66 549	\$ 60 271	\$ 62 350	\$ 66 576	\$ 70 722
Change in depreciation method	32 562	33 952	39 506	42 869	44 702	47 924	56 279	-	-	-	-
Deferred ineligible overhead	20 200	20 200	20 200	20 200	20 200	20 200	20 200	-	-	-	-
Loss on disposal of assets	3 200	-	-	-	-	-	-	-	-	-	-
Site restoration costs	1 424	2 794	2 703	1 408	1 317	1 133	6	-	-	-	-
Regulatory costs	4 389	3 664	2 339	1 339	1 882	1 391	1 954	1 444	2 029	1 499	2 114
Acquisition costs	-	-	-	-	-	-	-	-	-	-	-
Affordable Energy Fund	-	-	-	-	-	-	-	-	-	-	-
Conawapa Generation	-	-	-	379 758	-	-	-	-	-	-	-
DSM deferral	-	-	-	-	-	-	-	-	-	-	-
	111 918	116 288	164 151	539 825	156 958	157 576	144 988	61 715	64 379	68 075	72 836
Amortization of regulatory deferral debit balance											
Power Smart programs	\$ (34 937)	\$ (35 742)	\$ (36 512)	\$ (43 052)	\$ (49 322)	\$ (55 368)	\$ (61 329)	\$ (65 308)	\$ (68 737)	\$ (71 825)	\$ (73 101)
Change in depreciation method	-	(2 724)	(7 285)	(9 345)	(11 534)	(13 850)	(16 455)	(17 862)	(17 862)	(17 862)	(17 862)
Deferred ineligible overhead	-	(1 768)	(4 545)	(5 555)	(6 565)	(7 575)	(8 585)	(9 090)	(9 090)	(9 090)	(9 090)
Loss on disposal of assets	-	(288)	(577)	(577)	(577)	(577)	(577)	(577)	(577)	(577)	(577)
Site restoration costs	(4 106)	(4 106)	(3 990)	(3 855)	(3 559)	(2 990)	(2 629)	(2 234)	(2 170)	(1 991)	(1 826)
Regulatory costs	(2 723)	(2 942)	(3 665)	(2 884)	(2 495)	(1 883)	(1 400)	(1 657)	(1 684)	(1 721)	(1 749)
Acquisition costs	(692)	(692)	(692)	(692)	(692)	(692)	(692)	(692)	(692)	(692)	(692)
Affordable Energy Fund	(705)	(449)	(480)	(563)	(545)	(511)	(489)	(454)	(322)	(147)	(97)
Conawapa Generation	-	-	-	(11 592)	(12 645)	(12 645)	(12 645)	(12 645)	(12 645)	(12 645)	(12 645)
DSM deferral	-	-	-	-	-	-	-	-	-	-	-
	(43 163)	(48 711)	(57 746)	(78 114)	(87 933)	(96 091)	(104 801)	(110 520)	(113 780)	(116 550)	(117 640)
Closing balance of regulatory deferral debit balance											
Power Smart programs	\$ 204 079	\$ 224 016	\$ 286 909	\$ 338 108	\$ 377 643	\$ 409 204	\$ 414 423	\$ 409 386	\$ 402 999	\$ 397 750	\$ 395 371
Change in depreciation method	92 002	123 229	155 450	188 974	222 142	256 217	296 042	278 180	260 318	242 456	224 595
Deferred ineligible overhead	60 600	79 033	94 688	109 333	122 968	135 593	147 208	138 118	129 028	119 938	110 848
Loss on disposal of assets	11 539	11 250	10 673	10 096	9 520	8 943	8 366	7 789	7 212	6 635	6 058
Site restoration costs	28 028	26 716	25 428	22 982	20 740	18 883	16 260	14 025	11 855	9 864	8 038
Regulatory costs	5 486	6 209	4 882	3 338	2 725	2 233	2 787	2 573	2 919	2 697	3 062
Acquisition costs	9 788	9 096	8 404	7 712	7 020	6 328	5 636	4 944	4 252	3 560	2 868
Affordable Energy Fund	3 619	3 169	2 689	2 126	1 581	1 071	581	128	(195)	(342)	(439)
Conawapa Generation	-	-	-	368 166	355 521	342 875	330 230	317 585	304 939	292 294	279 649
DSM deferral	43 600	43 600	43 600	43 600	43 600	43 600	43 600	43 600	43 600	43 600	43 600
	458 742	526 319	632 724	1 094 434	1 163 460	1 224 945	1 265 132	1 216 328	1 166 927	1 118 453	1 073 649

TABLE 1: MH16 REGULATORY DEFERRAL DEBIT BALANCE									
<i>in thousands of dollars</i>									
	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34	2034/35	2035/36
	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast
Opening balance of regulatory deferral debit balance									
Power Smart programs	\$ 395 371	\$ 394 890	\$ 396 731	\$ 404 524	\$ 412 917	\$ 423 607	\$ 436 331	\$ 448 890	\$ 460 508
Change in depreciation method	224 595	206 733	188 871	171 010	153 148	135 286	117 424	99 563	81 701
Deferred ineligible overhead	110 848	101 758	92 668	83 578	74 488	65 398	56 308	47 218	38 128
Loss on disposal of assets	6 058	5 481	4 904	4 327	3 750	3 173	2 596	2 019	1 442
Site restoration costs	8 038	6 314	4 800	3 466	2 420	1 529	912	479	184
Regulatory costs	3 062	2 838	3 222	2 989	3 391	3 147	3 566	3 312	3 750
Acquisition costs	2 868	2 176	1 484	806	506	206	7	1	1
Affordable Energy Fund	(439)	(534)	(534)	(534)	(534)	(534)	(534)	(534)	(534)
Conawapa Generation	279 649	267 003	254 358	241 713	229 067	216 422	203 776	191 131	178 486
DSM deferral	43 600	43 600	43 600	43 600	43 600	43 600	43 600	43 600	43 600
	1 073 649	1 030 259	990 105	955 478	922 753	891 834	863 988	835 679	807 266
Additions to regulatory deferral debit balance									
Power Smart programs	\$ 74 678	\$ 78 900	\$ 82 801	\$ 82 257	\$ 83 893	\$ 85 623	\$ 87 367	\$ 89 135	\$ 90 933
Change in depreciation method	-	-	-	-	-	-	-	-	-
Deferred ineligible overhead	-	-	-	-	-	-	-	-	-
Loss on disposal of assets	-	-	-	-	-	-	-	-	-
Site restoration costs	-	-	-	-	-	-	-	-	-
Regulatory costs	1 564	2 206	1 632	2 302	1 703	2 402	1 777	2 506	1 854
Acquisition costs	-	-	-	-	-	-	-	-	-
Affordable Energy Fund	-	-	-	-	-	-	-	-	-
Conawapa Generation	-	-	-	-	-	-	-	-	-
DSM deferral	-	-	-	-	-	-	-	-	-
	76 243	81 106	84 433	84 558	85 596	88 025	89 144	91 640	92 787
Amortization of regulatory deferral debit balance									
Power Smart programs	\$ (75 159)	\$ (77 059)	\$ (75 008)	\$ (73 863)	\$ (73 203)	\$ (72 900)	\$ (74 807)	\$ (77 517)	\$ (80 195)
Change in depreciation method	(17 862)	(17 862)	(17 862)	(17 862)	(17 862)	(17 862)	(17 862)	(17 862)	(17 862)
Deferred ineligible overhead	(9 090)	(9 090)	(9 090)	(9 090)	(9 090)	(9 090)	(9 090)	(9 090)	(9 090)
Loss on disposal of assets	(577)	(577)	(577)	(577)	(577)	(577)	(577)	(577)	(577)
Site restoration costs	(1 724)	(1 514)	(1 334)	(1 046)	(891)	(616)	(433)	(295)	(188)
Regulatory costs	(1 789)	(1 821)	(1 866)	(1 900)	(1 947)	(1 982)	(2 031)	(2 068)	(2 120)
Acquisition costs	(692)	(692)	(678)	(300)	(300)	(199)	(6)	-	-
Affordable Energy Fund	(95)	-	-	-	-	-	-	-	-
Conawapa Generation	(12 645)	(12 645)	(12 645)	(12 645)	(12 645)	(12 645)	(12 645)	(12 645)	(12 645)
DSM deferral	-	-	-	-	-	-	-	-	-
	(119 633)	(121 259)	(119 061)	(117 283)	(116 515)	(115 871)	(117 452)	(120 054)	(122 677)
Closing balance of regulatory deferral debit balance									
Power Smart programs	\$ 394 890	\$ 396 731	\$ 404 524	\$ 412 917	\$ 423 607	\$ 436 331	\$ 448 890	\$ 460 508	\$ 471 246
Change in depreciation method	206 733	188 871	171 010	153 148	135 286	117 424	99 563	81 701	63 839
Deferred ineligible overhead	101 758	92 668	83 578	74 488	65 398	56 308	47 218	38 128	29 038
Loss on disposal of assets	5 481	4 904	4 327	3 750	3 173	2 596	2 019	1 442	866
Site restoration costs	6 314	4 800	3 466	2 420	1 529	912	479	184	(4)
Regulatory costs	2 838	3 222	2 989	3 391	3 147	3 566	3 312	3 750	3 484
Acquisition costs	2 176	1 484	806	506	206	7	1	1	1
Affordable Energy Fund	(534)	(534)	(534)	(534)	(534)	(534)	(534)	(534)	(534)
Conawapa Generation	267 003	254 358	241 713	229 067	216 422	203 776	191 131	178 486	165 840
DSM deferral	43 600	43 600	43 600	43 600	43 600	43 600	43 600	43 600	43 600
	1 030 259	990 105	955 478	922 753	891 834	863 988	835 679	807 266	777 376

TABLE 2: MH16 REGULATORY DEFERRAL CREDIT BALANCE											
<i>in thousands of dollars</i>											
	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27
	Outlook	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast
Opening balance of regulatory deferral credit balance											
DSM deferral	43 600	43 600	43 600	43 600	43 600	43 600	43 600	43 600	43 600	43 600	43 600
	43 600	43 600	43 600	43 600	43 600	43 600	43 600	43 600	43 600	43 600	43 600
Additions to regulatory deferral credit balance											
DSM deferral	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-
Amortization of regulatory deferral credit balance											
DSM deferral	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-
Closing balance of regulatory deferral credit balance											
DSM deferral	43 600	43 600	43 600	43 600	43 600	43 600	43 600	43 600	43 600	43 600	43 600
	43 600	43 600	43 600	43 600	43 600	43 600	43 600	43 600	43 600	43 600	43 600

TABLE 2: MH16 REGULATORY DEFERRAL CREDIT BALANCE									
<i>in thousands of dollars</i>									
	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34	2034/35	2035/36
	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast
Opening balance of regulatory deferral credit balance									
DSM deferral	43 600	43 600	43 600	43 600	43 600	43 600	43 600	43 600	43 600
	43 600	43 600	43 600	43 600	43 600	43 600	43 600	43 600	43 600
Additions to regulatory deferral credit balance									
DSM deferral	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-
Amortization of regulatory deferral credit balance									
DSM deferral	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-
Closing balance of regulatory deferral credit balance									
DSM deferral	43 600	43 600	43 600	43 600	43 600	43 600	43 600	43 600	43 600
	43 600	43 600	43 600	43 600	43 600	43 600	43 600	43 600	43 600

TABLE 3: MH16 UPDATE WITH INTERIM REGULATORY DEFERRAL DEBIT BALANCE											
<i>in thousands of dollars</i>											
	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27
	Actual	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast
Opening balance of regulatory deferral debit balance											
Power Smart programs	\$ 188 873	\$ 204 389	\$ 225 832	\$ 288 574	\$ 339 622	\$ 379 007	\$ 410 417	\$ 415 486	\$ 410 298	\$ 403 760	\$ 398 361
Change in depreciation method	59 441	90 827	124 778	164 284	200 716	236 074	272 464	314 894	298 439	280 577	262 716
Deferred ineligible overhead	40 400	60 600	79 033	94 688	109 333	122 968	135 593	147 208	138 118	129 028	119 938
Loss on disposal of assets	8 339	9 641	9 352	8 775	8 198	7 622	7 045	6 468	5 891	5 314	4 737
Site restoration costs	30 710	28 001	26 689	25 401	22 954	20 712	18 855	16 232	13 998	11 828	9 837
Regulatory costs	3 821	5 409	6 131	4 805	3 260	2 648	2 155	2 709	2 496	2 841	2 620
Acquisition costs	10 480	9 788	9 096	8 404	7 712	7 020	6 328	5 636	4 944	4 252	3 560
Affordable Energy Fund	4 324	4 163	3 714	3 234	2 670	2 126	1 615	1 126	672	350	203
Conawapa Generation	-	-	-	-	368 166	355 521	342 875	330 230	317 585	304 939	292 294
DSM deferral	43 600	48 800	48 800	48 800	48 800	48 800	48 800	48 800	48 800	48 800	48 800
	389 987	461 617	533 425	646 965	1 111 433	1 182 497	1 246 148	1 288 788	1 241 241	1 191 690	1 143 065
Additions to regulatory deferral debit balance											
Power Smart programs	\$ 50 453	\$ 57 184	\$ 99 404	\$ 94 251	\$ 88 857	\$ 86 929	\$ 66 549	\$ 60 271	\$ 62 350	\$ 66 576	\$ 70 722
Change in depreciation method	31 386	33 952	39 506	42 869	44 702	47 924	56 279	-	-	-	-
Deferred ineligible overhead	20 200	20 200	20 200	20 200	20 200	20 200	20 200	-	-	-	-
Loss on disposal of assets	1 302	-	-	-	-	-	-	-	-	-	-
Site restoration costs	1 361	2 794	2 703	1 408	1 317	1 133	6	-	-	-	-
Regulatory costs	3 946	3 664	2 339	1 339	1 882	1 391	1 954	1 444	2 029	1 499	2 114
Acquisition costs	-	-	-	-	-	-	-	-	-	-	-
Affordable Energy Fund	63	-	-	-	-	-	-	-	-	-	-
Conawapa Generation	-	-	-	379 758	-	-	-	-	-	-	-
DSM deferral	5 200	-	-	-	-	-	-	-	-	-	-
	113 912	117 794	164 151	539 825	156 958	157 576	144 988	61 715	64 379	68 075	72 836
Amortization of regulatory deferral debit balance											
Power Smart programs	\$ (34 937)	\$ (35 742)	\$ (36 662)	\$ (43 202)	\$ (49 473)	\$ (55 519)	\$ (61 480)	\$ (65 459)	\$ (68 888)	\$ (71 976)	\$ (73 251)
Change in depreciation method	-	-	-	(6 437)	(9 345)	(11 534)	(13 850)	(16 455)	(17 862)	(17 862)	(17 862)
Deferred ineligible overhead	-	(1 768)	(4 545)	(5 555)	(6 565)	(7 575)	(8 585)	(9 090)	(9 090)	(9 090)	(9 090)
Loss on disposal of assets	-	(288)	(577)	(577)	(577)	(577)	(577)	(577)	(577)	(577)	(577)
Site restoration costs	(4 070)	(4 106)	(3 990)	(3 855)	(3 559)	(2 990)	(2 629)	(2 234)	(2 170)	(1 991)	(1 826)
Regulatory costs	(2 358)	(2 942)	(3 665)	(2 884)	(2 495)	(1 883)	(1 400)	(1 657)	(1 684)	(1 721)	(1 749)
Acquisition costs	(692)	(692)	(692)	(692)	(692)	(692)	(692)	(692)	(692)	(692)	(692)
Affordable Energy Fund	(224)	(449)	(480)	(563)	(545)	(511)	(489)	(454)	(322)	(147)	(97)
Conawapa Generation	-	-	-	(11 592)	(12 645)	(12 645)	(12 645)	(12 645)	(12 645)	(12 645)	(12 645)
DSM deferral	-	-	-	-	-	-	-	-	-	-	-
	(42 281)	(45 987)	(50 612)	(75 357)	(85 894)	(93 926)	(102 347)	(109 263)	(113 930)	(116 700)	(117 790)
Closing balance of regulatory deferral debit balance											
Power Smart programs	\$ 204 389	\$ 225 832	\$ 288 574	\$ 339 622	\$ 379 007	\$ 410 417	\$ 415 486	\$ 410 298	\$ 403 760	\$ 398 361	\$ 395 831
Change in depreciation method	90 827	124 778	164 284	200 716	236 074	272 464	314 894	298 439	280 577	262 716	244 854
Deferred ineligible overhead	60 600	79 033	94 688	109 333	122 968	135 593	147 208	138 118	129 028	119 938	110 848
Loss on disposal of assets	9 641	9 352	8 775	8 198	7 622	7 045	6 468	5 891	5 314	4 737	4 160
Site restoration costs	28 001	26 689	25 401	22 954	20 712	18 855	16 232	13 998	11 828	9 837	8 011
Regulatory costs	5 409	6 131	4 805	3 260	2 648	2 155	2 709	2 496	2 841	2 620	2 985
Acquisition costs	9 788	9 096	8 404	7 712	7 020	6 328	5 636	4 944	4 252	3 560	2 868
Affordable Energy Fund	4 163	3 714	3 234	2 670	2 126	1 615	1 126	672	350	203	106
Conawapa Generation	-	-	-	368 166	355 521	342 875	330 230	317 585	304 939	292 294	279 649
DSM deferral	48 800	48 800	48 800	48 800	48 800	48 800	48 800	48 800	48 800	48 800	48 800
	461 617	533 425	646 965	1 111 433	1 182 497	1 246 148	1 288 788	1 241 241	1 191 690	1 143 065	1 098 110

TABLE 3: MH16 UPDATE WITH INTERIM REGULATORY DEFERRAL DEBIT BALANCE									
<i>in thousands of dollars</i>									
2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34	2034/35	2035/36	
Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	
Opening balance of regulatory deferral debit balance									
Power Smart programs	\$ 395 831	\$ 395 200	\$ 397 041	\$ 404 833	\$ 413 227	\$ 423 916	\$ 436 640	\$ 449 200	\$ 460 818
Change in depreciation method	244 854	226 992	209 130	191 269	173 407	155 545	137 684	119 822	101 960
Deferred ineligible overhead	110 848	101 758	92 668	83 578	74 488	65 398	56 308	47 218	38 128
Loss on disposal of assets	4 160	3 583	3 006	2 429	1 852	1 275	698	121	(456)
Site restoration costs	8 011	6 286	4 773	3 439	2 393	1 502	885	452	157
Regulatory costs	2 985	2 760	3 145	2 911	3 313	3 070	3 489	3 235	3 672
Acquisition costs	2 868	2 176	1 484	806	506	206	7	1	1
Affordable Energy Fund	106	11	11	11	11	11	11	11	11
Conawapa Generation	279 649	267 003	254 358	241 713	229 067	216 422	203 776	191 131	178 486
DSM deferral	48 800	48 800	48 800	48 800	48 800	48 800	48 800	48 800	48 800
	1 098 110	1 054 570	1 014 416	979 788	947 064	916 145	888 298	859 990	831 577
Additions to regulatory deferral debit balance									
Power Smart programs	\$ 74 678	\$ 78 900	\$ 82 801	\$ 82 257	\$ 83 893	\$ 85 623	\$ 87 367	\$ 89 135	\$ 90 933
Change in depreciation method	-	-	-	-	-	-	-	-	-
Deferred ineligible overhead	-	-	-	-	-	-	-	-	-
Loss on disposal of assets	-	-	-	-	-	-	-	-	-
Site restoration costs	-	-	-	-	-	-	-	-	-
Regulatory costs	1 564	2 206	1 632	2 302	1 703	2 402	1 777	2 506	1 854
Acquisition costs	-	-	-	-	-	-	-	-	-
Affordable Energy Fund	-	-	-	-	-	-	-	-	-
Conawapa Generation	-	-	-	-	-	-	-	-	-
DSM deferral	-	-	-	-	-	-	-	-	-
	76 243	81 106	84 433	84 558	85 596	88 025	89 144	91 640	92 787
Amortization of regulatory deferral debit balance									
Power Smart programs	\$ (75 309)	\$ (77 059)	\$ (75 008)	\$ (73 863)	\$ (73 203)	\$ (72 900)	\$ (74 807)	\$ (77 517)	\$ (80 195)
Change in depreciation method	(17 862)	(17 862)	(17 862)	(17 862)	(17 862)	(17 862)	(17 862)	(17 862)	(17 862)
Deferred ineligible overhead	(9 090)	(9 090)	(9 090)	(9 090)	(9 090)	(9 090)	(9 090)	(9 090)	(9 090)
Loss on disposal of assets	(577)	(577)	(577)	(577)	(577)	(577)	(577)	(577)	(577)
Site restoration costs	(1 724)	(1 514)	(1 334)	(1 046)	(891)	(616)	(433)	(295)	(188)
Regulatory costs	(1 789)	(1 821)	(1 866)	(1 900)	(1 947)	(1 982)	(2 031)	(2 068)	(2 120)
Acquisition costs	(692)	(692)	(678)	(300)	(300)	(199)	(6)	-	-
Affordable Energy Fund	(95)	-	-	-	-	-	-	-	-
Conawapa Generation	(12 645)	(12 645)	(12 645)	(12 645)	(12 645)	(12 645)	(12 645)	(12 645)	(12 645)
DSM deferral	-	-	-	-	-	-	-	-	-
	(119 783)	(121 259)	(119 061)	(117 283)	(116 515)	(115 871)	(117 452)	(120 054)	(122 677)
Closing balance of regulatory deferral debit balance									
Power Smart programs	\$ 395 200	\$ 397 041	\$ 404 833	\$ 413 227	\$ 423 916	\$ 436 640	\$ 449 200	\$ 460 818	\$ 471 556
Change in depreciation method	226 992	209 130	191 269	173 407	155 545	137 684	119 822	101 960	84 098
Deferred ineligible overhead	101 758	92 668	83 578	74 488	65 398	56 308	47 218	38 128	29 038
Loss on disposal of assets	3 583	3 006	2 429	1 852	1 275	698	121	(456)	(1 032)
Site restoration costs	6 286	4 773	3 439	2 393	1 502	885	452	157	(31)
Regulatory costs	2 760	3 145	2 911	3 313	3 070	3 489	3 235	3 672	3 407
Acquisition costs	2 176	1 484	806	506	206	7	1	1	1
Affordable Energy Fund	11	11	11	11	11	11	11	11	11
Conawapa Generation	267 003	254 358	241 713	229 067	216 422	203 776	191 131	178 486	165 840
DSM deferral	48 800	48 800	48 800	48 800	48 800	48 800	48 800	48 800	48 800
	1 054 570	1 014 416	979 788	947 064	916 145	888 298	859 990	831 577	801 687

TABLE 4: MH16 UPDATE WITH INTERIM REGULATORY DEFERRAL CREDIT BALANCE											
<i>in thousands of dollars</i>											
	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27
	Actual	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast
Opening balance of regulatory deferral credit balance											
DSM deferral	43 600	48 800	48 800	48 800	48 800	48 800	48 800	48 800	48 800	48 800	48 800
	43 600	48 800	48 800	48 800	48 800	48 800	48 800	48 800	48 800	48 800	48 800
Additions to regulatory deferral credit balance											
DSM deferral	5 200	-	-	-	-	-	-	-	-	-	-
	5 200	-	-	-	-	-	-	-	-	-	-
Amortization of regulatory deferral credit balance											
DSM deferral	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-
Closing balance of regulatory deferral credit balance											
DSM deferral	48 800	48 800	48 800	48 800	48 800	48 800	48 800	48 800	48 800	48 800	48 800
	48 800	48 800	48 800	48 800	48 800	48 800	48 800	48 800	48 800	48 800	48 800

TABLE 4: MH16 UPDATE WITH INTERIM REGULATORY DEFERRAL CREDIT BALANCE								
<i>in thousands of dollars</i>								
2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34	2034/35	2035/36
Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast
Opening balance of regulatory deferral credit balance								
DSM deferral	48 800	48 800	48 800	48 800	48 800	48 800	48 800	48 800
	48 800	48 800	48 800	48 800	48 800	48 800	48 800	48 800
Additions to regulatory deferral credit balance								
DSM deferral	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Amortization of regulatory deferral credit balance								
DSM deferral	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Closing balance of regulatory deferral credit balance								
DSM deferral	48 800	48 800	48 800	48 800	48 800	48 800	48 800	48 800
	48 800	48 800	48 800	48 800	48 800	48 800	48 800	48 800

REFERENCE:

Tab 6, Pages 42-43

PREAMBLE TO IR (IF ANY):

QUESTION:

- d) Figure 6.30 shows additions to the regulatory deferral account for the Affordable Energy Fund ending in 2015/16 (amortization continues throughout the 2018/19 horizon). Please provide all assumptions regarding the Affordable Energy Fund spending and amortization supporting this forecast.

RATIONALE FOR QUESTION:

RESPONSE:

The additions to the Affordable Energy Fund ("AEF") deferral account in 2014/15 and 2015/16 are the result of interest accruing on the balance of the AEF. No interest accruals are forecast in future periods as the amounts are immaterial.

The AEF spending forecast is based on the *Affordable Energy Fund Forecast* on page 50 of Appendix 7.2 – Demand Side Management Plan 2016/17 – Supplemental Report: 15 yr. (2016 to 2031).

The amortization assumption is that the Affordable Energy Fund costs are expensed in the year they are incurred. Thus the spending in each year will match the amortization for that year.

REFERENCE:

Tab 6, Pages 42-43

PREAMBLE TO IR (IF ANY):

QUESTION:

- e) Please provide a full description of the loss on disposal of assets shown in Figure 6.30, the basis for the losses shown, the basis for no additions related to losses in 2017/18 and beyond, and the assumptions regarding amortization of these losses.
- f) Please indicate the rationale for recording losses on disposal in Figure 6.30 under an assumed ELG depreciation approach being used for financial reporting purposes, given Hydro's previous testimony that ELG was being adopted to eliminate the need to record losses on disposal.
- g) Please provide a copy of MIPUG/MH-I-18 from the 2015 GRA (Case 1) showing the comparison of ELG and ASL but adding columns to show a calculation of the annual deferral as proposed by Hydro were it to be applied in that example, and the amortization of this deferral balance by year as well as the unamortized balance by year as proposed by Manitoba Hydro.
- h) In Tab 6 page 43 lines 21-23, Hydro indicates loss on disposal of assets can occur "for those assets retired prior to or subsequent to reaching their expected service life". What is meant by the term "or subsequent to" and please describe (i) how this gives rise to a loss on disposal and (ii) how (if at all) this is different than group depreciation methods applied by Hydro prior to adopting the ELG procedure.
- i) Per Tab 3 Supplement, page 14, Hydro notes that: "Manitoba Hydro included an assumption that ELG and ASL depreciation methodology differences would accrue to a regulatory deferral account until March 31, 2023, the fiscal year end of the last Keeyask unit in-service". Please indicate the basis for this assumption, rather than reflecting that ASL remains the permanent regulatory depreciation methodology. Please indicate the relevance of the last Keeyask unit in coming to this assumption.
- j) Please provide the rationale for the assumption that the ELG and ASL differences be amortized over 20 years, rather than a period such as the average life of Manitoba Hydro's assets (the average period over which assets will be amortized).

- k) Please provide the basis for assuming that \$50 million of downsizing costs would be expensed in 2017/18 rather than deferred and amortized (as a financial statement presentation, or if needed as a regulatory deferral) to match this expense with the long-term benefits expected to be achieved by the downsizing.

RATIONALE FOR QUESTION:

RESPONSE:

- e) The losses on disposal of assets as presented in Figure 6.30 of Tab 6 represent the net loss as calculated in accordance with the Equal Life Group (ELG) method of depreciation. Under ELG, assets are considered to be fully depreciated on retirement, provided the timing of retirements is consistent with that expected under the depreciation assumptions used. Losses or gains are experienced when assets are retired earlier or later than expected. The net loss (or gain) for financial reporting purposes is determined by comparing actual retirements to expected retirements, for each vintage year within each depreciable component, with a gain or loss calculated as the net book value on the difference in actual versus expected retirements, adjusted for the cost of removing assets from service as well as any proceeds received on disposition.

Under ELG, it is expected that gains and losses will be minimal. Experienced losses ranging from 1.6% - 0.8% of depreciation expense since 2014/15 support that expectation. Given the expectation that net losses will continue to remain relatively small, no provision was made in the forecast for future gains or losses on disposal of assets.

For financial reporting purposes under IFRS, Manitoba Hydro is required to recognize gains and losses associated with the disposal of assets as an immediate charge against income. Prior to the implementation of IFRS, Manitoba Hydro deferred the recognition of gains and losses on the disposal of assets by recognizing the gains or losses within accumulated depreciation. The balances were included as an adjustment to future depreciation rates (as determined in formal depreciation studies) and as such, gains and losses were recognized over the remaining service life of the assets. For rate-setting purposes, Manitoba Hydro is continuing to defer gains and losses on the disposition of

assets, consistent with the direction provided by the Public Utilities Board in Order 73/15.

Gains and losses on the disposal of assets are initially recorded in Depreciation and Amortization expense and are offset within the Net Movement in Regulatory Deferral Account. Effectively, this accounting treatment defers the gains and losses in a regulatory deferral account which is then subsequently amortized over a 20 year period.

- f) Under IFRS, it is a requirement to record gains or losses on disposal of assets within net income. Manitoba Hydro did not previously state that the ELG method of depreciation would eliminate the need to record losses on disposal. Representations made by Manitoba Hydro during the 2014/15 & 2015/16 Electric GRA stated that the magnitude of gains and losses to be reported under IFRS would be minimized by using ELG as compared to Manitoba Hydro's CGAAP Average Service Life (ASL) methodology. The following testimony from the 2014/15 & 2015/16 GRA confirms these representations: Transcript Page 3456, Lines 11-17 (Ms. Sandy Bauerlein) :

The second difference that IFRS requires is that gains and losses on retirement of assets have to be charged immediately into income un – under IFRS. Under Canadian GAAP any gains and losses on retirement of the asset are charged against accumulated depreciation and are factored into future depreciation rates.

Transcript Page 3472, Line 19 to Page 3473, Line 2 (Ms. Sandy Bauerlein):

So again, under IFRS, though, the expectation is because you have a greater degree of precision, because the depreciation rates themselves are calculated more representative of the service lives in the group, it will result in fewer gains and losses. So we expect to have – reductions in gains and losses are expected under the ELG method because that calculation considers that service life dispersion.

Financial results for the three years since the implementation of IFRS further support this representation. The following table compares the net losses reported under the ELG methodology implemented under IFRS versus the net losses which would have been experienced under Manitoba Hydro's previous CGAAP ASL methodology.

\$ millions	2014/15	2015/16	2016/17
	Actual	Actual	Outlook
Net loss reported (IFRS ELG)	5 527	2 812	3 200
Net loss under CGAAP ASL	21 501	14 386	23 200

g) Please see below for a version of MIPUG/MH I-18 (Case 1) from the 2014/15 & 2015/16 Electric GRA updated for the proposed accounting treatment for the annual IFRS-compliant ELG – CGAAP ASL difference as assumed in MH16 Update with Interim. A summary of the assumptions used in the accounting for the IFRS-compliant ELG – CGAAP ASL difference is as follows:

- The difference in depreciation expense between the ELG and ASL methods is deferred in a regulatory deferral account starting in 2014/15.
- The annual difference in depreciation is amortized over a 20 year period.
- Amortization of the deferral balance commences in 2019/20.
- No deferral of the difference in ELG-ASL depreciation following the final in-service date for the Keeyask Generating Station (i.e. no deferrals after 2022/23).

Please note that the years presented in the table start in fiscal 2014 as no ELG-ASL deferral account was maintained in the years prior to Manitoba Hydro’s transition to IFRS.

MIPUG/MH I-6(g)

Case 1 2015 GRA, ELG - ASL comparison

Assumes 20 yr amortization of ELG-ASL difference (starting in 2019/20) and no deferrals following 2022/23 fiscal year

Year	Cost	ELG Annual Rate	ELG Annual Expense	ASL Annual Rate	ASL Annual Expense	Annual ELG - ASL Deferral	Cumulative ELG - ASL Deferral	Annual (20 yr) Amortization ELG-ASL Deferral	Cumulative Amortization ELG-ASL Deferral	Unamortized Balance ELG-ASL Deferral
2014	890.40	0.80%	7.12	0.823%	7.33	-	-	-	-	-
2015	884.84	0.80%	7.08	0.823%	7.28	(0.20)	(0.20)	-	-	(0.20)
2016	879.02	0.79%	6.94	0.823%	7.23	(0.29)	(0.49)	-	-	(0.49)
2017	873.00	0.79%	6.90	0.823%	7.18	(0.29)	(0.78)	-	-	(0.78)
2018	866.77	0.79%	6.85	0.823%	7.13	(0.29)	(1.07)	-	-	(1.07)
2019	860.34	0.79%	6.80	0.823%	7.08	(0.28)	(1.35)	-	-	(1.35)
2020	853.70	0.79%	6.74	0.823%	7.03	(0.28)	(1.63)	(0.07)	(0.07)	(1.57)
2021	846.78	0.78%	6.60	0.823%	6.97	(0.36)	(2.00)	(0.08)	(0.15)	(1.85)
2022	839.65	0.78%	6.55	0.823%	6.91	(0.36)	(2.36)	(0.10)	(0.25)	(2.11)
2023	832.30	0.78%	6.49	0.823%	6.85	(0.36)	(2.72)	(0.12)	(0.37)	(2.35)
2024	824.73	0.78%	6.43	0.823%	6.79	-	(2.72)	(0.14)	(0.50)	(2.21)
2025	816.95	0.78%	6.37	0.823%	6.72	-	(2.72)	(0.14)	(0.64)	(2.08)
2026	808.88	0.77%	6.23	0.823%	6.66	-	(2.72)	(0.14)	(0.77)	(1.94)
2027	800.58	0.77%	6.16	0.823%	6.59	-	(2.72)	(0.14)	(0.91)	(1.81)
2028	792.05	0.77%	6.10	0.823%	6.52	-	(2.72)	(0.14)	(1.05)	(1.67)
2029	783.28	0.77%	6.03	0.823%	6.45	-	(2.72)	(0.14)	(1.18)	(1.53)
2030	774.26	0.77%	5.96	0.823%	6.37	-	(2.72)	(0.14)	(1.32)	(1.40)
2031	764.88	0.77%	5.89	0.823%	6.29	-	(2.72)	(0.14)	(1.45)	(1.26)
2032	755.20	0.76%	5.74	0.823%	6.22	-	(2.72)	(0.14)	(1.59)	(1.13)
2033	745.20	0.76%	5.66	0.823%	6.13	-	(2.72)	(0.14)	(1.73)	(0.99)
2034	734.87	0.76%	5.59	0.823%	6.05	-	(2.72)	(0.14)	(1.86)	(0.86)
2035	724.19	0.76%	5.50	0.823%	5.96	-	(2.72)	(0.14)	(2.00)	(0.72)
2036	713.01	0.76%	5.42	0.823%	5.87	-	(2.72)	(0.14)	(2.13)	(0.58)
2037	701.44	0.75%	5.26	0.823%	5.77	-	(2.72)	(0.14)	(2.27)	(0.45)
2038	689.46	0.75%	5.17	0.823%	5.67	-	(2.72)	(0.14)	(2.40)	(0.31)
2039	677.06	0.75%	5.08	0.823%	5.57	-	(2.72)	(0.14)	(2.54)	(0.18)
2040	664.24	0.75%	4.98	0.823%	5.47	-	(2.72)	(0.07)	(2.61)	(0.11)
2041	650.85	0.75%	4.88	0.823%	5.36	-	(2.72)	(0.05)	(2.66)	(0.05)
2042	637.04	0.74%	4.71	0.823%	5.24	-	(2.72)	(0.04)	(2.70)	(0.02)
2043	622.81	0.74%	4.61	0.823%	5.13	-	(2.72)	(0.02)	(2.72)	-
2044	608.18	0.74%	4.50	0.823%	5.01	-	(2.72)	-	(2.72)	-
2045	593.15	0.74%	4.39	0.823%	4.88	-	(2.72)	-	(2.72)	-
2046	577.63	0.73%	4.22	0.823%	4.75	-	(2.72)	-	(2.72)	-
2047	561.77	0.73%	4.10	0.823%	4.62	-	(2.72)	-	(2.72)	-
2048	545.59	0.73%	3.98	0.823%	4.49	-	(2.72)	-	(2.72)	-
2049	529.13	0.73%	3.86	0.823%	4.35	-	(2.72)	-	(2.72)	-
2050	512.40	0.73%	3.74	0.823%	4.22	-	(2.72)	-	(2.72)	-
2051	495.39	0.73%	3.62	0.823%	4.08	-	(2.72)	-	(2.72)	-
2052	478.22	0.72%	3.44	0.823%	3.94	-	(2.72)	-	(2.72)	-
2053	460.92	0.72%	3.32	0.823%	3.79	-	(2.72)	-	(2.72)	-
2054	443.53	0.72%	3.19	0.823%	3.65	-	(2.72)	-	(2.72)	-
2055	426.08	0.72%	3.07	0.823%	3.51	-	(2.72)	-	(2.72)	-
2056	408.63	0.72%	2.94	0.823%	3.36	-	(2.72)	-	(2.72)	-
2057	391.24	0.72%	2.82	0.823%	3.22	-	(2.72)	-	(2.72)	-
2058	373.94	0.71%	2.65	0.823%	3.08	-	(2.72)	-	(2.72)	-
2059	356.76	0.71%	2.53	0.823%	2.94	-	(2.72)	-	(2.72)	-
2060	339.74	0.71%	2.41	0.823%	2.80	-	(2.72)	-	(2.72)	-
2061	323.00	0.71%	2.29	0.823%	2.66	-	(2.72)	-	(2.72)	-
2062	306.52	0.71%	2.18	0.823%	2.52	-	(2.72)	-	(2.72)	-
2063	289.87	0.71%	2.06	0.823%	2.39	-	(2.72)	-	(2.72)	-
Total			1 000.81		1 000.37					

- h) The comment on lines 21-23 of page 43 of Tab 6 is incorrect. Typically, losses on the disposal of assets occur when assets are retired prior to reaching their expected service life and gains on the disposal of assets occur when assets are retired subsequent to reaching their expected service life. Lines 21-23 should have more appropriately read as follows:

Losses or gains on the disposal of assets is the net asset retirement amount for those assets retired prior to or subsequent to reaching their expected service life as determined under the ELG method of depreciation.

- i) Throughout Manitoba Hydro's transition to IFRS, Manitoba Hydro has implemented accounting changes intended to minimize the impacts of IFRS on customer rates while also limiting the extent of growth in regulatory deferral accounts so as to avoid pushing today's financial burdens out to future generations, as discussed in Manitoba Hydro's response to MIPUG MFR 5.

The assumption to continue to defer the difference in depreciation expense between the ELG and CGAAP ASL methods until March 31, 2023, the final in-service date for the Keeyask generating station, recognizes that annual increases in export sales made possible by the capacity of the Keeyask plant will be more than sufficient to offset annual increases in depreciation resulting from the impacts of the transition to IFRS.

The depreciation related assumptions in MH16 do not reflect the CGAAP ASL method as a permanent regulatory depreciation method for financial reporting purposes. Consistent with the PUB directive in page 97 Order 73/15, Manitoba Hydro is continuing to use CGAAP ASL for rate-setting purposes until further Order of the PUB on this matter. As per page 97 of PUB Order No. 73/15:

Manitoba Hydro is to continue to use its existing Average Service Life methodology for calculating depreciation rates for rate-setting purposes until the Board is satisfied that a change in methodology is warranted.

Manitoba Hydro contends that an IFRS compliant ASL depreciation study would result in a similar increase to depreciation as determined under the ELG method.

- j) The assumption to amortize the annual difference in depreciation expense over a 20 year period is viewed by Manitoba Hydro as a reasonable time period that would reduce the upfront impacts of IFRS on customer rates while also avoiding excessive growth in the regulatory deferral account. Consistent with Manitoba Hydro's response to MIPUG MFR 5, Manitoba Hydro is not supportive of extending the amortization periods of regulatory deferral balances so far into the future that future rate payers are left with the burden of absorbing excessively large regulatory deferral balances. Such circumstances would allow little room in future customer rates for other risks such as drought and higher interest rates. This concern is consistent with past concerns of the PUB with respect to aggressive capitalization and deferral policies as documented on pages 92 and 93 of PUB Order 116/08 which states:

"And, in this Order, the Board continues to be concerned with MH's "aggressive "capitalization and deferral policies with respect to OM&A expenses. While there is an argument for the practice, the net result is that costs now being incurred are not reflected in rates until years, in fact decades, later, meaning the current generation of ratepayers leaves the results for the generations that will follow to meet. The following concern, from Order 143/04, echoes past concerns raised by the Board with respect to the capitalization policies followed by MH. The Board then stated: "... While the Board understands that many of the projects undertaken by MH are long-term in nature, both from a benefit and cost perspective, aggressively capitalizing costs and selecting long amortization periods increases the rate risks to future generations of electric customers"

- k) Please see Manitoba Hydro's response to PUB/MH I-17c which provides an explanation of the accounting requirements under IFRS for restructuring costs.

REFERENCE:

PREAMBLE TO IR (IF ANY):

QUESTION:

- a) Tab 2 page 10 indicates “Total Debt is set to grow from 65% of GCR in 2012/13 to almost 1500% of GCR (i.e., 15 times) at current approved rates”. Please provide calculations for the 65% and 1500%.
- b) Starting with IFF05, and for each subsequent approved IFF, please provide the total value of long-term debt expected to be issued for Electric Operations in the first 10 years of the IFF (e.g., IFF05 should cover approximately 2006-2016).
- c) Please provide Figure 6.26 – Other Expenses for the full 20 year IFF horizon (Tab 6, page 37), for each of IFF16 and MH16 Update. Please ensure to provide a description for the large increases shown for 2019/20.
- d) PUB MFR-73 indicates the scenarios should be prepared: “Following the Board Directives as used in Attachment 46, 2016/17 Interim Application”. Please provide a full description of all changes made by Hydro to the base IFF16 forecasts to implement this method.
- e) Please describe all method differences between PUB-MFR-73 and MIPUG-MFR-5.
- f) Please provide a version of MIPUG-MFR-5 for MH-16 (Updated) 20 year forecast and using the methods as applied in Attachment 28 from the Interim Rate Application (shown in the ‘Attachment 28’ column in the table provided on page 1 of MIPUG-MFR-5). Additionally include the following changes:
 - Amortization of ineligible overhead to net income; and
 - Amortization of ELG/ASL difference to OCI (not net income).

RATIONALE FOR QUESTION:

RESPONSE:

- a) The 65% was a typographical error and should have been reported as 695%. This can be derived from the total electric domestic revenue amount of \$1,341 million over the total long term debt amount of \$9,329 million as reported in the Manitoba Hydro-Electric

2016/17 Annual Report. The “almost 1500%” is derived from the MH16 financial statements in 2023 when long-term debt reaches its highest level of \$22,905 million, the approved domestic revenue amount is, \$1,559 million, indicating that debt levels are more than doubling over this time period. Under MH16 Update with Interim, total debt has increased further and is projected to be over 1500% of domestic revenue.

- b) Please see Figure 1 below for the total value of long-term debt issued for Electric Operations in the first 10 years of the forecast from MH05 to MH16 Update with Interim.

Figure 1

Total New Long Term Debt Issued - Electric Operations

	MH05	MH06	MH07	MH08	MH09	MH10	MH11	MH12	MH13	MH14	MH15	MH16	MH16 Update	MH16 Update with Interim
2006	180													
2007	300	166												
2008	750	1 030	912											
2009	400	400	800	800										
2010	600	495	895	895	745									
2011	400	600	600	800	800	970								
2012	400	400	400	400	600	600	811							
2013	200	460	460	260	540	730	900	1 036						
2014	1 000	1 000	1 400	1 200	1 600	1 390	1 630	1 970	1 316					
2015	400	800	800	1 400	1 400	1 155	1 405	1 760	1 740	1 953				
2016	600	1 000	1 200	2 000	1 800	1 800	1 990	2 190	2 570	2 390	2 457			
2017		1 050	1 000	1 600	1 800	1 400	2 000	2 180	2 390	3 190	3 370	2 743	2166 (act)	2166 (act)
2018			1 200	1 800	1 800	2 200	2 590	2 580	2 590	3 200	2 970	3 370	3 478	3 468
2019				1 800	1 400	2 200	1 800	2 190	2 800	2 790	2 800	3 590	3 390	3 600
2020					1 000	1 800	1 590	1 390	2 000	1 600	1 390	1 970	2 160	2 160
2021						1 390	2 190	1 980	1 590	1 590	1 190	1 790	2 190	2 190
2022							1 590	1 790	1 390	600	400	790	790	990
2023								1 970	1 970	560	780	360	1 170	1 160
2024									2 190	580	380	(10)	(20)	(10)
2025										390	190	(10)	(10)	(10)
2026											550	(50)	150	(50)
2027												790	990	590
Total	\$5 230	\$7 401	\$9 667	\$12 955	\$13 485	\$15 635	\$18 496	\$21 036	\$22 546	\$18 843	\$16 477	\$15 333	\$14 288	\$14 088

Note: The total borrowing requirements do not include refinancing of underlying debt with ongoing interest rate swaps.

- c) Please see Figure 2 and Figure 3 below for the 20 year forecast for MH16 and MH16 Update with Interim, respectively. The increase in Other Expense in 2019/20 is due to the write-off and subsequent deferral of Conawapa project costs through the regulatory deferral account.

Figure 2

MANITOBA HYDRO
MH16 OTHER EXPENSES
(000's)

	2017/18 Forecast	2018/19 Forecast	2019/20 Forecast	2020/21 Forecast	2021/22 Forecast	2022/23 Forecast	2023/24 Forecast	2024/25 Forecast	2025/26 Forecast	2026/27 Forecast
Power Smart expenses	\$ 55 678	\$ 99 404	\$ 94 251	\$ 88 857	\$ 86 929	\$ 66 549	\$ 60 271	\$ 62 350	\$ 66 576	\$ 70 722
Conawapa Generation	-	-	379 758	-	-	-	-	-	-	-
Site restoration	2 794	2 703	1 408	1 317	1 133	6	-	-	-	-
Regulatory costs	3 664	2 339	1 339	1 882	1 391	1 954	1 444	2 029	1 499	2 114
Cost of services provided to external entities	2 200	2 200	2 244	2 287	2 330	2 370	2 410	2 451	2 493	2 535
Consulting engagement	-	-	-	-	-	-	-	-	-	-
Corporate restructuring costs	50 388	2 193	2 193	-	-	-	-	-	-	-
Miscellaneous	132	132	135	137	140	142	145	147	150	152
Total other expenses *	\$ 114 856	\$ 108 970	\$ 481 328	\$ 94 480	\$ 91 922	\$ 71 021	\$ 64 270	\$ 66 977	\$ 70 718	\$ 75 523
Year over year \$ change	\$ 54 392	\$ (5 886)	\$ 372 357	\$ (386 848)	\$ (2 558)	\$ (20 901)	\$ (6 751)	\$ 2 707	\$ 3 740	\$ 4 805
Year over year % change	90.0%	-5.1%	341.7%	-80.4%	-2.7%	-22.7%	-9.5%	4.2%	5.6%	6.8%

* Amounts related to Power Smart programs, Conawapa Generation, site restoration and regulatory costs have been deferred and are reflected in Net Movement

MANITOBA HYDRO
MH16 OTHER EXPENSES
(000's)

	2027/28 Forecast	2028/29 Forecast	2029/30 Forecast	2030/31 Forecast	2031/32 Forecast	2032/33 Forecast	2033/34 Forecast	2034/35 Forecast	2035/36 Forecast
Power Smart expenses	\$ 74 678	\$ 78 900	\$ 82 801	\$ 82 257	\$ 83 893	\$ 85 623	\$ 87 367	\$ 89 135	\$ 90 933
Conawapa Generation	-	-	-	-	-	-	-	-	-
Site restoration	-	-	-	-	-	-	-	-	-
Regulatory costs	1 564	2 206	1 632	2 302	1 703	2 402	1 777	2 506	1 854
Cost of services provided to external entities	2 578	2 622	2 666	2 712	2 758	2 805	2 852	2 901	2 950
Consulting engagement	-	-	-	-	-	-	-	-	-
Corporate restructuring costs	-	-	-	-	-	-	-	-	-
Miscellaneous	155	157	160	163	165	168	171	174	177
Total other expenses *	\$ 78 976	\$ 83 885	\$ 87 260	\$ 87 433	\$ 88 520	\$ 90 998	\$ 92 168	\$ 94 715	\$ 95 914
Year over year \$ change	\$ 3 453	\$ 4 909	\$ 3 375	\$ 173	\$ 1 087	\$ 2 478	\$ 1 169	\$ 2 548	\$ 1 199
Year over year % change	4.6%	6.2%	4.0%	0.2%	1.2%	2.8%	1.3%	2.8%	1.3%

* Amounts related to Power Smart programs, Conawapa Generation, site restoration and regulatory costs have been deferred and are reflected in Net Movement

Figure 3

MANITOBA HYDRO
MH16 UPDATE with Interim - OTHER EXPENSES
(000's)

	2017/18 Forecast	2018/19 Forecast	2019/20 Forecast	2020/21 Forecast	2021/22 Forecast	2022/23 Forecast	2023/24 Forecast	2024/25 Forecast	2025/26 Forecast	2026/27 Forecast
Power Smart expenses	\$ 57 184	\$ 99 404	\$ 94 251	\$ 88 857	\$ 86 929	\$ 66 549	\$ 60 271	\$ 62 350	\$ 66 576	\$ 70 722
Conawapa Generation	-	-	379 758	-	-	-	-	-	-	-
Site restoration	2 794	2 703	1 408	1 317	1 133	6	-	-	-	-
Regulatory costs	3 664	2 339	1 339	1 882	1 391	1 954	1 444	2 029	1 499	2 114
Cost of services provided to external entities	2 200	2 200	2 244	2 287	2 330	2 370	2 410	2 451	2 493	2 535
Consulting engagement	-	-	-	-	-	-	-	-	-	-
Corporate restructuring costs	50 388	2 193	2 193	-	-	-	-	-	-	-
Miscellaneous	132	132	135	137	140	142	145	147	150	152
Total other expenses *	\$ 116 362	\$ 108 970	\$ 481 328	\$ 94 480	\$ 91 922	\$ 71 021	\$ 64 270	\$ 66 977	\$ 70 718	\$ 75 523
Year over year \$ change	\$ 56 193	\$ (7 392)	\$ 372 357	\$ (386 848)	\$ (2 558)	\$ (20 901)	\$ (6 751)	\$ 2 707	\$ 3 740	\$ 4 805
Year over year % change	93.4%	-6.4%	341.7%	-80.4%	-2.7%	-22.7%	-9.5%	4.2%	5.6%	6.8%

* Amounts related to Power Smart programs, Conawapa Generation, site restoration and regulatory costs have been deferred and are reflected in Net Movement

MANITOBA HYDRO
MH16 UPDATE with Interim - OTHER EXPENSES
(000's)

	2027/28 Forecast	2028/29 Forecast	2029/30 Forecast	2030/31 Forecast	2031/32 Forecast	2032/33 Forecast	2033/34 Forecast	2034/35 Forecast	2035/36 Forecast
Power Smart expenses	\$ 74 678	\$ 78 900	\$ 82 801	\$ 82 257	\$ 83 893	\$ 85 623	\$ 87 367	\$ 89 135	\$ 90 933
Conawapa Generation	-	-	-	-	-	-	-	-	-
Site restoration	-	-	-	-	-	-	-	-	-
Regulatory costs	1 564	2 206	1 632	2 302	1 703	2 402	1 777	2 506	1 854
Cost of services provided to external entities	2 578	2 622	2 666	2 712	2 758	2 805	2 852	2 901	2 950
Consulting engagement	-	-	-	-	-	-	-	-	-
Corporate restructuring costs	-	-	-	-	-	-	-	-	-
Miscellaneous	155	157	160	163	165	168	171	174	177
Total other expenses *	\$ 78 976	\$ 83 885	\$ 87 260	\$ 87 433	\$ 88 520	\$ 90 998	\$ 92 168	\$ 94 715	\$ 95 914
Year over year \$ change	\$ 3 453	\$ 4 909	\$ 3 375	\$ 173	\$ 1 087	\$ 2 478	\$ 1 169	\$ 2 548	\$ 1 199
Year over year % change	4.6%	6.2%	4.0%	0.2%	1.2%	2.8%	1.3%	2.8%	1.3%

* Amounts related to Power Smart programs, Conawapa Generation, site restoration and regulatory costs have been deferred and are reflected in Net Movement

d) PUB MFR 73 is prepared based on the same treatment of overhead and depreciation methodology costs as MH16, except that annual rate increases were altered to those requested by the PUB.

e) The following table from MIPUG MFR 5 compares the accounting treatment reflecting Order 73/15 in MH16 and PUB MFR 73 to Attachment 28 from the 2016/17 Supplemental Filing and MIPUG MFR 5:

	MH16 & PUB MFR 73	ATTACHMENT 28 & MIPUG MFR 5
INELIGIBLE OVERHEAD		
Ineligible Overhead Annual Provision	\$20 million	\$20 million
Ineligible Overhead Amortization Period	20 years	30 years
Ineligible Overhead Deferred Until	2022/23	Indefinite
EQUAL LIFE GROUP (ELG)/AVERAGE SERVICE LIFE (ASL)		
ELG/ASL Amortization Period	20 years	34 years (2.98%)
ELG/ASL Deferred Until	2022/23	Indefinite

f) As outlined in MIPUG MFR 5 (page 3), amortization of regulatory deferral accounts in Other Comprehensive Income is not compliant with IFRS, and as a result, has not been provided in this response.

Please see Manitoba Hydro’s response to PUB/MH I-1b for an update to MIPUG MFR 5 reflecting MH16 Update with Interim and amortization of ineligible overhead and the ELG/ASL difference to net income.

REFERENCE:

Tab 4, Page 31

PREAMBLE TO IR (IF ANY):

Page 31 of Tab 4: Financial Target and Uncertainty Analysis states:

S&P has clarified its rating methodology such that it now defines “self-supporting” as maintaining stand-alone investment grade credit metrics. Since Manitoba Hydro does not meet this standard, Manitoba Hydro’s debt is now **included** in the tax supported debt of the Province. S&P considers Manitoba Hydro to have a “highly leveraged” financial risk profile.

QUESTION:

- a) When did S&P make this clarification?
- b) Please provide a reference to this clarification in terms of S&P methodology documentation or publications.
- c) Please provide S&P’s definition of “investment grade” as it pertains to Manitoba Hydro.
- d) Please provide Manitoba Hydro’s stand-alone credit rating per S&P.
- e) Please discuss the detailed standards that Manitoba Hydro would have to meet in terms of Debt:Equity, net income, cash flow, etc. to meet investment grade status under S&P’s methodology.
- f) If Manitoba Hydro is no longer determined to be self-supporting per S&P, please indicate what percentage of Hydro’s debt was transferred to the province for the purposes of determining the province’s rating and provide specific references to the S&P rating reports where these values are calculated.
- g) If S&P has transferred 100% of Manitoba Hydro’s debt to the province for the purpose of rating the province, please provide Manitoba Hydro’s understanding of the treatment of Hydro’s revenues and rate competitiveness in the metrics used to evaluate the province’s credit rating.
- h) Please provide a summary of the other major Canadian Crown Corporations (Manitoba and other provinces) in regard to their stand-alone ratings and status as self-supporting

entities, and indicate any changes to self-supporting status resulting from the S&P definitional change.

- i) If Manitoba Hydro is not self-supporting based on S&Ps analysis, and is consolidated into the Manitoba Government debt, please indicate the treatment by S&P for the high level of payments to government that are made by Manitoba Hydro to the Manitoba Government. Are these payments now netted out on consolidation?
- j) Please confirm that DBRS stated: "... a large equity injection by the Province that materially increases tax-supported debt could also put downward pressure on the Province's credit profile" (Appendix 4.4, page 2 of 40). Please indicate why Manitoba Hydro cites an equity injection as possibly a beneficial action in light of this statement by DBRS that it could put an adverse impact on the Province's ratings (which are what ultimately determines Hydro's interest rates).
- k) Please provide a copy of all S&P Credit Rating Reports for Manitoba Hydro and the Province of Manitoba over the past 3 years.

RATIONALE FOR QUESTION:

RESPONSE:

- a) S&P has clarified its rating methodology such that it now defines "self-supporting" as maintaining stand-alone investment grade credit metrics. Manitoba Hydro became aware of this clarification on July 14, 2016; the date that S&P announced that it no longer considered MHEB to be self-supporting mainly due to its high and rising leverage.
- b) When Manitoba Hydro was notified of the change to self-supporting status, Manitoba Hydro held conference calls with both the sub-sovereign analyst at S&P as well as the utility analyst. S&P identified, during these calls, that the criteria employed for the determination of self-supporting status was the requirement for the utility to maintain an investment grade stand-alone credit profile. S&P viewed MHEB, on a stand-alone basis, to have a sub-investment grade credit profile (lower than BBB-). This criteria is also defined in the document *Methodology For Rating Non-U.S. Local And Regional Governments* which can be found as Attachment 1 to this response.¹

¹ Standard & Poors Methodology For Rating Non-U.S. Local And Regional Governments, page 44

Response to parts c) to e):

It is Manitoba Hydro’s understanding that according to S&P’s rating methodology within their document titled *Criteria| Corporates | General: Corporate Methodology* (which can be found as Attachment 2 to this response) S&P evaluates an entity’s financial and business risk profiles in order to arrive at an anchor credit rating. Table 18 from S&P’s *Criteria| Corporates | General: Corporate Methodology* document summarizes the ratios that are considered in their financial risk profile analysis.²

Table 18

Cash Flow/Leverage Analysis Ratios--Medial Volatility							
	--Core ratios--		--Supplementary coverage ratios--		--Supplementary payback ratios--		
	FFO/debt (%)	Debt/EBITDA (x)	FFO/cash interest (x)	EBITDA/interest (x)	CFO/debt (%)	FOCF/debt (%)	DCF/debt (%)
Minimal	50+	less than 1.75	10.5+	14+	40+	30+	18+
Modest	35-50	1.75-2.5	7.5-10.5	9-14	27.5-40	17.5-30	11-18
Intermediate	23-35	2.5-3.5	5-7.5	5-9	18.5-27.5	9.5-17.5	6.5-11
Significant	13-23	3.5-4.5	3-5	2.75-5	10.5-18.5	5-9.5	2.5-6.5
Aggressive	9-13	4.5-5.5	1.75-3	1.75-2.75	7-10.5	0-5	(11)-2.5
Highly leveraged	Less than 9	Greater than 5.5	Less than 1.75	Less than 1.75	Less than 7	Less than 0	Less than (11)

In discussions with S&P, they indicated that while S&P has two core ratios for assessing financial risk, for regulated utilities, analysts focus mostly on the FFO/Debt ratio. The supplementary ratios are utilized if there is a divergence between the two core ratios; in other words, if one core ratio indicates ‘significant leverage’ and the other core ratio indicates ‘aggressive leverage’ then analysts will rely on the secondary ratios for direction as to classification. The 3 year average of Manitoba Hydro’s FFO/debt ratio for the last three fiscal years was 2.2% and therefore places MHEB’s financial risk profile into the highly leveraged category.

It is Manitoba Hydro’s understanding that in assessing the business risk profile, S&P looks at Country Risk, Industry Risk and Competitive Position. For regulated utilities in Canada, the first two are low, so the focus of the business risk profile is on Competitive

² Ratings Direct, *Criteria| Corporates| General: Corporate Methodology* dated November 19, 2013, page 35.

Position. For regulated utilities, the components of Competitive Position are weighted as follows:

- o Regulatory advantage assessment 60%
- o Scale, scope and diversity 20%
- o Operating efficiency 20%

At 60% weighting, the regulatory advantage assessment is MHEB's largest business risk component. The following is quoted directly from the *Criteria/ Corporates/ Utilities: Key Credit Factors For the Regulated Utilities Industry* (which can be found as Attachment 3 to this response):

“When assessing regulatory advantage, we first consider four pillars and sub-factors that we believe are key for a utility to recover all its costs, on time and in full, and earn a return on its capital employed:

Regulatory stability:

- Transparency of the key components of the rate setting and how these are assessed
- Predictability that lowers uncertainty for the utility and its stakeholders
- Consistency in the regulatory framework over time

Tariff-setting procedures and design:

- Recoverability of all operating and capital costs in full
- Balance of the interests and concerns of all stakeholders affected
- Incentives that are achievable and contained

Financial stability:

- Timeliness of cost recovery to avoid cash flow volatility
- Flexibility to allow for recovery of unexpected costs if they arise
- Attractiveness of the framework to attract long-term capital
- Capital support during construction to alleviate funding and cash flow pressure during periods of heavy investments

Regulatory independence and insulation:

- Market framework and energy policies that support long-term financeability of the utilities and that is clearly enshrined in law and separates the regulator's powers
- Risks of political intervention is absent so that the regulator can efficiently protect the utility's credit profile even during a stressful event”³

Table 3 from S&P’s *Criteria | Corporates | General: Corporate Methodology* document (found as Attachment 2 to this response) combines the financial and business risk profile in order to determine the anchor credit rating.⁴

Table 3

Combining The Business And Financial Risk Profiles To Determine The Anchor						
	--Financial risk profile--					
Business risk profile	1 (minimal)	2 (modest)	3 (intermediate)	4 (significant)	5 (aggressive)	6 (highly leveraged)
1 (excellent)	aaa/aa+	aa	a+/a	a-	bbb	bbb-/bb+
2 (strong)	aa/aa-	a+/a	a-/bbb+	bbb	bb+	bb
3 (satisfactory)	a/a-	bbb+	bbb/bbb-	bbb-/bb+	bb	b+
4 (fair)	bbb/bbb-	bbb-	bb+	bb	bb-	b
5 (weak)	bb+	bb+	bb	bb-	b+	b/b-
6 (vulnerable)	bb-	bb-	bb-/b+	b+	b	b-

With a “highly leveraged” financial risk profile, the business risk profile would need to be “excellent” in order to achieve an anchor rating with a BBB- ceiling. S&P did not disclose MHEB’s business risk profile, however with a stand-alone credit profile deemed to be sub-investment grade, it is assumed the business risk profile was not considered to be “excellent”.

- f) All of the provincial advances to Manitoba Hydro are included in the Province’s debt burden for the purposes of determining its credit rating. From S&P’s Global Ratings report dated July 29, 2016 on the Province of Manitoba:

³ Ratings Direct, *Criteria | Corporates | Utilities: Key Credit Factors For the Regulated Utilities Industry* copyright 2016, page 5.

⁴ Ratings Direct, *Criteria | Corporates | General: Corporate Methodology* dated November 19, 2013, page 8.

“Our assessment of the province's debt burden fully incorporates the debt on-lent to MHEB (nearly 40% of total tax-supported debt), whereas previously we had considered MHEB's status as a self-supporting entity to be a mitigating factor.”⁵

- g) Should all debt on-lent to the MHEB be included in the Province’s metrics for the purpose of evaluating the province’s credit rating, it is unclear to Manitoba Hydro what adjustments are made by S&P to reported revenues.
- h) The following table provides a summary of other major Canadian Crown Corporations in regard to their status as self-supporting entities as considered by S&P as well as the date of the change in self-supporting status as evidenced by the publication of their respective provincial credit rating reports. S&P does not publish stand-alone ratings for the Crown Corporations.

Crown Corporation	Self-Supporting Status	Date of Change in Status by S&P
Manitoba Hydro	No	July 14, 2016
BC Hydro	Yes	N/A
Hydro Quebec	Yes	N/A
SaskPower	No	June 24, 2016
NB Power	No	June 23, 2016
Nalcor Energy	No	July 19, 2016

- i) Manitoba Hydro is unaware of the treatment by S&P with respect to the payments to government that are made by Manitoba Hydro.
- j) DBRS did state: “... a large equity injection by the Province that materially increases tax-supported debt could also put downward pressure on the Province’s credit profile” (Appendix 4.4, page 2 of 40). However, DBRS also states the following:

⁵ S&P’s Global Ratings report dated July 29, 2016 on the Province of Manitoba, page 3

“... the Utility has begun reviewing initiatives to help alleviate pressure on its key financial ratios, such as improving operational efficiencies, requesting annual rate increases higher than the previously planned 3.95%, as well as a potential equity injection from the Province. DBRS sees these initiatives, if actualized, as positive to Manitoba Hydro’s financial profile, as they will provide some financial flexibility for the Utility, especially in the event of adverse drought conditions or further cost overruns on the projects.”⁶

Manitoba Hydro cites an equity injection as possibly a beneficial action as this would assist in restoring the financial health of the Corporation in a timely manner. Currently, DBRS highlights MHEB’s high leverage as the #1 challenge for the Corporation.⁷

- k) Manitoba Hydro does not have permission from S&P to place the Credit Rating Reports on the public record. As directed by the PUB, Manitoba Hydro will be filing a motion seeking confidential treatment of these reports pursuant to Rule 13.

⁶ DBRS Rating Report on the MHEB dated November 25, 2016 page 1.

⁷ DBRS Rating Report on the MHEB dated November 25, 2016 page 2.



Criteria | Governments | International Public Finance: Methodology For Rating Non-U.S. Local And Regional Governments

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Criteria | Governments | International Public Finance: Methodology For Rating Non-U.S. Local And Regional Governments

(Editor's Note: We originally published this criteria article on June 30, 2014. We've republished it following our periodic review completed on June 30, 2016. As a result of our review, we updated the author contact information, updated criteria references and deleted outdated sections that previously appeared in paragraphs 9-10 related to the initial publication of our criteria, and which were no longer relevant.)

1. This article describes Standard & Poor's Ratings Services' methodology for non-U.S. local and regional governments (LRGs) ratings. An overview of the changes compared with the previous methodology is in Appendix C.
2. "Principles Of Credit Ratings," published Feb. 16, 2011, form the basis of these criteria.

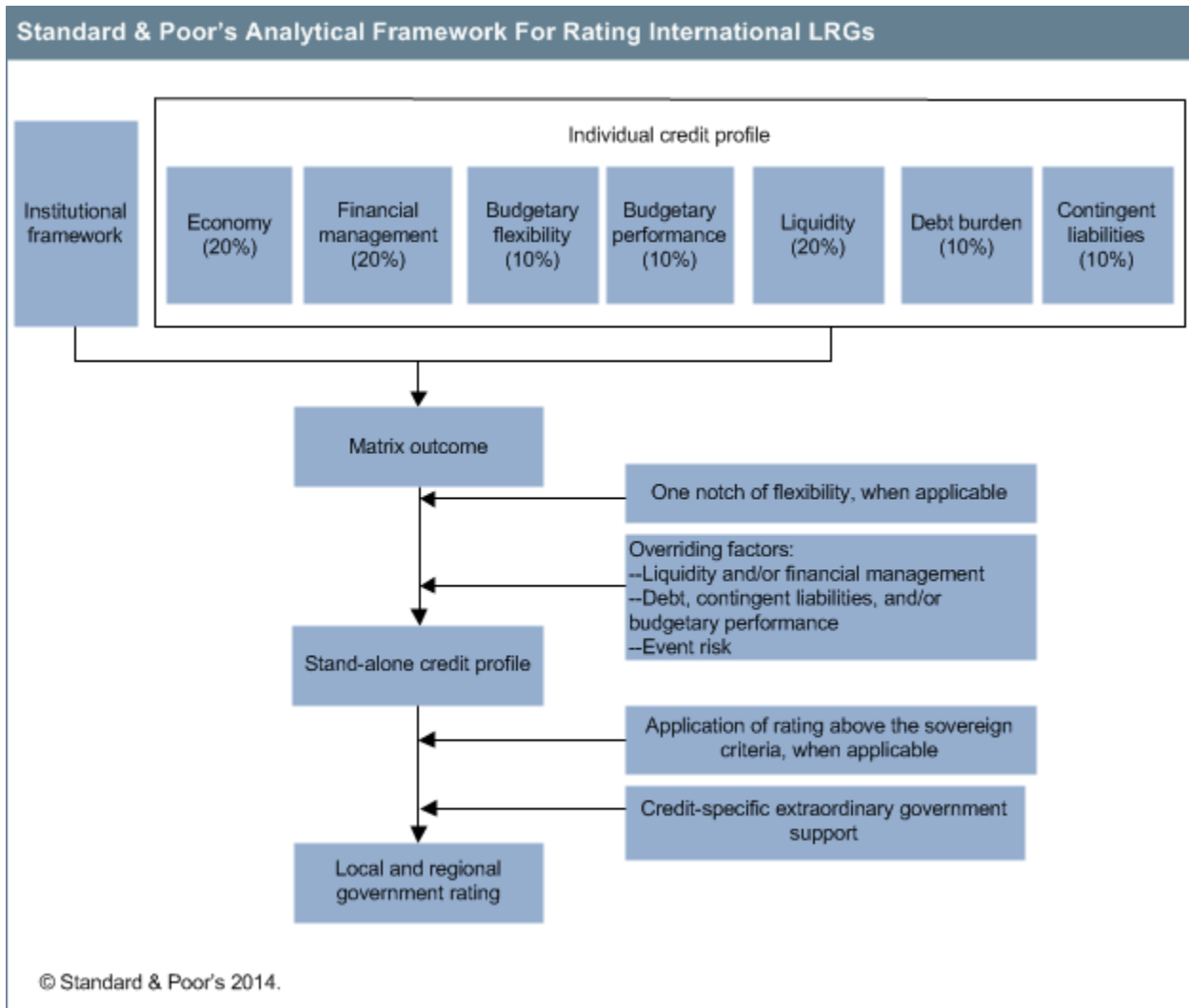
SCOPE OF THE CRITERIA

3. This methodology applies to issuer and long-term issue ratings on all non-U.S. LRGs. In this article, LRG refers to non-U.S. LRG, and rating refers to issuer credit rating (ICR), unless otherwise specified.
4. Although LRGs' scope of activities may vary, they bear, in our view, the same general responsibilities of delivering public services and funding infrastructure developments, which are supported directly or indirectly by taxes and fees levied on residents or transferred from other levels of government. In our view, LRGs' common task is financing the cost of these services and infrastructure developments with available revenues, as well as with recourse to debt when necessary. This methodology also applies to public-sector entities that are set up as local authorities and are responsible for providing similar services to those an LRG provides.

SUMMARY OF THE CRITERIA

5. This rating methodology addresses the factors that affect an LRG's willingness and ability to service its debt on time and in full.
6. The methodology sets out the framework for determining a local-currency ICR on an LRG. The foreign-currency ICR is the lower of the related sovereign's transfer and convertibility (T&C) assessment and the LRG's local-currency issuer credit rating (which incorporates, if relevant, the sovereign stress test per "Ratings Above The Sovereign--Corporate And Government Ratings: Methodology And Assumptions," published Nov. 19, 2013). Also see, "Criteria For Determining Transfer And Convertibility Assessments," published May 18, 2009, for our T&C assessment criteria. Most often, local- and foreign-currency ICRs on an LRG are the same. (See section "D. Long-Term Issue Ratings.")
7. The framework for rating LRGs consists of quantitative and qualitative analyses of eight factors: institutional framework, economy, financial management, budgetary flexibility, budgetary performance, liquidity, debt burden, and contingent liabilities (see chart).

8. The first step is to assess the institutional framework and the other seven key factors. A weighted average of these other seven factors establishes the individual credit profile (see chart). The criteria then combine the institutional framework assessment and the individual credit profile per table 1. The resulting matrix outcome can be adjusted up or down by one notch (see paragraph 17). We would also apply the credit-specific overriding factors (see paragraphs 20-22), when relevant, to arrive at an LRG's stand-alone credit profile (SACP) (see Glossary). We then factor in the sovereign-related considerations (see paragraph 23) to derive the ICR on an LRG.



9. [This paragraph has been deleted.]

10. [This paragraph has been deleted.]

METHODOLOGY

A. LRG Issuer Credit Rating Framework

11. Standard & Poor's assigns ratings to LRGs based on its qualitative and quantitative analyses of eight main factors:
- Institutional framework,
 - Economy,
 - Financial management,
 - Budgetary flexibility,
 - Budgetary performance,
 - Liquidity,
 - Debt burden, and
 - Contingent liabilities.
12. Standard & Poor's believes that an LRG's individual characteristics are best analyzed in the context of the institutional and legislative environments in which it operates. Consequently, our methodology distinguishes between our assessment of an LRG's institutional framework and the seven other rating factors. Those seven other factors, which are based on an LRG's individual characteristics, are combined to determine an individual credit profile.

1. Assessing the institutional framework

13. The institutional framework--which we analyze on a six-point scale, from '1' (the strongest assessment) to '6' (the weakest)--defines the environment in which an LRG operates. We view an LRG as part of the wider political, institutional, administrative, and budgetary systems of the country in which it is located. Standard & Poor's assessment of the institutional framework measures how the predictability, reliability, and supportiveness of public finance systems and legislative frameworks are likely to affect an LRG's ability to service debt in the long term. The institutional framework is the only LRG rating factor that we assess on a country basis for each level of government.

2. Determining an LRG's individual credit profile

14. The remaining seven key rating factors are based on an LRG's individual characteristics. To assess most factors, we first consider quantitative elements, and then qualitative factors. We assess each factor on a five-point scale, from '1' (the strongest) to '5' (the weakest) and then combine them to determine the individual credit profile. Specifically, the individual credit profile is a weighted average of the seven assessments: economy (weighted 20%), financial management (20%), budgetary flexibility (10%), budgetary performance (10%), liquidity (20%), debt burden (10%), and contingent liabilities (10%).

3. Combining the institutional framework assessment and the individual credit profile

15. The criteria then combine the institutional framework assessment and the individual credit profile per table 1.
16. If the individual credit profile is a whole number or ends with 0.5 (e.g., 1, 3, or 5.5), the matrix outcome is determined by table 1. If this is not the case (e.g., the individual credit profile is 2.2 or 4.9), the matrix outcome would fall within a range established in table 1. For instance, if an LRG is operating in an "evolving but balanced" institutional framework, with an individual credit profile of 2.3, the outcome would be in the 'aa-/a+' range. In these cases, we consider the position within that range (i.e., whether the individual credit profile is at the high or low end), our view of the future performance of the eight key credit factors, and a peer comparison to determine the matrix outcome.

17. Absent overriding factors, we expect that an LRG's SACP would, in most cases, fall within one notch of the matrix outcome. The main factors that can lead to an SACP that is one notch higher or lower than the matrix outcome are the following:

- At least one of the eight rating factors is improving/weakening, which supports/detracts from creditworthiness, and that is not already fully captured in the matrix outcome (in particular, as explained in paragraph 16), or
- The LRG is a sustained and projected overperformer in its peer group for most of the eight rating factors, and that is not already fully captured in the matrix outcome (in particular, as explained in paragraph 16), or
- The LRG is a sustained and projected underperformer in its peer group for at least one of the eight rating factors, and that is not already fully captured in the matrix outcome (in particular, as explained in paragraph 16).

Table 1

Combining The Institutional Framework Assessment And The Individual Credit Profile										
--Institutional framework--		--Individual credit profile--								
Assessment	Descriptor	1	1.5	2	2.5	3	3.5	4	4.5	5
1	Extremely predictable and supportive	aaa	aaa	aa+	aa	aa-	a	bbb+	bb+	bb- and below*
2	Very predictable and well balanced	aaa	aa+	aa	aa-	a+	a-	bbb	bb	b+ and below*
3	Evolving but balanced	aa+	aa	aa-	a+	a-	bbb	bb+	bb-	b and below*
4	Evolving and unbalanced	N/A	a+	a	a-	bbb	bb+	bb-	b	b- and below*
5	Volatile and unbalanced	N/A	a-	bbb+	bbb	bb+	bb-	b	b-	b- and below*
6	Very volatile and underfunded	N/A	N/A	bbb-	bb+	bb-	b+	b-	b- and below*	b- and below*

*Selecting 'ccc+', 'ccc', 'ccc-', and 'cc' matrix outcomes is based on "Criteria For Assigning 'CCC+', 'CCC', 'CCC-', And 'CC' Ratings," published on Oct. 1, 2012. N/A--Extremely unlikely combinations of ICP and IF assessments.

4. Credit-specific overriding factors and determining the SACP

18. The matrix outcome can be adjusted for one notch of flexibility (see paragraph 17) and for any overriding factors (see paragraphs 20-22), if applicable. This would then determine the SACP.
19. If an LRG has several overriding factors, we would adjust its matrix outcome by the cumulative effect of those overriding factors and would take into account the lowest cap indicated by those adjustments.
20. **a) Liquidity and financial management override and caps.** We give particular weight to liquidity and financial management assessments because the track record of LRG defaults suggests that weak liquidity and financial management are one of the main causes of defaults in the sector, in addition to systemic factors. If either the financial management or liquidity assessment is '5', the SACP is capped at 'bb+' and would be lower than the matrix outcome (by up to one full rating category). We lower the matrix outcome unless there are mitigating factors or the matrix outcome is already low (generally, in the 'b' category). Examples of such mitigating factors are strength of the institutional framework or liquidity support from the central government. The degree of the negative adjustment to the matrix outcome depends on the extent to which the risk stemming from one weak indicator (i.e., liquidity) is compounded by another weak indicator (i.e., financial management). When both the liquidity and financial management assessments are '5', the LRG's SACP is capped at 'b-'.

21. **b) Debt, contingent liabilities, and budgetary performance overrides.** We will lower the matrix outcome by one notch when tax-supported debt (see Glossary) is more than roughly 270% of consolidated operating revenues (i.e., 1.5x the weakest level of tax-supported debt in table 18), or when the deficit after capital accounts is more than roughly 23% of total adjusted revenues (i.e., 1.5x the highest level of deficit after capital accounts in table 15). If an LRG has both very high debt and deficit levels, then we generally lower the matrix outcome by two notches. In some cases, we will lower the matrix by just one notch if mitigating factors are present that indicate a stronger credit profile compared with peers that have similarly weak budgetary performance and debt ratios.
22. **c) Event risk.** In cases of imminent or rapidly rising political risk (such as war, escalating domestic conflict, or any acute and growing risk to institutional stability), an LRG's SACP could differ from the matrix outcome, depending on the conflict's expected magnitude and effect on the government's credit characteristics. This overriding factor aims to address risks beyond those already captured in the contingent liability assessment. Furthermore, the occurrence of a severe natural catastrophe could also lead to a material deviation from the matrix outcome depending on the extent of damage and the effect on the LRG's credit characteristics.

5. Sovereign-related overriding factors and determining the ICR

23. We derive the ICR on an LRG by applying to the SACP, when relevant, sovereign-related overriding factors, which are:
- The application of "Ratings Above The Sovereign--Corporate And Government Ratings: Methodology And Assumptions," and
 - Potential credit-specific extraordinary credit support from another government (another LRG or a sovereign) (see paragraphs 25-27).
24. We generally do not rate an LRG higher than its sovereign. In exceptional cases, when an LRG SACP is higher than the rating on its sovereign, the LRG should be able to meet the conditions and pass the stress tests described in "Ratings Above The Sovereign--Corporate And Government Ratings: Methodology And Assumptions," published Nov. 19, 2013, and in "Methodology: Rating Non-U.S. Local And Regional Governments Higher Than The Sovereign," published Dec. 15, 2014, in order to be rated above the sovereign.
25. Separately, in certain exceptional circumstances, Standard & Poor's may conclude that an LRG having difficulty repaying its debt on time is likely to benefit from timely and extraordinary credit support from another government.
26. In cases where we view this extraordinary credit support as sufficiently predictable, the LRG rating will be one notch higher than its SACP. To qualify for this uplift, all of the following conditions must be met:
- We expect that the likely extraordinary support to the LRG will be temporary and targeted to include debt repayment, and that this extraordinary support comes on top of ongoing support (fiscal equalization, grants) and systemic extraordinary support (in case of natural catastrophes, infrastructure projects of national importance, or severe and prolonged economic crisis) that we already integrate into our assessment of the LRG's institutional framework.
 - We expect the extraordinary support to be provided to an individual LRG in case of stress, as opposed to support benefiting the entire LRG sector. The support may benefit only a select number of important LRGs in the country.
 - The supporting government clearly expresses its willingness, or demonstrates incentives we believe to be strong, to provide timely credit support to the LRG, and the government's stance is backed by a supporting legislative or constitutional framework or by the existence of a consistent track record of such support for similar entities.
 - The legislative or constitutional framework provides the supporting government with the ability and the necessary tools to give extraordinary support to an individual LRG on a timely basis in case of need, including on very short

notice.

- The supporting government is rated higher than the LRG receiving the support before the application of this factor.
- We do not expect similarities or divergences in the political majorities to affect the provision of extraordinary support to an LRG at the time of stress.

27. In our experience, extraordinary support defined in these terms is rather exceptional in most countries. Given that LRGs are governments themselves, elected by local populations, we have observed that political considerations may affect the relationships between different levels of governments. One government's willingness to provide extraordinary support to another might be affected by its respective political majority at the time of financial stress, especially if an LRG's stress is perceived as stemming from poor or very aggressive management. Furthermore, in many countries, the financial relationships between the different levels of government are governed by a legislative framework that would require a lengthy approval process to provide this type of extraordinary support (such as parliamentary approval), which might make it difficult for a government to react in a timely manner.
28. We don't apply the GRE criteria ("Rating Government-Related Entities: Methodology And Assumptions," published March 25, 2015) to LRGs because the relevant supporting governments tend to provide extraordinary support on a systemic basis. This systemic support is reflected in the LRGs' SACPs, particularly via our institutional framework assessments. Our GRE criteria, in contrast, are designed to address extraordinary support provided on a temporary and entity-specific basis. However, public-sector entities set up as local authorities that are government-owned or controlled enterprises can be considered in the scope of the GRE criteria (see Glossary), and their SACPs will be based on the application of the non-U.S. LRG criteria.
29. Finally, when pertinent, the LRG rating would be based on the application of "Criteria For Assigning 'CCC+', 'CCC', 'CCC-', And 'CC'," published Oct. 1, 2012, or "Rating Implications Of Exchange Offers And Similar Restructurings, Update," published May 12, 2009.

B. Institutional Framework

30. We base our assessment of the institutional framework under which an LRG operates on legal and regulatory environments, local customs and political practices, and precedents. The assessment also considers some of the future changes that are likely to strengthen or undermine such a framework. This results in a forward-looking opinion, consistent with our overall approach to ratings.
31. The institutional framework is the only LRG rating factor that we assess on a country basis for each level of government. This means, for example, that our institutional framework assessment of all Mexican states could differ from that of Mexican municipalities. In some instances, when regional authorities have an influence on institutional frameworks under which municipal governments operate, the assessments for the municipalities may vary by a region (for example, varying assessments for municipalities based in different German federal states).
32. Key analytical factors in our assessment are:
- Predictability,
 - Revenue and expenditure balance, and

- Transparency and accountability.
33. We assess each of these three factors on a five-point scale, from '1' (very strong) to '5' (very weak). We apply the following weights: revenue and expenditure balance (50%), transparency and accountability (25%), and predictability (25%). We then convert the resulting weighted-average assessment (on a one to five scale) to a one to six scale (per table 2) to determine the institutional framework assessment.

Table 2

Institutional Framework		
Assessment	Description	Weighted average of three factors
1	Extremely predictable and supportive	1-1.5
2	Very predictable and well-balanced	1.75-2.25
3	Evolving but balanced	2.5-3
4	Evolving and unbalanced	3.25-3.75
5	Volatile and unbalanced	4-4.25
6	Very volatile and underfunded	4.5-5

1. Predictability

34. The predictability of the institutional framework assesses the frequency and extent of reforms affecting the division of responsibilities and revenues between the levels of governments in a jurisdiction. In addition, it incorporates an analysis of the laws that affect tax flexibility, the organization of the electoral system, and limitations on the use of debt, among others. We also consider the predictability of the outcome of reforms when they occur, based on their pace of implementation and on an LRG's ability to measure the short- and long-term impact that they will likely have on the LRG's finances. Finally, it includes our assessment of an LRG's ability to influence, and potentially veto, any decision taken at a higher level, particularly one that could adversely affect the LRG's financing system.

Table 3

Assessing The Predictability Of An LRG's Institutional Framework		
(An LRG would need to exhibit most of the characteristics listed in a given category to achieve that assessment.)		
1	3	5
Frequency and extent of reforms affecting the intergovernmental system and predictability of their outcome:		
The system is mature and stable, with a limited number of reforms implemented gradually and with a predictable outcome. It provides very good visibility on the evolution of LRGs' revenue sources and responsibilities for at least the next five to seven years. The system is largely defined in the constitution and codified by law.	The system is evolving with ongoing but no radical reforms, which are likely to affect only moderately LRGs' main revenues and responsibilities. It provides good visibility on the evolution of LRGs' revenue sources and responsibilities for at least the next three years. The system is governed by law but with some overlap and lack of clarity.	The system is very volatile, with ongoing and ill-prepared large-scale transformations, which makes LRGs' main revenues and expenditures highly unpredictable. The visibility on the evolution of LRGs' revenue sources and responsibilities is inferior to one year. The system is not well defined, leading to disputes between governments and changing rules. The system might be subject to high political risks.
Ability of LRGs to influence or oppose reform affecting the intergovernmental system:		
LRGs have strong political power through a dedicated chamber in the national parliament, and they can veto unwanted changes.	LRGs have sufficient political power to soften, but not block, the negative consequences of reforms.	LRGs have weak institutional and political powers, with no power to block or influence unwanted changes.

2. Revenue and expenditure balance

35. The analysis of revenue and expenditure balance considers: the overall adequacy of the revenues that an LRG receives to cover its expenditure mandates, the existence of a fiscal policy framework imposing prudent limits on an LRG's debt and deficit levels, and the availability of extraordinary support in exceptional circumstances (see table 4).
36. For LRGs to maintain fiscal sustainability in the long run, their expenditure responsibilities should be balanced against their revenue generation capacity, in Standard & Poor's view. In highly centralized systems, a good revenue and expenditure match would mostly depend on an LRG having sufficient revenue sources (including taxes or subsidies and equalization transfers) to cover expenditure, as well as indexation mechanisms (e.g. indexing wages to inflation increases) evolving in parallel. In decentralized public finance systems, a good revenue and expenditure match would depend mostly on an LRG having sufficient tax-raising authority and financial autonomy to maintain adequate financing of its obligations. In determining the degree of imbalances between revenues and expenditures, we analyze the historical fiscal interaction between the governments and the likelihood of such interaction in the future. We aim to assess the long-term structural coverage level of both the population's essential service and infrastructure needs, although these could fluctuate somewhat through the economic cycle.
37. If an LRG does not generate enough revenue to cover its expenditure needs under a given institutional framework, it can balance its revenue and expenditures by adhering to prudent fiscal policies.
38. We define the fiscal policy framework as a set of rules or legislations that limits the public deficits and debt burden at the LRG level, including enforcing adherence to conservative debt and liquidity management rules. A strong fiscal policy framework is likely to result in an LRG being more aware of its debt affordability and sustainability, as well as promotes budgetary discipline. Measures associated with strong fiscal policy frameworks typically include:
- Requiring a balanced operating budget,
 - Limiting long-term debt to capital investment purposes,
 - Preventing the use of complex financial transactions or derivatives for speculation purposes,
 - Limiting the growth of debt by setting a threshold and regulating recourse to foreign-currency debt, and
 - Monitoring the financial position to control potential fiscal imbalances.
39. In exceptional circumstances, LRGs may balance their revenues and expenditures by accessing extraordinary support from the higher level of government. For Standard & Poor's to include this in its analysis of revenue and expenditure balance, such support must be systemwide (i.e., available to all LRGs in exceptional circumstances, such as natural catastrophes, major infrastructure projects, or particularly severe economic crisis). The support may be provided in the form of access to repayable and nonrepayable financial assistance from the budget or state financial institutions. The level of institutionalization and the track record of such assistance inform our views on the likelihood of such support.
40. Extraordinary support or negative intervention affecting all LRGs within a system is included in the institutional framework assessment. Conversely, if timely, extraordinary financial support is directed at a particular LRG, as explained in paragraph 26, we would factor this in at the entity level, by raising the ICR relative to the SACP.

Table 4

Assessing The Revenue And Expenditure Balance Of An LRG's Institutional Framework

(An LRG would need to exhibit most of the characteristics listed in a given category to achieve that assessment.)

1	3	5
Overall adequacy of revenues to cover expenditures needs with state transfers and/or sufficient autonomy:		
The government provides LRGs with adequate resources to cover essential services and infrastructure needs. Transfers are predictable and allocated evenly throughout the financial year. OR LRGs have sufficient autonomy to manage their own revenues and responsibilities efficiently despite possible temporary imbalances during economic downturns.	Operating spending of most LRGs is covered by state transfers or own revenues, but meaningful differences can exist between the strongest and the weakest entities. Capital projects generally require moderate recourse to debt. Central government transfers are relatively predictable and timely.	Central government transfers and LRG's own revenues are not sufficient to cover essential services and infrastructure needs, resulting in large financing requirements or infrastructure gaps. Transfers are based on political relationships and in-year negotiations and come with delays.
Fiscal policy framework:		
A prudent fiscal policy is defined at the national level, aiming to reduce deficit and debt levels in the LRG sector over the medium to long term. Noncompliance with restrictions is penalized. Prudent restrictions on LRGs' debt and liquidity management limit their exposure to market risks.	A prudent fiscal policy framework is self-imposed at the LRG level. OR Prudent restrictions on LRGs' fiscal policy exist at the national level, but they were introduced recently, or do not prevent fast debt accumulation. Restrictions on LRGs debt and liquidity management are loose.	Restrictions on public deficits and debt are inexistent or inappropriate, leading to excessive debt accumulation, directly or through GREs or other off-budget financing. Monitoring of LRGs' financials is lax. Restrictions on debt and liquidity management are inexistent or inappropriate.
Extraordinary support:		
Strong track record of systemwide, consistent extraordinary support that enables LRGs to balance their revenues and expenditures in exceptional situations.	The system provides some extraordinary support to the LRG sector in exceptional situations, but there is no established framework and the track record is irregular. No risk of negative intervention.	The system provides limited extraordinary support, mostly politically driven, to the LRG sector for major infrastructure projects or natural catastrophes. OR The system is exposed to the risk of negative legal or financial intervention from the sovereign (or a higher level of the government).

3. Transparency and accountability

41. The strength of a public finance system also depends on national regulation of public-sector accounting systems, accountability of managers and politicians, and system transparency. We have observed that strong and predictable systems usually impose high standards for transparency and accountability (see table 5). These standards are established by law or are supported by the country's general management culture.
42. We believe that transparent and accountable systems promote the implementation of good practices, such as compulsory audits or external controls, full accrual accounting, consolidated reporting requirements, and long-term financial planning with proper assessment of external and internal risks. Such transparency and accountability reinforce the need for monitoring techniques for both the revenue and cost sides of operations. Comprehensive reporting implies the requirement to report financial performance, balance-sheet, cash reserves, cash flow statements, real and financial assets, debt, and detailed information on the GRE sector on a timely basis. It also implies the need to report estimates of contingent liabilities. We also assess the reliability of the information through the existence of controls on financial statements by public institutions or recognized private auditing firms. In our view, strong systems also ensure the general institutionalization of budgetary processes and the existence of a clear delineation of roles between the elected officials and the LRG's administration. Such best practices also increase awareness of the government's financial strengths and weaknesses, in our view.
43. On the other hand, we observe that in less transparent and less sophisticated public finance systems, LRGs tend to

focus on short-term technical issues. They appear to operate with low-quality financial information and may have weak incentives for efficiency. Weak and unpredictable systems tend not to set requirements or promote the implementation of best practices aiming to improve transparency of LRGs' financial operations and long-term planning, audits of financial statements, or better accountability of financial managers.

Table 5

Assessing The Transparency And Accountability Of An LRG's Institutional Framework

(An LRG would need to exhibit most of the characteristics listed in a given category to achieve that assessment.)

1	3	5
Transparency and institutionalization of budgetary processes:		
Roles and responsibilities, between elected officials setting priorities and managers implementing them, are clearly defined.	The delineation of roles and responsibilities is relatively clear, with elected officials setting priorities implemented by managers.	Delineation in the legislation of the relations between elected officials and managers is not clear, leading to potentially significant imbalances and frequent turnover of the administrative staff after each election.
Disclosure and accounting standards for public finance information:		
Nationally established transparent accounting standards exist, as well as a full accrual accounting system. Best practices and legal requirements are in place regarding public disclosure, comprehensive and timely information on LRGs' budget execution, historical data, and financial planning, including the GRE sector.	Accounting standards are generally transparent but not fully harmonized, leaving room for interpretation. Legal requirements or common practice on financial reports and budgets disclosure are solid but not very detailed, especially regarding the GRE sector.	Accounting standards are weak and inconsistent. Reporting requirements for financial statements and budgets are limited to basic information.
Control levels and reliability of information:		
The timely audit of financial statements, in compliance with national law, by an independent private company or public body is mandatory.	The external audit, in compliance with national law, by a public body is mandatory but is not always very detailed or timely.	The external audit is not mandatory and state agencies' overseeing of legal compliance is limited to basic information.

4. Linkages between the institutional framework assessments and sovereign ratings

44. The institutional framework assessments generally have a strong link with the credit quality of the related sovereign. While all the references in this section are to the sovereign credit quality, the reference point could be the credit quality of a higher level of government, which has a jurisdiction over the LRG, if more relevant. Typically, prudent policymaking of high-rated sovereigns, coupled with predictable and stable institutions, translates into a well-balanced and supportive legal and regulatory framework that governs the relations between the sovereign and other levels of the governments. On the other end of the spectrum, low-rated sovereigns have generally less predictable division of revenues and expenditures between the levels of government, and their ability to provide extraordinary and ongoing support to lower levels of governments is weak. As a result, we expect LRGs operating in 'AAA' and 'AA' rated sovereigns would have associated institutional framework assessments of '1' or '2', in 'A' rated sovereigns with assessments of '3', in 'BBB' rated sovereigns with assessments of '4', in 'BB' rated sovereigns with assessments of '5', and in 'B' rated sovereigns with assessments of '6'. (All references are to sovereign foreign-currency rating categories.)
45. Exceptions to this do exist--although we view sovereign credit quality as a good proxy for the strength of the institutional framework. The institutional framework assessment, based on the methodology described in paragraphs 30-43, could be weaker (i.e., worse) than the linkages indicated in paragraph 44. Take, for instance, an LRG that has an assessment of '4' (per table 2), and the respective sovereign is rated in the 'AA' category (a category common for LRGs

with institutional framework assessments of '1' or '2', as per paragraph 44). This combination, though rare, is possible if a system has any of the following:

- Weak transparency and accountability, which weigh on the institutional framework more than they do on the sovereign rating;
- Institutional framework characterized by low predictability regarding reforms affecting the main division of responsibilities and revenues between the different levels of governments; or
- Weak fiscal policy framework, including the risk of a negative intervention from a sovereign (or a higher level of the government).

46. Conversely, the institutional framework assessment based on the methodology described in paragraphs 30-43 could be stronger (by up to 1 point) than the linkages indicated in paragraph 44. This is possible if specific risks affecting a sovereign rating do not have direct implications for the institutional framework, or if a central government is protecting an LRG's institutional framework from economic stress, despite the deterioration of the central government's creditworthiness. For instance, an institutional framework assessment of '3' for an LRG located in a sovereign rated in the 'BBB' category (which typically would map to an institutional framework assessment of '4', per paragraph 44) is possible if all of the following conditions are met:

- Evidence of a sovereign (or a higher level of government) providing effective protection over an LRG's revenue and expenditure balance from a sovereign stress;
- A sovereign (or a higher level of government) undertakes enhanced monitoring over an LRG so as to ensure the sector's adherence to financial discipline and uphold the current level of the LRG's transparency and accountability; and
- A high visibility regarding the evolution and sustainability of an LRG's revenue sources and predictability of expenditure responsibilities.

47. Overall, the linkage to the sovereign ratings establishes the upper limit to the institutional framework assessment (per paragraphs 44 and 46). There is, however, no lower limit, as per paragraph 45, to the institutional framework assessment derived according to the methodology in paragraphs 30-43.

C. Individual Credit Profile

48. After analyzing institutional framework, we then assess the other seven key rating factors, which comprise an LRG's individual credit profile (see table 6).

Table 6

What Standard & Poor's Considers When Assessing An LRG's Individual Credit Profile
<p>Economy</p> <p>The economic assessment measures how economic factors are likely to affect an LRG's revenue generation capability and spending needs and ultimately its ability to service debt in the medium to long term.</p>
<p>Financial management</p> <p>The financial management assessment measures how the quality of an LRG's financial management and its political context are likely to affect its willingness and ability to service debt over time.</p>

Table 6

What Standard & Poor's Considers When Assessing An LRG's Individual Credit Profile (cont.)

<p>Budgetary flexibility</p> <p>The budgetary flexibility assessment measures how much an LRG could increase its revenues or reduce its expenditures in the case of need, to maintain its debt servicing ability.</p>
<p>Budgetary performance</p> <p>The budgetary performance assessment measures the level and the volatility of an LRG's expected cash flows (from operations and investment activities) that are available to service debt. It also gauges the efficiency of the LRG's financial policy.</p>
<p>Liquidity</p> <p>The liquidity assessment measures how an LRG's internal sources of liquidity, such as cash reserves and cash flow generation, and external sources, namely bank lines and market access, are likely to affect its debt servicing capability.</p>
<p>Debt burden</p> <p>The debt burden assessment measures how our expectations for the level, structure, and sustainability of an LRG's debt is likely to affect its debt servicing capability.</p>
<p>Contingent liabilities</p> <p>The contingent liabilities assessment measures to what extent the risk of occurrence of some off-balance-sheet risks and their relative size are likely to impair an LRG's capacity to repay its debt in the medium to long term.</p>

1. Economy

49. To assess the economic strength of an LRG, Standard & Poor's reviews:
- Income levels,
 - Diversification of the economy,
 - Economic growth prospects, and
 - Socioeconomic and demographic profiles.
50. Our analysis of income levels determines the anchor for our assessment of the economy. We then factor in the other three qualitative factors to determine the final economic assessment. Specifically, the anchor for an economic assessment is adjusted by up to two points up or down, based on the net effect of the qualitative factors (see table 7). If income levels fall at or near cutoff points, the assessment will improve by one point if economic trends are improving or worsen by one point if trends are weakening. The economic assessments are: '1' (very strong), '2' (strong), '3' (average), '4' (weak), and '5' (very weak).

a) Income levels

51. Standard & Poor's generally recognizes income levels, as measured by GDP per capita, as a reliable indicator of the potential strength of an LRG's revenue or tax base and of the potential needs for social services, public assistance, and welfare, depending on the LRG's responsibilities.
52. To derive the anchor, we use either local or national GDP per capita data. The selection is made based on which set of data most adequately reflects the LRG's real revenue generation capacity. Specifically, this analytical decision is based on the composition and sources of an LRG's revenues, including the proportion of transfers from the central government and the existence and depth of a revenue equalization framework. (Revenue equalization is the transfer of fiscal resources across jurisdictions with the aim of offsetting differences in revenue raising capacity.) For instance, if

an LRG is heavily dependent on a central government's transfers or a sizable share of its revenue stems from a far-reaching equalization system, rather than from its own revenue streams, national GDP per capita is a more appropriate starting point. The decision of which level of government data to use (i.e., national or local data) can vary depending on the tier of the government and reflects the institutional framework.

53. Standard & Poor's usually uses the GDP per capita data in U.S. dollars at market prices. Depending on the reporting norms in a given country, we might use other nationally recognized proxy for GDP per capita indicators (such as gross state product per capita). In other situations (for instance, when a significant portion of income accrues to nonresidents and is not taxable by the jurisdiction), we will focus on the gross national product per capita measure. If the municipal or provincial/state data are not available, we would generally use the data for a higher level of government with appropriate adjustments.
54. Standard & Poor's periodically raises the thresholds of the income levels in line with the world nominal annual GDP growth. GDP per capita has risen for many decades as the world has grown richer. The greater wealth has not led to a decline in LRGs default rates, so we adjust to preserve the relativities in our analysis. We expect to make such adjustments periodically, and we do not expect these changes to have a rating impact. The changes may not be the same across the scoring scale, either in absolute terms or on a percentage basis. The changes are incremental and are based on our judgment of how global economic growth and exchange rate movements may affect LRGs at different stages of development.
55. The anchor is based on a historical three-year average, using annual average exchange rates, to minimize the impact of currency fluctuations.

b) Diversification of the economy

56. The diversification of an LRG's economic structure is important to assess the potential volatility of the tax base and its resilience to stress. A deep, broad, and well-diversified economy with strength in several sectors is usually less exposed to a downturn in a specific industry and exhibits less volatile tax revenue than an economy with high exposure to a single industry or employer, especially one undergoing restructuring or experiencing negative trends. As such, we apply a positive adjustment to the anchor due to an exceptionally broad or diversified economy compared with peers in the anchor category. Alternatively, we adjust the anchor through a negative qualifier due to a concentrated or narrow economic base, which exposes LRGs to exogenous factors.
57. To assess the diversification of the economic structure, we analyze the share of each sector in terms of employment and/or output (when relevant), while identifying potential significant employers that could affect the LRG's financial performance if they represent a large share of tax revenues or a sizable portion of local employment (directly and indirectly). When we see significant concentration--typically above 20% of the local employment base or tax revenues--we analyze the health and prospects of the relevant sectors or employers.

c) Economic growth prospects

58. Our economic analysis is based, among other things, on recent and projected trends in output, employment, productivity and investments, and takes into account a region's growth potential. We believe that the growth potential is best understood in the context of national economic development and the competitive advantages or disadvantages of the region or locality. These may include natural endowments, location, proximity to key markets, employment

opportunities, educational offerings, or the tax structure. We believe that expectations for economic growth are also based on the state of infrastructure development. The availability and quality of airports, ports, railways, roads, and space for development are, in our view, essential to accommodate and support growing populations and economic activities. Other measures of an economy may include recent and anticipated levels of private and public investment, including foreign direct investment trends and export performance, as well as expected productivity gains, when they are available at the regional level.

59. Above-average growth prospects compared with those for peers in the same anchor category improve the anchor, while limited growth prospects due to structural economic or natural handicaps, or large infrastructure needs leading to growth prospects inferior to those of the peers, worsen the anchor.

d) Comparative socioeconomic and demographic profiles

60. In some cases, an anchor (whether based on national or local GDP per capita data) might not fully capture differences in socioeconomic conditions and demographic profiles between the LRGs. These differences may have an impact on LRGs' spending needs. To incorporate these locally driven differences, we could apply an adjustment to the anchor if socioeconomic conditions are above or below the average of the other LRGs from the same tier of government in that country. Specifically, we will apply a positive adjustment if an LRG has stronger socioeconomic indicators, implying lower spending pressure in the future compared with peers. Conversely, we will apply a negative adjustment (of up to two points) if an LRG faces weaker socioeconomic indicators, implying higher spending needs in the future, compared with the peers. Examples of such socioeconomic indicators requiring a negative adjustment could be high unemployment rates, a high proportion of income support and welfare recipients, and a demographic profile that might have a material negative impact on revenue growth and expenditure needs. Such demographic profile could be a population decrease or a high share of dependent population (generally greater than 55%).

Table 7 Standard & Poor's Assessment Of An LRG's Economy					
GDP per capita* (nominal US\$)	>38,000	27,001-38,000	16,001-27,000	5,500-16,000	<5,500
Anchor:	1	2	3	4	5
Qualitative factors positively affecting the anchor include:			Qualitative factors negatively affecting the anchor include:		
Exceptionally broad or diversified economy compared with peers in the same anchor category, providing a strong resilience to economic cycles.			Very volatile and/or concentrated economy, carrying significant exposure to a single vulnerable or cyclical industry—generally greater than 20% of GDP (when relevant) or employment—and/or to a single taxpayer (generally greater than 20% of tax revenues), leading to potential revenue volatility.		
Above-average growth prospects compared with those of peers in the same anchor category, supporting robust revenue growth.			Limited growth prospects due to structural economic or natural handicaps, or large infrastructure needs, leading to growth prospects inferior to those of the peers in the same anchor category.		
More favorable socioeconomic and demographic profiles, implying lower spending needs relative to peers'.			Less favorable socioeconomic and demographic profiles, implying higher spending needs relative to peers'.		
Income levels falling at or near cut-off points will receive the better anchor if trends are improving, and the worse anchor if trends are weakening, reflecting the expected future level. The adjustment impact of each qualitative factor may vary from one point, in most cases, to two points exceptionally (particularly for concentration risk and for socioeconomic indicators), depending on the magnitude of this risk relative to peers'. Overall, the economic assessment equals the anchor, adjusted by up to two points up or down, based on the net effect of the qualitative factors outlined above.					
*Based on the average of the latest available three years of actuals or estimates using average annual exchange rates. © Standard & Poor's 2014.					

61. Here are a few examples of how we would assess an LRG's economy.

- **EXAMPLE 1:** A region has a GDP per capita of US\$45,000, implying an anchor of '1'. However, its economy is concentrated in the oil sector, which accounts for about 30% of the regional GDP and the same proportion of tax revenues. Assuming that the other factors are neutral, our economy assessment for the region would likely be '2', one point weaker than the anchor indicated by the GDP per capita, reflecting the exposure to the volatile oil industry. If the oil industry accounted for 70% of the LRG's GDP or tax base, the anchor would likely be adjusted by two points for a final assessment of '3', to reflect the magnitude of this risk.
- **EXAMPLE 2:** A city has a GDP per capita of US\$20,000, implying an anchor of '3'. The city has a broad, well-diversified economy and is the capital city of a developing economy already well advanced in its transition. Assuming that the other factors are neutral, our economy assessment for the city would likely be '2', one point better than the anchor indicated by the GDP per capita, reflecting the city's exceptionally strong diversification profile.

2. Financial Management

62. Next, we assess how the quality of an LRG's financial management and the political framework in which it operates are likely to affect the LRG's willingness and ability to service debt over time. The financial management assessment encompasses five factors: political and managerial strength, long-term capital and financial planning, revenue and expenditure management, debt and liquidity management, and management of GREs.
63. We then combine the five factors through a weighted average to form an initial financial management assessment, which can range from '1' ("very strong") to '5' ("very weak") (see table 8). The weights are:
- Political and managerial strength (30%),
 - Long-term capital and financial planning (20%),
 - Revenue and expenditure management (20%),
 - Debt and liquidity management (20%), and
 - Management of GREs (10%).

Table 8

Financial Management Assessment		
Descriptor	Weighted-average financial management assessment	Rounded financial management assessment
Very strong	1-1.4	1
Strong	1.5-2.4	2
Satisfactory	2.5-3.4	3
Weak	3.5-4.4	4
Very weak	4.5-5	5

64. The rounded assessment from table 8 can be raised or lowered by a maximum of one point in the following cases:
- Usually, if the financial management assessment is at the high or low end of any of the ranges in table 8, we could lower (or raise) the assessment to the next category if we expect any of the subfactors (that comprise financial management) to improve (or deteriorate). For instance, a weighted assessment of 2.3 can result in a final assessment of '3' if we expect a worsening in, for instance, revenue and expenditure management. Conversely, a weighted assessment of 2.5 can get a final assessment of '2' if we expect an improving trend in, for instance, debt and liquidity management.
 - In rare cases, this one point of flexibility could be applied even if the initial assessment is not around one of the cutoff points. Take, for instance, a weighted-average assessment of 2.7, which corresponds to a rounded financial management assessment of '3' per table 8. If, in our view, any given financial management subfactor represents a disproportional credit weakness, we could change the assessment to '4'. Similarly, if any given subfactor represents a disproportional credit strength, we could change the assessment to '2'.
65. The rounded financial management assessment can be further adjusted if any overriding factors apply. There are two we consider: transparency and payment culture.
66. The transparency override sets the final financial management assessment at '5', when:
- Information is often quite basic and may be communicated with material delays, or
 - Financial reporting is not detailed, and the accounting standards are consistently unclear. Key information is

missing on some government activities.

67. The payment culture override applies when an entity's willingness to make full and timely payments on its financial obligations is questioned. An LRG can, and sometimes does, default on its obligations even when it has the capacity to pay. If concerns about the payment culture exist (e.g., if we believe there is at least a moderate likelihood that an entity would not prioritize the timely payment of debt service in a stress scenario), the overall financial management assessment is '5' and the SACP is capped at 'bb+' (as per paragraph 20). If we believe there is a high likelihood that an entity would not prioritize the timely payment of debt service in a stress scenario, we cap the SACP at 'b-'. This analysis is usually evidence-based. Examples may include an LRG that is questioning the legitimacy of debt contracted by a previous administration, or the absence of material policy change since the last default. In extreme cases, the weak or uncertain willingness to pay will result in the application of "Criteria For Assigning 'CCC+', 'CCC', 'CCC-', And 'CC' Ratings."

a) Political and managerial strength

68. Political and managerial strength gets the highest weighting in the total financial management assessment (30%). Policymakers' commitment to disciplined fiscal policies and their ability and willingness to make unpopular decisions to ensure financial and socioeconomic stability, as well as management's capacity to implement these decisions, are fundamental in promoting a sustainable fiscal framework within an LRG (see table 9).
69. When reviewing political strength, we focus on a government's strategies for and track record of passing budgets, meeting goals, and effectively implementing public policies. When analyzing management capabilities, we assess the expertise, continuity, and overall capacity of the administration's management. We assess the management's capability to implement the set policies, as well as its ability to maintain financially sustainable policies or adjust the policies as needed despite political pressures.
70. In addition, political and managerial strength is dependent on the structure of the financial management, independence of control functions, and quality of the administrative staff. We take into account management's performance in identifying, measuring, and planning responses to key external risks, such as an economic downturn, natural catastrophes, a major reduction in government grants, or a change in the institutional arrangements.

Table 9

How Standard & Poor's Assesses Typical Characteristics Of An LRG's Political And Managerial Strength		
(An LRG would need to exhibit a majority of the characteristics listed in a given category to achieve that assessment.)		
1	3	5
<p>There is broad political consensus (supported by governing party majority) on fiscal policies, enabling the government to enact structural reforms, pass budgets, and make unpopular decisions, when necessary. The management team is experienced and qualified in implementing policy changes. There is an implicit agreement by which political and financial management teams respect their spheres of power to achieve fiscal sustainability. Management accountability is strong.</p>	<p>There is a generally strong consensus to implement structural reforms, albeit after some amendments or delay. Political disagreements may delay important fiscal decisions. Management team has adequate expertise in implementing policy changes. Distinctions between political and managerial responsibilities may, at times, be opaque. Adequate financial management accountability has been maintained throughout changes of administration.</p>	<p>The LRG is unable to implement unpopular reforms. Political stability is weak and untested through a political transition. The government repeatedly faces challenges in passing budgets on time. The management team is understaffed, lacks relevant skills, qualifications, or experience in implementing policy changes. Key man risk exists. Institutionalized public policies do not exist. There is no clear distinction between political and managerial responsibilities. The system of financial management to guarantee internal accountability is inadequate.</p>

b) Long-term capital and financial planning

71. In this part of the assessment, we consider the quality of the long-term financial management, financial policies, and processes over a period longer than five years.
72. For long-term planning, we determine whether there is a credible and well-documented long-term financial plan that supports financial discipline and stability. We consider the operational aspects of the long-term planning (such as processes, formal documents explaining fiscal goals, and the financial resources needed to cover major infrastructure projects or long-term financial obligations such as pensions), the consistency around fiscal targets, and the plausibility of underlying assumptions concerning revenues and expenditures (see table 10).

Table 10

How Standard & Poor's Assesses Typical Characteristics Of An LRG's Long-Term Financial Planning		
(An LRG would need to exhibit a majority of the characteristics listed in a given category to achieve that assessment.)		
1	3	5
Prudent and well-defined financial policies, reflected in a detailed and formal long-term financial planning with key fiscal targets that remain prudent and impartial to the political cycles. Well-documented and realistic revenue and expenditure assumptions. Long-term financial management (financial policies and processes) extends beyond five years.	Relatively prudent financial policies with a medium- to long-term plan that provides visibility but may not be very detailed. Realistic long-term goals, including disciplined fiscal targets only moderately affected by political cycles. Long-term financial management (financial policies and processes) covers the next two to three years.	Absence of medium- to long-term financial planning, reliance on short-term planning. There are no defined fiscal targets, or they are frequently changed and highly sensitive to political cycles. Aggressive financial strategy based on unrealistic assumptions and no clear financial benchmarks. Inferior cash flow forecasting, unreliable, short-term financial management, financial policies, or processes.

c) Revenue and expenditure management

73. When assessing revenue and expenditure management, we review the quality and comprehensiveness of an LRG's budgeting process. For revenues, our focus tends to be on the forecasting for the budget cycle, administration, and collection of the main taxes, considering the reasons behind any variations from forecast. On the operating expenditure side, we look at mechanisms in place to control and monitor costs. For capital expenditure, we consider the planning, funding, and prioritizing of the various projects, and the exposure to delays and cost overruns (see table 11).

Table 11

How Standard & Poor's Assesses Typical Characteristics Of An LRG's Revenue And Expenditure Management		
(An LRG would need to exhibit a majority of the characteristics listed in a given category to achieve that assessment.)		
1	3	5
Budgeting is done on a fully consolidated basis, including government-related entities where relevant. Budgets reflect goals defined in the long-term financial plan and are based on realistic assumptions. Clearly formalized budgetary procedures ensure continuity and effectiveness in budgeting. Budget is approved before the start of the fiscal year, and limited budget revisions are made during the year.	Budgetary approach includes all budget-financed entities. Budgeted expenditures and revenues show realistic and well-documented assumptions, and actual variations from budget are only moderate. Clear budgetary procedures ensure an effective budgeting process. Small exceptional delays in budget approval. Moderate budget revisions during the year.	Budgeting excludes a large part of relevant activities and is short-term in nature. The approach is incremental, rather than based on result oriented budgets. Lack of clear processes lead to inconsistent procedures. Budgets often approved after the start of the fiscal year, with substantial revisions during the year.

Table 11

How Standard & Poor's Assesses Typical Characteristics Of An LRG's Revenue And Expenditure Management (cont.)

(An LRG would need to exhibit a majority of the characteristics listed in a given category to achieve that assessment.)

1	3	5
Track record of accurate budget forecasting, with robust control over revenue and expenditures. Advanced control system in place. Culture of controlling costs and ensuring the effective use of funds by subsidized entities. Negligible overspending, compensated for by intra-annual corrective measures.	Adequate capacity to forecast operating revenues and to control operating expenditures largely within budget. Improving cost monitoring. Overspending is identified by the government during the year, and there is some capacity to take corrective measures.	Low predictability of revenues, significant variations from budget (including due to weak revenue collection capacity), and unreliable cost control measures. Most requests from subsidized entities are accepted or rejected without controls. Systematic and material overspending. Capital spending is not well monitored. Budgeting uncertainties due to protracted disputes (e.g., long-standing arrears to contractors).

d) Debt and liquidity management

- 74. Our assessment of debt and liquidity management considers an LRG's policies regarding the external sources of financing, as well as the available liquidity to repay debt (see table 12). We evaluate management's appetite for and understanding of debt-related risks, such as exposure to market risks, refinancing, and concentration of lenders.
- 75. Within the liquidity management evaluation specifically, we evaluate an LRG's investment and liquidity policies, as well as its ability to forecast cash flows accurately and identify pressure points during the year. Ongoing and cooperative relationships with banks and investors are also important in supporting strong debt and liquidity management. Relevant metrics include the level of overdue payables, accounts receivable, smooth maturity profile, and free cash or equivalents to cover short- and long-term financial obligations.

Table 12

How Standard & Poor's Assesses Typical Characteristics Of An LRG's Debt And Liquidity Management

(An LRG would need to exhibit a majority of the characteristics listed in a given category to achieve that assessment.)

1	3	5
Very prudent debt management policy. Long-term debt used for capital expenditure (capex) and not operating costs. Sophisticated, active, risk-averse policy aimed primarily at minimizing risk, and secondarily cost. No unhedged foreign currency exposure, limited interest-rate risk, and low proportion of short-term debt. Clear liquidity policy with stipulated minimum and desired levels of cash and equivalents. Prudent combination of committed bank facilities (if needed) and own cash. Detailed annual planning with actual cash flows close to the plan, and detailed daily monitoring. Cash and debt management integrated, and managed by specialists. Centralized cash management for all government units.	Prudent debt management policy, including adherence to self-imposed limits. Long-term debt used for capex and refinancing of long-term borrowings. Derivatives only used for hedging purposes. Only small proportion of unhedged foreign currency debt, moderate interest-rate risk, and moderate level of short-term debt. Prudent liquidity policy, with a level of committed bank facilities that comfortably meets likely fluctuations. Comprehensive liquidity reports covering just the core government. Adequate cash flow planning, but not very precise and actuals noticeably differ from the plan. Planning only partly integrated with debt management. Fluctuating reserves not defined by specific policy.	Debt management lacks effective policies, and/or leaves the LRG vulnerable to market shocks. Long-term debt used to cover liquidity needs. Debt limits (self-imposed or national ones) are regularly breached. Aggressive debt management with use of derivatives for speculative purposes. High reliance on short-term debt, with high exposure to interest-rate and currency risks. No specific guidelines on liquidity and lack of cash flow planning. Material delays in payment to suppliers, and occasionally of wages. Poor liquidity reporting. Cash management is more an administrative payment function. Numerous and decentralized cash accounts, with little control or visibility over cash flows. Reliance on limited sources for funding.

e) Management of government-related entities

- 76. To assess the quality of the management of GREs, such as companies owned by an LRG, we review (with available data) the clarity regarding the GREs' mandates, the LRG's capacity and effectiveness in setting and monitoring the

GREs' medium-term targets and financial performances, and the degree of transparency and frequency of financial reporting (see table 13).

77. Most rated LRGs manage GREs. However, there are some that directly manage services within the government. In these cases, the assessment will reflect our view of the quality of an LRG's management of these services (which is likely to coincide with our political and managerial strength assessment) and the rationale behind managing these activities directly rather than through GREs. The assessment will be worse if an LRG does not manage any GREs because it does not have the resources to run them, versus a better assessment if a model of operating without GREs is more effective.

Table 13

How Standard & Poor's Assesses Typical Characteristics Of An LRG's Management Of Government-Related Entities

(An LRG would need to exhibit a majority of the characteristics listed in a given category to achieve that assessment.)

1	3	5
Sound rationale for the existence of all GREs, such as efficiency in provision of services or access to private finance. Transparent nomination process for board and CEO based on competence. Comprehensive plans linked to the LRG's financial strategy. Entities fully cover costs with own sources or fees/grants received from the LRG, in exchange for the contractually defined provision of a public service.	Most GREs provide essential services, although efficiency in the provision of services might not be their primary goal. They are controlled through government representation on board and annual reporting, and ultimately through the LRG internal control body. Planning is not comprehensive. Some GREs have moderate structural deficits, which are generally covered by the LRGs.	GREs lack a clear rationale, other than absorbing costs and debt on behalf of the LRG. Senior managers are political appointees, but a lack of information or planning means the LRG still has weak controls. Most companies are in structural deficit. Government funding for the provision of public service is insufficient, or GREs lack the capacity to perform within budget.

3. Budgetary Flexibility

78. Standard & Poor's believes that budgetary flexibility is particularly important to an LRG when government finances are facing external pressure. If an LRG has budgetary flexibility, it is more likely, in our view, to be able to adjust its revenues or expenditures in the face of external shocks, such as economic downturns or intergovernmental system changes, to maintain its debt servicing ability. We both qualitatively and quantitatively assess an LRG's willingness and ability to increase revenues and to cut expenditures.
79. An LRG's revenue flexibility depends, in our view, on three main factors:
- Its ability to raise taxes, fees, or tariffs;
 - The political considerations and economic limits that could curb the use of this flexibility; and
 - Potential revenues from asset sales.
80. And its willingness and ability to cut expenditures depends, in our view, on these main factors:
- Operating expenditures flexibility,
 - Capital expenditures flexibility, and
 - Potential limitations on expenditure flexibility.
81. Standard & Poor's derives its budgetary flexibility assessment (see table 14) by combining the two key ratios--modifiable revenues as a share of adjusted operating revenues and capital expenditures as a share of total

expenditures--to determine the anchor. The anchor is based on the average of the two-year actual data, the current-year budget or estimate, and two years of Standard & Poor's forecasts. We then consider the other, qualitative factors to determine the final budgetary flexibility assessment. The budgetary flexibility assessments are: '1' (very strong), '2' (strong), '3' (average), '4' (weak), and '5' (very weak).

a) Revenue flexibility

82. *i) Ability to raise taxes, fees, or tariffs.* To measure an LRG's control over its revenue base, Standard & Poor's primary metric is the share of modifiable revenues as a percentage of adjusted operating revenues (see Glossary). Modifiable revenues are those that a local government may increase or decrease in case of need (including taxes, fees, and rents). In practice, revenue modification occurs mainly by changing a rate or the calculation of a base or by introducing a new tax or fee. Shared taxes distributed between LRGs based on centrally defined formulas are typically not part of modifiable revenues.
83. Although modifiable revenues as a share of an LRG's adjusted operating revenues generally gives an approximation of its tax flexibility, we think this measure is appropriately complemented by a qualitative evaluation of the maximum additional revenues that the LRG could gain. This can vary significantly depending on the national legislation, as well as on the LRG's current taxation levels compared with the maximum level set by law. Furthermore, in cases where tax collection rates are very low, the effective impact of an increase in tax rates may remain marginal.
84. *ii) Political considerations and economic limits.* In our experience, practical limitations on budgetary flexibility may arise from political priorities or competition from neighboring jurisdictions. To evaluate these aspects, we may compare an LRG's key tax rates against the national average and those of the LRG's closest peers. We believe that significant unfavorable disparities may indicate a risk that the tax base could drift to other jurisdictions or create pressure to cut taxes. Such pressure can also, in our view, result from a political commitment to limit revenue increases. In certain jurisdictions, use of tax flexibility is also constrained by the need for approval from a higher level of government or voter ratification. Finally, economic limitations might stem from a low-income population or weak tax base.
85. *iii) Potential additional revenues from asset sales.* In certain countries, LRGs may have large portfolios of sellable assets, typically in the form of shareholdings in commercial companies or a large number of housing and commercial properties. Selling these assets could generate sizable one-time revenues for an LRG. But these divestments might be subject to legal hurdles, political opposition, lack of buyers, or long lead times. Hence, we typically would consider such revenues as benefiting budgetary flexibility if sellable assets can be realistically liquidated and will generate an equivalent of roughly 20% of the LRG's operating revenues. As such, we would also expect that the government would be willing to sell or would have a track record of selling such assets.

b) Willingness and ability to cut expenditures

86. LRGs' expenditures are generally broken down between operating expenditures and capital expenditures (capex) (see Glossary). Of the two, LRGs generally have broader flexibility to trim spending on the capex side. For instance, it is often easier to delay the construction--and costs--of a new school rather than cut the salaries of school teachers. Consequently, Standard & Poor's primary metric to measure an LRG's expenditure flexibility is capex as a percentage of total expenditures.
87. *i) Operating expenditures flexibility.* How flexible an LRG's operating costs are depends on the type of expenditure. Some operating costs can be totally inflexible, such as payments on financial obligations, or expenditures mandated by national legislation with prescribed service standards. Those that are generally inflexible but may offer some room for maneuver include personnel expenditures in certain jurisdictions (depending on employees' status), certain subsidies,

or direct spending for core responsibilities, such as education and health care. Finally, other operating spending may be more easily cut to the extent that it is for nonessential services. However, governments generally find it politically difficult to take these types of actions, especially during an economic slowdown when taxpayers are already under stress.

88. **ii) Capital expenditures flexibility.** Although capex may, in principle, be easier to cut than operating expenses, capex can also be quite inflexible. This is particularly the case when a large project is under construction (i.e., it is difficult to stop the work on a subway line halfway through, especially under a long-term contract), when an LRG faces important infrastructure needs, when it has underspent for a long period (resulting in the possible need for catch-up spending), or when capital expenditures are co-financed by a third party (such as a higher level of a government or a multilateral institution). Furthermore, the effectiveness of large capital spending programs can be an important positive credit factor, especially for LRGs in emerging markets, where such programs support economic growth and the ability to generate taxes over the long term.
89. **iii) Potential limitations on expenditure flexibility.** Although expenditures can be difficult to cut, they can also be a source of pressure when they need to rise, such as when an LRG needs to increase services or upgrade infrastructure owing to a rapidly growing population, to meet the needs of a developing economy, or to improve standards in a developed market (for example, when tightening environmental norms).
90. We believe that an LRG's expenditure flexibility depends partly on its core responsibilities. For instance, there is generally less flexibility and more cost pressure associated with politically and socially important educational or health care spending than with vocational training or street lighting.

Table 14 Standard & Poor's Assessment Of An LRG's Budgetary Flexibility					
Anchor derived from the combined ratios below:					
	Modifiable revenues as % of adjusted operating revenues*				
Capex as % of total expenditures*	>70%	51%-70%	31%-50%	10%-30%	<10%
>=15%	1	2	3	4	4
<15%	2	3	3	4	5
Qualitative factors positively affecting the anchor include:			Qualitative factors negatively affecting the anchor include:		
Demonstrated capability and willingness to cut operating spending--typically by more than 5% of operating spending--thanks to a flexible cost structure, flexible legislation, and widespread political support.			Highly limited leeway to adjust modifiable revenues--typically by less than 2% of operating revenues--either because tax rates are already high, tax collection levels are very low, or tax pressure is above peers', and/or because of a lack of political willingness to increase taxes.		
Ability to increase operating revenues--typically by more than 5% of operating revenues--through the creation of new taxes or influence on shared taxes.					
Demonstrated ability to postpone capex due to excellent infrastructure, typically by more than 20% of capital spending.			Highly limited ability to cut expenditures because of significant infrastructure needs or large-scale projects, and/or owing to significant pressure on operating costs or political priorities.		
Above-average capacity (as described in paragraph 85) to generate revenues from asset sales.					
Each qualitative factor generally accounts for a one-point adjustment. Anchor measures falling at or near cut-off points will receive the better assessment if trends are improving, the worse assessment if trends are weakening. Overall, the budgetary flexibility assessment equals the anchor, adjusted by up to two points up or down, based on the net effect of the qualitative factors listed above.					
*Based on the average of the two-year actual data, the current-year budget or estimate, and two years of Standard & Poor's forecasts.					
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91. Here are a few illustrations of our approach, including how our assessment takes into account qualitative considerations:

- **EXAMPLE 1:** 60% of an LRG's adjusted operating revenues are modifiable and capex is above 20% of total expenditures, which corresponds with an anchor of '2'. Tax rates are already close to the legal ceiling, or the LRG has a strong political commitment not to increase taxes. Assuming all the other factors are neutral, we would expect to assess the LRG's budgetary flexibility at '3', one point weaker than the anchor.
- **EXAMPLE 2:** 60% of an LRG's adjusted operating revenues are modifiable and capex is below 10% of total expenditures, which corresponds with an anchor of '3'. The LRG exhibits maneuverability on about 6% of its operating costs, including personnel expenses. Assuming all the other factors are neutral, we would expect to assess LRG's budgetary flexibility at '2', one point stronger than the anchor.

- EXAMPLE 3: 60% of an LRG's adjusted operating revenues are modifiable and capex is more than 25% of total expenditures, which corresponds with an anchor of '2'. Capex is not flexible because the LRG has large infrastructure needs and many of its investments are co-funded and carry earmarked transfers from an upper level of government and, therefore, cannot be cut contractually. Furthermore, the LRG has very low tax collection rates, which would significantly soften the effect of a hike in tax rates. Assuming all the other factors are neutral, we would expect to assign the LRG's budgetary flexibility an assessment of '4', two points weaker than the anchor.

4. Budgetary Performance

92. The budgetary performance assessment measures the level and the volatility of an LRG's expected cash flows (from operations and investment activities) that are available to service debt. It also gauges the efficiency of the LRG's financial policy. With this in mind, Standard & Poor's analysis of budgetary performance relies largely on two key ratios: operating balance and balance after capital accounts, which form the anchor.
93. The anchor is based on the average of the two-year actual data, the current-year budget or estimate, and two years of Standard & Poor's forecasts. The forecast figures in table 15 are based on our base-case projections, which, in turn, reflect our macroeconomic outlook and incorporate management's medium-term plan and any policy change and response, as well as expected pressures on and increases in revenues and expenditures.
94. We then consider other qualitative factors to determine the final budgetary performance assessment. The budgetary performance assessments are: '1' (very strong), '2' (strong), '3' (average), '4' (weak), and '5' (very weak).

a) Operating balance

95. We believe the operating balance (see Glossary), when calculated on a cash or modified-cash basis, as a percent of adjusted operating revenues generally gives a good proxy for an LRG's cash flows from operations. The ratio reflects the extent to which an LRG can finance its operational costs and public services from recurring revenues--mostly taxes and operating subsidies. An operating balance of 5% of adjusted operating revenues or more typically indicates that an LRG generates self-financing capacity that it can use to partially or fully fund its capital investments and repay debt. An operating balance of less than 5% of adjusted operating revenues typically indicates less self-financing capacity and suggests the LRG would have greater vulnerability to a prolonged recession or to unexpected events. Persistent operating deficits indicate that an LRG would normally need to use debt to fund everyday operations. We note that such a situation is generally not sustainable in the long term and could indicate that the LRG's revenue base may not be sufficient to sustain its range of services, or could indicate management's lack of willingness to address structural imbalances.
96. In jurisdictions with full accrual accounting, we may use the modified (see paragraph 99) accrual operating balance.

b) Balance after capital accounts

97. The balance after capital accounts (see Glossary) represents a proxy of the overall funding needs or surplus that an LRG derives from its operating and capital activities and would generally correspond to changes in net debt in a pure cash-based accounting system. An LRG can finance the balance either by drawing on its cash reserves or by borrowing.

98. We have observed that analyses of budgetary performance often suffer from a lack of uniform definition of terms and from other inconsistencies in public-sector accounting standards across countries. The basis for public-sector accounting ranges from pure cash accounting to pure accrual accounting and includes a variety of modified-cash and modified-accrual accounting standards. The extent of consolidation of public-sector satellite companies in an LRG's accounts can also differ widely from one LRG to another.
99. Consequently, Standard & Poor's makes a series of adjustments to LRGs' reported financial indicators to minimize these inconsistencies. The adjustments aim to align financial information on LRGs, as much as possible, to form a modified-cash base (when relevant and appropriate in the context of the budgetary performance analysis), by eliminating the noncash items, such as depreciation and provisions, to obtain comparable financial data on LRGs across jurisdictions.
100. The anchor can be adjusted up or down by up to two points, based on our analysis of the net effect of the qualitative factors detailed in paragraphs 101-102 and in table 15. Each qualitative factor generally counts for one point of adjustment. Anchor assessments falling at or near cutoff points will receive the higher assessment if trends are worsening and the lower assessment if trends are improving.
101. Positive qualifiers to the anchor are:
- Expected structural improvement: if our base-case forecasts point to a material structural improvement versus the period average (i.e., that would lead to a better anchor score within our rating horizon), and
 - High cash reserve levels: if deficits are temporary and can be largely covered by cash reserves.
102. Negative qualifiers to the anchor are:
- Expected structural deterioration: if our base-case forecasts point to a material structural deterioration from the period average (i.e., that would lead to a worse anchor score within our rating horizon);
 - Pronounced volatility in performance as evidenced by a combination of one or more of the following factors: high inflation, very cyclical revenues, dependence on volatile state transfers, and exposure to event risk; and
 - Underestimated spending as evidenced by a combination of one or more of the following factors: significant underspending, large unpaid debt to suppliers, and off-budget financing through public companies.

Table 15
Standard & Poor's Assessment Of An LRG's Budgetary Performance

Anchor derived from the combined ratios below:

Operating balance as % of adjusted operating revenues*	Balance after capital accounts as % of total adjusted revenues*				
	>0	0-(5%)	(5%)-(10%)	(10%)-(15%)	<(15%)
>5%	1	2	3	4	4
0%-5%	2	3	3	4	5
<0%	N/A	4	4	5	5
Qualitative factors positively affecting the anchor include:			Qualitative factors negatively affecting the anchor include:		
Expected structural improvement: if our base-case forecasts point to a material structural improvement versus the period average (i.e., that would lead to a better anchor score within our rating horizon)			Expected structural deterioration: if our base-case forecasts point to a material structural deterioration from the period average (i.e., that would lead to a worse anchor score within our rating horizon)		
High cash reserve levels: if deficits are temporary and can be largely covered by cash reserves			Pronounced volatility in performance as evidenced by a combination of one or more of the following factors: high inflation, very cyclical revenues, dependence on volatile state transfers, and exposure to event risk		
			Underestimated spending as evidenced by a combination of one or more of the following factors: significant underspending, large unpaid debt to suppliers, and off-budget financing through public companies		
Each qualitative factor generally counts for an adjustment of one point. Anchor assessment measures falling at or near cut-off points will receive the higher (worse) assessment if trends are worsening, and the lower assessment if trends are strengthening, reflecting the expected future level. Overall, the budgetary performance assessment equals the anchor, adjusted by up to two points up or down, based on the net effect of the qualitative factors listed above.					
*Based on the average of the two-year actual data, the current-year budget or estimate, and two years of Standard & Poor's forecasts. N/A--Not applicable.					
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103. Here are a few examples of our approach to assessing budgetary performance.

- **EXAMPLE 1:** Over the period considered (two years of actual performance, one current year, and two years of forecast), an LRG has an operating surplus of 6% of adjusted operating revenues but its deficit after capital accounts is 12% of total adjusted revenues because of the completion of its substantial capital investment in transit systems. Based on this, its anchor would be '4'. The LRG does not plan any further major investment, and our base-case forecast is for a small deficit after capital accounts of less than 5%. Assuming all other factors are neutral, we would expect to assign a budgetary performance assessment of '3', one point stronger than the anchor.
- **EXAMPLE 2:** An LRG has an operating surplus of 6% of operating revenues and its average deficit after capital accounts is less than 5% of total revenues. This implies an anchor of '2'. However, the LRG's performance is very volatile because a large share of revenues comes from state transfers that vary widely each year. In addition, the

LRG has a large stock of unpaid suppliers' bills, which means that operating expenditures on a cash flow basis are underestimated. Assuming all other factors are neutral, we would expect to assign a budgetary performance assessment of '4', two points weaker than anchor, taking into account the performance volatility and the sizable unpaid supplier debt.

5. Liquidity

104. The liquidity assessment measures how an LRG's internal sources of liquidity, such as cash reserves and cash flow generation (adjusted for debt service and borrowing), and external sources, namely bank lines and market access, are likely to affect its future debt-servicing capability.
105. Standard & Poor's liquidity analysis takes into account an LRG's levels of cash and readily marketable securities, committed bank lines, access to capital markets, and projected cash inflows and outflows within one year, including their seasonality and sensitivity to economic performance. In analyzing liquidity, Standard & Poor's focuses on the:
 - Internal cash flow generation capability; and
 - External liquidity deriving from access to banks and capital markets, and financing from other levels of governments and government agencies.
106. For an in-depth explanation of these factors, see "Methodology And Assumptions For Analyzing The Liquidity Of Non-U.S. Local And Regional Governments And Related Entities And For Rating Their Commercial Paper Programs," published Oct. 15, 2009. Our analysis of an LRG's debt and liquidity management policies and its risk management is a component of the financial management assessment. The adjusted cash reserves and internal cash flow generation capability set the anchor for the liquidity assessment. Various qualitative factors, including the access to external liquidity, are applied to the anchor to determine the final liquidity assessment. The range of assessments is: '1' (exceptional), '2' (strong), '3' (adequate), '4' (less than adequate), and '5' (weak).

a) Internal liquidity

107. Standard & Poor's cash flow analysis (and initial liquidity anchor assessment in table 17) consists of a forward-looking assessment of an LRG's adjusted cash reserves and internal cash flow generation capability, relative to annual debt service.
108. To evaluate the internal liquidity available to repay debt, we seek to determine free cash and liquid assets (see Glossary), a measure we define as liquid assets that are unrestricted, not needed to meet daily operating needs or planned capital costs in a forward-looking perspective, available to cover debt service over the next 12 months, and adjusted for market risk on noncash investments. Specifically, we count only highly liquid and immediately sellable assets and generally apply a discount to the market value of fixed-income securities and equities to reflect potential volatility due to various market risks (see liquidity criteria article for more details).
109. To determine the liquidity anchor, we assess the average cash position expected over the coming 12 months (excluding debt service and borrowing) divided by debt service coming due over the next 12 months.
110. If an LRG does not provide a reliable, forward-looking liquidity plan, we project an LRG's internal liquidity based on a combination of historical trends (i.e., free average cash over the past 12 months) and our cash forecast for the next 12

months. We evaluate the latter using our forecasted yearly balance after capital expenditures (adjusted for interest payment) divided by 2, as a proxy. Such forecasted cash position is then divided by the debt service coming due in the next 12 months.

b) Committed bank lines

111. Although we generally regard cash and liquid assets as the strongest form of liquidity, many issuers rely on bank facilities for their financing and liquidity management. In our view, though committed bank facilities may provide a sense of security, back-up facilities do not guarantee that liquidity will always be available. Also, in some countries, bank facilities are not committed over several years, but rather are up for renewal every year. For this reason, we focus on various factors, which, in our opinion, affect the degree of the bank's commitment to advance cash under all circumstances. More information on Standard & Poor's criteria to assess committed bank facilities can be found in "Methodology And Assumptions For Analyzing The Liquidity Of Non-U.S. Local And Regional Governments And Related Entities And For Rating Their Commercial Paper Programs." When we analyze the committed bank facilities as available liquidity support under these criteria, we take the undrawn amounts into account when calculating the liquidity anchor assessment. We view entities whose internal cash generation capacity is sufficient to cover debt service coming due over the next 12 months more positively (i.e., by assigning them better anchor assessments) than those that rely on existing committed liquidity and revolving lines (see table 17).
112. The liquidity anchor reflects an average cash position (daily or monthly) compared with annual debt service. Therefore, a ratio of less than 100% is not necessarily a source of concern because annual debt service is usually spread out throughout the year (i.e., there is no expectation that a cash balance in a particular day should cover 100% of the annual debt service), and an LRG may have access to external liquidity (borrowing from the capital markets, central government, or additional credit lines) to cover debt service.
113. The average cash balances over the debt service (the anchor in table 17) are used to rank LRGs based on their ability to pay debt from the adjusted cash reserves and internally generated cash flows and undrawn but committed bank lines, if available. However, the average balance will not signal liquidity troughs, especially if the cash flows are volatile. Hence, we closely review how cash projections match the debt service schedule throughout the year.
114. The SACP will be 'b-' or lower for entities that meet all three conditions: (1) have "limited" or "uncertain" access to liquidity (see table 16), regardless of the initial anchor score; (2) are unable to improve their liquidity positions (through cutting or postponing spending or raising revenues); and (3) for whom the cash flow analysis around debt repayment periods indicates that adjusted cash reserves and internally generated cash flow will be insufficient (including prefinancing) to cover balance after capital expenditures (including debt service). (See example 1 in paragraph 125.)
115. Finally, for an LRG with a final liquidity assessment of '5', its SACP would be the lower of the 'bb+' cap or the matrix outcome, which, in turn, will be worsened by as much as one rating category, unless there are mitigating factors (see paragraph 20).

c) Access to external liquidity

116. Standard & Poor's observes that market funding--bank loans, bonds, and commercial paper--can be an important source of LRG financing, particularly in countries with liquid and mature banking systems or capital markets. In some countries, such as Germany and Canada, LRGs rely largely on a well-developed capital market for their funding, while

in many other countries, public finance entities rely mostly on bank loans. As observed during periods of severe market dislocation, such as in 2008, the LRGs did not lose access to the market to the same extent as did other asset classes.

117. We also observe that the legislative framework under which an LRG operates can affect its access to liquidity. This is particularly the case when the LRGs benefit from special and timely access to liquidity from the central government or from other levels of government, or, on the contrary, when the use of debt instruments for liquidity purposes is intermittently restricted or legally banned.
118. Consequently, we analyze an LRG's liquidity position in the context of both country- and entity-specific characteristics that affect its access to external liquidity and, therefore, its refinancing capacity and risk. Our analysis includes:
- The legal framework defining an LRG's access to liquidity, including to central government. We analyze the track record, predictability, and sustainability (amid potential pressures on the sovereign creditworthiness) of such legal framework;
 - The general strength and diversity of domestic banks, focusing particularly on active lenders to the municipal/public sector;
 - The development of the domestic bond market in general and for LRGs in particular; and
 - An individual LRG's track record of market access or links with a diversified pool of banks and our opinion as to whether this track record will continue.
119. Based on the above considerations, we classify LRG access to external liquidity in five categories, outlined in table 16. We then use these classifications as qualitative adjustments to our overall liquidity assessment, as described in table 17.

Table 16 Standard & Poor's Assessment Of An LRG's Access To External Liquidity	
Access to external liquidity	Typical characteristics
Exceptional*	--Both characteristics listed for the "strong" category, and legally defined exceptional access to sources of liquidity from other levels of government or a central government-owned bank or agency.
Strong§	--Proven track record of sufficient access to a deep and liquid capital market at all times (including during periods of severe market dislocation such as 2008 and 2009), or to a strong and diversified pool of domestic and international banks, in banking systems with a BICRA of '1' to '3'†, or --Access to well-established and effectively operating sources of liquidity from other levels of government or a central government-owned bank or agency.
Satisfactory	--Continued access to a strong and diversified pool of domestic banks, in banking systems with a BICRA of '1' to '4'†.
Limited	--Possible or intermittent legal restrictions on the use of debt instruments for liquidity management, or --Limited development of domestic capital market for LRGs, or --Generally good access to the domestic banking system, but a limited number of players in the LRG field or moderate strength of the domestic banking system, carrying a BICRA of '4' to '8'†.
Uncertain	--Legal restrictions banning the use of debt instruments for liquidity management, or --Undeveloped domestic capital market for LRGs, or --Weak domestic banking system, carrying a BICRA of '7' to '10'†, with a limited number of lenders to LRGs.
*These characteristics can only be found in very highly rated sovereigns (rated 'AA' and higher). §These characteristics can only be found in sovereigns rated 'BBB-' and higher. †If BICRA assessment is available.	
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120. We use the assessment from table 16 to derive the final liquidity assessment in table 17 as such:

- "Exceptional" access to external funding improves the liquidity anchor assessment (in table 17) by two points.
- "Strong" access to external funding improves the anchor assessment by one point if only one condition listed is met. In exceptional cases, if both conditions listed are met, the anchor assessment improves by two points.
- "Limited" access to external funding worsens the anchor assessment by one point. However, if the liquidity anchor assessment is '1' ("exceptional"), based on structurally very strong capacity to generate internal cash, no negative adjustment is made.
- "Uncertain" access to external funding worsens the anchor assessment by two points. However, if the liquidity anchor assessment is '1' ("exceptional"), based on structurally very strong capacity to generate internal cash, the assessment will worsen by just one point.

121. Separately, if an entity's liquidity access is potentially limited by covenant or other restrictive terms, our assessment per table 16 is reduced to no better than the "limited" category.
122. Overall, the liquidity assessment equals the anchor assessment, adjusted up or down by as many as three points, based on our analysis of the net effect of the qualitative factors detailed in paragraphs 123-124 and in tables 16 and 17. The impact of each qualitative factor generally counts for one point, except when we consider an LRG's access to external liquidity to be "exceptional," "strong," or "uncertain." Anchor assessment measures falling at or near cutoff points will receive the higher assessment if trends are worsening and the lower assessment if trends are strengthening, reflecting the expected future level.
123. Positive qualifiers that can be applied to the anchor are:
- "Exceptional" or "strong" access to external liquidity, as defined in table 16;
 - Policy response by an LRG: For entities with a very low debt service coverage ratio (anchor assessments of '5') as defined in table 17, we use this positive qualifier if there is a track record of appropriate and timely policy response from the respective LRG to liquidity pressures in the form of delayed or cancelled expenditures to meet debt service in all circumstances, and if we believe the same policy will be carried out by this LRG and will allow to target cash inflows to timely match debt service disbursements; and
 - Very robust internal cash flow generation capability compared with peers in the same category (translating into an annual operating balance before interest/debt service of roughly 200% or greater). Cash flows are evenly distributed during the year and very predictable.
124. Negative qualifiers that can be applied to the anchor are:
- "Limited" or "uncertain" access to external liquidity, as defined in table 16;
 - Very large expected funding needs beyond the coming year (up to 36 months). These needs can stem from working capital, multiyear investment programs (either not covered by prearranged financing, or covered by loans already drawn down), or potential large amounts of unpaid supplier debt at the LRG level or at its satellite companies (typically equating to more than four months of operating spending); and
 - Expected volatility in the liquidity ratio during or beyond the 12 coming months (up to 36 months) due to, for instance, a lumpy debt amortization profile, or large bullet maturities.

Table 17 Standard & Poor's Assessment Of An LRG's Liquidity					
	Free cash and liquid assets as a % of next 12 months' debt service	Free cash, liquid assets, and committed and undrawn bank lines as a % of next 12 months' debt service			
	>100%	>120%	81%-120%	40%-80%	<40%
Anchor	1	2	3	4	5
Qualitative factors positively affecting the anchor include:		Qualitative factors negatively affecting the anchor include:			
Access to external liquidity is "exceptional" or "strong," as defined in table 16.		Access to external liquidity is "limited" or "uncertain," as defined in table 16.			
Proactive policy response, as defined in paragraph 123.		Very large expected funding needs.			
Internal cash flow generation capability is very robust compared with peers in this category.		Expected volatility in the liquidity ratio over the next 12 months or beyond.			
<p>The adjustment impact of each qualitative factor may vary from one point (in most cases) to two (in cases where we consider an LRG's access to external liquidity to be exceptional, strong, or uncertain). Overall, the liquidity assessment is based on the anchor, adjusted up to three categories up or down, based on the net effect of the qualitative factors listed above.</p>					
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125. Here are a few illustrations of our approach.

- EXAMPLE 1:** An LRG in a developing country has almost no debt, so its debt service coverage of free cash and liquid assets is more than 100%, implying an anchor of '1'. However, the LRG is located in a country where we view access to external liquidity as "uncertain," meaning that the LRG might not be able to borrow if necessary. Because of the "uncertain" external liquidity access, we review the LRG's cash flow, especially around debt repayment periods, to ensure that, despite a strong cash position on average (as explained in paragraph 114), the adjusted cash reserves and internal cash generation cover the balance after capital expenditure and debt service. If no liquidity gaps are identified, we likely will assess the LRG's liquidity at '2', one point below the anchor (as per paragraph 120). However, if we identify a liquidity gap around the debt service payment, and no adjustment is envisaged, the SACP will be capped at 'b-', per paragraph 114.

- **EXAMPLE 2:** An LRG in a developed country has debt service coverage of free cash and liquid assets plus undrawn committed facilities of about 50%, which would indicate an anchor of '4'. However, the LRG is located in a country where we consider access to external liquidity to be "exceptional." Assuming all other factors are neutral, we would likely assess the LRG's liquidity at '2', or two points better than the anchor.

6. Debt Burden

126. An LRG's debt burden, while important, is not viewed as an absolute measure of an LRG's creditworthiness. We have observed that LRGs rated 'BBB-' and above have, on average, much higher debt levels than those rated 'BB+' and lower. This is because the higher-rated LRGs generally benefit from better access to liquidity, a more predictable revenue and expenditure structure, and broader budgetary flexibility enabling them to sustain higher debt burdens. When examining extreme cases, such as defaults, the track record of defaulting LRGs suggests that most of these defaulted with relatively low debt levels.

127. With this in mind, our debt burden analysis focuses on the following factors:

- A forward-looking assessment of debt stocks and interest burden;
- Potential volatility in the cost of debt from exposure to market risks; and
- An assessment of other long-term liabilities, mostly unfunded pension liabilities and other postemployment benefits (OPEBs).

128. We derive our debt burden anchor from the combination of a forward-looking assessment of an LRG's debt and interest burden, relative to its available resources. We can adjust the anchor up or down by up to two points, to reflect our assessment of the qualitative considerations detailed in paragraphs 140-141 and in table 18. The adjustment impact of each qualitative factor generally counts for one point. Debt indicators falling at or near cutoff points will receive the higher assessment if trends are worsening and the lower assessment if trends are strengthening. The range of final debt burden assessments is: '1' (very low), '2' (low), '3' (moderate), '4' (high), and '5' (very high).

a) Forward-looking debt and interest burden assessments

129. We do not analyze an LRG's debt burden in isolation, and we do not confine our analysis to core government debt. Accordingly, we also take into account the GREs which, in our view, are likely to rely on financial assistance from the LRG, if their own resources are not sufficient to meet their obligations. Factors affecting our analysis of an LRG's debt obligations and those of GREs include examining existing explicit obligations--mostly in the form of guarantees--or implicit moral obligations that the LRG may have, stemming for instance from the size of an LRG's ownership stake in a given GRE and the role it performs. We also take into account the financial standing of GREs.

130. Among the debt measures we analyze to capture differing levels of consolidation from one LRG to another, we believe that the ratio of tax-supported debt to consolidated operating revenues (see Glossary) is the most appropriate measure for international comparisons. This measure helps to smooth out some of the differences stemming from accounting systems and political frameworks around the world. It is also a good measure, in our view, of all debt that ultimately relies on an LRG's total revenues (tax and other revenues) because it incorporates the debt of satellite companies that rely at least partially on the LRG for their financial standing.

131. In rare cases, when an GRE's revenues are disproportionately large compared with those of the LRG and, hence, could distort the debt burden measure on the consolidated level, we will use the government direct debt (see Glossary) as a share of its direct revenues as an anchor. This conservative approach more properly accounts for revenues available for payment of government debt and avoids the risk of rapid deterioration in the debt assessment should the GRE with high revenues and low debt become self-supporting. (In that case, the GRE's financials would be excluded from the debt measure calculation and included instead in the analysis of contingent liabilities.)
132. The second ratio we analyze is interest payment (see Glossary) to adjusted operating revenues, meaning gross interest on direct debt at the LRG level. This ratio gives us an indication of the sustainability of an LRG's debt by measuring the share of income it uses to cover cost of debt. We may also consider the ratio of debt service to operating revenues, but we give it less weight in our debt burden assessment because it includes some considerations of an LRG's refinancing capacity, which can differ widely across countries, and which our liquidity assessment already captures.

b) Qualitative factors: exposure to market risks and unfunded pension and OPEB liabilities

133. We monitor an LRG's exposure to market risks, aiming to factor in effects that could lead to volatility in the interest and debt service burden. In turn, these effects could influence the size of and volatility in the LRG's debt burden. We focus specifically on the following areas.
134. *i) Interest rate risk.* Some LRGs structure their debt portfolios to take advantage of expected movements in interest rates and are therefore exposed to losses if interest rates do not move as they had anticipated. When analyzing an LRG's exposure to interest rates, we generally focus on the share of its debt that is sensitive to interest rate fluctuations, the degree of exposure to main market rates, or other variables from which pricing is derived (for instance LIBOR or Euribor), and the mechanisms the LRG uses to monitor and respond to adverse interest rate movements, such as the use of hedging strategies.
135. *ii) Currency risk.* If an LRG has foreign currency-denominated debt, we generally analyze the consequences of adverse exchange rate movements and how it could mitigate these through hedging strategies. When an LRG bears foreign exchange risk either by choice or because it lacks hedging tools, we analyze the mechanisms it employs for monitoring and managing exposure to determine the degree of risk it faces and the existence of any mitigants to this risk. As part of our analysis of currency risks, we seek to ascertain how volatile the exchange rates are between relevant foreign currencies and the LRG's domestic currency.
136. *iii) Use of derivative or nonstandard financial instruments.* We also usually analyze the use--or nonuse--of derivative or nonstandard financial instruments to manage exposures to market risks. Taken by themselves, derivatives are not necessarily detrimental to an LRG's credit profile if they are primarily used for hedging purposes. We analyze the LRG's objectives in entering into derivative contracts and other financial instruments, including hedging, trading, and cost reduction; the type of risk they are designed to mitigate; the extent of their use; management's risk tolerance; management's competence in executing hedging and its understanding of the risks involved; and the controls in place to monitor derivatives and their potential impact on the LRG's liquidity risk.
137. *iv) Debt maturity profile.* We factor the debt maturity profile mainly into our liquidity assessment, but we also take it into account when we evaluate an LRG's interest burden and volatility. In our observation, an LRG with a very short-term amortization profile--typically average debt maturity of less than two years--is much more sensitive to interest rate fluctuations, because a greater proportion of its debt might require refinancing.

138. **v) Other long-term liabilities.** In certain countries, LRGs are responsible for all, or part of, the pensions of their employees. In these countries, pension liabilities may affect the credit quality of LRGs to varying degrees, depending on the nature of the local pension plans, the demographic profile of the LRG's employees, and the financial coverage of future obligations.
139. The impact of pension and OPEB obligations depends on:
- The magnitude of unfunded pension and OPEB liabilities assessed in the context of the budgetary impact. We typically make a negative adjustment to a debt assessment if the unfunded liabilities are greater than 50% of operating revenues and are unaddressed, hence necessitating larger budgetary outlays in the future. We aim to incorporate the unfunded liability as calculated using the accumulated benefit obligation (ABO) method (see Glossary). In countries where ABO-based data are not available, we will use projected benefit obligation (PBO) data (see Glossary).
 - The degree to which pension costs will likely escalate and whether the government has plans to address them. Relative to debt, governments have a higher level of flexibility to address these costs, both in terms of timing and level of payment. Many governments have the flexibility to alter benefit levels, and some governments already have availed themselves of this ability. Most governments also can pay less than the annual required contribution without leaving the fund unable to meet actual payments in the current and following year. On the other hand, such delays accelerate the growth rate of future payments. When the potential for such accelerations exists and the increased payments increase budget stress, the final debt assessment worsens by one point when a specific and credible plan to address this burden is in place (unless this is already explicitly reflected in our forward-looking budgetary performance assessment). Otherwise, the anchor worsens by two points.
140. Overall, positive qualifiers that can be applied to the anchor are:
- Exceptionally high operating balance (i.e., cases when direct debt typically represents less than three years of operating margin), and
 - Large debt on-lent to self-supporting entities (see Glossary). Some LRGs raise debt to on-lend it to subsidiaries or GREs. If these subsidiaries are self-supporting and if the share of such on-lent debt is a substantial portion of the total debt of the LRG (so that, if we exclude this on-lent debt, the debt anchor assessment would improve by one point or more), we will improve our anchor debt assessment by one point to recognize a lower credit risk associated with the LRG's debt profile.
141. Negative qualifiers that can be applied to the anchor are:
- Potential significant volatility in the debt burden owing to high exposure to market risks (e.g., interest, currency risk, a short-term maturity profile, and aggressive use of derivative or nonstandard instruments), which could lead to an increase in the cost and level of debt such, that it would weaken the anchor by one point, and
 - Unaddressed large unfunded pension and OPEB liabilities and/or large and rising pension costs.

Table 18
Standard & Poor's Assessment Of An LRG's Debt Burden

Anchor Is derived from the combined ratios below:

Interest payment as % of adjusted operating revenues†	Tax-supported debt as % of consolidated operating revenues§				
	<30%	30%-60%	61%-120%	121%-180%	>180%
<5%	1	2	3	4	5
5%-9%	2	3	4	4	5
> 9%	3	4	5	5	5
Qualitative factors positively affecting the anchor include:			Qualitative factors negatively affecting the anchor include:		
Exceptionally high operating balance (typically, direct debt represents less than three years of operating margin)			Potential significant volatility in the debt burden owing to high exposure to market risks		
Debt burden mitigated by self-supporting on-lent debt			Unaddressed exposure to large unfunded pension and OPEB liabilities and/or large and rising pension costs (see paragraph 139)		
The adjustment impact of each qualitative factor generally counts for one point. Debt indicators falling at or near cut-off points will receive the higher assessment if trends are worsening, and the lower assessment if trends are strengthening, reflecting the expected future level. Overall, the debt burden assessment equals the anchor, adjusted by up to two categories up or down, based on the net effect of the qualitative factors listed above.					
§Based on the debt level forecasted in two years time (i.e., debt in a year t+2). †Based on the average of last actual data, current-year budget or estimate, and following year forecast.					
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142. Here are a few examples of how we would assess an LRG's debt burden:

- **EXAMPLE 1:** An LRG in a developing country has forecast tax-supported debt of 28% of consolidated operating revenues and an interest burden of 4% of operating revenues, which would indicate an anchor of '1'. However, it has high exposure to market risk because of its very short-term debt profile--most debt is maturing within two years. Assuming all other factors are neutral, we would likely assign the LRG a debt burden assessment of '2', one level worse than the anchor assessment.
- **EXAMPLE 2:** An LRG has forecast tax-supported debt of 50% of consolidated operating revenues and an interest burden of 3% of operating revenues, implying an anchor of '2'. The LRG has unfunded pension liabilities accounting for 60% of operating revenues and no plans in place to address this gap. Assuming all other factors are neutral, we would expect to assess this LRG's debt burden at '3', one level worse than the anchor.

7. Contingent Liabilities

143. Contingent liabilities correspond to explicit (such as guarantees to self-supporting GREs) or implicit obligations (such as litigation costs or potential financial support to unguaranteed self-supporting GREs) that an LRG may incur under certain circumstances. If these liabilities materialize, they could affect an LRG's financial position, usually by increasing debt, potentially weighing down budgetary performance, or drawing down on liquidity. As the contingent liabilities materialize, the improvement in the contingent liability assessment usually is offset by deterioration in our other assessments of the LRG. The contingent liability assessment might also improve if the risks are minimized (for instance, if the local government support is no longer needed due to an entity's privatization) or become more remote. We take into consideration a government's planning and preparedness for the potential realization of contingent liabilities. This could take the form of budgetary allocations for these risks (contingency reserves, a provision or other non-financial measures, such as emergency management preparedness). A high level of preparedness can be an important mitigating factor in our assessment of contingent liabilities, even if the contingent liabilities' risks are significant.
144. Contingent liabilities are difficult to assess because they may vary substantially from one country to another, and the likelihood of occurrence of related risks may be tough to predict. Furthermore, contingent liabilities might arise from hundreds of small risks, not all of which may be material for our LRG rating analysis.
145. For these reasons, Standard & Poor's assessment of an LRG's contingent liabilities is mostly qualitative, focusing on the nature of the contingent liability and its materiality (see table 19). When possible (see paragraphs 147-148), we quantify the LRG's expected support under a significant stress scenario. In other cases (see paragraphs 150-153), we use a qualitative assessment of such risks. We also take into consideration the amount of contingency reserves, allocations, or provisions that the LRG sets aside to cover for these risks when they exist. The range of contingent liabilities assessments is: '1' (very low), '2' (low), '3' (moderate), '4' (high), and '5' (very high).
146. The most frequent types of contingent liabilities that we have observed for LRGs across different countries include (1) liabilities related to self-supporting nonfinancial and financial GREs, (2) nondebt obligations (such as payables to suppliers) of non-self-supporting GREs (debt of and guarantees to non-self-supporting GREs are part of our debt burden assessment), (3) support to lower levels of the government (for instance, regional government supporting municipal government), (4) other contingent liabilities, such as public-private partnerships (PPPs), securitizations, litigations, insurance plans, natural disasters, and other event risk. The size and materiality of these contingent liabilities can differ substantially from one LRG to another.

a) Contingent liabilities from rated GREs

147. An LRG may incur a contingent risk from companies in which it owns stakes or from other public or private GREs. For rated GREs, we analyze their size, risk profile, likelihood of support by a respective government, and, when possible, the cost of such support under stress.
148. In instances when LRGs own, control, or guarantee a financial institution, we seek to assess the maximum risk that the institution could represent for the LRG, based on the depositary financial institution's size, its credit profile, the LRG's ownership profile, the amount of debt guaranteed, and the support that could come from other governments or

institutions in the event of financial stress. When possible, we quantify this risk using our risk-adjusted capital framework model (see "Bank Capital Methodology And Assumptions," published Dec. 6, 2010). Specifically, we estimate stress-case losses over a three-year period under a substantial, 'A' stress scenario and calculate ensuing hypothetical recapitalization cost. The 'A' stress scenario, defined in "Understanding Standard & Poor's Rating Definitions," published on June 3, 2009, corresponds to a GDP decline by as much as 6%, an unemployment rise up to 15%, and a stock market drop by up to 60%. When such analysis is not possible, we will estimate the potential financial assistance from the local government in case of stress based on the GRE's financial and business profile.

b) Contingent liabilities from unrated GREs

149. When an LRG owns or controls unrated GREs, including a multitude of small companies (for which it can be difficult to obtain detailed information), we aim to obtain relevant financial information, when possible, to understand potential government's exposure. This may include information on the consolidated debt figure for the relevant companies, the LRG's stakes in these companies, the sector in which they operate, and some key indicators of their financial situations (such as profits and losses, revenues, the ratio of debt to equity, and debt, including that to suppliers). When possible, we analyze the risk profile and nature of operations/associated costs of the sector, in which a GRE operates. For instance, resolution of technical problems in the electricity generation sector might be a higher liability to the government, compared with potential financial assistance to a water company.

c) Public-private partnerships

150. We evaluate PPP projects in our analysis, either under our debt burden assessment or as a contingent liability, depending on the degree of risk transfer to the private sector (see "Methodology And Assumptions: The Impact Of PPP Projects On International Local And Regional Governments: Refined Accounting Treatment," published Dec. 15, 2008). Even though a PPP's legal documentation may state that associated private debt is nonrecourse to the LRG, we have observed that the LRG may nevertheless on certain occasions aid a given PPP project for political or economic reasons; hence we view these arrangements as presenting contingent liability risks. In addition, the risk stemming from PPP arrangements might affect our view of the LRG's budgetary performance, debt, and liquidity.

d) Securitizations

151. The approach we use for PPPs also applies to an LRG's securitization of existing credits or future revenues (taxes or fees or transfers). If an LRG executes a securitization simply to raise debt off balance sheet, we would consolidate it in the LRG's debt. Other securitization deals are treated as contingent liabilities. This is because similar to PPPs, even if there is a true sale of existing or future revenues, with investors having no recourse to the LRG, we have observed that the LRG may nevertheless have a moral obligation to aid a given securitization deal if it were failing. In addition, the risk stemming from the securitization transaction might affect our view of the LRG's budgetary flexibility, debt burden, and liquidity.

e) Litigations

152. LRGs might face a variety of litigation (linked, for instance, to expropriations or environmental considerations). When these risks are not covered in the LRG's budget, through a provision or budget allocation, we may view them as a contingent liability. This risk is difficult to evaluate because the liabilities depend on court decisions. As a result, we generally assess litigation risk through discussions with the LRG's senior management and by reviewing the LRG's track record of annual payments relative to total outstanding claims and the LRG's budget size.

f) Other common types of contingent liabilities

153. Other types of contingent liabilities are workers' compensation, insurance plans, extraordinary support to lower levels of the government (for instance, to support payables' repayment or infrastructure projects), natural catastrophes, and geopolitical risks.

Table 19 Standard & Poor's Assessment Of An LRG's Contingent Liabilities	
Assessment	Typical characteristics
1	-- LRG's overall exposure* to GREs is estimated at less than 20% of LRG's operating revenues. Self-supporting GREs are unlikely to require LRG's support in the event of stress§ or support will be very limited (i.e., estimated at below 2% of the LRG's consolidated operating revenues)†, AND --Other contingent liabilities are limited (e.g., no large GREs and no significant litigations, PPPs, or securitizations) OR very high level of provision/preparedness for potential CL risks.
2	-- LRG's overall exposure* to GREs is more than 20% of operating revenues. Self-supporting GREs are unlikely to require LRG's support in the event of financial stress§ or support will be limited (i.e., estimated at below 10% of the LRG's consolidated operating revenues†), AND --Other contingent liabilities are limited OR high level of provision/preparedness for potential CL risks.
3	-- Self-supporting GREs may require and are likely to receive government support in the event of financial stress†. The potential recap cost for rated (and unrated, if estimate is available) GREs is estimated at below 15% of the LRG's consolidated operating revenues (see paragraph 148), OR --Other contingent liabilities are moderate. LRG is exposed to some contingent liabilities listed in paragraphs 149-153, the risks are higher than in a better category OR CL are high but provisions/other measures could partially compensate for losses.
4	-- Self-supporting GREs may require and are likely to receive government support in the event of financial stress†. The potential recap cost for rated (and unrated, if estimate is available) GREs is estimated between 15%-30% of the LRG's consolidated operating revenues (see paragraph 148), OR -- Other contingent liabilities are significant, and the risk of them materializing (and negatively affecting LRG's performance) is substantial.
5	--Self-supporting GREs may require and are likely to receive government support in the event of financial stress†. The potential recap cost for rated (and unrated, if estimate is available) GREs is estimated above 30% of the LRG's consolidated operating revenues (see paragraph 148), OR --Other contingent liabilities are very significant. In some cases, the probability of material risks being realized is significant (with no adequate provision against it), with potentially substantial impact on other areas of the LRGs credit standing.
*Defined as debt and guarantees of self-supporting entities and non-debt obligations of non-self-supporting entities. §"Low" or "moderate" likelihood of support, if assessed under GRE criteria. †"Moderately high"/"high"/"very high"/"extremely high"/"almost certain" likelihood of support, if assessed under GRE criteria, due to large government stake if unrated, or due to non-self-supporting status. © Standard & Poor's 2014.	

D. Long-Term Issue Ratings

154. The rating on an unguaranteed foreign-currency issue of an LRG is the same as the LRG foreign-currency issuer credit rating because subordination is uncommon in this sector. We do not assign recovery ratings to LRGs' obligations. The

rating on an unguaranteed LRG's local-currency issue is generally the same as the local-currency issuer credit rating on the LRG. We rate fully guaranteed debt that meets our guarantee criteria at the same level as the guarantor.

155. These criteria do not apply to securitized issues, such as tax participation transactions (see "Methodology And Assumptions For Rating Mexican Tax Participation Transactions," published Feb. 19, 2014) or transactions backed by local taxes (see "In Mexico, Local Governments Turn To Future Tax Revenue Securitization To Free Up Funds," published Oct. 26, 2007).

APPENDIX

A. LRG Rating Calibrations

156. The overall calibration of the LRG ratings criteria is based on our analysis of the history of LRG defaults, the effect of past financial and economic crises on LRGs' creditworthiness, and our view of the credit characteristics of LRG governments compared with those of other issuers.
157. Our annual default and transition study (see "International Local And Regional Governments Default And Transition Study: 2012 Saw Defaults Spike," published March 28, 2013) tracks LRGs' default and transition performance since 1975. Through year-end 2012, we have recorded 19 defaults among rated non-U.S. LRGs. None of the LRGs that defaulted were initially rated investment grade. According to the 2012 default and transition study, the cumulative default rate for speculative-grade LRGs was 7.3% over a 60-month horizon and 18.6% over a 120-month horizon. This compares with 16.4% and 24.4% corporate default rates, respectively, as per "2012 Annual Global Corporate Default Study And Rating Transitions," published March 18, 2013. We observed that historical defaults were associated with sovereign stress (such as in Argentina and Russia), as well as credit-specific characteristics, including poor liquidity and weak financial management (e.g., defaults of Mexican LRGs in 2012). Liquidity and financial management, in addition to systemic factors (reflected in the institutional framework and economic assessments), are common leading indicators of LRG defaults, and so these criteria further refine our assessments of these factors. In addition to receiving a higher weight in the framework, liquidity and financial management are included as overriding factors to the matrix outcome. The ongoing emphasis on the sovereign-related risk is highlighted in the linkages between the IF assessment and the sovereign ratings.
158. The analysis of the institutional framework is a critical part of the LRG criteria. Governments with sufficient autonomy may raise taxes or cut services to strengthen their fiscal profiles. For governments without such autonomy, relationships with higher-level governments are key. As such, a local government's legal and political relationships with higher levels of government can be more important to its ability to meet debt service (see Glossary) than its immediate financial position.
159. Standard & Poor's calibrates its LRG rating criteria based on the above observations and on its general framework outlined in:
- "Understanding Standard & Poor's Rating Definitions," published June 3, 2009;
 - "Credit Stability Criteria," published May 3, 2010; and

- "The Time Dimension Of Standard & Poor's Credit Ratings," published Sept. 22, 2010.

B. Glossary

Local and regional government (LRG)

160. **Government-related entity (GRE).** Enterprises potentially affected by extraordinary government intervention during periods of stress, as defined in "Rating Government-Related Entities: Methodology And Assumptions," published on Dec. 9, 2010. GREs are often partially or totally controlled by a government (or governments), and they contribute to implementing policies or delivering key services to the population. However, we have observed that some entities with little or no government ownership might also benefit from extraordinary government support because of their systemic importance or their critical role as providers of crucial goods and services. In this article, GREs generally refers to companies either owned or controlled by LRGs.
161. **Stand-alone credit profile (SACP).** Reflects Standard & Poor's opinion of the entity's creditworthiness, before taking into account the potential for direct entity-specific extraordinary intervention from the entity's parent company or, in the case of a GRE, the government that controls or owns it.

Budgetary flexibility and budgetary performance

162. **Operating revenues.** Recurring revenues that an LRG receives. Operating revenues comprise taxes and nontax revenues, such as grants, operating subsidies, fines, fees for services, tariffs, rents, and other sources from which the LRG derives revenues. They exclude capital revenues, such as capital subsidies and proceeds from asset sales, and any revenues from borrowed funds.
163. **Adjusted operating revenues.** Operating revenues adjusted for material noncash or pass-through items.
164. **Consolidated operating revenues.** An LRG's operating revenues and the commercial revenues (comprising fees and sales, among others) generated by GREs that the LRG owns or controls, for which we include debt in the LRG's tax-supported debt ratio. We generally deduct from the GREs' revenues material sums that come from the LRG itself, such as a subsidy or service contract.
165. **Operating expenditures.** Correspond to the costs of an LRG's operations, its administration, and its provision of services to the population, directly or through other public bodies.
166. **Adjusted operating expenditures.** Operating expenditures adjusted for material noncash (provisions, depreciation) or pass-through items.
167. **Operating balance.** Equals adjusted operating revenues minus adjusted operating expenditures (including interest expense).
168. **Capital expenditures.** Typically cover the repair and replacement of existing infrastructure and the development of new infrastructure.
169. **Capital revenues.** Chiefly comprise proceeds from asset sales and capital grants.
170. **Balance after capital accounts.** Results from the adding of capital revenues to and the subtracting of capital expenditures from the operating balance.

Liquidity

171. **Free cash and liquid assets.** Liquid assets that are unrestricted, not needed to meet daily operating needs or planned capital costs in a forward-looking perspective, available to cover debt service over the next 12 months, and adjusted for market risk on noncash investments.

Debt burden and contingent liabilities

172. **Interest payments.** Correspond to the amount of interest paid within a given budgetary period, including the interest component of financial leases.
173. **Debt service.** Equals interest payments plus the amount of principal repaid during a given budgetary timeframe, including the capital component of financial leases and short-term debt repaid during the period. We believe that debt service on a revolving credit line tends to be exaggerated if the full amount of turnover on the revolving line is recorded as repayment. Therefore, in our calculations, repayment under the revolving line would include only the maximum amount drawn under the line during the year, minus debt outstanding under the revolving line at year-end.
174. **Direct debt.** Comprises long- and short-term financial debt assumed directly by the borrower--loans, bonds, credits, and capitalized lease obligations--that an LRG is obliged to pay to another entity in accordance with an express agreement or for other legally binding reasons. It excludes guaranteed debt and the debt of GREs, unless serviced by the LRG on an ongoing basis. It includes debt serviced via subsidies from other levels of government, unless the legal obligation to service this debt is transferred to the other government.
175. **Guaranteed debt.** Financial debt on which the principal and interest payments are the responsibility of the LRG (as the guarantor), if the borrower that is primarily liable fails to repay the debt. If an LRG has to service the debt it has guaranteed, then we would include the guaranteed amount in the LRG's direct debt.
176. **Tax-supported debt.** The sum of the following items:
- Direct debt of the LRG;
 - Guaranteed debt of GREs or other entities that are not self-supporting;
 - Nonguaranteed debt of GREs that are not self-supporting;
 - Debt of nonbank GREs, when the long-term rating on the GRE is the same as the long-term rating on the LRG, based on our opinion of an "almost certain" likelihood that the LRG will provide support for the GRE (generally excluding those GREs that are self-supporting) if needed, or when the GRE's debt is issued by the LRG's central treasury (as is the case in Australia); and
 - Debt of PPPs and securitizations, when the risk transfer to the private sector is not material enough to treat the public sector entity's financial commitment as a contingent liability.
177. In instances where we believe that a GRE is not self-supporting, we consolidate in the tax-supported debt ratio all the GRE's debt and own commercial revenues, regardless of the LRG's percentage of ownership of the GRE.
178. **Self-supporting entities.** A GRE that does not need financial support from its LRG and is unlikely to require support in the future is self-supporting debt. Financial support includes any direct or indirect contribution aiming at balancing operating accounts, financing investments, or repaying debt. When a GRE receives sizable revenues from its LRG for a service, we evaluate the exchange as if it were a remuneration at market rates for a service that could be provided in comparable terms by a private contractor. Self-supporting entities generally have investment-grade stand-alone credit profile (or estimated creditworthiness, if SACP is not formally established). For speculative-grade LRGs, GREs whose SACPs (or estimated creditworthiness) are at the same level or higher than that of the LRG's (hence unlikely to require government support) can also be classified as self-supporting.
179. **Projected benefit obligation.** An estimate of the present value of an employee's pension that assumes that the employee will continue to work and that his or her pension contributions would increase as their salary increases.
180. **Accumulated benefit obligation method.** A method that assumes that the employee ceases to work for the company at the time the actuarial estimate is made.

181. **Total adjusted revenues.** The sum of adjusted operating revenues and capital revenues for a given budgetary period.

C. Changes From Previous Methodology

182. These criteria fully superseded "Methodology For Rating International Local And Regional Governments," published Sept. 20, 2010. It also partially superseded "Methodology And Assumptions For Analyzing The Liquidity Of Non-U.S. Local And Regional Governments And Related Entities And For Rating Their Commercial Paper Programs," published Oct. 15, 2009, and fully superseded "Methodology And Assumptions: Analyzing The Impact Of Unfunded Pension Liabilities On The Credit Quality Of International Local And Regional Governments," published July 31, 2009. The main changes aimed to streamline, specify, and enhanced certain parts of the criteria. In particular:

- In the institutional framework assessment, we combined the analysis of revenue and expenditure balance with that of the systemic government support. This approach better captures the interconnectedness of these two assessments, recognizing that LRGs may balance their revenues and expenditures by accessing ongoing and extraordinary systemic support from the higher level of government.
- We more closely linked the impact of the sovereign macro fundamentals on the credit standing of an LRG, by establishing a mapping between the institutional framework assessment and the foreign-currency rating on the related sovereign.
- We provided flexibility in assigning the economic anchor assessments based on the national income data (as an alternative to using local GDP per capita) to better reflect institutional characteristics of various LRG systems. We introduced a qualifier for comparative socioeconomic indicators, which includes previously used adjustments for high unemployment and weak demographic profile, but also addresses a broader set of factors which could pressure an LRG's spending.
- In the financial management assessment, we put greater emphasis on the factors that, in our opinion, are important drivers of an LRG's creditworthiness, such as political and managerial strength, transparency, and credit culture. We also formalized the scoring framework for the financial management assessment.
- We emphasized the forward-looking aspect in our assessment of the LRG's liquidity and refined certain adjustment factors to improve the application consistency.
- Other changes were mainly to address frequent criteria application questions, refine the criteria to better capture regional differences in LRGs' frameworks and operations, align this methodology with other criteria, and ensure global consistency and transparency of the criteria application.

183. These criteria became effective immediately upon publication on June 30, 2014.

RELATED CRITERIA AND RESEARCH

Related Criteria

- Ratings Above The Sovereign--Corporate And Government Ratings: Methodology And Assumptions, Nov. 19, 2013
- Criteria For Assigning 'CCC+', 'CCC', 'CCC-', And 'CC' Ratings, Oct. 1, 2012
- Banking Industry Country Risk Assessment Methodology And Assumptions, Nov. 9, 2011
- Principles Of Credit Ratings, Feb. 16, 2011
- Rating Government-Related Entities: Methodology And Assumptions, March 25, 2015
- Bank Capital Methodology And Assumptions, Dec. 6, 2010
- Stand-Alone Credit Profiles: One Component Of A Rating, Oct. 1, 2010

- Credit Stability Criteria, May 3, 2010
- Methodology And Assumptions For Analyzing The Liquidity Of Non-U.S. Local And Regional Governments And Related Entities And For Rating Their Commercial Paper Programs, Oct. 15, 2009
- Methodology: Rating Non-U.S. Local And Regional Governments Higher Than The Sovereign, Dec. 15, 2014
- Understanding Standard & Poor's Rating Definitions, June 3, 2009
- Criteria For Determining Transfer And Convertibility Assessments, May 18, 2009
- Rating Implications Of Exchange Offers And Similar Restructurings, Update, May 12, 2009
- The Impact Of PPP Projects On International Local And Regional Governments: Refined Accounting Treatment, Dec. 15, 2008

Related Research

- International Local And Regional Governments Default And Transition Study: 2012 Saw Defaults Spike, March 28, 2013
- The Time Dimension Of Standard & Poor's Credit Ratings, Sept. 22, 2010

These criteria represent the specific application of fundamental principles that define credit risk and ratings opinions. Their use is determined by issuer- or issue-specific attributes as well as Standard & Poor's Ratings Services' assessment of the credit and, if applicable, structural risks for a given issuer or issue rating. Methodology and assumptions may change from time to time as a result of market and economic conditions, issuer- or issue-specific factors, or new empirical evidence that would affect our credit judgment.

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Corporate Methodology

(Editor's Note: We originally published this criteria article on Nov. 19, 2013. We're republishing this article following our periodic review completed on Oct. 16, 2015. As a result of our review, we've updated criteria references, the contact list, and deleted sections that appeared in paragraphs 9 and 10 related to the initial publication of our criteria, and which are no longer relevant. We note that the definitions of financial sponsor-owned companies and financial sponsors in this article have been superseded by those in "The Treatment Of Non-Common Equity Financing In Nonfinancial Corporate Entities," published April 29, 2014.)

1. These criteria present Standard & Poor's Ratings Services methodology for rating corporate industrial companies and utilities. The criteria organize the analytical process according to a common framework and articulate the steps in developing the stand-alone credit profile (SACP) and issuer credit rating (ICR) for a corporate entity.
2. This article is related to our criteria article "Principles Of Credit Ratings," which we published on Feb. 16, 2011.

SUMMARY OF THE CRITERIA

3. The criteria describe the methodology we use to determine the SACP and ICR for corporate industrial companies and utilities. Our assessment reflects these companies' business risk profiles, their financial risk profiles, and other factors that may modify the SACP outcome (see "General Criteria: Stand-Alone Credit Profiles: One Component Of A Rating," published Oct. 1, 2010, for the definition of SACP). The criteria provide clarity on how we determine an issuer's SACP and ICR and are more specific in detailing the various factors of the analysis. The criteria also provide clear guidance on how we use these factors as part of determining an issuer's ICR. Standard & Poor's intends for these criteria to provide the market with a framework that clarifies our approach to fundamental analysis of corporate credit risks.
4. The business risk profile comprises the risk and return potential for a company in the markets in which it participates, the competitive climate within those markets (its industry risk), the country risks within those markets, and the competitive advantages and disadvantages the company has within those markets (its competitive position). The business risk profile affects the amount of financial risk that a company can bear at a given SACP level and constitutes the foundation for a company's expected economic success. We combine our assessments of industry risk, country risk, and competitive position to determine the assessment for a corporation's business risk profile.
5. The financial risk profile is the outcome of decisions that management makes in the context of its business risk profile and its financial risk tolerances. This includes decisions about the manner in which management seeks funding for the company and how it constructs its balance sheet. It also reflects the relationship of the cash flows the organization can achieve, given its business risk profile, to the company's financial obligations. The criteria use cash flow/leverage analysis to determine a corporate issuer's financial risk profile assessment.
6. We then combine an issuer's business risk profile assessment and its financial risk profile assessment to determine its anchor (see table 3). Additional rating factors can modify the anchor. These are: diversification/portfolio effect, capital structure, financial policy, liquidity, and management and governance. Comparable ratings analysis is the last

analytical factor under the criteria to determine the final SACP on a company.

7. These criteria are complemented by industry-specific criteria called Key Credit Factors (KCFs). The KCFs describe the industry risk assessments associated with each sector and may identify sector-specific criteria that supersede certain sections of these criteria. As an example, the liquidity criteria state that the relevant KCF article may specify different standards than those stated within the liquidity criteria to evaluate companies that are part of exceptionally stable or volatile industries. The KCFs may also define sector-specific criteria for one or more of the factors in the analysis. For example, the analysis of a regulated utility's competitive position is different from the methodology to evaluate the competitive position of an industrial company. The regulated utility KCF will describe the criteria we use to evaluate those companies' competitive positions (see "Key Credit Factors For The Regulated Utility Industry," published Nov. 19, 2013).

SCOPE OF THE CRITERIA

8. This methodology applies to nonfinancial corporate issuer credit ratings globally. Please see "Criteria Guidelines For Recovery Ratings On Global Industrial Issuers' Speculative-Grade Debt," published Aug. 10, 2009, and "2008 Corporate Criteria: Rating Each Issue," published April 15, 2008, for further information on our methodology for determining issue ratings. This methodology does not apply to the following sectors, based on the unique characteristics of these sectors, which require either a different framework of analysis or substantial modifications to one or more factors of analysis: project finance entities, project developers, transportation equipment leasing, auto rentals, commodities trading, investment holding companies and companies that maximize their returns by buying and selling equity holdings over time, Japanese general trading companies, corporate securitizations, nonprofit and cooperative organizations, and other entities whose cash flows are primarily derived from partially owned equity holdings.
9. This paragraph has been deleted.
10. The information in this paragraph has been moved to the section headed: Summary Of Historic Changes To The Article.

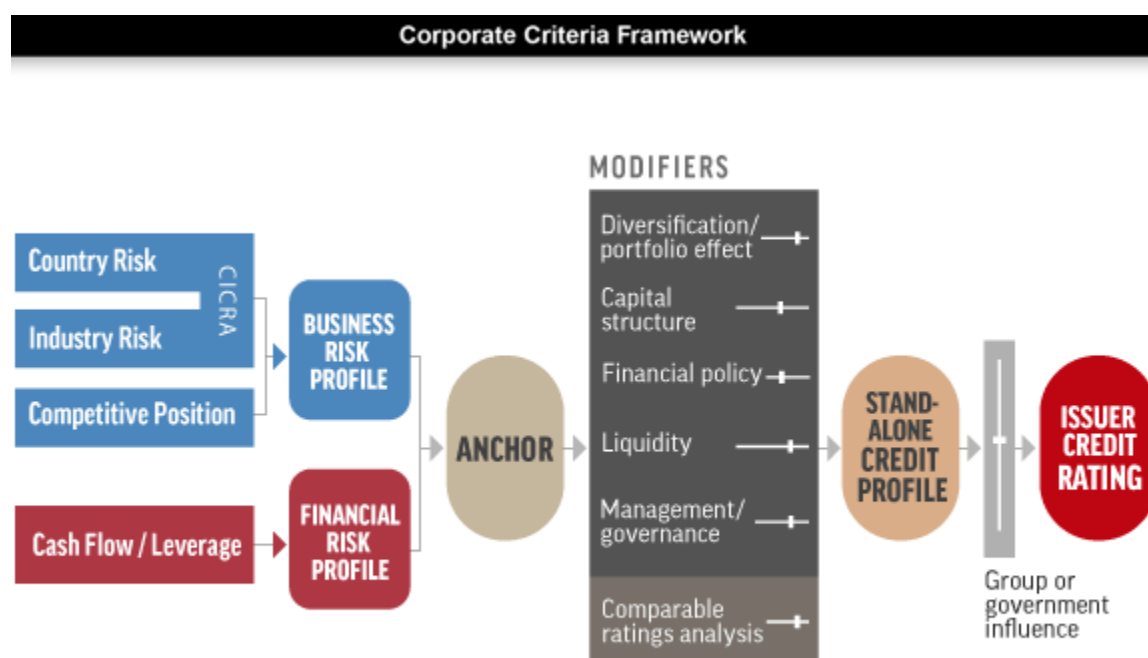
METHODOLOGY

A. Corporate Ratings Framework

11. The corporate analytical methodology organizes the analytical process according to a common framework, and it divides the task into several factors so that Standard & Poor's considers all salient issues. First we analyze the company's business risk profile, then evaluate its financial risk profile, then combine those to determine an issuer's anchor. We then analyze six factors that could potentially modify our anchor conclusion.
12. To determine the assessment for a corporate issuer's business risk profile, the criteria combine our assessments of industry risk, country risk, and competitive position. Cash flow/leverage analysis determines a company's financial risk

profile assessment. The analysis then combines the corporate issuer's business risk profile assessment and its financial risk profile assessment to determine its anchor. In general, the analysis weighs the business risk profile more heavily for investment-grade anchors, while the financial risk profile carries more weight for speculative-grade anchors.

13. After we determine the anchor, we use additional factors to modify the anchor. These factors are: diversification/portfolio effect, capital structure, financial policy, liquidity, and management and governance. The assessment of each factor can raise or lower the anchor by one or more notches--or have no effect. These conclusions take the form of assessments and descriptors for each factor that determine the number of notches to apply to the anchor.
14. The last analytical factor the criteria call for is comparable ratings analysis, which may raise or lower the anchor by one notch based on a holistic view of the company's credit characteristics.



15. The three analytic factors within the business risk profile generally are a blend of qualitative assessments and quantitative information. Qualitative assessments distinguish risk factors, such as a company's competitive advantages, that we use to assess its competitive position. Quantitative information includes, for example, historical cyclicality of revenues and profits that we review when assessing industry risk. It can also include the volatility and level of profitability we consider in order to assess a company's competitive position. The assessments for business risk profile are: 1, excellent; 2, strong; 3, satisfactory; 4, fair; 5, weak; and 6, vulnerable.
16. In assessing cash flow/leverage to determine the financial risk profile, the analysis focuses on quantitative measures. The assessments for financial risk profile are: 1, minimal; 2, modest; 3, intermediate; 4, significant; 5, aggressive; and 6,

highly leveraged.

17. The ICR results from the combination of the SACP and the support framework, which determines the extent of the difference between the SACP and the ICR, if any, for group or government influence. Extraordinary influence is then captured in the ICR. Please see "Group Rating Methodology," published Nov. 19, 2013, and "Rating Government-Related Entities: Methodology And Assumptions," published March 25, 2015, for our methodology on group and government influence.
18. Ongoing support or negative influence from a government (for government-related entities), or from a group, is factored into the SACP (see "SACP criteria"). While such ongoing support/negative influence does not affect the industry or country risk assessment, it can affect any other factor in business or financial risk. For example, such support or negative influence can affect: national industry analysis, other elements of competitive position, financial risk profile, the liquidity assessment, and comparable ratings analysis.
19. The application of these criteria will result in an SACP that could then be constrained by the relevant sovereign rating and transfer and convertibility (T&C) assessment affecting the entity when determining the ICR. In order for the final ICR to be higher than the applicable sovereign rating or T&C assessment, the entity will have to meet the conditions established in "Ratings Above The Sovereign--Corporate And Government Ratings: Methodology And Assumptions," published Nov. 19, 2013.

1. Determining the business risk profile assessment

20. Under the criteria, the combined assessments for country risk, industry risk, and competitive position determine a company's business risk profile assessment. A company's strengths or weaknesses in the marketplace are vital to its credit assessment. These strengths and weaknesses determine an issuer's capacity to generate cash flows in order to service its obligations in a timely fashion.
21. Industry risk, an integral part of the credit analysis, addresses the relative health and stability of the markets in which a company operates. The range of industry risk assessments is: 1, very low risk; 2, low risk; 3, intermediate risk; 4, moderately high risk; 5, high risk; and 6, very high risk. The treatment of industry risk is in section B.
22. Country risk addresses the economic risk, institutional and governance effectiveness risk, financial system risk, and payment culture or rule of law risk in the countries in which a company operates. The range of country risk assessments is: 1, very low risk; 2, low risk; 3, intermediate risk; 4, moderately high risk; 5, high risk; and 6, very high risk. The treatment of country risk is in section C.
23. The evaluation of an enterprise's competitive position identifies entities that are best positioned to take advantage of key industry drivers or to mitigate associated risks more effectively--and achieve a competitive advantage and a stronger business risk profile than that of entities that lack a strong value proposition or are more vulnerable to industry risks. The range of competitive position assessments is: 1, excellent; 2, strong; 3, satisfactory; 4, fair; 5, weak; and 6, vulnerable. The full treatment of competitive position is in section D.
24. The combined assessment for country risk and industry risk is known as the issuer's Corporate Industry and Country Risk Assessment (CICRA). Table 1 shows how to determine the combined assessment for country risk and industry

risk.

Table 1

Determining The CICRA						
--Country risk assessment--						
Industry risk assessment	1 (very low risk)	2 (low risk)	3 (intermediate risk)	4 (moderately high risk)	5 (high risk)	6 (very high risk)
1 (very low risk)	1	1	1	2	4	5
2 (low risk)	2	2	2	3	4	5
3 (intermediate risk)	3	3	3	3	4	6
4 (moderately high risk)	4	4	4	4	5	6
5 (high risk)	5	5	5	5	5	6
6 (very high risk)	6	6	6	6	6	6

25. The CICRA is combined with a company's competitive position assessment in order to create the issuer's business risk profile assessment. Table 2 shows how we combine these assessments.

Table 2

Determining The Business Risk Profile Assessment						
--CICRA--						
Competitive position assessment	1	2	3	4	5	6
1 (excellent)	1	1	1	2	3*	5
2 (strong)	1	2	2	3	4	5
3 (satisfactory)	2	3	3	3	4	6
4 (fair)	3	4	4	4	5	6
5 (weak)	4	5	5	5	5	6
6 (vulnerable)	5	6	6	6	6	6

*See paragraph 26.

26. A small number of companies with a CICRA of 5 may be assigned a business risk profile assessment of 2 if all of the following conditions are met:
- The company's competitive position assessment is 1.
 - The company's country risk assessment is no riskier than 3.
 - The company produces significantly better-than-average industry profitability, as measured by the level and volatility of profits.
 - The company's competitive position within its sector transcends its industry risks due to unique competitive advantages with its customers, strong operating efficiencies not enjoyed by the large majority of the industry, or scale/scope/diversity advantages that are well beyond the large majority of the industry.
27. For issuers with multiple business lines, the business risk profile assessment is based on our assessment of each of the factors--country risk, industry risk, and competitive position--as follows:
- Country risk: We use the weighted average of the country risk assessments for the company across all countries where companies generate more than 5% of sales or EBITDA, or where more than 5% of fixed assets are located.
 - Industry risk: We use the weighted average of the industry risk assessments for all business lines representing more

than 20% of the company's forecasted earnings, revenues or fixed assets, or other appropriate financial measures if earnings, revenue, or fixed assets do not accurately reflect the exposure to an industry.

- **Competitive position:** We assess all business lines identified above for the components competitive advantage, scope/scale/diversity, and operating efficiency (see section D). They are then blended using a weighted average of revenues, earnings, or assets to form the preliminary competitive position assessment. The level of profitability and volatility of profitability are then assessed based on the consolidated financials for the enterprise. The preliminary competitive position assessment is then blended with the profitability assessment, as per section D.5, to assess competitive position for the enterprise.

2. Determining the financial risk profile assessment

28. Under the criteria, cash flow/leverage analysis is the foundation for assessing a company's financial risk profile. The range of assessments for a company's cash flow/leverage is 1, minimal; 2, modest; 3, intermediate; 4, significant; 5, aggressive; and 6, highly leveraged. The full treatment of cash flow/leverage analysis is the subject of section E.

3. Merger of financial risk profile and business risk profile assessments

29. An issuer's business risk profile assessment and its financial risk profile assessment are combined to determine its anchor (see table 3). If we view an issuer's capital structure as unsustainable or if its obligations are currently vulnerable to nonpayment, and if the obligor is dependent upon favorable business, financial, and economic conditions to meet its commitments on its obligations, then we will determine the issuer's SACP using "Criteria For Assigning 'CCC+', 'CCC', 'CCC-', And 'CC' Ratings," published Oct. 1, 2012. If the issuer meets the conditions for assigning 'CCC+', 'CCC', 'CCC-', and 'CC' ratings, we will not apply Table 3.

Table 3

Combining The Business And Financial Risk Profiles To Determine The Anchor						
--Financial risk profile--						
Business risk profile	1 (minimal)	2 (modest)	3 (intermediate)	4 (significant)	5 (aggressive)	6 (highly leveraged)
1 (excellent)	aaa/aa+	aa	a+/a	a-	bbb	bbb-/bb+
2 (strong)	aa/aa-	a+/a	a-/bbb+	bbb	bb+	bb
3 (satisfactory)	a/a-	bbb+	bbb/bbb-	bbb-/bb+	bb	b+
4 (fair)	bbb/bbb-	bbb-	bb+	bb	bb-	b
5 (weak)	bb+	bb+	bb	bb-	b+	b/b-
6 (vulnerable)	bb-	bb-	bb-/b+	b+	b	b-

30. When two anchor outcomes are listed for a given combination of business risk profile assessment and financial risk profile assessment, an issuer's anchor is determined as follows:
- When a company's financial risk profile is 4 or stronger (meaning, 1-4), its anchor is based on the comparative strength of its business risk profile. We consider our assessment of the business risk profile for corporate issuers to be points along a possible range. Consequently, each of these assessments that ultimately generate the business risk profile for a specific issuer can be at the upper or lower end of such a range. Issuers with stronger business risk profiles for the range of anchor outcomes will be assigned the higher anchor. Those with a weaker business risk profile for the range of anchor outcomes will be assigned the lower anchor.
 - When a company's financial risk profile is 5 or 6, its anchor is based on the comparative strength of its financial risk profile. Issuers with stronger cash flow/leverage ratios for the range of anchor outcomes will be assigned the higher anchor. Issuers with weaker cash flow/leverage ratios for the range of anchor outcomes will be assigned the lower anchor.

anchor. For example, a company with a business risk profile of (1) excellent and a financial risk profile of (6) highly leveraged would generally be assigned an anchor of 'bb+' if its ratio of debt to EBITDA was 8x or greater and there were no offsetting factors to such a high level of leverage.

4. Building on the anchor

31. The analysis of diversification/portfolio effect, capital structure, financial policy, liquidity, and management and governance may raise or lower a company's anchor. The assessment of each modifier can raise or lower the anchor by one or more notches--or have no effect in some cases (see tables 4 and 5). We express these conclusions using specific assessments and descriptors that determine the number of notches to apply to the anchor. However, this notching in aggregate can't lower an issuer's anchor below 'b-' (see "Criteria For Assigning 'CCC+', 'CCC', 'CCC-', And 'CC' Ratings," published Oct. 1, 2012, for the methodology we use to assign 'CCC' and 'CC' category SACPs and ICRs to issuers).
32. The analysis of the modifier diversification/portfolio effect identifies the benefits of diversification across business lines. The diversification/portfolio effect assessments are 1, significant diversification; 2, moderate diversification; and 3, neutral. The impact of this factor on an issuer's anchor is based on the company's business risk profile assessment and is described in Table 4. Multiple earnings streams (which are evaluated within a firm's business risk profile) that are less-than-perfectly correlated reduce the risk of default of an issuer (see Appendix D). We determine the impact of this factor based on the business risk profile assessment because the benefits of diversification are significantly reduced with poor business prospects. The full treatment of diversification/portfolio effect analysis is the subject of section F.

Table 4

Modifier Step 1: Impact Of Diversification/Portfolio Effect On The Anchor						
	--Business risk profile assessment--					
Diversification/portfolio effect	1 (excellent)	2 (strong)	3 (satisfactory)	4 (fair)	5 (weak)	6 (vulnerable)
1 (significant diversification)	+2 notches	+2 notches	+2 notches	+1 notch	+1 notch	0 notches
2 (moderate diversification)	+1 notch	+1 notch	+1 notch	+1 notch	0 notches	0 notches
3 (neutral)	0 notches	0 notches	0 notches	0 notches	0 notches	0 notches

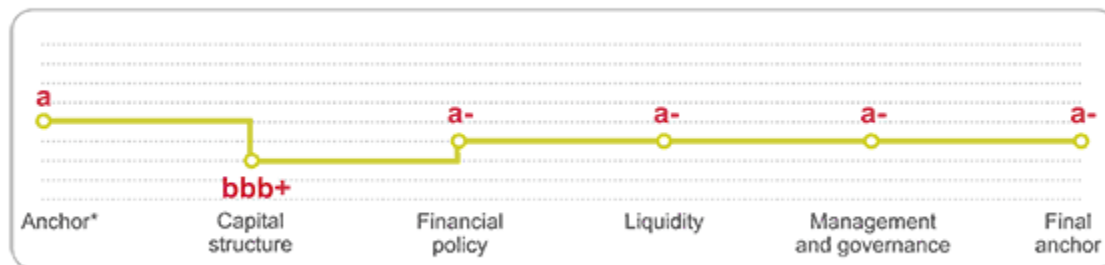
33. After we adjust for the diversification/portfolio effect, we determine the impact of the other modifiers: capital structure, financial policy, liquidity, and management and governance. We apply these four modifiers in the order listed in Table 5. As we go down the list, a modifier may (or may not) change the anchor to a new range (one of the ranges in the four right-hand columns in the table). We'll choose the appropriate value from the new range, or column, to determine the next modifier's effect on the anchor. And so on, until we get to the last modifier on the list--management and governance. For example, let's assume that the anchor, after adjustment for diversification/portfolio effect but before adjusting for the other modifiers, is 'a'. If the capital structure assessment is very negative, the indicated anchor drops two notches, to 'bbb+'. So, to determine the impact of the next modifier--financial policy--we go to the column 'bbb+' to 'bbb-' and find the appropriate assessment--in this theoretical example, positive. Applying that assessment moves the anchor up one notch, to the 'a-' and higher' category. In our example, liquidity is strong, so the impact is zero notches and the anchor remains unchanged. Management and governance is satisfactory, and thus the anchor remains 'a-' (see chart following table 5).

Table 5

	--Anchor range--			
	'a-' and higher	'bbb+' to 'bbb-'	'bb+' to 'bb-'	'b+' and lower
Factor/Assessment				
Capital structure (see section G)				
1 (Very positive)	2 notches	2 notches	2 notches	2 notches
2 (Positive)	1 notch	1 notch	1 notch	1 notch
3 (Neutral)	0 notches	0 notches	0 notches	0 notches
4 (Negative)	-1 notch	-1 notch	-1 notch	-1 notch
5 (Very negative)	-2 or more notches	-2 or more notches	-2 or more notches	-2 notches
Financial policy (FP; see section H)				
1 (Positive)	+1 notch if M&G is at least satisfactory	+1 notch if M&G is at least satisfactory	+1 notch if liquidity is at least adequate and M&G is at least satisfactory	+1 notch if liquidity is at least adequate and M&G is at least satisfactory
2 (Neutral)	0 notches	0 notches	0 notches	0 notches
3 (Negative)	-1 to -3 notches(1)	-1 to -3 notches(1)	-1 to -2 notches(1)	-1 notch
4 (FS-4, FS-5, FS-6, FS-6 [minus])	N/A(2)	N/A(2)	N/A(2)	N/A(2)
Liquidity (see section I)				
1 (Exceptional)	0 notches	0 notches	0 notches	+1 notch if FP is positive, neutral, FS-4, or FS-5 (3)
2 (Strong)	0 notches	0 notches	0 notches	+1 notch if FP is positive, neutral, FS-4, or FS-5 (3)
3 (Adequate)	0 notches	0 notches	0 notches	0 notches
4 (Less than adequate [4])	N/A	N/A	-1 notch(5)	0 notches
5 (Weak)	N/A	N/A	N/A	'b-' cap on SACP
Management and governance (M&G; see section J)				
1 (Strong)	0 notches	0 notches	0, +1 notches(6)	0, +1 notches(6)
2 (Satisfactory)	0 notches	0 notches	0 notches	0 notches
3 (Fair)	-1 notch	0 notches	0 notches	0 notches
4 (Weak)	-2 or more notches(7)	-2 or more notches(7)	-1 or more notches(7)	-1 or more notches(7)

(1) Number of notches depends on potential incremental leverage. (2) See "Financial Policy," section H.2. (3) Additional notch applies only if we expect liquidity to remain exceptional or strong. (4) See "Methodology And Assumptions: Liquidity Descriptors For Global Corporate Issuers," published Dec. 16, 2014. SACP is capped at 'bb+.' (5) If issuer SACP is 'bb+' due to cap, there is no further notching. (6) This adjustment is one notch if we have not already captured benefits of strong management and governance in the analysis of the issuer's competitive position. (7) Number of notches depends upon the degree of negative effect to the enterprise's risk profile.

Example: How Remaining Modifiers Can Change The Anchor



*After adjusting for diversification/portfolio effect. See paragraph 33.

34. Our analysis of a firm's capital structure assesses risks in the firm's capital structure that may not arise in the review of its cash flow/leverage. These risks include the currency risk of debt, debt maturity profile, interest rate risk of debt, and an investments subfactor. We assess a corporate issuer's capital structure on a scale of 1, very positive; 2, positive; 3, neutral; 4, negative; and 5, very negative. The full treatment of capital structure is the subject of section G.
35. Financial policy serves to refine the view of a company's risks beyond the conclusions arising from the standard assumptions in the cash flow/leverage, capital structure, and liquidity analyses. Those assumptions do not always reflect or adequately capture the long-term risks of a firm's financial policy. The financial policy assessment is, therefore, a measure of the degree to which owner/managerial decision-making can affect the predictability of a company's financial risk profile. We assess financial policy as 1) positive, 2) neutral, 3) negative, or as being owned by a financial sponsor. We further identify financial sponsor-owned companies as "FS-4", "FS-5", "FS-6", or "FS-6 (minus)." The full treatment of financial policy analysis is the subject of section H.
36. Our assessment of liquidity focuses on the monetary flows--the sources and uses of cash--that are the key indicators of a company's liquidity cushion. The analysis also assesses the potential for a company to breach covenant tests tied to declines in earnings before interest, taxes, depreciation, and amortization (EBITDA). The methodology incorporates a qualitative analysis that addresses such factors as the ability to absorb high-impact, low-probability events, the nature of bank relationships, the level of standing in credit markets, and the degree of prudence of the company's financial risk management. The liquidity assessments are 1, exceptional; 2, strong; 3, adequate; 4, less than adequate; and 5, weak. An SACP is capped at 'bb+' for issuers whose liquidity is less than adequate and 'b-' for issuers whose liquidity is weak, regardless of the assessment of any modifiers or comparable ratings analysis. (For the complete methodology on assessing corporate issuers' liquidity, see "Methodology And Assumptions: Liquidity Descriptors For Global Corporate Issuers," published Dec. 16, 2014.)
37. The analysis of management and governance addresses how management's strategic competence, organizational effectiveness, risk management, and governance practices shape the company's competitiveness in the marketplace, the strength of its financial risk management, and the robustness of its governance. The range of management and governance assessments is: 1, strong; 2, satisfactory; 3, fair; and 4, weak. Typically, investment-grade anchor outcomes reflect strong or satisfactory management and governance, so there is no incremental benefit. Alternatively, a fair or weak assessment of management and governance can lead to a lower anchor. Also, a strong assessment for management and governance for a weaker entity is viewed as a favorable factor, under the criteria, and can have a

positive impact on the final SACP outcome. For the full treatment of management and governance, see "Methodology: Management And Governance Credit Factors For Corporate Entities And Insurers," published Nov. 13, 2012.

5. Comparable ratings analysis

38. The anchor, after adjusting for the modifiers, could change one notch up or down in order to arrive at an issuer's SACP based on our comparable ratings analysis, which is a holistic review of a company's stand-alone credit risk profile, in which we evaluate an issuer's credit characteristics in aggregate. A positive assessment leads to a one-notch improvement, a negative assessment leads to a one-notch reduction, and a neutral assessment indicates no change to the anchor. The application of comparable ratings analysis reflects the need to 'fine-tune' ratings outcomes, even after the use of each of the other modifiers. A positive or negative assessment is therefore likely to be common rather than exceptional.

B. Industry Risk

39. The analysis of industry risk addresses the major factors that Standard & Poor's believes affect the risks that entities face in their respective industries. (See "Methodology: Industry Risk," published Nov. 19, 2013.)

C. Country Risk

40. The analysis of country risk addresses the major factors that Standard & Poor's believes affect the country where entities operate. Country risks, which include economic, institutional and governance effectiveness, financial system, and payment culture/rule of law risks, influence overall credit risks for every rated corporate entity. (See "Country Risk Assessment Methodology And Assumptions," published Nov. 19, 2013.)

1. Assessing country risk for corporate issuers

41. The following paragraphs explain how the criteria determine the country risk assessment for a corporate entity. Once it's determined, we combine the country risk assessment with the issuer's industry risk assessment to calculate the issuer's CICRA (see section A, table 1). The CICRA is one of the factors of the issuer's business risk profile. If an issuer has very low to intermediate exposure to country risk, as represented by a country risk assessment of 1, 2, or 3, country risk is neutral to an issuer's CICRA. But if an issuer has moderately high to very high exposure to country risk, as represented by a country risk assessment of 4, 5, or 6, the issuer's CICRA could be influenced by its country risk assessment.
42. Corporate entities operating within a single country will receive a country risk assessment for that jurisdiction. For entities with exposure to more than one country, the criteria prospectively measure the proportion of exposure to each country based on forecasted EBITDA, revenues, or fixed assets, or other appropriate financial measures if EBITDA, revenue, or fixed assets do not accurately reflect the exposure to that jurisdiction.
43. Arriving at a company's blended country risk assessment involves multiplying its weighted-average exposures for each country by each country's risk assessment and then adding those numbers. For the weighted-average calculation, the criteria consider countries where the company generates more than 5% of its sales or where more than 5% of its fixed assets are located, and all weightings are rounded to the nearest 5% before averaging. We round the assessment to the

nearest integer, so a weighted assessment of 2.2 rounds to 2, and a weighted assessment of 2.6 rounds to 3 (see table 6).

Table 6

Hypothetical Example Of Weighted-Average Country Risk For A Corporate Entity			
Country	Weighting (% of business*)	Country risk§	Weighted country risk
Country A	45	1	0.45
Country B	20	2	0.4
Country C	15	1	0.15
Country D	10	4	0.4
Country E	10	2	0.2
Weighted-average country risk assessment (rounded to the nearest whole number)	--	--	2

*Using EBITDA, revenues, fixed assets, or other financial measures as appropriate. §On a scale from 1-6, lowest to highest risk.

44. A weak link approach, which helps us calculate a blended country risk assessment for companies with exposure to more than one country, works as follows: If fixed assets are based in a higher-risk country but products are exported to a lower-risk country, the company's exposure would be to the higher-risk country. Similarly, if fixed assets are based in a lower-risk country but export revenues are generated from a higher-risk country and cannot be easily redirected elsewhere, we measure exposure to the higher-risk country. If a company's supplier is located in a higher-risk country, and its supply needs cannot be easily redirected elsewhere, we measure exposure to the higher-risk country. Conversely, if the supply chain can be re-sourced easily to another country, we would not measure exposure to the higher risk country.
45. Country risk can be mitigated for a company located in a single jurisdiction in the following narrow case. For a company that exports the majority of its products overseas and has no direct exposure to a country's banking system that would affect its funding, debt servicing, liquidity, or ability to transfer payments from or to its key counterparties, we could reduce the country risk assessment by one category (e.g., 5 to 4) to determine the adjusted country risk assessment. This would only apply for countries where we considered the financial system risk subfactor a constraint on the overall country risk assessment for that country. For such a company, other country risks are not mitigated: Economic risk still applies, albeit less of a risk than for a company that sells domestically (potential currency volatility remains a risk for exporters); institutional and governance effectiveness risk still applies (political risk may place assets at risk); and payment culture/rule of law risk still applies (legal risks may place assets and cross-border contracts at risk).
46. Companies will often disclose aggregated information for blocks of countries, rather than disclosing individual country information. If the information we need to estimate exposure for all countries is not available, we use regional risk assessments. Regional risk assessments are calculated as averages of the unadjusted country risk assessments, weighted by gross domestic product of each country in a defined region. The criteria assess regional risk on a 1-6 scale (strongest to weakest). Please see Appendix A, Table 26, which lists the constituent countries of the regions.
47. If an issuer does not disclose its country-level exposure or regional-level exposure, individual country risk exposures or regional exposures will be estimated.

2. Adjusting the country risk assessment for diversity

48. We will adjust the country risk assessment for a company that operates in multiple jurisdictions and demonstrates a high degree of diversity of country risk exposures. As a result of this diversification, the company could have less exposure to country risk than the rounded weighted average of its exposures might indicate. Accordingly, the country risk assessment for a corporate entity could be adjusted if an issuer meets the conditions outlined in paragraph 49.
49. The preliminary country risk assessment is raised by one category to reflect diversity if all of the following four conditions are met:
- If the company's head office, as defined in paragraph 51, is located in a country with a risk assessment stronger than the preliminary country risk assessment;
 - If no country, with a country risk assessment equal to or weaker than the company's preliminary country risk assessment, represents or is expected to represent more than 20% of revenues, EBITDA, fixed assets, or other appropriate financial measures;
 - If the company is primarily funded at the holding level, or through a finance subsidiary in a similar or stronger country risk environment than the holding company, or if any local funding could be very rapidly substituted at the holding level; and
 - If the company's industry risk assessment is '4' or stronger.
50. The country risk assessment for companies that have 75% or more exposure to one jurisdiction cannot be improved and will, in most instances, equal the country risk assessment of that jurisdiction. But the country risk assessment for companies that have 75% or more exposure to one jurisdiction can be weakened if the balance of exposure is to higher risk jurisdictions.
51. We consider the location of a corporate head office relevant to overall risk exposure because it influences the perception of a company and its reputation--and can affect the company's access to capital. We determine the location of the head office on the basis of 'de facto' head office operations rather than just considering the jurisdiction of incorporation or stock market listing for public companies. De facto head office operations refers to the country where executive management and centralized high-level corporate activities occur, including strategic planning and capital raising. If such activities occur in different countries, we take the weakest country risk assessment applicable for the countries in which those activities take place.

D. Competitive Position

52. Competitive position encompasses company-specific factors that can add to, or partly offset, industry risk and country risk--the two other major factors of a company's business risk profile.
53. Competitive position takes into account a company's: 1) competitive advantage, 2) scale, scope, and diversity, 3) operating efficiency, and 4) profitability. A company's strengths and weaknesses on the first three components shape its competitiveness in the marketplace and the sustainability or vulnerability of its revenues and profit. Profitability can either confirm our initial assessment of competitive position or modify it, positively or negatively. A stronger-than-industry-average set of competitive position characteristics will strengthen a company's business risk profile. Conversely, a weaker-than-industry-average set of competitive position characteristics will weaken a

company's business risk profile.

54. These criteria describe how we develop a competitive position assessment. They provide guidance on how we assess each component based on a number of subfactors. The criteria define the weighting rules applied to derive a preliminary competitive position assessment. And they outline how this preliminary assessment can be maintained, raised, or lowered based on a company's profitability. Standard & Poor's competitive position analysis is both qualitative and quantitative.

1. The components of competitive position

55. A company's competitive position assessment can be: 1, excellent; 2, strong; 3, satisfactory; 4, fair; 5, weak; or 6, vulnerable.
56. The analysis of competitive position includes a review of:
- Competitive advantage;
 - Scale, scope, and diversity;
 - Operating efficiency; and
 - Profitability.
57. We follow four steps to arrive at the competitive position assessment. First, we separately assess competitive advantage; scale, scope, and diversity; and operating efficiency (excluding any benefits or risks already captured in the issuer's CICRA assessment). Second, we apply weighting factors to these three components to derive a weighted-average assessment that translates into a preliminary competitive position assessment. Third, we assess profitability. Finally, we combine the preliminary competitive position assessment and the profitability assessment to determine the final competitive position assessment. Profitability can confirm, or influence positively or negatively, the competitive position assessment.
58. We assess the relative strength of each of the first three components by reviewing a variety of subfactors (see table 7). When quantitative metrics are relevant and available, we use them to evaluate these subfactors. However, our overall assessment of each component is qualitative. Our evaluation is forward-looking; we use historical data only to the extent that they provide insight into future trends.
59. We evaluate profitability by assessing two subcomponents: level of profitability (measured by historical and projected nominal levels of return on capital, EBITDA margin, and/or sector-specific metrics) and volatility of profitability (measured by historically observed and expected fluctuations in EBITDA, return on capital, EBITDA margin, or sector specific metrics). We assess both subcomponents in the context of the company's industry.

Table 7

Competitive Position Components And Subfactors		
Component	Explanation	Subfactors
1. Competitive advantage (see Appendix B, section 1)	The strategic positioning and attractiveness to customers of a company's products or services, and the fragility or sustainability of its business model	<ul style="list-style-type: none"> • Strategy • Differentiation/uniqueness/product positioning/bundling • Brand reputation and marketing • Product and/or service quality • Barriers to entry and customers' switching costs • Technological advantage and capabilities and vulnerability to/ability to drive technological displacement • Asset base characteristics
2. Scale, scope, and diversity (see Appendix B, section 2)	The concentration or diversification of business activities	<ul style="list-style-type: none"> • Diversity of products or services • Geographic diversity • Volumes, size of markets and revenues, and market share • Maturity of products or services
3. Operating efficiency (see Appendix B, section 3)	The quality and flexibility of a company's asset base and its cost management and structure	<ul style="list-style-type: none"> • Cost structure • Manufacturing processes • Working capital management • Technology
4. Profitability		<ul style="list-style-type: none"> • Level of profitability (historical and projected return on capital, EBITDA margin, and/or sector-relevant measure) • Volatility of profitability

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2. Assessing competitive advantage, scale, scope, and diversity, and operating efficiency

60. We assess competitive advantage; scale, scope, and diversity; and operating efficiency as: 1, strong; 2, strong/adequate; 3, adequate; 4, adequate/weak; or 5, weak. Tables 8, 9, and 10 provide guidance for assessing each component.
61. In assessing the components' relative strength, we place significant emphasis on comparative analysis. Peer comparisons provide context for evaluating the subfactors and the resulting component assessment. We review company-specific characteristics in the context of the company's industry, not just its narrower subsector. (See list of industries and subsectors in Appendix B, table 27.) For example, when evaluating an airline, we will benchmark the assessment against peers in the broader transportation-cyclical industry (including the marine and trucking subsectors), and not just against other airlines. Likewise, we will compare a home furnishing manufacturer with other companies in the consumer durables industry, including makers of appliances or leisure products. We might occasionally extend the comparison to other industries if, for instance, a company's business lines cross several industries, or if there are a limited number of rated peers in an industry, subsector, or region.

62. An assessment of strong means that the company's strengths on that component outweigh its weaknesses, and that the combination of relevant subfactors results in lower-than-average business risk in the industry. An assessment of adequate means that the company's strengths and weaknesses with respect to that component are balanced and that the relevant subfactors add up to average business risk in the industry. A weak assessment means that the company's weaknesses on that component override any strengths and that its subfactors, in total, reveal higher-than-average business risk in the industry.
63. Where a component is not clearly strong or adequate, we may assess it as strong/adequate. A component that is not clearly adequate or weak may end up as adequate/weak.
64. Although we review each subfactor, we don't assess each individually--and we seek to understand how they may reinforce or weaken each other. A component's assessment combines the relative strengths and importance of its subfactors. For any company, one or more subfactors can be unusually important--even factors that aren't common in the industry. Industry KCF articles identify subfactors that are consistently more important, or happen not to be relevant, in a given industry.
65. Not all subfactors may be equally important, and a single one's strength or weakness may outweigh all the others. For example, if notwithstanding a track record of successful product launches and its strong brand equity, a company's strategy doesn't appear adaptable, in our view, to changing competitive dynamics in the industry, we will likely not assess its competitive advantage as strong. Similarly, if its revenues came disproportionately from a narrow product line, we might view this as compounding its risk of exposure to a small geographic market and, thus, assess its scale, scope, and diversity component as weak.
66. From time to time companies will, as a result of shifting industry dynamics or strategies, expand or shrink their product or service lineups, alter their cost structures, encounter new competition, or have to adapt to new regulatory environments. In such instances, we will reevaluate all relevant subfactors (and component assessments).

Table 8

Competitive Advantage Assessment

Qualifier	What it means	Guidance
Strong	<ul style="list-style-type: none"> The company has a major competitive advantage due to one or a combination of factors that supports revenue and profit growth, combined with lower-than-average volatility of profits. There are strong prospects that the company can sustain this advantage over the long term. This should enable the company to withstand economic downturns and competitive and technological threats better than its competitors can. Any weaknesses in one or more subfactors are more than offset by strengths in other subfactors that produce sustainable and profitable revenue growth. 	<ul style="list-style-type: none"> The company's business strategy is highly consistent with, and adaptable to, industry trends and conditions and supports its leadership in the marketplace. It consistently develops and markets well-differentiated products or services, aligns products with market demand, and enhances the attractiveness or uniqueness of its value proposition through bundling. Its superior track record of product development, service quality, and customer satisfaction and retention support its ability to maintain or improve its market share. Its products or services command a clear price premium relative to its competitors' thanks to its brand equity, technological leadership, or quality of service; it is able to sustain this advantage with innovation and effective marketing. It benefits from barriers to entry from regulation, market characteristics, or intrinsic benefits (such as patents, technology, or customer relationships) that effectively reduce the threat of new competition. It has demonstrated a commitment and ability to effectively reinvest in its asset base, as evidenced by a continuous pipeline of new products and/or improvement in key capabilities, such as employee retention, customer care, distribution, and supplier relations. These tangible and intangible assets support long term prospects of sustainable and profitable growth.
Adequate	<ul style="list-style-type: none"> The company has some competitive advantages, but not so large as to create a superior business model or durable benefit compared to its peers'. It has some but not all drivers of competitiveness. Certain factors support the business' long-term viability and should result in average profitability and average profit volatility during recessions or periods of increased competition. However, these drivers are partially offset by the company's disadvantages or lack of sustainability of other factors. 	<ul style="list-style-type: none"> The company's strategy is well adapted to marketplace conditions, but it is not necessarily a leader in setting industry trends. It exhibits neither superior nor subpar abilities with respect to product or service differentiation and positioning. Its products command no price premium or advantage relative to competing brands as a result of its brand equity or its technological positioning. It may enjoy some barriers to entry that provide some defense against competitors but don't overpower them. It faces some risk of product/service displacement or substitution longer term. Its metrics of product or service quality and customer satisfaction or retention are in line with its industry's average. The company could lose customers to competitors if it makes operational missteps. Its asset profile does not exhibit particularly superior or inferior characteristics compared to other industry participants. These assets generate consistent revenue and profit growth although long-term prospects are subject to some uncertainty.

Weak	<ul style="list-style-type: none"> The company has few, if any, competitive advantages and a number of competitive disadvantages. Because the company lacks many competitive advantages, its long-term prospects are uncertain, and its profit volatility is likely to be higher than average for its industry. The company is less likely than its competitors to withstand economic, competitive, or technological threats. Alternatively, the company has weaknesses in one or more subfactors that could keep its profitability below average and its profit volatility above average during economic downturns or periods of increased competition. 	<ul style="list-style-type: none"> The company's strategy is inconsistent with, or not well adapted to, marketplace trends and conditions. There is evidence of little innovation, slowness in developing and marketing new products, an inability to raise prices, and/or ineffective bundling. Its products generally enjoy no price premium relative to competing brands and it often has to sell its products at a lower price than its peers can command. It has suffered or is at risk of suffering customer defections due to falling quality and because customers perceive its products or services to be less valuable than those of its competitors. Its revenues and market shares are vulnerable to aggressive pricing by existing or new competitors or to technological displacement risks over the near to medium term. Its metrics of product or service quality and customer satisfaction or retention are weaker than the industry average. Its reinvestment in its business is lower than its peers', its ability to retain operational talent is limited, its distribution network is inefficient, and its revenue could stagnate or decline as result.
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Table 9

Scale, Scope, And Diversity		
Qualifier	What it means	Guidance
Strong	<ul style="list-style-type: none"> The company's overall scale, scope, and diversity supports stable revenues and profits by rendering it essentially invulnerable to all but the most disruptive combinations of adverse factors, events, or trends. Its significant advantages in scale, scope, and diversity enable it to withstand economic, regional, competitive, and technological threats better than its competitors can. 	<ul style="list-style-type: none"> The company's range of products or services is among the most comprehensive in its sector. It derives its revenue and profits from a broader set of products or services than the industry average. Its products and services enjoy industry-leading market shares relative to other participants in its industry. It does not rely on a particular customer or small group of customers. If it does, the customer(s) is/are of high credit quality, their demand is highly sustainable, or the company and its customer(s) have significant interdependence. It does not depend on any particular supplier or related group of suppliers that it could not easily replace. If it does, the supplier(s) is/are of high credit quality, or the company and its supplier(s) have significant interdependence. It enjoys broader geographic diversity than its peers and doesn't overly depend on a single regional or local market. If it does, the market is local, often for regulatory reasons. The company's production or service centers are diversified across several locations. It holds a strategic investment that provides positive business diversification.
Adequate	<ul style="list-style-type: none"> The company's overall scale, scope, and diversity is comparable to its peers'. Its ability to withstand economic, competitive, or technological threats is comparable to the ability of others within its sector. 	<ul style="list-style-type: none"> The company has a broad range of products or services compared with its competitors and doesn't depend on a particular product or service for the majority of its revenues and profits. Its market share is average compared with that of its competitors. Its dependence on or concentration of key customers is no higher than the industry average, and the loss of a top customer would be unlikely to pose a high risk to its business stability. It isn't overly dependent on any supplier or regional group of suppliers that it couldn't easily replace. It doesn't depend excessively on a single local or regional market, and its geographic footprint of production and revenue compares with that of other industry participants.

Weak	<ul style="list-style-type: none"> The company's lack of scale, scope, and diversity compromises the stability and sustainability of its revenues and profits. The company's vulnerability to, or reliance on, various elements of scale, scope, and diversity leaves it less likely than its competitors to withstand economic, competitive, or technological threats. 	<ul style="list-style-type: none"> The company's product or service lineup is somewhat limited compared to those of its sector peers. The company derives its profits from a narrow group of products or services, and has not achieved significant market share compared with its peers. Demand for its products or services is lower than for its competitors', and this trend isn't improving. It relies heavily on a particular customer or small group of customers, and the characteristics of the customer base do not mitigate this risk. It depends on a particular supplier or group of suppliers, which it would not be able to easily replace without incurring high switching costs. It depends disproportionately on a single local or regional economy for selling its goods or services, and the company's industry is global. Key production assets are concentrated by location, and the company has limited ability to quickly replace them without incurring high costs relative to its profits.
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Table 10

Operating Efficiency Assessment

Qualifier	What it means	Guidance
Strong	<ul style="list-style-type: none"> The company maximizes revenues and profits via intelligent use of assets and by minimizing costs and increasing efficiency. The company's cost structure should enable it to withstand economic downturns better than its peers. 	<ul style="list-style-type: none"> The company has a lower cost structure than its peers resulting in higher profits or margins even if capacity utilization or demand are well below ideal levels and during down economic and industry cycles. It has demonstrated its ability to efficiently manage fixed and variable costs in cyclical downturns, and has a history of successful and often ongoing cost reductions programs. Its capacity utilization is close to optimal at the peak of the industry cycle and outperforms the industry average over the cycle. It has demonstrated that it can pass along increases in input costs and we expect this will continue. It has a very high ability to adjust production and labor costs in response to changes in demand without repercussions for product quality, or has demonstrated the ability to operate very profitably in a more costly or less flexible labor environment. Its suppliers have demonstrated an ability to meet swings in demand without causing bottlenecks or quality issues, and can absorb all but the most severe supply chain disruptions. It has superior working capital management, as evidenced by a consistently better-than-average "cash conversion cycle" and other working capital metrics, supporting higher cash flow and lower funding costs. Its investments in technology are likely to increase revenue growth and/or improve its cost structure and operating efficiency.

- Adequate**
- A combination of cost structure and efficiency should support sustainable profits with average profit volatility relative to the company's peers. Its cost structure is similar to its peers'.
 - The company has demonstrated the ability to manage some fixed and most variable costs except during periods of extremely weak demand, and has some history of cutting costs in good and bad times.
 - Its cost structure permits some profitability even if capacity utilization or customer demand is well below ideal levels. The company can at least break even during most of the industry/demand cycle.
 - Its cost structure is in line with its peers'. For example, its selling, general, and administrative (SG&A) expense as a percent of revenue is similar to its peers' and is likely to be stable.
 - It has demonstrated an ability to adjust labor costs in most scenarios without hurting product output and quality, or can operate profitably in a more costly or less flexible labor environment; it has some success passing on input cost increases, although perhaps only partially or with time lag.
 - Its suppliers have met typical swings in demand without causing widespread bottlenecks or quality issues, and the company has some capacity to withstand limited supply chain disruptions.
 - It has good working capital management, evidenced by its cash conversion cycle and working capital metrics that are on par with its peers'.
 - Its investments in technology are likely to help it at least maintain its cost structure and current level of operating efficiency.

- Weak**
- The company's operating efficiency leaves it with lower profitability than its peers' due to lower asset utilization and/or a higher, less flexible cost structure.
 - The company's cost structure permits better-than-marginal profitability only if capacity utilization is at the top of the cycle or during periods of strong demand. The company needs solid and sustained industry conditions to generate fair profitability.
 - It has limited success or capability of managing fixed costs and even most typically variable costs are fixed in the next two to three years.
 - It has a limited track record of successful cost reductions, such as reducing labor costs in the face of swings in demand, or it has limited ability to pass along increases in input costs.
 - Its costs are higher than its peers'. For example, the company's SG&A expense as a percent of revenue is above that of its peers, and likely to remain so.
 - Its suppliers may face bottlenecks or quality issues in the event of modest swings in demand, or have limited technological capabilities. There is evidence that a limited supply chain disruption would make it difficult for suppliers to meet their commitments to the company.
 - Its working capital management is weak, as evidenced by working capital metrics that are significantly worse than those of its peers, resulting in lower cash flow and higher funding costs.
 - It lacks investments in technology, which could hurt its revenue growth and/or result in a higher cost structure and less efficient operations relative to its peers'.

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3. Determining the preliminary competitive position assessment: Competitive position group profile and category weightings

67. After assessing competitive advantage; scale, scope, and diversity; and operating efficiency, we determine a company's preliminary competitive position assessment by ascribing a specific weight to each component. The weightings depend on the company's Competitive Position Group Profile (CPGP).
68. There are six possible CPGPs: 1) services and product focus, 2) product focus/scale driven, 3) capital or asset focus, 4) commodity focus/cost driven, 5) commodity focus/scale driven, and 6) national industry and utilities (see table 11 for definitions and characteristics).

Table 11

Competitive Position Group Profile (CPGP)		
	Definition and characteristics	Examples
Services and product focus	Brands, product quality or technology, and service reputation are typically key differentiating factors for competing in the industry. Capital intensity is typically low to moderate, although supporting the brand often requires ongoing reinvestment in the asset base.	Typically, these are companies in consumer-facing light manufacturing or service industries. Examples include branded drug manufacturers, software companies, and packaged food.
Product focus/scale driven	Product and geographic diversity, as well as scale and market position are key differentiating factors. Sophisticated technology and stringent quality controls heighten risk of product concentration. Product preferences or sales relationships are more important than branding or pricing. Cost structure is relatively unimportant.	The sector most applicable is medical device/equipment manufacturers, particularly at the higher end of the technology scale. These companies largely sell through intermediaries, as opposed to directly to the consumer.
Capital or asset focus	Sizable capital investments are generally required to sustain market position in the industry. Brand identification is of limited importance, although product and service quality often remain differentiating factors.	Heavy manufacturing industries typically fall into this category. Examples include telecom infrastructure manufacturers and semiconductor makers.
Commodity focus/cost driven	Cost position and efficiency of production assets are more important than size, scope, and diversification. Brand identification is of limited importance	Typically, these are companies that manufacture products from natural resources that are used as raw materials by other industries. Examples include forest and paper products companies that harvest timber or produce pulp, packaging paper, or wood products.
Commodity focus/scale driven	Pure commodity companies have little product differentiation, and tend to compete on price and availability. Where present, brand recognition or product differences are secondary or of less importance.	Examples range from pure commodity producers and most oil and gas upstream producers, to some producers with modest product or brand differentiation, such as commodity foods.
National industries and utilities	Government policy or control, regulation, and taxation and tariff policies significantly affect the competitive dynamics of the industry (see paragraphs 72-73).	An example is a water-utility company in an emerging market.

69. The nature of competition and key success factors are generally prescribed by industry characteristics, but vary by company. Where service, product quality, or brand equity are important competitive factors, we'll give the competitive advantage component of our overall assessment a higher weighting. Conversely, if the company produces a commodity product, differentiation comes less into play, and we will more heavily weight scale, scope, and diversity as well as operating efficiency (see table 12).

Table 12

Component	--(%)--					
	Services and product focus	Product focus/scale driven	Capital or asset focus	Commodity focus/cost driven	Commodity focus/scale driven	National industries and utilities
1. Competitive advantage	45	35	30	15	10	60
2. Scale, scope, and diversity	30	50	30	35	55	20
3. Operating efficiency	25	15	40	50	35	20
Total	100	100	100	100	100	100
Weighted-average assessment*	1.0-5.0	1.0-5.0	1.0-5.0	1.0-5.0	1.0-5.0	1.0-5.0

*1 (strong), 2 (strong/adequate), 3 (adequate), 4 (adequate/weak), 5 (weak).

70. We place each of the defined industries (see Appendix B, table 27) into one of the six CPGPs (see above and Appendix B, table 27). This is merely a starting point for the analysis, since we recognize that some industries are less homogenous than others, and that company-specific strategies do affect the basis of competition.
71. In fact, the criteria allow for flexibility in selecting a company's group profile (with its category weightings). Reasons for selecting a profile different than the one suggested in the guidance table could include:
- The industry is heterogeneous, meaning that the nature of competition differs from one subsector to the next, and possibly even within subsectors. The KCF article for the industry will identify such circumstances.
 - A company's strategy could affect the relative importance of its key factors of competition.
72. For example, the standard CPGP for the telecom and cable industry is services and product focus. While this may be an appropriate group profile for carriers and service providers, an infrastructure provider may be better analyzed under the capital or asset focus group profile. Other examples: In the capital goods industry, a construction equipment rental company may be analyzed under the capital or asset focus group profile, owing to the importance of efficiently managing the capital spending cycle in this segment of the industry, whereas a provider of hardware, software, and services for industrial automation might be analyzed under the services and product focus group profile, if we believe it can achieve differentiation in the marketplace based on product performance, technology innovation, and service.
73. In some industries, the effects of government policy, regulation, government control, and taxation and tariff policies can significantly alter the competitive dynamics, depending on the country in which a company operates. That can alter our assessment of a company's competitive advantage; scale, size, and diversity; or operating efficiency. When industries in given countries have risks that differ materially from those captured in our global industry risk profile and assessment (see "Methodology: Industry Risk," published Nov. 19, 2013, section B), we will weight competitive advantage more heavily to capture the effect, positive or negative, on competitive dynamics. The assessment of competitive advantage; scale, size, and diversity; and operating efficiency will reflect advantages or disadvantages based on these national industry risk factors. Table 13 identifies the circumstances under which national industry risk factors are positive or negative.

Table 13

National Industry Risk Factors	
National industry risk factors are positive	<ul style="list-style-type: none"> Government policy including regulation, ownership, and taxation is supportive and has a good track record of mitigating risks to the stability of industry margins. Any government ownership, tariff, and taxation policy supports growth prospects for revenues and profit generation. There is very little discernible risk of negative policy, regulatory, ownership, or taxation changes that could threaten business stability.
National industry risk factors are negative	<ul style="list-style-type: none"> Government policy and regulation has a weak track record of stabilizing margins and reducing industry risks. Any government ownership, tariff, and taxation policy undermine growth prospects for revenues and profit generation. There is an increasing risk of negative policy, ownership, and taxation changes that could undermine industry stability.

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74. When national industry risk factors are positive for a company, typically they support revenue growth, profit growth, higher EBITDA margins, and/or lower-than-average volatility of profits. Often, these benefits provide barriers to entry that impede or even bar new market entrants, which should be reflected in the competitive advantage assessment. These benefits may also include risk mitigants that enable a company to withstand economic downturns and competitive and technological threats better in its local markets than its global competitors can. The scale, scope, and diversity assessment might also benefit from these policies if the company is able to withstand economic, regional, competitive, and technological threats better than its global competitors can. Likewise, the company's operating efficiency assessment may improve if, as a result, it is better able than its global competitors to withstand economic downturns, taking into account its cost structure.
75. Conversely, when national industry risk factors are negative for a company, typically they detract from revenue growth and profit growth, shrink EBITDA margins, and/or increase the average volatility of profits. The company may also have less protection against economic downturns and competitive and technological threats within its local markets than its global competitors do. We may also adjust the company's scale, scope, and diversity assessment lower if, as a result of these policies, it is less able to withstand economic, regional, competitive, and technological threats than its global competitors can. Likewise, we may adjust its operating efficiency assessment lower if, as a result of these policies, it is less able to withstand economic downturns, taking into account the company's cost structure.
76. An example of when we might use a national industry risk factor would be for a telecommunications network owner that benefits from a monopoly network position, supported by substantial capital barriers to entry, and as a result is subject to regulated pricing for its services. Accordingly, in contrast to a typical telecommunications company, our analysis of the company's competitive position would focus more heavily on the monopoly nature of its operations, as well as the nature and reliability of the operator's regulatory framework in supporting future revenue and earnings. If we viewed the regulatory framework as being supportive of the group's future earnings stability, and we considered its

monopoly position to be sustainable, we would assess these national industry risk factors as positive in our assessment of the group's competitive position.

77. The weighted average assessment translates into the preliminary competitive position assessment on a scale of 1 to 6, where one is best. Table 14 describes the matrix we use to translate the weighted average assessment of the three components into the preliminary competitive position assessment.

Table 14

Translation Table For Converting Weighted-Average Assessments Into Preliminary Competitive Position Assessments

Weighted average assessment range	Preliminary competitive position assessment
1.00 – 1.50	1
>1.50 – 2.25	2
>2.25 – 3.00	3
>3.00 – 3.75	4
>3.75 – 4.50	5
>4.50 – 5.00	6

4. Assessing profitability

78. We assess profitability on the same scale of 1 to 6 as the competitive position assessment.
79. The profitability assessment consists of two subcomponents: level of profitability and the volatility of profitability, which we assess separately. We use a matrix to combine these into the final profitability assessment.

a) Level of profitability

80. The level of profitability is assessed in the context of the company's industry. We most commonly measure profitability using return on capital (ROC) and EBITDA margins, but we may also use sector-specific ratios. Importantly, as with the other components of competitive position, we review profitability in the context of the industry in which the company operates, not just in its narrower subsector. (See list of industries and subsectors in Appendix B, table 27.)
81. We assess level of profitability on a three-point scale: above average, average, and below average. Industry KCF articles may establish numeric guidance, for instance by stating that an ROC above 12% is considered above average, between 8%-12% is average, and below 8% is below average for the industry, or by differentiating between subsectors in the industry. In the absence of numeric guidance, we compare a company against its peers across the industry.
82. We calculate profitability ratios generally based on a five-year average, consisting of two years of historical data, our projections for the current year (incorporating any reported year-to-date results and estimates for the remainder of the year), and the next two financial years. There may be situations where we consider longer or shorter historical results or forecasts, depending on such factors as availability of financials, transformational events (such as mergers or acquisitions [M&A]), cyclical distortion (such as peak or bottom of the cycle metrics that we do not deem fully representative of the company's level of profitability), and we take into account improving or deteriorating trends in profitability ratios in our assessment.

b) Volatility of profitability

83. We base the volatility of profitability on the standard error of the regression (SER) for a company's historical EBITDA, EBITDA margins, or return on capital. The KCF articles provide guidance on which measures are most appropriate for a given industry or set of companies. For each of these measures, we divide the standard error by the average of that measure over the time period in order to ensure better comparability across companies.
84. The SER is a statistical measure that is an estimate of the deviation around a 'best fit' linear trend line. We regress the company's EBITDA, EBITDA margins, or return on capital against time. A key advantage of SER over standard deviation or coefficient of variation is that it doesn't view upwardly trending data as inherently more volatile. At the same time, we recognize that SER, like any statistical measure, may understate or overstate expected volatility and thus we will make qualitative adjustments where appropriate (see paragraphs 86-90). Furthermore, we only calculate SER when companies have at least seven years of historical annual data and have not significantly changed their line of business during the timeframe, to ensure that the results are meaningful.
85. As with the level of profitability, we evaluate a company's SER in the context of its industry group. For most industries, we establish a six-point scale with 1 capturing the least volatile companies, i.e., those with the lowest SERs, and 6 identifying companies whose profits are most volatile. We have established industry-specific SER parameters using the most recent seven years of data for companies within each sector. We believe that seven years is generally an adequate number of years to capture a business cycle. (See Appendix B, section 4 for industry-specific SER parameters.) For companies whose business segments cross multiple industries, we evaluate the SER in the context of the organization's most dominant industry--if that industry represents at least two-thirds of the organization's EBITDA, sales, or other relevant metric. If the company is a conglomerate and no dominant industry can be identified, we will evaluate its profit volatility in the context of SER guidelines for all nonfinancial companies.
86. In certain circumstances, the SER derived from historical information may understate--or overstate--expected future volatility, and we may adjust the assessment downward or upward. The scope of possible adjustments depends on certain conditions being met as described below.
87. We might adjust the SER-derived volatility assessment to a worse assessment (i.e., to a higher assessment for greater volatility) by up to two categories if the expected level of volatility isn't apparent in historical numbers, and the company either:
- Has a weighted country risk assessment of 4 or worse, which may, notwithstanding past performance, result in a less stable business environment going forward;
 - Operates in a subsector of the industry that may be prone to higher technology or regulation changes, or other potential disruptive risks that have not emerged over the seven year period;
 - Is of limited size and scope, which will often result in inherently greater vulnerability to external changes; or
 - Has pursued material M&A or internal growth projects that obscure the company's underlying performance trend line. As an example, a company may have consummated an acquisition during the trough of the cycle, masking what would otherwise be a significant decline in performance.
88. The choice of one or two categories depends on the degree of likelihood that the related risks will materialize and our view of the likely severity of these risks.

89. Conversely, we may adjust the SER-derived volatility assessment to a better assessment (i.e., to a lower assessment reflecting lower volatility) by up to two categories if we observe that the conditions historically leading to greater volatility have receded and are misrepresentative. This will be the case when:
- The company grew at a moderately faster, albeit more uneven, pace relative to the industry. Since we measure volatility around a linear trend line, a company growing at a constant percentage of moderate increase (relative to the industry) or an uneven pace (e.g., due to "lumpy" capital spending programs) could receive a relatively unfavorable assessment on an unadjusted basis, which would not be reflective of the company's performance in a steady state. (Alternatively, those companies that grow at a significantly higher-than-average industry rate often do so on unsustainable rates of growth or by taking on high-risk strategies. Companies with these high-risk growth strategies would not receive a better assessment and could be adjusted to a worse assessment;)
 - The company's geographic, customer, or product diversification has increased in scope as a result of an acquisition or rapid expansion (e.g. large, long-term contracts wins), leading to more stability in future earnings in our view; or
 - The company's business model is undergoing material change that we expect will benefit earnings stability, such as a new regulatory framework or major technology shift that is expected to provide a significant competitive hedge and margin protection over time.
90. The choice of one or two categories depends on the degree of likelihood that the related risks will materialize and our view of the likely severity of these risks.
91. If the company either does not have at least seven years of annual data or has materially changed its business lines or undertaken abnormally high levels of M&A during this time period, then we do not use its SER to assess the volatility of profitability. In these cases, we use a proxy to establish the volatility assessment. If there is a peer company that has, and is expected to continue having, very similar profitability volatility characteristics, we use the SER of that peer entity as a proxy.
92. If no such matching peer exists, or one cannot be identified with enough confidence, we perform an assessment of expected volatility based on the following rules:
- An assessment of 3 if we expect the company's profitability, supported by available historical evidence, will exhibit a volatility pattern in line with, or somewhat less volatile than, the industry average.
 - An assessment of 2 based on our confidence, supported by available historical evidence, that the company will exhibit lower volatility in profitability metrics than the industry's average. This could be underpinned by some of the factors listed in paragraph 89, whereas those listed in paragraph 87 would typically not apply.
 - An assessment of 4 or 5 based on our expectation that profitability metrics will exhibit somewhat higher (4), or meaningfully higher (5) volatility than the industry, supported by available historical evidence, or because of the applicability of possible adjustment factors listed in paragraph 87.
 - Assessments of either 1 or 6 are rarely assigned and can only be achieved based on a combination of data evidence and very high confidence tests. For an assessment of 1, we require strong evidence of minimal volatility in profitability metrics compared with the industry, supported by at least five years of historical information, combined with a very high degree of confidence that this will continue in the future, including no country risk, subsector risk or size considerations that could otherwise warrant a worse assessment as per paragraph 87. For an assessment of 6 we require strong evidence of very high volatility in profitability metrics compared with the industry, supported by at least five years of historical information and very high confidence that this will continue in the future.
93. Next, we combine the level of profitability assessment with the volatility assessment to determine the final profitability

assessment using the matrix in Table 15.

Table 15

Profitability Assessment						
	--Volatility of profitability assessment--					
Level of profitability assessment	1	2	3	4	5	6
Above average	1	1	2	3	4	5
Average	1	2	3	4	5	6
Below average	2	3	4	5	6	6

5. Combining the preliminary competitive position assessment with profitability

94. The fourth and final step in arriving at a competitive position assessment is to combine the preliminary competitive position assessment with the profitability assessment. We use the combination matrix in Table 16, which shows how the profitability assessment can confirm, strengthen, or weaken (by up to one category) the overall competitive position assessment.

Table 16

Combining The Preliminary Competitive Position Assessment And Profitability Assessment						
	--Preliminary competitive position assessment--					
Profitability assessment	1	2	3	4	5	6
1	1	2	2	3	4	5
2	1	2	3	3	4	5
3	2	2	3	4	4	5
4	2	3	3	4	5	5
5	2	3	4	4	5	6
6	2	3	4	5	5	6

95. We generally expect companies with a strong preliminary competitive position assessment to exhibit strong and less volatile profitability metrics. Conversely, companies with a relatively weaker preliminary competitive position assessment will generally have weaker and/or more volatile profitability metrics. Our analysis of profitability helps substantiate whether management is translating any perceived competitive advantages, diversity benefits, and cost management measures into higher earnings and more stable return on capital and return on sales ratios than the averages for the industry. When profitability differs markedly from what the preliminary/anchor competitive position assessment would otherwise imply, we adjust the competitive position assessment accordingly.
96. Our method of adjustment is biased toward the preliminary competitive position assessment rather than toward the profitability assessment (e.g., a preliminary competitive assessment of 6 and a profitability assessment of 1 will result in a final assessment of 5).

E. Cash Flow/Leverage

97. The pattern of cash flow generation, current and future, in relation to cash obligations is often the best indicator of a company's financial risk. The criteria assess a variety of credit ratios, predominately cash flow-based, which

complement each other by focusing on the different levels of a company's cash flow waterfall in relation to its obligations (i.e., before and after working capital investment, before and after capital expenditures, before and after dividends), to develop a thorough perspective. Moreover, the criteria identify the ratios that we think are most relevant to measuring a company's credit risk based on its individual characteristics and its business cycle.

98. For the analysis of companies with intermediate or stronger cash flow/leverage assessments (a measure of the relationship between the company's cash flows and its debt obligations as identified in paragraphs 106 and 124), we primarily evaluate cash flows that reflect the considerable flexibility and discretion over outlays that such companies typically possess. For these entities, the starting point in the analysis is cash flows before working capital changes plus capital investments in relation to the size of a company's debt obligations in order to assess the relative ability of a company to repay its debt. These "leverage" or "payback" cash flow ratios are a measure of how much flexibility and capacity the company has to pay its obligations.
99. For entities with significant or weaker cash flow/leverage assessments (as identified in paragraphs 105 and 124), the criteria also call for an evaluation of cash flows in relation to the carrying cost or interest burden of a company's debt. This will help us assess a company's relative and absolute ability to service its debt. These "coverage"- or "debt service"-based cash flow ratios are a measure of a company's ability to pay obligations from cash earnings and the cushion the company possesses through stress periods. These ratios, particularly interest coverage ratios, become more important the further a company is down the credit spectrum.

1. Assessing cash flow/leverage

100. Under the criteria, we assess cash flow/leverage as 1, minimal; 2, modest; 3, intermediate; 4, significant; 5, aggressive; or 6, highly leveraged. To arrive at these assessments, the criteria combine the assessments of a variety of credit ratios, predominately cash flow-based, which complement each other by focusing attention on the different levels of a company's cash flow waterfall in relation to its obligations. For each ratio, there is an indicative cash flow/leverage assessment that corresponds to a specified range of values in one of three given benchmark tables (see tables 17, 18, and 19). We derive the final cash flow/leverage assessment for a company by determining the relevant core ratios, anchoring a preliminary cash flow assessment based on the relevant core ratios, determining the relevant supplemental ratio(s), adjusting the preliminary cash flow assessment according to the relevant supplemental ratio(s), and, finally, modifying the adjusted cash flow/leverage assessment for any material volatility.

2. Core and supplemental ratios

a) Core ratios

101. For each company, we calculate two core credit ratios--funds from operations (FFO) to debt and debt to EBITDA--in accordance with Standard & Poor's ratios and adjustments criteria (see "Corporate Methodology: Ratios And Adjustments," published Nov. 19, 2013). We compare these payback ratios against benchmarks to derive the preliminary cash flow/leverage assessment for a company. These ratios are also useful in determining the relative ranking of the financial risk of companies.

b) Supplemental ratios

102. The criteria also consider one or more supplemental ratios (in addition to the core ratios) to help develop a fuller understanding of a company's financial risk profile and fine-tune our cash flow/leverage analysis. Supplemental ratios

could either confirm or adjust the preliminary cash flow/leverage assessment. The confirmation or adjustment of the preliminary cash flow/leverage assessment will depend on the importance of the supplemental ratios as well as any difference in indicative cash flow/leverage assessment between the core and supplemental ratios as described in section E.3.b.

103. The criteria typically consider five standard supplemental ratios, although the relevant KCF criteria may introduce additional supplemental ratios or focus attention on one or more of the standard supplemental ratios. The standard supplemental ratios include three payback ratios--cash flow from operations (CFO) to debt, free operating cash flow (FOCF) to debt, and discretionary cash flow (DCF) to debt--and two coverage ratios, FFO plus interest to cash interest and EBITDA to interest.
104. The criteria provide guidelines as to the relative importance of certain ratios if a company exhibits characteristics such as high leverage, working capital intensity, capital intensity, or high growth.
105. If the preliminary cash flow/leverage assessment is significant or weaker (see section E.3), then two coverage ratios, FFO plus interest to cash interest and EBITDA to interest, will be given greater importance as supplemental ratios. For the purposes of calculating the coverage ratios, "cash interest" includes only cash interest payments (i.e., interest excludes noncash interest payable on, for example, payment-in-kind [PIK] instruments) and does not include any Standard & Poor's adjusted interest on such items as leases, while "interest" is the income statement figure plus Standard & Poor's adjustments to interest (see "Corporate Methodology: Ratios And Adjustments," published Nov. 19, 2013).
106. If the preliminary cash flow/leverage assessment is intermediate or stronger, the criteria first apply the three standard supplemental ratios of CFO to debt, FOCF to debt, and DCF to debt. When FOCF to debt and DCF to debt indicate a cash flow/leverage assessment that is lower than the other payback-ratio-derived cash flow/leverage assessments, it signals that the company has either larger than average capital spending or other non-operating cash distributions (including dividends). If these differences persist and are consistent with a negative trend in overall ratio levels, which we believe is not temporary, then these supplemental leverage ratios will take on more importance in the analysis.
107. If the supplemental ratios indicate a cash flow/leverage assessment that is different than the preliminary cash flow/leverage assessment, it could suggest an unusual debt service or fixed charge burden, working capital or capital expenditure profile, or unusual financial activity or policies. In such cases, we assess the sustainability or persistence of these differences. For example, if either working capital or capital expenditures are unusually low, leading to better indicated assessments, we examine the sustainability of such lower spending in the context of its impact on the company's longer term competitive position. If there is a deteriorating trend in the company's asset base, we give these supplemental ratios less weight. If either working capital or capital expenditures are unusually high, leading to weaker indicated assessments, we examine the persistence and need for such higher spending. If elevated spending levels are required to maintain a company's competitive position, for example to maintain the company's asset base, we give more weight to these supplemental ratios.
108. For capital-intensive companies, EBITDA and FFO may overstate financial strength, whereas FOCF may be a more accurate reflection of their cash flow in relation to their financial obligations. The criteria generally consider a

capital-intensive company as having ongoing capital spending to sales of greater than 10%, or depreciation to sales of greater than 8%. For these companies, the criteria place more weight on the supplementary ratio of FOCF to debt. Where we place more analytic weight on FOCF to debt, we also seek to estimate the amount of maintenance or full cycle capital required (see Appendix C) under normal conditions (we estimate maintenance or full-cycle capital expenditure required because this is not a reported number). The FOCF figure may be adjusted by adding back estimated discretionary capital expenditures. The adjusted FOCF to debt based on maintenance or full cycle capital expenditures often helps determine how much importance to place on this ratio. If both the FOCF to debt and the adjusted (for estimated discretionary capital spending) FOCF to debt derived assessments are different from the preliminary cash/flow leverage assessment, then these supplemental leverage ratios take on more importance in the analysis.

109. For working-capital-intensive companies, EBITDA and FFO may also overstate financial strength, and CFO may be a more accurate measure of the company's cash flow in relation to its financial risk profile. Under the criteria, if a company has a working capital-to-sales ratio that exceeds 25% or if there are significant seasonal swings in working capital, we generally consider it to be working-capital-intensive. For these companies, the criteria place more emphasis on the supplementary ratio of CFO to debt. Examples of companies that have working-capital-intensive characteristics can be found in the capital goods, metals and mining downstream, or the retail and restaurants industries. The need for working capital in those industries reduces financial flexibility and, therefore, these supplemental leverage ratios take on more importance in the analysis.
110. For all companies, when FOCF to debt or DCF to debt is negative or indicates materially lower cash flow/leverage assessments, the criteria call for an examination of management's capital spending and cash distribution strategies. For high-growth companies, typically the focus is on FFO to debt instead of FOCF to debt because the latter ratio can vary greatly depending on the growth investment the company is undergoing. The criteria generally consider a high-growth company one that exhibits real revenue growth in excess of 8% per year. Real revenue growth excludes price or foreign exchange related growth, under these criteria. In cases where FOCF or DCF is low, there is a greater emphasis on monitoring the sustainability of margins and return on capital and the overall financing mix to assess the likely trend of future debt ratios. In addition, debt service ratio analysis will be important in such situations. For companies with more moderate growth, the focus is typically on FOCF to debt unless the capital spending is short term or is not funded with debt.
111. For companies that have ongoing and well entrenched banking relationships we can reflect these relationships in our cash flow/leverage analysis through the use of the interest coverage ratios as supplemental ratios. These companies generally have historical links and a strong ongoing relationship with their main banks, as well as shareholdings by the main banks, and management influence and interaction between the main banks and the company. Based on their bank relationships, these companies often have lower interest servicing costs than peers, even if the macro economy worsens. In such cases, we generally use the interest coverage ratios as supplemental ratios. This type of banking relationship occurs in Japan, for example, where companies that have the type of bank relationship described in this paragraph tend to have a high socioeconomic influence within their country by way of their revenue size, total debt quantum, number of employees, and the relative importance of the industry.

c) Time horizon and ratio calculation

112. A company's credit ratios may vary, often materially, over time due to economic, competitive, technological, or investment cycles, the life stage of the company, and corporate or strategic actions. Thus, we evaluate credit ratios on a time series basis with a clear forward-looking bias. The length of the time series is dependent on the relative credit risk of the company and other qualitative factors and the weighting of the time series varies according to transformational events. A transformational event is any event that could cause a material change in a company's financial profile, whether caused by changes to the company's capital base, capital structure, earnings, cash flow profile, or financial policies. Transformational events can include mergers, acquisitions, divestitures, management changes, structural changes to the industry or competitive environment, and/or product development and capital programs. This section provides guidance on the timeframe and weightings the criteria apply to calculate the indicative ratios.
113. The criteria generally consider the company's credit ratios for the previous one to two years, current-year forecast, and the two subsequent forecasted financial years. There may be situations where longer--or even shorter--historical results or forecasts are appropriate, depending on such factors as availability of financials, transformational events, or relevance. For example, a utility company with a long-term capital spending program may lend itself to a longer-term forecast, whereas for a company experiencing a near-term liquidity squeeze even a two-year forecast will have limited value. Alternatively, for most commodities-based companies we emphasize credit ratios based on our forward-looking view of market conditions, which may differ materially from the historical period.
114. Historical patterns in cash flow ratios are informative, particularly in understanding past volatility, capital spending, growth, accounting policies, financial policies, and business trends. Our analysis starts with a review of these historical patterns in order to assess future expected credit quality. Historical patterns can also provide an indication of potential future volatility in ratios, including that which results from seasonality or cyclicity. A history of volatility could result in a more conservative assessment of future cash flow generation if we believe cash flow will continue to be volatile.
115. The forecast ratios are based on an expected base-case scenario developed by Standard & Poor's, incorporating current and near-term economic conditions, industry assumptions, and financial policies. The prospective cyclical and longer-term volatility associated with the industry in which the issuer operates is addressed in the industry risk criteria (see section B) and the longer-term directional influence or event risk of financial policies is addressed in our financial policy criteria (see section H).
116. The criteria generally place greater emphasis on forecasted years than historical years in the time series of credit ratios when calculating the indicative credit ratio. For companies where we have five years of ratios as described in section E.3, generally we calculate the indicative ratio by weighting the previous two years, the current year, and the forecasted two years as 10%, 15%, 25%, 25%, and 25%, respectively.
117. This weighting changes, however, to place even greater emphasis on the current and forecast years when:
- The issuer meets the characteristics described in paragraph 113, and either shorter- or longer-term forecasts are applicable. The weights applied will generally be quite forward weighted, particularly if a company is undergoing a transformational event and there is moderate or better cash flow certainty.
 - The issuer is forecast to generate negative cash flow available for debt repayment, which we believe could lead to

deteriorating credit metrics. Forecast negative cash flows could be generated from operating activities as well as capital expenditures, share buybacks, dividends, or acquisitions, as we forecast these uses of cash based on the company's track record, market conditions, or financial policy. The weights applied will generally be 30%, 40%, and 30% for the current and two subsequent years, respectively.

- The issuer is in an industry that is prospectively volatile or that has a high degree of cash flow uncertainty. Industries that are prospectively volatile are industries whose competitive risk and growth assessments are either high risk (5) or very high risk (6) or whose overall industry risk assessments are either high risk (5) or very high risk (6). The weights applied will generally be 50% for the current year and 50% for the first subsequent forecast year.

118. When the indicative ratio(s) is borderline (i.e., less than 10% different from the threshold in relative terms) between two assessment thresholds (as described in section E.3 and tables 17, 18, and 19) and the forecast points to a switch in the ratio between categories during the rating timeframe, we will weigh the forecast even more heavily in order to prospectively capture the trend.
119. For companies undergoing a transformational event, the weighting of the time series could vary significantly.
120. For companies undergoing a transformational event and with significant or weaker cash flow/leverage assessments, we place greater weight on near-term risk factors. That's because overemphasis on longer-term (inherently less predictable) issues could lead to some distortion when assessing the risk level of a speculative-grade company. We generally analyze a company using the arithmetic mean of the credit ratios expected according to our forecasts for the current year (or pro forma current year) and the subsequent financial year. A common example of this is when a private equity firm acquires a company using additional debt leverage, which makes historical financial ratios meaningless. In this scenario, we weight or focus the majority of our analysis on the next one or two years of projected credit measures.

3. Determining the cash flow/leverage assessment

a) Identifying the benchmark table

121. Tables 17, 18, and 19 provide benchmark ranges for various cash flow ratios we associate with different cash flow/leverage assessments for standard volatility, medial volatility, and low volatility industries. The tables of benchmark ratios differ for a given ratio and cash flow/leverage assessment along two dimensions: the starting point for the ratio range and the width of the ratio range.
122. If an industry exhibits low volatility, the threshold levels for the applicable ratios to achieve a given cash flow/leverage assessment are less stringent than those in the medial or standard volatility tables, although the range of the ratios is narrower. Conversely, if an industry exhibits medial or standard levels of volatility, the threshold for the applicable ratios to achieve a given cash flow/leverage assessment are elevated, albeit with a wider range of values.
123. The relevant benchmark table for a given company is based on our assessment of the company's associated industry and country risk volatility, or the CICRA (see section A, table 1). The low volatility table (table 19) will generally apply when a company's CICRA is 1, unless otherwise indicated in a sector's KCF criteria. The medial volatility table (table 18) will be used under certain circumstances for companies with a CICRA of 1 or 2. Those circumstances are described in the respective sectors' KCF criteria. The standard volatility table (table 17) serves as the relevant benchmark table for companies with a CICRA of 2 or worse, and we will always use it for companies with a CICRA of 1 or 2 and whose competitive position is assessed 5 or 6. Although infrequent, we will use the low volatility table when

a company's CICRA is 2 for companies that exhibit or are expected to exhibit low levels of volatility. The choice of volatility tables for companies with a CICRA of 2 is addressed in the respective sector's KCF article.

Table 17

	--Core ratios--		--Supplementary coverage ratios--		--Supplementary payback ratios--		
	FFO/debt (%)	Debt/EBITDA (x)	FFO/cash interest(x)	EBITDA/interest (x)	CFO/debt (%)	FOCF/debt (%)	DCF/debt (%)
Minimal	60+	Less than 1.5	More than 13	More than 15	More than 50	40+	25+
Modest	45-60	1.5-2	9-13	10-15	35-50	25-40	15-25
Intermediate	30-45	2-3	6-9	6-10	25-35	15-25	10-15
Significant	20-30	3-4	4-6	3-6	15-25	10-15	5-10
Aggressive	12-20	4-5	2-4	2-3	10-15	5-10	2-5
Highly leveraged	Less than 12	Greater than 5	Less than 2	Less than 2	Less than 10	Less than 5	Less than 2

Table 18

	--Core ratios--		--Supplementary coverage ratios--		--Supplementary payback ratios--		
	FFO/debt (%)	Debt/EBITDA (x)	FFO/cash interest (x)	EBITDA/interest (x)	CFO/debt (%)	FOCF/debt (%)	DCF/debt (%)
Minimal	50+	less than 1.75	10.5+	14+	40+	30+	18+
Modest	35-50	1.75-2.5	7.5-10.5	9-14	27.5-40	17.5-30	11-18
Intermediate	23-35	2.5-3.5	5-7.5	5-9	18.5-27.5	9.5-17.5	6.5-11
Significant	13-23	3.5-4.5	3-5	2.75-5	10.5-18.5	5-9.5	2.5-6.5
Aggressive	9-13	4.5-5.5	1.75-3	1.75-2.75	7-10.5	0-5	(11)-2.5
Highly leveraged	Less than 9	Greater than 5.5	Less than 1.75	Less than 1.75	Less than 7	Less than 0	Less than (11)

Table 19

	--Core ratios--		--Supplementary coverage ratios--		--Supplementary payback ratios--		
	FFO/debt (%)	Debt/EBITDA (x)	FFO/cash interest (x)	EBITDA/interest (x)	CFO/debt (%)	FOCF/debt (%)	DCF/debt (%)
Minimal	35+	Less than 2	More than 8	More than 13	More than 30	20+	11+
Modest	23-35	2-3	5-8	7-13	20-30	10-20	7-11
Intermediate	13-23	3-4	3-5	4-7	12-20	4-10	3-7
Significant	9-13	4-5	2-3	2.5-4	8-12	0-4	0-3
Aggressive	6-9	5-6	1.5-2	1.5-2.5	5-8	(10)-0	(20)-0
Highly leveraged	Less than 6	Greater than 6	Less than 1.5	Less than 1.5	Less than 5	Less than (10)	Less than (20)

b) Aggregating the credit ratio assessments

124. To determine the final cash flow/leverage assessment, we make these calculations:
- 1) First, calculate a time series of standard core and supplemental credit ratios, select the relevant benchmark table, and determine the appropriate time weighting of the credit ratios.

- Calculate the two standard core credit ratios and the five standard supplemental credit ratios over a five-year time horizon.
 - Consult the relevant industry KCF article (if applicable), which may identify additional supplemental ratio(s). The relevant benchmark table for a given company is based on our assessment of the company's associated industry and country risk volatility, or the CICRA.
 - Calculate the appropriate weighted average cash flow/leverage ratios. If the company is undergoing a transformational event, then the core and supplemental ratios will typically be calculated based on Standard & Poor's projections for the current and next one or two financial years.
- 2) Second, we use the core ratios to determine the preliminary cash flow assessment.
- Compare the core ratios (FFO to debt and debt to EBITDA) to the ratio ranges in the relevant benchmark table.
 - If the core ratios result in different cash flow/leverage assessments, we will select the relevant core ratio based on which provides the best indicator of a company's future leverage.
- 3) Third, we review the supplemental ratio(s).
- Determine the importance of standard or KCF supplemental ratios based on company-specific characteristics, namely, leverage, capital intensity, working capital intensity, growth rate, or industry.
- 4) Fourth, we calculate the adjusted cash flow/leverage assessment.
- If the cash flow/leverage assessment(s) indicated by the important supplemental ratio(s) differs from the preliminary cash flow/leverage assessment, we might adjust the preliminary cash flow/leverage assessment by one category in the direction of the cash flow/leverage assessment indicated by the supplemental ratio(s) to derive the adjusted cash flow/leverage assessment. We will make this adjustment if, in our view, the supplemental ratio provides the best indicator of a company's future leverage.
 - If there is more than one important supplemental ratio and they result in different directional deviations from the preliminary cash flow/leverage assessment, we will select one as the relevant supplemental ratio based on which, in our opinion, provides the best indicator of a company's future leverage. We will then make the adjustment outlined above if the selected supplemental ratio differs from the preliminary cash flow/leverage assessment and the selected supplemental ratio provides the best overall indicator of a company's future leverage.
- 5) Lastly, we determine the final cash flow/leverage assessment based on the volatility adjustment.
- We classify companies as stable for these cash flow criteria if cash flow/leverage ratios are expected to move up by one category during periods of stress based on their business risk profile. The final cash flow/leverage assessment for these companies will not be modified from the adjusted cash flow/leverage assessment.
 - We classify companies as volatile for these cash flow criteria if cash flow/leverage ratios are expected to move one or two categories worse during periods of stress based on their business risk profiles. Typically, this is equivalent to EBITDA declining about 30% from its current level. The final cash flow/leverage assessment for these companies will be modified to one category weaker than the adjusted cash flow/leverage assessment; the adjustment will be eliminated if cash flow/leverage ratios, as evaluated, include a moderate to high level of stress already.
 - We classify companies as highly volatile for these cash flow criteria if cash flow/leverage ratios are expected to move two or three categories worse during periods of stress, based on their business risk profiles. Typically, this is equivalent to EBITDA declining about 50% from its current level. The final cash flow/leverage assessment for these companies will be modified to two categories weaker than the adjusted cash flow/leverage assessment; the adjustment will be eliminated or reduced to one category if cash flow/leverage ratios, as evaluated, include a moderate to high level of stress already.
125. The volatility adjustment is the mechanism by which we factor a "cushion" of medium-term variance to current financial performance not otherwise captured in either the near-term base-case forecast or the long-term business risk

assessment. We make this adjustment based on the following:

- The expectation of any potential cash flow/leverage ratio movement is both prospective and dependent on the current business or economic conditions.
- Stress scenarios include, but are not limited to, a recessionary economic environment, technology or competitive shifts, loss or renegotiation of major contracts or customers, and key product or input price movements, as typically defined in the company's industry risk profile and competitive position assessment.
- The volatility adjustment is not static and is company specific. At the bottom of an economic cycle or during periods of stressed business conditions, already reflected in the general industry risk or specific competitive risk profile, the prospect of weakening ratios is far less than at the peak of an economic cycle or business conditions.
- The expectation of prospective ratio changes may be formed by observed historical performance over an economic, business, or product cycle by the company or by peers.
- The assessment of which classification to use when evaluating the prospective number of scoring category moves will be guided by how close the current ratios are to the transition point (i.e. "buffer" in the current scoring category) and the corresponding amount of EBITDA movement at each scoring transition.

F. Diversification/Portfolio Effect

126. Under the criteria, diversification/portfolio effect applies to companies that we regard as conglomerates. They are companies that have multiple core business lines that may be operated as separate legal entities. For the purpose of these criteria, a conglomerate would have at least three business lines, each contributing a material source of earnings and cash flow.
127. The criteria aim to measure how diversification or the portfolio effect could improve the anchor of a company with multiple business lines. This approach helps us determine how the credit strength of a corporate entity with a given mix of business lines could improve based on its diversity. The competitive position factor assesses the benefits of diversity within individual lines of business. This factor also assesses how poorly performing businesses within a conglomerate affect the organization's overall business risk profile.
128. Diversification/portfolio effect could modify the anchor depending on how meaningful we think the diversification is, and on the degree of correlation we find in each business line's sensitivity to economic cycles. This assessment will have either a positive or neutral impact on the anchor. We capture any potential factor that weakens a company's diversification, including poor management, in our management and governance assessment.
129. We define a conglomerate as a diversified company that is involved in several industry sectors. Usually the smallest of at least three distinct business segments/lines would contribute at least 10% of either EBITDA or FOCF and the largest would contribute no more than 50% of EBITDA or FOCF, with the long-term aim of increasing shareholder value by generating cash flow. Industrial conglomerates usually hold a controlling stake in their core businesses, have highly identifiable holdings, are deeply involved in the strategy and management of their operating companies, generally do not frequently roll over or reshuffle their holdings by buying and selling companies, and therefore have high long-term exposure to the operating risks of their subsidiaries.
130. In rating a conglomerate, we first assess management's commitment to maintain the diversified portfolio over a

longer-term horizon. These criteria apply only if the company falls within our definition of a conglomerate.

1. Assessing diversification/portfolio effect

131. A conglomerate's diversification/portfolio effect is assessed as 1, significant diversification; 2, moderate diversification; or 3, neutral. An assessment of moderate diversification or significant diversification potentially raises the issuer's anchor. To achieve an assessment of significant diversification, an issuer should have uncorrelated diversified businesses whose breadth is among the most comprehensive of all conglomerates'. This assessment indicates that we expect the conglomerate's earnings volatility to be much lower through an economic cycle than an undiversified company's. To achieve an assessment of moderate diversification, an issuer typically has a range of uncorrelated diversified businesses that provide meaningful benefits of diversification with the expectation of lower earnings volatility through an economic cycle than an undiversified company's.
132. We expect that a conglomerate will also benefit from diversification if its core assets consistently produce positive cash flows over our rating horizon. This supports our assertion that the company diversifies to take advantage of allocating capital among its business lines. To this end, our analysis focuses on a conglomerate's track record of successfully deploying positive discretionary cash flow into new business lines or expanding capital-hungry business lines. We assess companies that we do not expect to achieve these benefits as neutral.

2. Components of correlation and how it is incorporated into our analysis

133. We determine the assessment for this factor based on the number of business lines in separate industries (as described in table 27) and the degree of correlation between these business lines as described in table 20. There is no rating uplift for an issuer with a small number of business lines that are highly correlated. By contrast, a larger number of business lines that are not closely correlated provide the maximum rating uplift.

Table 20

Assessing Diversification/Portfolio Effect			
	--Number of business lines--		
Degree of correlation of business lines	3	4	5 or more
High	Neutral	Neutral	Neutral
Medium	Neutral	Moderately diversified	Moderately diversified
Low	Moderately diversified	Significantly diversified	Significantly diversified

134. The degree of correlation of business lines is high if the business lines operate within the same industry, as defined by the industry designations in Appendix B, table 27. The degree of correlation of business lines is medium if the business lines operate within different industries, but operate within the same geographic region (for further guidance on defining geographic regions, see Appendix A, table 26). An issuer has a low degree of correlation across its business lines if these business lines are both a) in different industries and b) either operate in different regions or operate in multiple regions.
135. If we believe that a conglomerate's various industry exposures fail to provide a partial hedge against the consolidated entity's volatility because they are highly correlated through an economic cycle, then we assess the diversification/portfolio effect as neutral.

G. Capital Structure

136. Standard & Poor's uses its capital structure criteria to assess risks in a company's capital structure that may not show up in our standard analysis of cash flow/leverage. These risks may exist as a result of maturity date or currency mismatches between a company's sources of financing and its assets or cash flows. These can be compounded by outside risks, such as volatile interest rates or currency exchange rates.

1. Assessing capital structure

137. Capital structure is a modifier category, which adjusts the initial anchor for a company after any modification due to diversification/portfolio effect. We assess a number of subfactors to determine the capital structure assessment, which can then raise or lower the initial anchor by one or more notches--or have no effect in some cases. We assess capital structure as 1, very positive; 2, positive; 3, neutral; 4, negative; or 5, very negative. In the large majority of cases, we believe that a firm's capital structure will be assessed as neutral. To assess a company's capital structure, we analyze four subfactors:

- Currency risk associated with debt,
- Debt maturity profile (or schedule),
- Interest rate risk associated with debt, and
- Investments.

138. Any of these subfactors can influence a firm's capital structure assessment, although some carry greater weight than others, based on a tiered approach:

- Tier one risk subfactors: Currency risk of debt and debt maturity profile, and
- Tier two risk subfactor: Interest rate risk of debt.

139. The initial capital structure assessment is based on the first three subfactors (see table 21). We may then adjust the preliminary assessment based on our assessment of the fourth subfactor, investments.

Table 21

Preliminary Capital Structure Assessment

Preliminary capital structure assessment	Subfactor assessments
Neutral	No tier one subfactor is negative.
Negative	One tier one subfactor is negative, and the tier two subfactor is neutral.
Very negative	Both tier one subfactors are negative, or one tier one subfactor is negative and the tier two subfactor is negative.

140. Tier one subfactors carry the greatest risks, in our view, and, thus, could have a significant impact on the capital structure assessment. This is because, in our opinion, these factors have a greater likelihood of affecting credit metrics and potentially causing liquidity and refinancing risk. The tier two subfactor is important in and of itself, but typically less so than the tier one subfactors. In our view, in the majority of cases, the tier two subfactor in isolation has a lower likelihood of leading to liquidity and default risk than do tier one subfactors.

141. The fourth subfactor, investments, as defined in paragraph 153, quantifies the impact of a company's investments on

its overall financial risk profile. Although not directly related to a firm's capital structure decisions, certain investments could provide a degree of asset protection and potential financial flexibility if they are monetized. Thus, the fourth subfactor could modify the preliminary capital structure assessment (see table 22). If the subfactor is assessed as neutral, then the preliminary capital structure assessment will stand. If investments is assessed as positive or very positive, we adjust the preliminary capital structure assessment upward (as per table 22) to arrive at the final assessment.

Table 22

Final Capital Structure Assessment			
	--Investments subfactor assessment--		
Preliminary capital structure assessment	Neutral	Positive	Very positive
Neutral	Neutral	Positive	Very positive
Negative	Negative	Neutral	Positive
Very negative	Very negative	Negative	Negative

2. Capital structure analysis: Assessing the subfactors

a) Subfactor 1: Currency risk of debt

142. Currency risk arises when a company borrows without hedging in a currency other than the currency in which it generates revenues. Such an unhedged position makes the company potentially vulnerable to fluctuations in the exchange rate between the two currencies, in the absence of mitigating factors. We determine the materiality of any mismatch by identifying situations where adverse exchange-rate movements could weaken cash flow and/or leverage ratios. We do not include currency mismatches under the following scenarios:
- The country where a company generates its cash flows has its currency pegged to the currency in which the company has borrowed, or vice versa (or the currency of cash flows has a strong track record and government policy of stability with the currency of borrowings), examples being the Hong Kong dollar which is pegged to the U.S. dollar, and the Chinese renminbi which is managed in a narrow band to the U.S. dollar (and China's foreign currency reserves are mainly in U.S. dollars). Moreover, we expect such a scenario to continue for the foreseeable future;
 - A company has the proven ability, through regulation or contract, to pass through changes in debt servicing costs to its customers; or
 - A company has a natural hedge, such as where it may sell its product in a foreign currency and has matched its debt in that same currency.
143. We also recognize that even if an entity generates insufficient same-currency cash flow to meet foreign currency-denominated debt obligations, it could have substantial other currency cash flows it can convert to meet these obligations. Therefore, the relative amount of foreign denominated debt as a proportion of total debt is an important factor in our analysis. If foreign denominated debt, excluding fully hedged debt principal, is 15% or less of total debt, we assess the company as neutral on currency risk of debt. If foreign-denominated debt, excluding fully hedged debt principal, is greater than 15% of total debt, and debt to EBITDA is greater than 3.0x, we evaluate currency risks through further analysis.
144. If an entity's foreign-denominated debt in a particular currency represents more than 15% of total debt, and if its debt to EBITDA ratio is greater than 3.0x, we identify whether a currency-specific interest coverage ratio indicates potential

currency risk. The coverage ratio divides forecasted operating cash flow in each currency by interest payments over the coming 12 months for that same currency. It is often easier to ascertain the geographic breakdown of EBITDA as opposed to operating cash flow. So in situations where we don't have sufficient cash flow information, we may calculate an EBITDA to interest expense coverage ratio in the relevant currencies. If neither cash flow nor EBITDA information is disclosed, we estimate the relevant exposures based on available information.

145. In such an instance, our assessment of this subfactor is negative if we believe any appropriate interest coverage ratio will fall below 1.2x over the next 12 months.

b) Subfactor 2: Debt maturity profile

146. A firm's debt maturity profile shows when its debt needs to be repaid, or refinanced if possible, and helps determine the firm's refinancing risk. Lengthier and more evenly spread out debt maturity schedules reduce refinancing risk, compared with front-ended and compressed ones, since the former give an entity more time to manage business- or financial market-related setbacks.
147. In evaluating debt maturity profiles, we measure the weighted average maturity (WAM) of bank debt and debt securities (including hybrid debt) within a capital structure, and make simplifying assumptions that debt maturing beyond year five matures in year six. $WAM = (Maturity1/Total\ Debt)*tenor1 + (Maturity2/Total\ Debt)*\ tenor2 + \dots (Thereafter/Total\ Debt)*\ tenor6$
148. In evaluating refinancing risk, we consider risks in addition to those captured under the 12-month to 24-month time-horizons factored in our liquidity criteria (see "Methodology And Assumptions: Liquidity Descriptors For Global Corporate Issuers," published Dec. 16, 2014). While we recognize that investment-grade companies may have more certain future business prospects and greater access to capital than speculative-grade companies, all else being equal, we view a company with a shorter maturity schedule as having greater refinancing risk compared to a company with a longer one. In all cases, we assess a company's debt maturity profile in conjunction with its liquidity and potential funding availability. Thus, a short-dated maturity schedule alone is not a negative if we believe the company can maintain enough liquidity to pay off debt that comes due in the near term.
149. Our assessment of this subfactor is negative if the WAM is two years or less, and the amount of these near-term maturities is material in relation to the issuer's liquidity so that under our base-case forecast, we believe the company's liquidity assessment will become less than adequate or weak over the next two years due to these maturities. In certain cases, we may assess a debt maturity profile as negative regardless of whether or not the company passes the aforementioned test. We expect such instances to be rare, and will include scenarios where we believed a concentration of debt maturities within a five-year time horizon poses meaningful refinancing risk, either due to the size of the maturities in relation to the company's liquidity sources, the company's leverage profile, its operating trends, lender relationships, and/or credit market standings.

c) Subfactor 3: Interest rate risk of debt

150. The interest rate risk of debt subfactor analyzes the company's mix of fixed-rate and floating-rate debt. Generally, a higher proportion of fixed-rate debt leads to greater predictability and stability of interest expense and therefore cash flows. The exception would be companies whose operating cash flows are to some degree correlated with interest rate movements--for example, a regulated utility whose revenues are indexed to inflation--given the typical correlation

between nominal interest rates and inflation.

151. The mix of fixed versus floating-rate debt is usually not a significant risk factor for companies with intermediate or better financial profiles, strong profitability, and high interest coverage. In addition, the interest rate environment at a given point in time will play a role in determining the impact of interest rate movements. Our assessment of this subcategory will be negative if a 25% upward shift (e.g., from 2.0% to 2.5%) or a 100 basis-point upward shift (e.g., 2% to 3%) in the base interest rate of the floating rate debt will result in a breach of interest coverage covenants or interest coverage rating thresholds identified in the cash flow/leverage criteria (see section E.3).
152. Many loan agreements for speculative-grade companies contain a clause requiring a percentage of floating-rate debt to be hedged for a period of two to three years to mitigate this risk. However, in many cases the loan matures after the hedge expires, creating a mismatched hedge. We consider only loans with hedges that match the life of the loan to be--effectively--fixed-rate debt.

d) Subfactor 4: Investments

153. For the purposes of the criteria, investments refer to investments in unconsolidated equity affiliates, other assets where the realizable value isn't currently reflected in the cash flows generated from those assets (e.g. underutilized real-estate property), we do not expect any additional investment or support to be provided to the affiliate, and the investment is not included within Standard & Poor's consolidation scope and so is not incorporated in the company's business and financial risk profile analysis. If equity affiliate companies are consolidated, then the financial benefits and costs of these investments will be captured in our cash flow and leverage analysis. Similarly, where the company's ownership stake does not qualify for consolidation under accounting rules, we may choose to consolidate on a pro rata basis if we believe that the equity affiliates' operating and financing strategy is influenced by the rated entity. If equity investments are strategic and provide the company with a competitive advantage, or benefit a company's scale, scope, and diversity, these factors will be captured in our competitive position criteria and will not be used to assess the subfactor investments as positive. Within the capital structure criteria, we aim to assess nonstrategic financial investments that could provide a degree of asset protection and financial flexibility in the event they are monetized. These investments must be noncore and separable, meaning that a potential divestiture, in our view, has no impact on the company's existing operations.
154. In many instances, the cash flows generated by an equity affiliate, or the proportional share of the associate company's net income, might not accurately reflect the asset's value. This could occur if the equity affiliate is in high growth mode and is currently generating minimal cash flow or net losses. This could also be true of a physical asset, such as real estate. From a valuation standpoint, we recognize the subjective nature of this analysis and the potential for information gaps. As a result, in the absence of a market valuation or a market valuation of comparable companies in the case of minority interests in private entities, we will not ascribe value to these assets.
155. We assess this subfactor as positive or very positive if three key characteristics are met. First, an estimated value can be ascribed to these investments based on the presence of an existing market value for the firm or comparable firms in the same industry. Second, there is strong evidence that the investment can be monetized over an intermediate timeframe--in the case of an equity investment, our opinion of the marketability of the investment would be enhanced by the presence of an existing market value for the firm or comparable firms, as well as our view of market liquidity.

Third, monetization of the investment, assuming proceeds would be used to repay debt, would be material enough to positively move existing cash flow and leverage ratios by at least one category and our view on the company's financial policy, specifically related to financial discipline, supports the assessment that the potential proceeds would be used to pay down debt. This subfactor is assessed as positive if debt repayment from the investment sale has the potential to improve cash flow and leverage ratios by one category. We assess investments as very positive if proceeds upon sale of the investment have the potential to improve cash flow and leverage ratios by two or more categories. If the three characteristics are not met, this subfactor will be assessed as neutral and the preliminary capital structure assessment will stand.

156. We will not assess the investments subfactor as positive or very positive when the anchor is 'b+' or lower unless the three conditions described in paragraph 155 are met, and:
- For issuers with less than adequate or weak liquidity, the company has provided a credible near-term plan to sell the investment.
 - For issuers with adequate or better liquidity, we believe that the company, if needed, could sell the investment in a relatively short timeframe.

H. Financial Policy

157. Financial policy refines the view of a company's risks beyond the conclusions arising from the standard assumptions in the cash flow/leverage assessment (see section E). Those assumptions do not always reflect or entirely capture the short-to-medium term event risks or the longer-term risks stemming from a company's financial policy. To the extent movements in one of these factors cannot be confidently predicted within our forward-looking evaluation, we capture that risk within our evaluation of financial policy. The cash flow/leverage assessment will typically factor in operating and cash flows metrics we observed during the past two years and the trends we expect to see for the coming two years based on operating assumptions and predictable financial policy elements, such as ordinary dividend payments or recurring acquisition spending. However, over that period and, generally, over a longer time horizon, the firm's financial policies can change its financial risk profile based on management's or, if applicable, the company's controlling shareholder's (see Appendix E, paragraphs 254-257) appetite for incremental risk or, conversely, plans to reduce leverage. We assess financial policy as 1) positive, 2) neutral, 3) negative, or as being owned by a financial sponsor. We further identify financial sponsor-owned companies as "FS-4", "FS-5", "FS-6", or "FS-6 (minus)" (see section H.2).

1. Assessing financial policy

158. First, we determine if a company is owned by a financial sponsor. Given the intrinsic characteristics and aggressive nature of financial sponsor's strategies (i.e. short- to intermediate-term holding periods and the use of debt or debt-like instruments to maximize shareholder returns), we assign a financial risk profile assessment to a firm controlled by a financial sponsor that reflects the likely impact on leverage due to these strategies and we do not separately analyze management's financial discipline or financial policy framework.
159. If a company is not controlled by a financial sponsor, we evaluate management's financial discipline and financial policy framework. Management's financial discipline measures its tolerance for incremental financial risk or,

conversely, its willingness to maintain the same degree of financial risk or to lower it compared with recent cash flow/leverage metrics and our projected ratios for the next two years. The company's financial policy framework assesses the comprehensiveness, transparency, and sustainability of the entity's financial policies. We do not assess these factors for financial sponsor controlled firms.

160. The financial discipline assessments can have a positive or negative influence on an enterprise's overall financial policy assessment, or can have no net effect. Conversely, the financial policy framework assessment cannot positively influence the overall financial policy assessment. It can constrain the overall financial policy assessment to no greater than neutral.
161. The separate assessments of a company's financial policy framework and financial discipline determine the financial policy adjustment.
162. We assess management's financial discipline as 1, positive; 2, neutral; or 3, negative. We determine the assessment by evaluating the predictability of an entity's expansion plans and shareholder return strategies. We take into account, generally, management's tolerance for material and unexpected negative changes in credit ratios or, instead, its plans to rapidly decrease leverage and keep credit ratios within stated boundaries.
163. A company's financial policy framework assessment is: 1, supportive or 2, non-supportive. We make the determination by assessing the comprehensiveness of a company's financial policy framework and whether financial targets are clearly communicated to a large number of stakeholders, and are well defined, achievable, and sustainable.

Table 23

Financial Policy Assessments		
Assessment	What it means	Guidance
Positive	Indicates that we expect management's financial policy decisions to have a positive impact on credit ratios over the time horizon, beyond what can be reasonably built in our forecasts on the basis of normalized operating and cash flow assumptions. An example would be when a credible management team commits to dispose of assets or raise equity over the short to medium term in order to reduce leverage. A company with a 1 financial risk profile will not be assigned a positive assessment.	If financial discipline is positive, and the financial policy framework is supportive
Neutral	Indicates that, in our opinion, future credit ratios won't differ materially over the time horizon beyond what we have projected, based on our assessment of management's financial policy, recent track record, and operating forecasts for the company. A neutral financial policy assessment effectively reflects a low probability of "event risk," in our view.	If financial discipline is positive, and the financial policy framework is non-supportive. Or when financial discipline is neutral, regardless of the financial policy framework assessment.
Negative	Indicates our view of a lower degree of predictability in credit ratios, beyond what can be reasonably built in our forecasts, as a result of management's financial discipline (or lack of it). It points to high event risk that management's financial policy decisions may depress credit metrics over the time horizon, compared with what we have already built in our forecasts based on normalized operating and cash flow assumptions.	If financial discipline is negative, regardless of the financial policy framework assessment
Financial Sponsor*	We define a financial sponsor as an entity that follows an aggressive financial strategy in using debt and debt-like instruments to maximize shareholder returns. Typically, these sponsors dispose of assets within a short to intermediate time frame. Accordingly, the financial risk profile we assign to companies that are controlled by financial sponsors ordinarily reflects our presumption of some deterioration in credit quality in the medium term. Financial sponsors include private equity firms, but not infrastructure and asset-management funds, which maintain longer investment horizons.	We define financial sponsor-owned companies as companies that are owned 40% or more by a financial sponsor or a group of three or less financial sponsors and where we consider that the sponsor(s) exercise control of the company solely or together.

*Assessed as FS-4, FS-5, FS-6, or FS-6 (minus).

2. Financial sponsor-controlled companies

164. We define a financial sponsor as an entity that follows an aggressive financial strategy in using debt and debt-like instruments to maximize shareholder returns. Typically, these sponsors dispose of assets within a short-to-intermediate time frame. Financial sponsors include private equity firms, but not infrastructure and asset-management funds, which maintain longer investment horizons.
165. We define financial sponsor-owned companies as companies that are owned 40% or more by a financial sponsor or a group of three or less financial sponsors and where we consider that the sponsor(s) exercise control of the company solely or together.
166. We differentiate between financial sponsors and other types of controlling shareholders and companies that do not have controlling shareholders based on our belief that short-term ownership--such as exists in private equity sponsor-owned companies--generally entails financial policies aimed at achieving rapid returns for shareholders typically through aggressive debt leverage.
167. Financial sponsors often dictate policies regarding risk-taking, financial management, and corporate governance for the companies that they control. There is a common pattern of these investors extracting cash in ways that increase the companies' financial risk by utilizing debt or debt like instruments. Accordingly, the financial risk profile we assign to companies that are controlled by financial sponsors ordinarily reflect our presumption of some deterioration in credit quality or steadily high leverage in the medium term.
168. We assess the influence of financial sponsor ownership as "FS-4", "FS-5", "FS-6", and "FS-6 (minus)" depending on how aggressive we assume the sponsor will be and assign a financial risk profile accordingly (see table 24).
169. Generally, financial sponsor-owned issuers will receive an assessment of "FS-6" or "FS-6 (minus)", leading to a financial risk profile assessment of '6', under the criteria. A "FS-6" assessment indicates that, in our opinion, forecasted credit ratios in the medium term are likely to be consistent with a '6' financial risk profile, based on our assessment of the financial sponsor's financial policy and track record. A "FS-6 (minus)" will likely be applied to companies that we forecast to have near-term credit ratios consistent with a '6' financial risk profile, but we believe the financial sponsor to be very aggressive and that leverage could increase materially even further from our forecasted levels.
170. In a small minority of cases, a financial sponsor-owned entity could receive an assessment of "FS-5". This assessment will apply only when we project that the company's leverage will be consistent with a '5' (aggressive) financial risk profile (see tables 17, 18, and 19), we perceive that the risk of releveraging is low based on the company's financial policy and our view of the owner's financial risk appetite, and liquidity is at least adequate.
171. In even rarer cases, we could assess the financial policy of a financial sponsor-owned entity as "FS-4". This assessment will apply only when all of the following conditions are met: other shareholders own a material (generally, at least 20%) stake, we expect the sponsor to relinquish control over the intermediate term, we project that leverage is currently consistent with a '4' (significant) financial risk profile (see tables 17, 18, and 19), the company has said it will maintain leverage at or below this level, and liquidity is at least adequate.

Table 24

Financial Risk Profile Implications For Sponsor-Owned Issuers		
Assessment	What it Means	Guidance
FS-4	Financial risk profile set at '4'	<p>Issuer must meet all of the following conditions:</p> <ul style="list-style-type: none"> • Other shareholders must own a material (no less than 20%) stake; • We anticipate that the sponsor will relinquish control over the medium term; • For issuers subject to Table 17 (standard volatility), debt to EBITDA is less than 4x, and we estimate that it will remain less than 4x. For issuers that are subject to Table 18 (medial volatility), debt to EBITDA is below 4.5x and we forecast it to remain below that level. Or for issuers subject to Table 19 (low volatility), debt to EBITDA is less than 5x and our estimation is it will remain below that level; • The company has indicated a financial policy stipulating a level of leverage consistent with a significant or better financial risk profile (that is, debt to EBITDA of less than 4x when applying standard volatility tables, 4.5x when applying medial volatility tables, or less than 5x when applying low volatility tables) and • We assess liquidity to be at least adequate, with adequate covenant headroom.
FS-5	Financial risk profile set at '5'	<p>Issuer must meet all of the following conditions:</p> <ul style="list-style-type: none"> • For issuers subject to the standard volatility table, debt to EBITDA is less than 5x, and we estimate that it will remain less than 5x. For issuers that are subject to the medial volatility table, debt to EBITDA is below 5.5x and we forecast it to remain below that level. Or for issuers subject to the low volatility table, debt to EBITDA is less than 6x and our estimation is it will remain below that level; • We believe the risk of releveraging beyond 5x (standard volatility issuer), 5.5x (medial volatility issuer), or 6x (low volatility issuer) is low; and • We assess liquidity to be at least adequate, with adequate covenant headroom.
FS-6	Financial risk profile set at '6'	Standard & Poor's debt to EBITDA is greater than 5x (when applying the standard volatility table), greater than 5.5x (when applying the medial volatility table), or greater than 6x (when applying the low volatility table). However, we believe leverage is unlikely to increase meaningfully beyond these levels.
FS-6 (minus)	Financial risk profile set at '6', and anchor reduced by one notch (unless this results in a final rating below 'B-')	In determining the anchor the financial risk profile is a '6', but we believe the track record of the financial sponsor indicates that leverage could increase materially from already high levels.

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3. Companies not controlled by a financial sponsor

172. For companies not controlled by a financial sponsor we evaluate management's financial discipline and financial policy framework to determine the influence on an entity's financial risk profile beyond what is implied by recent credit ratios and our cash flow and leverage forecasts. This influence can be positive, neutral, or negative.
173. We do not distinguish between management and a controlling shareholder that is not a financial sponsor when assessing these subfactors, as the controlling shareholder usually has the final say on financial policy.

a) Financial discipline

174. The financial discipline assessment is based on management's leverage tolerance and the likelihood of event risk. The criteria evaluate management's potential appetite to incur unforeseen, higher financial risk over a prolonged period and the associated impact on credit measures. We also assess management's capacity and commitment to rapidly decrease debt leverage to levels consistent with its credit ratio targets.
175. This assessment therefore seeks to determine whether unforeseen actions by management to increase, maintain, or reduce financial risk are likely to occur during the next two to three years, with either a negative or positive effect, or none at all, on our baseline forecasts for the period.
176. This assessment is based on the leverage tolerance of a company's management, as reflected in its plans or history of acquisitions, shareholder remuneration, and organic growth strategies (see Appendix E, paragraphs 258 to 263).
177. We assess financial discipline as positive, neutral, or negative, based on its potential impact on our forward-looking assessment of a firm's cash flow/leverage, as detailed in table 25. For example, a neutral assessment for leverage tolerance reflects our expectation that management's financial policy will unlikely lead to significant deviation from current and forecasted credit ratios. A negative assessment acknowledges a significant degree of event risk of increased leverage relative to our base-case forecast, resulting from the company's acquisition policy, its shareholder remuneration policy, or its organic growth strategy. A positive assessment indicates that the company is likely to take actions to reduce leverage, but we cannot confidently incorporate these actions into our baseline forward-looking assessment of cash flow/leverage.
178. A positive assessment indicates that management is committed and has the capacity to reduce debt leverage through the rapid implementation of credit enhancing measures, such as asset disposals, rights issues, or reductions in shareholder returns. In addition, management's track record over the past five years shows that it has taken actions to rapidly reduce unforeseen increases in debt leverage and that there have not been any prolonged periods when credit ratios were weaker than our expectations for the rating. Management, even if new, also has a track record of successful execution. Conversely, a negative assessment indicates management's financial policy allows for significant increase in leverage compared with both current levels and our forward-looking forecast under normal operating/financial conditions or does not have observable time limits or stated boundaries. Management has a track record of allowing for significant and prolonged peaks in leverage and there is no commitment or track record of management using mitigating measures to rapidly return to credit ratios consistent with our expectations.
179. As evidence of management's leverage tolerance, we evaluate its track record and plans regarding acquisitions, shareholder remuneration, and organic growth strategies (see Appendix E, paragraphs 258 to 263). Acquisitions could increase the risk that leverage will be higher than our base-case forecast if we view management's strategy as opportunistic or if its financial policy (if it exists) provides significant headroom for debt-financed acquisitions. Shareholder remuneration could also increase the risk of leverage being higher than our base-case forecast if management's shareholder reward policies are not particularly well defined or have no clear limits, management has a tolerance for shareholder returns exceeding operating cash flow, or has a track record of sustained cash returns despite weakening operating performance or credit ratios. Organic growth strategies can also result in leverage higher than our base-case forecast if these plans have no clear focus or investment philosophy, capital spending is fairly unpredictable,

or there is a track record of overspending or unexpected or rapid shifts in plans for new markets or products.

180. We also take into account management's track record and level of commitment to its stated financial policies, to the extent a company has a stated policy. Historical evidence and any deviations from stated policies are key elements in analyzing a company's leverage tolerance. Where material and unexpected deviation in leverage may occur (for example, on the back of operating weakness or acquisitions), we also assess management's plan to restore credit ratios to levels consistent with previous expectations through rapid and proactive non-organic measures. Management's track record to execute its deleveraging plan, its level of commitment, and the scope and timeframe of debt mitigating measures will be key differentiators in assessing a company's financial policy discipline.

Table 25

Assessing Financial Discipline

Descriptor	What it means	Guidance
Positive	Management is likely to take actions that result in leverage that is lower than our base-case forecast, but can't be confidently included in our base-case assumptions. Event risk is low.	Management is committed and has capacity to reduce debt leverage and increase financial headroom through the rapid implementation of credit enhancing measures, in line with its stated financial policy, if any. This relates primarily to management's careful and moderate policy with regard to acquisitions and shareholder remuneration as well as to its organic growth strategy. The assessments are supported by historical evidence over the past five years of not showing any prolonged weakening in the company's credit ratios, or relative to our base-case credit metrics' assumptions. Management, even if new, has a track record of successful execution.
Neutral	Leverage is not expected to deviate materially from our base-case forecast. Event risk is moderate.	Management's financial discipline with regard to acquisitions, shareholder remuneration, as well as its organic growth strategy does not result in significantly different leverage as defined in its stated financial policy framework.
Negative	Leverage could become materially higher than our base-case forecast. Event risk is high.	Management's financial policy framework does not explicitly rule out a significant increase in leverage compared to our base-case assumptions, possibly reflecting a greater event risk with regard to its M&A and shareholder remuneration policy as well as to its organic growth strategy. These points are supported by historical evidence over the past five years of allowing for significant and prolonged peaks in leverage, which remained unmitigated by credit supporting measures by management.

b) Financial policy framework

181. The company's financial policy framework assesses the comprehensiveness, transparency, and sustainability of the entity's financial policies (see Appendix E, paragraphs 264-268). This will help determine whether there is a satisfactory degree of visibility into the issuer's future financial risk profile. Companies that have developed and sustained a comprehensive set of financial policies are more likely to build long-term, sustainable credit quality than those that do not.
182. We will assess a company's financial policy framework as supportive or non-supportive based on evidence that supports the characteristics listed below. In order for an entity to receive a supportive assessment for financial policy framework, there must be sufficient evidence of management's financial policies to back that assessment.
183. A company assessed as supportive will generally exhibit the following characteristics:
- Management has a comprehensive set of financial policies covering key areas of financial risk, including debt leverage and liability management. Financial targets are well defined and quantifiable.
 - Management's financial policies are clearly articulated in public forums (such as public listing disclosures and investor presentations) or are disclosed to a limited number of key stakeholders such as main creditors or to the credit rating agencies. The company's adherence to these policies is satisfactory.

- Management's articulated financial policies are considered achievable and sustainable. This assessment takes into consideration historical adherence to articulated policies, existing financial risk profile, capacity to sustain capital structure through nonorganic means, demands of key stakeholders, and the stability of financial policy parameters over time.

184. A company receives a non-supportive assessment if it does not meet all the conditions for a supportive assessment. We expect a non-supportive assessment to be uncommon.

I. Liquidity

185. Our assessment of liquidity focuses on monetary flows--the sources and uses of cash--that are the key indicators of a company's liquidity cushion. The analysis assesses the potential for a company to breach covenant tests related to declines in EBITDA, as well as its ability to absorb high-impact, low-probability events, the nature of the company's bank relationships, its standing in credit markets, and how prudent (or not) we believe its financial risk management to be (see "Methodology And Assumptions: Liquidity Descriptors For Global Corporate Issuers," published Dec. 16, 2014).

J. Management And Governance

186. The analysis of management and governance addresses how management's strategic competence, organizational effectiveness, risk management, and governance practices shape the issuer's competitiveness in the marketplace, the strength of its financial risk management, and the robustness of its governance. Stronger management of important strategic and financial risks may enhance creditworthiness (see "Methodology: Management And Governance Credit Factors For Corporate Entities And Insurers," published Nov. 13, 2012).

K. Comparable Ratings Analysis

187. The comparable ratings analysis is our last step in determining a SACP on a company. This analysis can lead us to raise or lower our anchor, after adjusting for the modifiers, on a company by one notch based on our overall assessment of its credit characteristics for all subfactors considered in arriving at the SACP. This involves taking a holistic review of a company's stand-alone credit risk profile, in which we evaluate an issuer's credit characteristics in aggregate. A positive assessment leads to a one-notch upgrade, a negative assessment leads to a one-notch downgrade, and a neutral assessment indicates no change to the anchor.
188. The application of comparable ratings analysis reflects the need to "fine-tune" ratings outcomes, even after the use of each of the other modifiers. A positive or negative assessment is therefore likely to be common rather than exceptional.
189. We consider our assessments of each of the underlying subfactors to be points within a possible range. Consequently, each of these assessments that ultimately generate the SACP can be at the upper or lower end, or at the mid-point, of such a range:

- A company receives a positive assessment if we believe, in aggregate, its relative ranking across the subfactors typically to be at the higher end of the range;
 - A company receives a negative assessment if we believe, in aggregate, its relative ranking across the subfactors typically to be at the lower end of the range;
 - A company receives a neutral assessment if we believe, in aggregate, its relative ranking across the subfactors typically to be in line with the middle of the range.
190. The most direct application of the comparable ratings analysis is in the following circumstances:
- Business risk assessment. If we expect a company to sustain a position at the higher or lower end of the ranges for the business risk category assessment, the company could receive a positive or negative assessment, respectively.
 - Financial risk assessment and financial metrics. If a company's actual and forecasted metrics are just above (or just below) the financial risk profile range, as indicated in its cash flow/leverage assessment, we could assign a positive or negative assessment.
191. We also consider additional factors not already covered, or existing factors not fully captured, in arriving at the SACP. Such factors will generally reflect less frequently observed credit characteristics, may be unique, or may reflect unpredictability or uncertain risk attributes, both positive and negative.
192. Some examples that we typically expect could lead to a positive or negative assessment using comparable ratings analysis include:
- Short operating track record. For newly formed companies or companies that have experienced transformational events, such as a significant acquisition, a lack of an established track record of operating and financial performance could lead to a negative assessment until such a track record is established.
 - Entities in transition. A company in the midst of changes that we anticipate will strengthen or weaken its creditworthiness and that are not already fully captured elsewhere in the criteria could receive a positive or negative assessment. Such a transition could occur following major divestitures or acquisitions, or during a significant overhaul of its strategy, business, or financial structure.
 - Industry or macroeconomic trends. When industry or macroeconomic trends indicate a strengthening or weakening of the company's financial condition that is not already fully captured elsewhere in the criteria, the company could receive a positive or negative assessment, respectively.
 - Unusual funding structures. A company with exceptional financial resources that the criteria do not capture in the traditional ratio or liquidity analysis, or in capital structure analysis, could receive a positive assessment.
 - Contingent risk exposures. How well (or not) a company identifies, manages, and reserves for contingent risk exposures that can arise if guarantees are called, derivative contract break clauses are activated, or substantial lawsuits are lost could lead to a negative assessment.

Summary Of Historic Changes To This Article

These criteria became effective on the date of publication. We note that the definitions of financial sponsor-owned companies and financial sponsors in this article have been superseded by those in "The Treatment Of Non-Common Equity Financing In Nonfinancial Corporate Entities," published April 29, 2014.

This article has previously been republished following our periodic review completed on Oct. 17, 2014, to add a section on frequently asked questions and on Dec. 16, 2013, to make some adjustments to language. (These

adjustments have no impact on our ratings or the effective date of the criteria.)

Sectors that now fall in the scope of this criteria since its original publication include:

- Agricultural cooperatives following publication of "Key Credit Factors For Agricultural Cooperatives," on March 17, 2015
- Entities engaged in commodities trading activities that generate less than 70% of expected earnings from commodities trading following publication of "Commodities Trading Industry Methodology," published Jan. 29, 2015, and
- Master limited partnerships and general partnerships of master limited partnerships trading following publication of "Methodology: Master Limited Partnerships And General Partnerships," on Sept. 22, 2014.

SUPERSEDED CRITERIA FOR ISSUERS WITHIN THE SCOPE OF THESE CRITERIA

- Companies Owned By Financial Sponsors: Rating Methodology, March 21, 2013
- Methodology: Business Risk/Financial Risk Matrix Expanded, Sept. 18, 2012
- How Stock Prices Can Affect An Issuer's Credit Rating, Sept. 26, 2008
- 2008 Corporate Criteria: Analytical Methodology, April 15, 2008
- Credit FAQ: Knowing The Investors In A Company's Debt And Equity, April 4, 2006

RELATED CRITERIA

- Rating Government-Related Entities: Methodology And Assumptions, March 25, 2015
- Methodology And Assumptions: Liquidity Descriptors For Global Corporate Issuers, Dec. 16, 2014
- Methodology: Industry Risk, Nov. 19, 2013
- Corporate Criteria: Ratios And Adjustments, Nov. 19, 2013
- Country Risk Assessment Methodology And Assumptions, Nov. 19, 2013
- Ratings Above The Sovereign--Corporate And Government Ratings: Methodology And Assumptions, Nov. 19, 2013
- Group Rating Methodology, Nov. 19, 2013
- Methodology: Management And Governance Credit Factors For Corporate Entities And Insurers, Nov. 13, 2012
- Criteria For Assigning 'CCC+', 'CCC', 'CCC-', And 'CC' Ratings, Oct. 1, 2012
- Principles Of Credit Ratings, published Feb. 16, 2011
- Stand-Alone Credit Profiles: One Component Of A Rating, Oct. 1, 2010
- Criteria Guidelines For Recovery Ratings On Global Industrial Issuers' Speculative-Grade Debt, Aug. 10, 2009
- 2008 Corporate Criteria: Rating Each Issue, April 15, 2008

APPENDIXES

A. Country Risk

Table 26

Country And Regional Risk		
Region		
Western Europe		
Southern Europe		
Western + Southern Europe		
East Europe		
Central Europe		
Eastern Europe and Central Asia		
Middle East		
Africa		
North America		
Central America		
Latin America		
The Caribbean		
Asia-Pacific		
Central Asia		
East Asia		
Australia NZ		
Country	Region	GDP weighting (%)
South Africa	Africa	30.2
Egypt	Africa	28.0
Nigeria	Africa	23.5
Morocco	Africa	8.9
Tunisia	Africa	5.4
Senegal	Africa	1.4
Mozambique	Africa	1.4
Zambia	Africa	1.2
Indonesia	Asia-Pacific	27.1
Taiwan	Asia-Pacific	20.1
Thailand	Asia-Pacific	14.4
Malaysia	Asia-Pacific	11.0
Philippines	Asia-Pacific	9.5
Vietnam	Asia-Pacific	7.1
Bangladesh	Asia-Pacific	6.8
Sri Lanka	Asia-Pacific	2.8
Laos	Asia-Pacific	0.4
Papua New Guinea	Asia-Pacific	0.4
Mongolia	Asia-Pacific	0.3
Australia	Australia NZ	88.2
New Zealand	Australia NZ	11.8
Guatemala	Central America	40.5
Costa Rica	Central America	30.2

Table 26

Country And Regional Risk (cont.)		
Panama	Central America	29.3
India	Central Asia	86.5
Pakistan	Central Asia	9.3
Kazakhstan	Central Asia	4.2
Poland	Central Europe	46.3
Czech Republic	Central Europe	16.6
Hungary	Central Europe	11.3
Slovakia	Central Europe	7.7
Bulgaria	Central Europe	6.0
Croatia	Central Europe	4.6
Lithuania	Central Europe	3.8
Latvia	Central Europe	2.1
Estonia	Central Europe	1.6
China	East Asia	64.5
Japan	East Asia	23.6
Korea	East Asia	8.4
Hong Kong	East Asia	1.9
Singapore	East Asia	1.7
Greece	East Europe	77.5
Slovenia	East Europe	16.0
Cyprus	East Europe	6.5
Russia	Eastern Europe and Central Asia	80.4
Ukraine	Eastern Europe and Central Asia	10.8
Belarus	Eastern Europe and Central Asia	4.8
Azerbaijan	Eastern Europe and Central Asia	3.2
Georgia	Eastern Europe and Central Asia	0.9
Brazil	Latin America	35.3
Mexico	Latin America	26.3
Argentina	Latin America	11.1
Colombia	Latin America	7.5
Venezuela	Latin America	6.0
Peru	Latin America	4.9
Chile	Latin America	4.8
Ecuador	Latin America	2.0
Uruguay	Latin America	0.8
El Salvador	Latin America	0.7
Paraguay	Latin America	0.6
Belize	Latin America	0.0
Turkey	Middle East	42.8
Saudi Arabia	Middle East	28.2
Israel	Middle East	9.4
Qatar	Middle East	7.2

Table 26

Country And Regional Risk (cont.)		
Kuwait	Middle East	6.3
Oman	Middle East	3.4
Jordan	Middle East	1.5
Bahrain	Middle East	1.2
United States	North America	91.5
Canada	North America	8.5
Italy	Southern Europe	52.6
Spain	Southern Europe	40.4
Portugal	Southern Europe	7.0
Dominican Republic	The Caribbean	75.4
Jamaica	The Caribbean	19.2
Barbados	The Caribbean	5.4
Germany	Western Europe	28.7
United Kingdom	Western Europe	21.3
France	Western Europe	20.7
Netherlands	Western Europe	6.5
Belgium	Western Europe	3.9
Sweden	Western Europe	3.6
Switzerland	Western Europe	3.3
Austria	Western Europe	3.3
Norway	Western Europe	2.6
Denmark	Western Europe	1.9
Finland	Western Europe	1.8
Ireland	Western Europe	1.8
Luxembourg	Western Europe	0.4
Iceland	Western Europe	0.1
Malta	Western Europe	0.1

B. Competitive Position

Table 27

List Of Industries, Subsectors, And Standard Competitive Position Group Profiles		
Industry	Subsector	Competitive position group profile
Transportation cyclical	Airlines	Capital or asset focus
	Marine	Capital or asset focus
	Trucking	Capital or asset focus
Auto OEM	Automobile and truck manufacturers	Capital or asset focus
Metals and mining downstream	Aluminum	Commodity focus/cost driven
	Steel	Commodity focus/cost driven
Metals and mining upstream	Coal and consumable fuels	Commodity focus/cost driven

Table 27

List Of Industries, Subsectors, And Standard Competitive Position Group Profiles (cont.)

Industry	Subsector	Competitive position group profile
	Diversified metals and mining	Commodity focus/cost driven
	Gold	Commodity focus/cost driven
	Precious metals and minerals	Commodity focus/cost driven
Homebuilders and developers	Homebuilding	Capital or asset focus
Oil and gas refining and marketing	Oil and gas refining and marketing	Commodity focus/scale driven
Forest and paper products	Forest products	Commodity focus/cost driven
	Paper products	Commodity focus/cost driven
Building Materials	Construction materials	Capital or asset focus
Oil and gas integrated, exploration and production	Integrated oil and gas	Commodity focus/scale driven
	Oil and gas exploration and production	Commodity focus/scale driven
Agribusiness and commodity foods	Agricultural products	Commodity focus/scale driven
Real estate investment trusts (REITs)	Diversified REITs	Real-estate specific*
	Health care REITs	Real-estate specific*
	Industrial REITs	Real-estate specific*
	Office REITs	Real-estate specific*
	Residential REITs	Real-estate specific*
	Retail REITs	Real-estate specific*
	Specialized REITs	Not applicable**
	Self-storage REITs	Real-estate specific*
	Net lease REITs	Real-estate specific*
	Real estate operating companies	Real-estate specific*
Leisure and sports	Casinos and gaming	Services and product focus
	Hotels, resorts, and cruise lines	Services and product focus
	Leisure facilities	Services and product focus
Commodity chemicals	Commodity chemicals	Commodity focus/cost driven
	Diversified chemicals	Commodity focus/cost driven
	Fertilizers and agricultural chemicals	Commodity focus/cost driven
Auto suppliers	Auto parts and equipment	Capital or asset focus
	Tires and rubber	Capital or asset focus
	Vehicle-related suppliers	Capital or asset focus
Aerospace and defense	Aerospace and defense	Services and product focus
Technology hardware and semiconductors	Communications equipment	Capital or asset focus
	Computer hardware	Capital or asset focus
	Computer storage and peripherals	Capital or asset focus
	Consumer electronics	Capital or asset focus
	Electronic equipment and instruments	Capital or asset focus
	Electronic components	Capital or asset focus
	Electronic manufacturing services	Capital or asset focus
	Technology distributors	Capital or asset focus
	Office electronics	Capital or asset focus

Table 27

List Of Industries, Subsectors, And Standard Competitive Position Group Profiles (cont.)

Industry	Subsector	Competitive position group profile
	Semiconductor equipment	Capital or asset focus
	Semiconductors	Capital or asset focus
Specialty Chemicals	Industrial gases	Capital or asset focus
	Specialty chemicals	Capital or asset focus
Capital Goods	Electrical components and equipment	Capital or asset focus
	Heavy equipment and machinery	Capital or asset focus
	Industrial componentry and consumables	Capital or asset focus
	Construction equipment rental	Capital or asset focus
	Industrial distributors	Services and product focus
Engineering and construction	Construction and engineering	Services and product focus
Railroads and package express	Railroads	Capital or asset focus
	Package express	Services and product focus
	Logistics	Services and product focus
Business and consumer services	Consumer services	Services and product focus
	Distributors	Services and product focus
	Facilities services	Services and product focus
	General support services	Services and product focus
	Professional services	Services and product focus
Midstream energy	Oil and gas storage and transportation	Commodity focus/scale driven
Technology software and services	Internet software and services	Services and product focus
	IT consulting and other services	Services and product focus
	Data processing and outsourced services	Services and product focus
	Application software	Services and product focus
	Systems software	Services and product focus
	Consumer software	Services and product focus
Consumer durables	Home furnishings	Services and product focus
	Household appliances	Services and product focus
	Housewares and specialties	Services and product focus
	Leisure products	Services and product focus
	Photographic products	Services and product focus
	Small appliances	Services and product focus
Containers and packaging	Metal and glass containers	Capital or asset focus
	Paper packaging	Capital or asset focus
Media and entertainment	Ad agencies and marketing services companies	Services and product focus
	Ad-supported internet content platforms	Services and product focus
	Broadcast TV networks	Services and product focus
	Cable TV networks	Services and product focus
	Consumer and trade magazines	Services and product focus
	Data/professional publishing	Services and product focus
	Directories	Services and product focus

Table 27

List Of Industries, Subsectors, And Standard Competitive Position Group Profiles (cont.)

Industry	Subsector	Competitive position group profile
	E-Commerce (services)	Services and product focus
	Educational publishing	Services and product focus
	Film and TV programming production	Capital or asset focus
	Miscellaneous media and entertainment	Services and product focus
	Motion picture exhibitors	Services and product focus
	Music publishing	Services and product focus
	Music recording	Services and product focus
	Newspapers	Services and product focus
	Outdoor advertising	Services and product focus
	Printing	Commodity focus/scale driven
	Radio broadcasters	Services and product focus
	Trade shows	Services and product focus
	TV stations	Services and product focus
Oil and gas drilling, equipment and services	Onshore contract drilling	Commodity focus/scale driven
	Offshore contract drilling	Capital or Asset Focus
	Oil and gas equipment and services (oilfield services)	Commodity focus/scale driven
Retail and restaurants	Catalog retail	Services and product focus
	Internet retail	Services and product focus
	Department stores	Services and product focus
	General merchandise stores	Services and product focus
	Apparel retail	Services and product focus
	Computer and electronics retail	Services and product focus
	Home improvement retail	Services and product focus
	Specialty stores	Services and product focus
	Automotive retail	Services and product focus
	Home furnishing retail	Services and product focus
Health care services	Health care services	Commodity focus/scale driven
Transportation infrastructure	Airport services	National industries and utilities
	Highways	National industries and utilities
	Railtracks	National industries and utilities
	Marine ports and services	National industries and utilities
Environmental services	Environmental and facilities services	Services and product focus
Regulated utilities	Electric utilities	National industries and utilities
	Gas utilities	National industries and utilities
	Multi-utilities	National industries and utilities
	Water utilities	National industries and utilities
Unregulated power and gas	Independent power producers and energy traders	Capital or asset focus
	Merchant power	Capital or asset focus
Pharmaceuticals	Branded pharmaceuticals	Services and product focus

Table 27

List Of Industries, Subsectors, And Standard Competitive Position Group Profiles (cont.)

Industry	Subsector	Competitive position group profile
	Generic pharmaceuticals	Commodity focus/scale driven
Health care equipment	High-tech health care equipment	Product focus/scale driven
	Low-tech health care equipment	Commodity focus/scale driven
Branded nondurables	Brewers	Services and product focus
	Distillers and vintners	Services and product focus
	Soft drinks	Services and product focus
	Packaged foods and meats	Services and product focus
	Tobacco	Services and product focus
	Household products	Services and product focus
	Apparel, footwear, accessories, and luxury goods	Services and product focus
Telecommunications and cable	Personal products	Services and product focus
	Cable and satellite	Services and product focus
	Alternative carriers	Services and product focus
	Integrated telecommunication services	Services and product focus
	Wireless towers	Capital or asset focus
	Data center operators	Capital or asset focus
	Fiber-optic carriers	Capital or asset focus
	Wireless telecommunication services	Services and product focus

*See "Key Credit Factors For The Real Estate Industry," published Nov. 19, 2013. **For specialized REITs, there is no standard CPGP, as the CPGP will vary based on the underlying industry exposure (e.g. a forest and paper products REIT).

1. Analyzing subfactors for competitive advantage

193. Competitive advantage is the first component of our competitive position analysis. Companies that possess a sustainable competitive advantage are able to capitalize on key industry factors or mitigate associated risks more effectively. When a company operates in more than one business, we analyze each segment separately to form an overall view of its competitive advantage. In assessing competitive advantage, we evaluate the following subfactors:

- Strategy;
- Differentiation/uniqueness, product positioning/bundling;
- Brand reputation and marketing;
- Product/service quality;
- Barriers to entry, switching costs;
- Technological advantage and capabilities, technological displacement; and
- Asset profile.

a) Strategy

194. A company's business strategy will enhance or undermine its market entrenchment and business stability. Compelling business strategies can create a durable competitive advantage and thus a relatively stronger competitive position. We form an opinion as to the source and sustainability (if any) of the company's competitive advantage relative to its peers'. The company may have a differentiation advantage (i.e., brand, technology, regulatory) or a cost advantage (i.e., lower cost producer/servicer at the same quality level), or a combination.

195. Our assessment of a company's strategy is informed by a company's historical performance and how realistic we view its forward-looking business objectives to be. These may include targets for market shares, the percentage of revenues derived from new products, price versus the competition's, sales or profit growth, and required investment levels. We evaluate these objectives in the context of industry dynamics and the attractiveness of the markets in which the company participates.

b) Differentiation/uniqueness, product positioning/bundling

196. The attributes of product or service differentiation vary by sector, and may include product or services features, performance, durability, reliability, delivery, and comprehensiveness, among other measures. The intensity of competition may be lower where buyers perceive the product or service to be highly differentiated or to have few substitutes. Conversely, products and services that lack differentiation, or offer little value-added in the eyes of customers, are generally commodity-type products that primarily compete on price. Competition intensity will often be highest where limited or moderate investment (R&D, capital expenditures, or advertising) or low employee skill levels (for service businesses) are required to compete. Independent market surveys, media commentaries, market share trends, and evidence of leading or lagging when it comes to raising or lowering prices can indicate varying degrees of product differentiation.

197. Product positioning influences how companies are able to extend or protect market shares by offering popular products or services. A company's abilities to replace aging products with new ones, or to launch product extensions, are important elements of product positioning. In addition, the ability to sell multiple products or services to the same customer, known as bundling or cross-selling, (for instance, offering an aftermarket servicing contract together with the sale of a new appliance) can create a competitive advantage by increasing customers' switching costs and fostering loyalty.

c) Brand reputation and marketing

198. Brand equity measures the price premium a company receives based on its brand relative to the generic equivalent. High brand equity typically translates into customer loyalty, built partially via marketing campaigns. One measure of advertising effectiveness can be revenue growth compared with the increase in advertising expenses.

199. We also analyze re-investment and advertising strategies to anticipate potential strengthening or weakening of a company's brand. A company's track record of boosting market share and delivering attractive margins could indicate its ability to build and maintain brand reputation.

d) Product/service level quality

200. The strength and consistency of a value proposition is an important factor contributing to a sustainable competitive advantage. Value proposition encompasses the key features of a product or a service that convince customers that their purchase has the right balance between price and quality. Customers generally perceive a product or a service to be good if their expectations are consistently met. Quality, both actual and perceived, can help a company attract and retain customers. Conversely, poor product and service quality may lead to product recalls, higher-than-normal product warnings, or service interruptions, which may reduce demand. Measures of customer satisfaction and retention, such as attrition rates and contract renewal rates, can help trace trends in product/service quality.

201. Maintaining the value proposition requires consistency and adaptability around product design, marketing, and

quality-related operating controls. This is pertinent where product differentiation matters, as is the case in most noncommodity industries, and especially so where environmental or human health (concerns for the chemical, food, and pharmaceutical industries) adds a liability dimension to the quality and value proposition. Similarly, regulated utilities (which often do not set their own prices) typically focus on delivering uninterrupted service, often to meet the standards set by their regulator.

e) Barriers to entry, switching costs

202. Barriers to entry can reduce or eliminate the threat of new market entrants. Where they are effective, these barriers can lead to more predictable revenues and profits, by limiting pricing pressures and customer losses, lowering marketing costs, and improving operating efficiency. While barriers to entry may enable premium pricing, a dominant player may rationally choose pricing restraint to further discourage new entrants.
203. Barriers to entry can be one or more of: a natural or regulatory monopoly; supportive regulation; high transportation costs; an embedded customer base that would incur high switching costs; a proprietary product or service; capital or technological intensiveness.
204. A natural monopoly may result from unusually high requirements for capital and operating expenditures that make it uneconomic for a market to support more than a single, dominant provider. The ultimate barrier to entry is found among regulated utilities, which provide an essential service in their 'de juris' monopolies and receive a guaranteed rate of return on their investments. A supportive regulatory regime can include rules and regulations with high hurdles that discourage competitors, or mandate so many obligations for a new entrant as to make market entry financially unviable.
205. In certain industrial sectors, proprietary access to a limited supply of key raw materials or skilled labor, or zoning laws that effectively preclude a new entrant, can provide a strong barrier to entry. Factors such as relationships, long-term contracts or maintenance agreements, or exclusive distribution agreements can result in a high degree of customer stickiness. A proprietary product or service that's protected by a copyright or patent can pose a significant hurdle to new competitors.

f) Technological advantage and capabilities, technological displacement

206. A company may benefit from a proprietary technology that enables it to offer either a superior product or a commodity-type product at a materially lower cost. Proven research and development (R&D) capabilities can deliver a differentiated, superior product or service, as in the pharmaceutical or high tech sectors. However, optimal R&D strategies or the importance or effectiveness of patent protection differ by industry, stage of product development, and product lifecycle.
207. Technological displacement can be a threat in many industries; new technologies or extensions of current ones can effectively displace a significant portion of a company's products or services.

g) Asset profile

208. A company's asset profile is a reflection of its reinvestment, which creates tangible or intangible assets, or both. Companies in similar sectors and industries usually have similar reinvestment options and, thus, their asset profiles tend to be comparable. The reinvestment in "heavy" industries, such as oil and gas, metals and mining, and

automotive, tends to produce more tangible assets, whereas the reinvestment in certain "light" industries, such as services, media and entertainment, and retail, tends to produce more intangible assets.

209. We evaluate how a company's asset profile supports or undermines its competitive advantage by reviewing its manufacturing or service creation capabilities and investment requirements, its distribution capabilities, and its track record and commitment to reinvesting in its asset base. This may include a review of the company's ability to attract and retain a talented workforce; its degree of vertical integration and how that may help or hinder its ability to secure supply sources, control the value-added part of its production chain, or adjust to technological developments; or its ability develop a broad and strong distribution network.

2. Analyzing subfactors for scale, scope, and diversity

210. In assessing the relative strength of this component, we evaluate four subfactors:
- Diversity of product or service range;
 - Geographic diversity;
 - Volumes, size of markets and revenues, and market shares; and
 - Maturity of products or services.
211. In a given industry, entities with a broader mix of business activities are typically lower risk, and entities with a narrower mix are higher risk. High concentration of business volumes by product, customer, or geography, or a concentration in the production footprint or supplier base, can lead to less stable and predictable revenues and profits. Comparatively broader diversity helps a company withstand economic, competitive, or technological threats better than its peers.
212. There is no minimum size criterion, although size often provides a measure of diversification. Size and scope of operations is important relative to those of industry peers, though not in absolute terms. While relatively smaller companies can enjoy a high degree of diversification, they will likely be, almost by definition, more concentrated in terms of product, number of customers, or geography than their larger peers in the same industry.
213. Successful and continuing diversification supports a stronger competitive position. Conversely, poor diversification weakens overall competitive position. For example, a company will weaken its overall business position if it enters new product lines and countries where it has limited expertise and lacks critical mass to be a real competitor to the incumbent market leaders. The weakness is greater when the new products or markets are riskier than the traditional core business.
214. Where applicable, we also include under scale, scope, and diversity an assessment of the potential benefits derived from unconsolidated (or partially consolidated) investments in strategic assets. The relative significance of such an investment and whether it is in an industry that exhibits high or, conversely, low correlation with the issuer's businesses would be considered in determining its potential benefits to scale, scope, and diversity. This excludes nonstrategic, financial investments, the analysis of which does not fall under the competitive position criteria but, instead, under the capital structure criteria.

a) Diversity of product or service range

215. The concentration of business volumes or revenues in a particular or comparatively small set of products or services can lead to less stable revenues and profits. Even if this concentration is in an attractive product or service, it may be a weakness. Likewise, the concentration of business volumes with a particular customer or a small group of customers, or the reliance on one or a few suppliers, can expose the company to a potentially greater risk of losing and having to replace related revenues and profits. On the other hand, successful diversification across products, customers, and/or suppliers can lead to more stable and predictable revenues and profits, which supports a stronger assessment of scale, scope, and diversity.
216. The relative contribution of different products or services to a company's revenues or profits helps us gauge its diversity. We also evaluate the correlation of demand between product or services lines. High correlation in demand between seemingly different product or service lines will accentuate volume declines during a weak part of the business cycle.
217. In most sectors, the share of revenue a company receives from its largest five to 10 customers or counterparties reveals how diversified its customer base is. However, other considerations such as the stability and credit quality of that customer base, and the company's ability to retain significant customers, can be mitigating or accentuating factors in our overall evaluation. Likewise, supplier dependency can often be measured based on a supplier's share of a company's operating or capital costs. However, other factors, such as the degree of interdependence between the company and its supplier(s), the substitutability of key supply sources, and the company's presumed ability to secure alternative supply without incurring substantial switching costs, are important considerations. Low switching costs (i.e. limited impact on input price, quality, or delivery times as a result of having to adapt to a new supply chain partner) can mitigate a high level of concentration.

b) Geographic diversity

218. We assess geographic diversity both from the standpoint of the breadth of the company's served or addressable markets, and from the standpoint of how geographically concentrated its facilities are.
219. The concentration of business volumes and revenues within a particular region can lead to greater exposure to economic factors affecting demand for a company's goods or services in that region. Even if the company's volumes and revenues are concentrated in an attractive region, it may still be vulnerable to a significant drop in demand for its goods and services. Conversely, a company that serves multiple regions may benefit from different demand conditions in each, possibly resulting in greater revenue stability and more consistent profitability than a more focused peer's. That said, we consider geographic diversification in the context of the industry and the size of the local or regional economy. For instance, companies operating in local industries (such as food retailers) may benefit from a well-entrenched local position.
220. Generally, though, geographically concentrated production or service operations can expose a company to the risk of disruption, and damage revenues and profitability. Even when country risks don't appear significant, a company's vulnerability to exogenous factors (for example, natural disasters, labor or political unrest) increases with geographic concentration.

c) Volumes, size of markets and revenues, market share

221. Absolute sales or unit volumes and market share do not, by themselves, support a strong assessment of scale, scope, and diversity. Yet superior market share is a positive, since it may indicate a broad range of operations, products, or services.
222. We view volume stability (relative to peers') as a positive especially when: a company has demonstrated it during an economic downturn; if it has been achieved without relying on greater price concessions than competitors have made; and when it is likely to be sustained in the future. However, volume stability combined with shrinking market share could be evidence of a company's diminishing prospects for future profitability. We assess the predictability of business volumes and the likely degree of future volume stability by analyzing the company's performance relative to peers' on several industry factors: cyclical; ability to adapt to technological and regulatory threats; the profile of the customer base (stickiness); and the potential life cycle of the company's products or services.
223. Depending on the industry sector, we measure a company's relative size and market share based on unit sales; the absolute amount of revenues; and the percentage of revenues captured from total industry revenues. We also adjust for industry and company specific qualitative considerations. For example, if an industry is particularly fragmented and has a number of similarly sized participants, none may have a particular advantage or disadvantage with respect to market share.

d) Maturity of products or services

224. The degree of maturity and the relative position on the lifecycle curve of the company's product or service portfolio affect the stability and sustainability of its revenues and margins. It is important to identify the stage of development of a company's products or services in order to measure the life cycle risks that may be associated with key products or services.
225. Mature products or services (e.g. consumer products or broadcast programming) are not necessarily a negative, in our view, if they still contribute reliable profits. If demand is declining for a company's product or service, we examine its track record on introducing new products with staying power. Similarly, a company's track record with product launches is particularly relevant.

3. Analyzing subfactors for operating efficiency

226. In assessing the relative strength of this component, we consider four subfactors:
- Cost structure,
 - Manufacturing processes,
 - Working capital management, and
 - Technology.
227. To the extent a company has high operating efficiency, it should be able to generate better profit margins than peers that compete in the same markets, whatever the prevailing market conditions. The ability to minimize manufacturing and other operational costs and thus maximize margins and cash flow--for example, through manufacturing excellence, cost control, and diligent working capital management--will provide the funds for research and development, marketing, and customer service.

a) Cost structure

228. Companies that are well positioned from a cost standpoint will typically enjoy higher capacity utilization and be more profitable over the course of the business cycle. Cost structure and cost control are keys to generating strong profits and cash flow, particularly for companies that produce commodities, operate in mature industries, or face pricing pressures. It is important to consider whether a company or any of its competitors has a sustainable cost advantage, which can be based on access to cheaper energy, favorable manufacturing locations, or lower and more flexible labor costs, for example.
229. Where information is available, we examine a company's fixed versus variable cost mix as an indication of operating leverage, a measure of how revenue growth translates into growth in operating income. A company with significant operating leverage may witness dramatic declines in operating profit if unit volumes fall, as during cyclical downturns. Conversely, in an upturn, once revenues pass the breakeven point, a substantial percentage of incremental revenues typically becomes profit.

b) Manufacturing process

230. Capital intensity characterizes many heavy manufacturing sectors that require minimum volumes to produce acceptable profits, cash flow, and return on assets. We view capacity utilization through the business cycle (combined with the cost base) as a good indication of manufacturers' ability to maintain profits in varying economic scenarios. Our capacity utilization assessment is based on a company's production capacity across its manufacturing footprint. In addition, we consider the direction of a company's capacity utilization in light of our unit sales expectations, as opposed to analyzing it plant-by-plant.
231. Labor relations remain an important focus in our analysis of operating efficiency for manufacturers. Often, a company's labor cost structure is driven by its history of contractual negotiations and the countries in which it operates. We examine the rigidity or flexibility of a company's labor costs and the extent to which it relies on labor rather than automation. We analyze labor cost structure by assessing the extent of union representation, wage and benefit costs as a share of cost of goods sold (when available), and by assessing the balance of capital equipment vs. labor input in the manufacturing process. We also incorporate trends in a company's efforts to transfer labor costs from high-cost to low-cost regions.

c) Working capital management

232. Working capital management--of current or short-term assets and liabilities--is a key factor in our evaluation of operating efficiency. In general, companies with solid working capital management skills exhibit shorter cash conversion cycles (defined as days' investment in inventory and receivables less days' investment in accounts payable) than their lower-skilled peers. Short cash-conversion cycles could, for instance, demonstrate that a company has a stronger position in the supply chain (for example, requiring suppliers or dealers to hold more of its inventory). This allows a company to direct more capital than its peers can to other areas of investment.

d) Technology

233. Technology can play an important role in achieving superior operating efficiency through effective yield management (by improving input/output ratios), supply chain automation, and cost optimization.
234. Achieving high yield management is particularly important in industries with limited inventory and high fixed costs,

such as transportation, lodging, media, and retail. The most efficient airlines can achieve higher revenue per available seat mile than their peers, while the most efficient lodging companies can achieve a higher revenue per available room than their peers. Both industries rely heavily on technology to effectively allocate inventory (seats and rooms) to maximize sales and profitability.

235. Effective supply chain automation systems enable companies to reduce investments in inventory and better forecast future orders based on current trends. By enabling electronic data interchange between supplier and retailer, such systems help speed orders and reorders for goods by quickly pinpointing which merchandise is selling well and needs restocking. They also identify slow moving inventory that needs to be marked down, making space available for fresh merchandise.
236. Effective use of technology can also help hold down costs by improving productivity via automation and workflow management. This can reduce selling, general, and administrative costs, which usually represent a substantial portion of expenditures for industries with high fixed costs, thus boosting earnings.

4. Industry-specific SER parameters

Table 28

SER Calibration By Industry Based On EBITDA						
	--Volatility of profitability assessment*--					
	1	2	3	4	5	6
Transportation cyclical	=<10%	>10%-14%	>14%-22%	>22%-33%	>33%-76%	>76%
Auto OEM	=<25%	>25%-33%	>33%-35%	>35%-40%	>40%-46%	>46%
Metals and mining downstream	=<16%	>16%-31%	>31%-42%	>42%-53%	>53%-82%	>82%
Metals and mining upstream	=<16%	>16%-23%	>23%-28%	>28%-34%	>34%-59%	>59%
Homebuilders and developers	=<19%	>19%-33%	>33%-46%	>46%-65%	>65%-95%	>95%
Oil and gas refining and marketing	=<14%	>14%-21%	>21%-35%	>35%-46%	>46%-82%	>82%
Forest and paper products	=<9%	>9%-18%	>18%-26%	>26%-51%	>51%-114%	>114%
Building materials	=<9%	>9%-16%	>16%-19%	>19%-24%	>24%-33%	>33%
Oil and gas integrated, exploration and production	=<12%	>12%-19%	>19%-22%	>22%-28%	>28%-38%	>38%
Agribusiness and commodity foods	=<12%	>12%-19%	>19%-25%	>25%-39%	>39%-57%	>57%
Real estate investment trusts (REITs)	=<5%	>5%-9%	>9%-13%	>13%-20%	>20%-32%	>32%
Leisure and sports	=<5%	>5%-9%	>9%-12%	>12%-16%	>16%-24%	>24%
Commodity chemicals	=<14%	>14%-19%	>19%-28%	>28%-37%	>37%-51%	>51%
Auto suppliers	=<15%	>15%-20%	>20%-26%	>26%-32%	>32%-45%	>45%
Aerospace and defense	=<6%	>6%-9%	>9%-15%	>15%-24%	>24%-41%	>41%
Technology hardware and semiconductors	=<11%	>11%-15%	>15%-22%	>22%-31%	>31%-58%	>58%
Specialty chemicals	=<5%	>5%-10%	>10%-14%	>14%-23%	>23%-36%	>36%
Capital goods	=<12%	>12%-16%	>16%-21%	>21%-30%	>30%-45%	>45%
Engineering and construction	=<9%	>9%-14%	>14%-20%	>20%-28%	>28%-39%	>39%
Railroads and package express	=<5%	>5%-8%	>8%-10%	>10%-13%	>13%-22%	>22%
Business and consumer services	=<4%	>4%-8%	>8%-11%	>11%-16%	>16%-30%	>30%
Midstream energy	=<5%	>5%-9%	>9%-11%	>11%-15%	>15%-31%	>31%
Technology software and services	=<4%	>4%-9%	>9%-14%	>14%-19%	>19%-33%	>33%

Table 28

SER Calibration By Industry Based On EBITDA (cont.)						
--Volatility of profitability assessment*--						
	1	2	3	4	5	6
Consumer durables	=<7%	>7%-10%	>10%-13%	>13%-19%	>19%-35%	>35%
Containers and packaging	=<5%	>5%-7%	>7%-12%	>12%-18%	>18%-26%	>26%
Media and entertainment	=<6%	>6%-10%	>10%-14%	>14%-20%	>20%-29%	>29%
Oil and gas drilling, equipment and services	=<16%	>16%-22%	>22%-28%	>28%-44%	>44%-62%	>62%
Retail and restaurants	=<4%	>4%-8%	>8%-11%	>11%-16%	>16%-26%	>26%
Health care services	=<4%	>4%-5%	>5%-9%	>9%-12%	>12%-19%	>19%
Transportation infrastructure	=<2%	>2%-4%	>4%-7%	>7%-12%	>12%-19%	>19%
Environmental services	=<5%	>5%-9%	>9%-13%	>13%-22%	>22%-29%	>29%
Regulated utilities	=<4%	>4%-7%	>7%-9%	>9%-14%	>14%-26%	>26%
Unregulated power and gas	=<7%	>7%-16%	>16%-20%	>20%-29%	>29%-47%	>47%
Pharmaceuticals	=<5%	>5%-8%	>8%-11%	>11%-17%	>17%-32%	>32%
Health care equipment	=<3%	>3%-5%	>5%-6%	>6%-10%	>10%-25%	>25%
Branded nondurables	=<4%	>4%-7%	>7%-10%	>10%-15%	>15%-43%	>43%
Telecommunications and cable	=<3%	>3%-6%	>6%-9%	>9%-13%	>13%-23%	>23%
Overall	=<5%	>5%-9%	>9%-15%	>15%-23%	>23%-43%	>43%

*The data ranges include the values up to and including the upper bound. As an example, for a range of 5%-9%, a value of 5% is excluded, while a value of 9% is included; the numbers are rounded to the nearest whole number for presentation purposes.

Table 29

SER Calibration By Industry Based On EBITDA Margin						
--Volatility of profitability assessment*--						
	1	2	3	4	5	6
Transportation cyclical	=<4%	>4%-8%	>8%-16%	>16%-28%	>28%-69%	>69%
Auto OEM	=<15%	>15%-19%	>19%-29%	>29%-31%	>31%-45%	>45%
Metals and mining downstream	=<10%	>10%-18%	>18%-26%	>26%-36%	>36%-56%	>56%
Metals and mining upstream	=<8%	>8%-10%	>10%-14%	>14%-19%	>19%-31%	>31%
Homebuilders and developers	=<10%	>10%-18%	>18%-30%	>30%-56%	>56%-114%	>114%
Oil and gas refining and marketing	=<12%	>12%-22%	>22%-28%	>28%-42%	>42%-71%	>71%
Forest and paper products	=<8%	>8%-13%	>13%-21%	>21%-41%	>41%-117%	>117%
Building materials	=<4%	>4%-8%	>8%-13%	>13%-18%	>18%-23%	>23%
Oil and gas integrated, exploration and production	=<4%	>4%-6%	>6%-8%	>8%-13%	>13%-22%	>22%
Agribusiness and commodity foods	=<9%	>9%-14%	>14%-18%	>18%-27%	>27%-100%	>100%
Real estate investment trusts (REITs)	=<2%	>2%-5%	>5%-8%	>8%-13%	>13%-34%	>34%
Leisure and sports	=<3%	>3%-5%	>5%-6%	>6%-9%	>9%-18%	>18%
Commodity chemicals	=<9%	>9%-14%	>14%-18%	>18%-25%	>25%-37%	>37%
Auto suppliers	=<9%	>9%-13%	>13%-18%	>18%-23%	>23%-40%	>40%
Aerospace and defense	=<3%	>3%-6%	>6%-7%	>7%-12%	>12%-24%	>24%
Technology hardware and semiconductors	=<7%	>7%-10%	>10%-15%	>15%-21%	>21%-62%	>62%
Specialty chemicals	=<3%	>3%-6%	>6%-10%	>10%-19%	>19%-28%	>28%
Capital goods	=<6%	>6%-9%	>9%-13%	>13%-20%	>20%-33%	>33%

Table 29

SER Calibration By Industry Based On EBITDA Margin (cont.)						
--Volatility of profitability assessment*--						
	1	2	3	4	5	6
Engineering and construction	=<6%	>6%-8%	>8%-12%	>12%-17%	>17%-26%	>26%
Railroads and package express	=<2%	>2%-6%	>6%-8%	>8%-10%	>10%-17%	>17%
Business and consumer services	=<3%	>3%-5%	>5%-7%	>7%-12%	>12%-22%	>22%
Midstream energy	=<3%	>3%-6%	>6%-9%	>9%-14%	>14%-28%	>28%
Technology software and services	=<3%	>3%-6%	>6%-10%	>10%-15%	>15%-30%	>30%
Consumer durables	=<4%	>4%-8%	>8%-11%	>11%-15%	>15%-26%	>26%
Containers and packaging	=<5%	>5%-7%	>7%-9%	>9%-15%	>15%-22%	>22%
Media and entertainment	=<4%	>4%-6%	>6%-9%	>9%-14%	>14%-24%	>24%
Oil and gas drilling, equipment and services	=<6%	>6%-12%	>12%-16%	>16%-22%	>22%-32%	>32%
Retail and restaurants	=<3%	>3%-5%	>5%-7%	>7%-12%	>12%-21%	>21%
Health care services	=<3%	>3%-5%	>5%-6%	>6%-8%	>8%-15%	>15%
Transportation infrastructure	=<1%	>1%-3%	>3%-5%	>5%-7%	>7%-15%	>15%
Environmental services	=<3%	>3%-4%	>4%-6%	>6%-10%	>10%-24%	>24%
Regulated utilities	=<4%	>4%-7%	>7%-9%	>9%-14%	>14%-24%	>24%
Unregulated power and gas	=<6%	>6%-10%	>10%-15%	>15%-23%	>23%-41%	>41%
Pharmaceuticals	=<4%	>4%-5%	>5%-7%	>7%-10%	>10%-21%	>21%
Health care equipment	=<2%	>2%-4%	>4%-5%	>5%-10%	>10%-16%	>16%
Branded nondurables	=<3%	>3%-6%	>6%-9%	>9%-13%	>13%-28%	>28%
Telecommunications and cable	=<2%	>2%-4%	>4%-5%	>5%-7%	>7%-13%	>13%
Overall	=<3%	>3%-6%	>6%-10%	>10%-16%	>16%-32%	>32%

*The data ranges include the values up to and including the upper bound. As an example, for a range of 5%-9%, a value of 5% is excluded, while a value of 9% is included; the numbers are rounded to the nearest whole number for presentation purposes.

Table 30

SER Calibration By Industry Based On Return On Capital						
--Volatility of profitability assessment*--						
	1	2	3	4	5	6
Transportation cyclical	=<14%	>14%-28%	>28%-39%	>39%-53%	>53%-156%	>156%
Auto OEM	=<42%	>42%-64%	>64%-74%	>74%-86%	>86%-180%	>180%
Metals and mining downstream	=<25%	>25%-32%	>32%-43%	>43%-53%	>53%-92%	>92%
Metals and mining upstream	=<22%	>22%-30%	>30%-38%	>38%-45%	>45%-93%	>93%
Homebuilders and developers	=<12%	>12%-31%	>31%-50%	>50%-70%	>70%-88%	>88%
Oil and gas refining and marketing	=<14%	>14%-30%	>30%-48%	>48%-67%	>67%-136%	>136%
Forest and paper products	=<10%	>10%-22%	>22%-40%	>40%-89%	>89%-304%	>304%
Building materials	=<13%	>13%-20%	>20%-26%	>26%-36%	>36%-62%	>62%
Oil and gas integrated, exploration and production	=<16%	>16%-22%	>22%-31%	>31%-43%	>43%-89%	>89%
Agribusiness and commodity foods	=<12%	>12%-15%	>15%-29%	>29%-55%	>55%-111%	>111%
Real estate investment trusts (REITs)	=<8%	>8%-14%	>14%-20%	>20%-26%	>26%-116%	>116%
Leisure and sports	=<11%	>11%-17%	>17%-26%	>26%-34%	>34%-64%	>64%
Commodity chemicals	=<19%	>19%-28%	>28%-41%	>41%-50%	>50%-73%	>73%

Table 30

SER Calibration By Industry Based On Return On Capital (cont.)						
--Volatility of profitability assessment*--						
	1	2	3	4	5	6
Auto suppliers	=<20%	>20%-39%	>39%-50%	>50%-67%	>67%-111%	>111%
Aerospace and defense	=<7%	>7%-13%	>13%-19%	>19%-27%	>27%-61%	>61%
Technology hardware and semiconductors	=<8%	>8%-21%	>21%-34%	>34%-49%	>49%-113%	>113%
Specialty chemicals	=<5%	>5%-18%	>18%-28%	>28%-43%	>43%-64%	>64%
Capital goods	=<15%	>15%-24%	>24%-31%	>31%-45%	>45%-121%	>121%
Engineering and construction	=<12%	>12%-21%	>21%-23%	>23%-33%	>33%-54%	>54%
Railroads and package express	=<3%	>3%-11%	>11%-17%	>17%-20%	>20%-27%	>27%
Business and consumer services	=<9%	>9%-17%	>17%-23%	>23%-40%	>40%-87%	>87%
Midstream energy	=<5%	>5%-11%	>11%-17%	>17%-22%	>22%-34%	>34%
Technology software and services	=<8%	>8%-21%	>21%-35%	>35%-65%	>65%-105%	>105%
Consumer durables	=<8%	>8%-13%	>13%-20%	>20%-35%	>35%-60%	>60%
Containers and packaging	=<6%	>6%-14%	>14%-23%	>23%-35%	>35%-52%	>52%
Media and entertainment	=<9%	>9%-17%	>17%-26%	>26%-40%	>40%-86%	>86%
Oil and gas drilling, equipment and services	=<25%	>25%-33%	>33%-45%	>45%-65%	>65%-90%	>90%
Retail and restaurants	=<6%	>6%-14%	>14%-18%	>18%-26%	>26%-69%	>69%
Health care services	=<6%	>6%-10%	>10%-15%	>15%-25%	>25%-44%	>44%
Transportation infrastructure	=<5%	>5%-9%	>9%-12%	>12%-16%	>16%-27%	>27%
Environmental Services	=<7%	>7%-12%	>12%-24%	>24%-35%	>35%-72%	>72%
Regulated utilities	=<6%	>6%-9%	>9%-13%	>13%-20%	>20%-36%	>36%
Unregulated power and gas	=<14%	>14%-19%	>19%-29%	>29%-55%	>55%-117%	>117%
Pharmaceuticals	=<6%	>6%-8%	>8%-15%	>15%-20%	>20%-33%	>33%
Health care equipment	=<4%	>4%-8%	>8%-19%	>19%-31%	>31%-81%	>81%
Branded nondurables	=<6%	>6%-10%	>10%-17%	>17%-29%	>29%-63%	>63%
Telecommunications and cable	=<7%	>7%-13%	>13%-19%	>19%-26%	>26%-60%	>60%
Overall	=<7%	>7%-15%	>15%-23%	>23%-38%	>38%-81%	>81%

*The data ranges include the values up to and including the upper bound. As an example, for a range of 5%-9%, a value of 5% is excluded, while a value of 9% is included; the numbers are rounded to the nearest whole number for presentation purposes.

C. Cash Flow/Leverage Analysis

1. The merits and drawbacks of each cash flow measure

a) EBITDA

237. EBITDA is a widely used, and therefore a highly comparable, indicator of cash flow, although it has significant limitations. Because EBITDA derives from the income statement entries, it can be distorted by the same accounting issues that limit the use of earnings as a basis of cash flow. In addition, interest can be a substantial cash outflow for speculative-grade companies and therefore EBITDA can materially overstate cash flow in some cases. Nevertheless, it serves as a useful and common starting point for cash flow analysis and is useful in ranking the financial strength of different companies.

b) Funds from operations (FFO)

238. FFO is a hybrid cash flow measure that estimates a company's inherent ability to generate recurring cash flow from its operations independent of working capital fluctuations. FFO estimates the cash flow available to the company before working capital, capital spending, and discretionary items such as dividends, acquisitions, etc.
239. Because cash flow from operations tends to be more volatile than FFO, FFO is often used to smooth period-over-period variation in working capital. We consider it a better proxy of recurring cash flow generation because management can more easily manipulate working capital depending on its liquidity or accounting needs. However, we do not generally rely on FFO as a guiding cash flow measure in situations where assessing working capital changes is important to judge a company's cash flow generating ability and general creditworthiness. For example, for working-capital-intensive industries such as retailing, operating cash flow may be a better indicator than FFO of the firm's actual cash generation.
240. FFO is a good measure of cash flow for well-established companies whose long-term viability is relatively certain (i.e., for highly rated companies). For such companies, there can be greater analytical reliance on FFO and its relation to the total debt burden. FFO remains very helpful in the relative ranking of companies. In addition, more established, healthier companies usually have a wider array of financing possibilities to cover potential short-term liquidity needs and to refinance upcoming maturities. For marginal credit situations, the focus shifts more to free operating cash flow--after deducting the various fixed uses such as working capital investment and capital expenditures--as this measure is more directly related to current debt service capability.

c) Cash flow from operations (CFO)

241. The measurement and analysis of CFO forms an important part of our ratings assessment, in particular for companies that operate in working-capital-intensive industries or industries in which working capital flows can be volatile. CFO is distinct from FFO as it is a pure measure of cash flow calculated after accounting for the impact on earnings of changes in operating assets and liabilities. CFO is cash flow that is available to finance items such as capital expenditures, repay borrowing, and pay for dividends and share buybacks.
242. In many industries, companies shift their focus to cash flow generation in a downturn. As a result, even though they typically generate less cash from ordinary business activities because of low capacity utilization and relatively low fixed-cost absorption, they may generate cash by reducing inventories and receivables. Therefore, although FFO is likely to be lower in a downturn, the impact on CFO may not be as great. In times of strong growth the opposite will be true, and consistently lower CFO compared to FFO without a corresponding increase in revenue and profitability can indicate an untenable situation.
243. Working capital is a key element of a company's cash flow generation. While there tends to be a need to build up working capital and therefore to consume cash in a growth or expansion phase, changes in working capital can also act as a buffer in case of a downturn. Many companies will sell off inventories and invest a lower amount in raw materials because of weaker business activities, both of which reduce the amount of capital and cash that is tied up in working capital. Therefore, working capital fluctuations can occur both in periods of revenue growth and contraction and analyzing a company's near-term working capital needs is crucial for estimating future cash flow developments.
244. Often, businesses that are capital intensive are not working-capital-intensive: most of the capital commitment is

upfront in equipment and machinery, while asset-light businesses may have to invest proportionally more in inventories and receivables. That also affects margins, because capital-intensive businesses tend to have proportionally lower operating expenses (and therefore higher EBITDA margins), while working-capital-intensive businesses usually report lower EBITDA margins. The resulting cash flow volatility can be significant: because all investment is made upfront in a capital-intensive business, there is usually more room to absorb subsequent EBITDA volatility because margins are higher. For example, a capital-intensive company may remain reasonably profitable even if its EBITDA margin declines from 30% to 20%. By contrast, a working-capital-intensive business with a lower EBITDA margin (due to higher operating expenses) of 8% can post a negative EBITDA margin if EBITDA volatility is large.

d) Free operating cash flow (FOCF)

245. By deducting capital expenditures from CFO, we arrive at FOCF, which can be used as a proxy for a company's cash generated from core operations. We may exclude discretionary capital expenditures for capacity growth from the FOCF calculation, but in practice it is often difficult to discriminate between spending for expansion and replacement. And, while companies have some flexibility to manage their capital budgets to weather down cycles, such flexibility is generally temporary and unsustainable in light of intrinsic requirements of the business. For example, companies can be compelled to increase their investment programs because of strong demand growth or technological changes. Regulated entities (for example, telecommunications companies) might also face significant investment requirements related to their concession contracts (the understanding between a company and the host government that specifies the rules under which the company can operate locally).
246. Positive FOCF is a sign of strength and helpful in distinguishing between two companies with the same FFO. In addition, FOCF is helpful in differentiating between the cash flows generated by more and less capital-intensive companies and industries.
247. In highly capital-intensive industries (where maintenance capital expenditure requirements tend to be high) or in other situations in which companies have little flexibility to postpone capital expenditures, measures such as FFO to debt and debt to EBITDA may provide less valuable insight into relative creditworthiness because they fail to capture potentially meaningful capital expenditures. In such cases, a ratio such as FOCF to debt provides greater analytical insight.
248. A company serving a low-growth or declining market may exhibit relatively strong FOCF because of diminishing fixed and working capital needs. Growth companies, in contrast, exhibit thin or even negative FOCF because of the investment needed to support growth. For the low-growth company, credit analysis weighs the positive, strong current cash flow against the danger that this high level of cash flow might not be sustainable. For the high-growth company, the opposite is true: weighing the negatives of a current cash deficit against prospects of enhanced cash flow once current investments begin yielding cash benefits. In the latter case, if we view the growth investment as temporary and not likely to lead to increased leverage over the long-term, we'll place greater analytical importance on FFO to debt rather than on FOCF to debt. In any event, we also consider the impact of a company's growth environment in our business risk analysis, specifically in a company's industry risk analysis (see section B).

e) Discretionary cash flow (DCF)

249. For corporate issuers primarily rated in the investment-grade universe, DCF to debt can be an important barometer of future cash flow adequacy as it more fully reflects a company's financial policy, including decisions regarding dividend payouts. In addition, share buybacks and potential M&A, both of which can represent very significant uses of cash, are important components in cash flow analysis.
250. The level of dividends depends on a company's financial strategy. Companies with aggressive dividend payout targets might be reluctant to reduce dividends even under some liquidity pressure. In addition, investment-grade companies are less likely to reduce dividend payments following some reversals--although dividends ultimately are discretionary. DCF is the truest reflection of excess cash flow, but it is also the most affected by management decisions and, therefore, does not necessarily reflect the potential cash flow available.

D. Diversification/Portfolio Effect

1. Academic research

251. Academic research recently concluded that, during the global financial crisis of 2007-2009, conglomerates had the advantage over single sector-focused firms because they had better access to the credit markets as a result of their debt co-insurance and used the internal capital markets more efficiently (i.e., their core businesses had stronger cash flows). Debt co-insurance is the view that the joining-together of two or more firms whose earnings streams are less-than-perfectly correlated reduces the risk of default of the merged firms (i.e., the co-insurance effect) and thereby increases the "debt capacity" or "borrowing ability" of the combined enterprise. These financing alternatives became more valuable during the crisis. (Source: "Does Diversification Create Value In The Presence Of External Financing Constraints? Evidence From The 2007-2009 Financial Crisis," Venkat Kuppaswamy and Belen Villalonga, Harvard Business School, Aug. 19, 2011.)
252. In addition, fully diversified, focused companies saw more narrow credit default swap spreads from 2004-2010 vs. less diversified firms. This highlighted that lenders were differentiating for risk and providing these companies with easier and cheaper access to capital. (Source: "The Power of Diversified Companies During Crises," The Boston Consulting Group and Leipzig Graduate School of Management, January 2012.)
253. Many rated conglomerates are either country- or region-specific; only a small percentage are truly global. The difference is important when assessing the country and macroeconomic risk factors. Historical measures for each region, based on volatility and correlation, reflect regional trends that are likely to change over time.

E. Financial Policy

1. Controlling shareholders

254. Controlling shareholder(s)--if they exist--exert significant influence over a company's financial risk profile, given their ability to use their direct or indirect control of the company's financial policies for their own benefit. Although the criteria do not associate the presence of controlling shareholder(s) to any predefined negative or positive impact, we assess the potential medium- to long-term implications for a company's credit standing of these strategies. Long-term

ownership--such as exists in many family-run businesses--is often accompanied by financial discipline and reluctance to incur aggressive leverage. Conversely, short-term ownership--such as exists in private equity sponsor-owned companies--generally entails financial policies aimed at achieving rapid returns for shareholders typically through aggressive debt leverage.

255. The criteria define controlling shareholder(s) as:

- A private shareholder (an individual or a family) with majority ownership or control of the board of directors;
- A group of shareholders holding joint control over the company's board of directors through a shareholder agreement. The shareholder agreement may be comprehensive in scope or limited only to certain financial aspects; and
- A private equity firm or a group of private equity firms holding at least 40% in a company or with majority control of its board of directors.

256. A company is not considered to have a controlling shareholder if it is publicly listed with more than 50% of voting interest listed or when there is no evidence of a particular shareholder or group of shareholders exerting 'de facto' control over a company.

257. Companies that have as their controlling shareholder governments or government-related entities, infrastructure and asset-management funds, and diversified holding companies and conglomerates are assessed in separate criteria.

2. Financial discipline

a) Leverage influence from acquisitions

258. Companies may employ more or less acquisitive growth strategies based on industry dynamics, regulatory changes, market opportunities, and other factors. We consider management teams with disciplined, transparent acquisition strategies that are consistent with their financial policy framework as providing a high degree of visibility into the projected evolution of cash flow and credit measures. Our assessment takes into account management's track record in terms of acquisition strategy and the related impact on the company's financial risk profile. Historical evidence of limited management tolerance for significant debt-funded acquisitions provides meaningful support for the view that projected credit ratios would not significantly weaken as a result of the company's acquisition policy. Conversely, management teams that pursue opportunistic acquisition strategies, without well-defined parameters, increase the risks that the company's financial risk profile may deteriorate well beyond our forecasts.

259. Acquisition funding policies and management's track record in this respect also provide meaningful insight in terms of credit ratio stability. In the criteria, we take into account management's willingness and capacity to mobilize all funding resources to restore credit quality, such as issuing equity or disposing of assets, to mitigate the impact of sizable acquisitions on credit ratios. The financial policy framework and related historical evidence are key considerations in our assessment.

b) Leverage influence from shareholder remuneration policies

260. A company's approach to rewarding shareholders demonstrates how it balances the interests of its various stakeholders over time. Companies that are consistent and transparent in their shareholder remuneration policies, and exhibit a willingness to adjust shareholder returns to mitigate adverse operating conditions, provide greater support to their long-term credit quality than other companies. Conversely, companies that prioritize cash returns to shareholders

in periods of deteriorating economic, operating, or share price performance can significantly undermine long-term credit quality and exacerbate the credit impact of adverse business conditions. In assessing a company's shareholder remuneration policies, the criteria focus on the predictability of shareholder remuneration plans, including how a company builds shareholder expectations, its track record in executing shareholder return policies over time, and how shareholder returns compare with industry peers'.

261. Shareholder remuneration policies that lack transparency or deviate meaningfully from those of industry peers introduce a higher degree of event risk and volatility and will be assessed as less predictable under the criteria. Dividend and capital return policies that function primarily as a means to distribute surplus capital to shareholders based on transparent and stable payout ratios--after satisfying all capital requirements and leverage objectives of the company, and that support stable to improving leverage ratios--are considered the most supportive of long term credit quality.

c) Leverage influence from plans regarding investment decisions or organic growth strategies

262. The process by which a company identifies, funds, and executes organic growth, such as expansion into new products and/or new markets, can have a significant impact on its long-term credit quality. Companies that have a disciplined, coherent, and manageable organic growth strategy, and have a track record of successful execution are better positioned to continue to attract third-party capital and maintain long-term credit quality. By contrast, companies that allocate significant amounts of capital to numerous, unrelated, large and/or complex projects and often incur material overspending against the original budget can significantly increase their credit risk.
263. The criteria assess whether management's organic growth strategies are transparent, comprehensive, and measurable. We seek to evaluate the company's mid- to long-term growth objectives--including strategic rationales and associated execution risks--as well as the criteria it uses to allocate capital. Effective capital allocation is likely to include guidelines for capital deployment, including minimum return hurdles, competitor activity analysis, and demand forecasting. The company's track record will provide key data for this assessment, including how well it executes large and/or complex projects against initial budgets, cost overruns, and timelines.

3. Financial policy framework

a) Comprehensiveness of financial policy framework

264. Financial policies that are clearly defined, unambiguous, and provide a tight framework around management behavior are the most reliable in determining an issuer's future financial risk profile. We assess as consistent with a supportive assessment, policies that are clear, measurable, and well understood by all key stakeholders. Accordingly, the financial policy framework must include well-defined parameters regarding how the issuer will manage its cash flow protection strategies and debt leverage profile. This includes at least one key or a combination of financial ratio constraints (such as maximum debt to EBITDA threshold) and the latter must be relevant with respect to the issuer's industry and/or capital structure characteristics.
265. By contrast, the absence of established financial policies, policies that are vague or not quantifiable, or historical evidence of significant and unexpected variation in management's long-term financial targets could contribute to an overall assessment of a non-supportive financial policy framework.

b) Transparency of financial policies

266. We assess as supportive financial policy objectives that are transparent and well understood by all key stakeholders and we view them as likely to influence an issuer's financial risk profile over time. Alternatively, financial policies, if they exist, that are not communicated to key stakeholders and/or where there is limited historical evidence to support the company's commitment to these policies, are non-supportive, in our view. We consider the variety of ways in which a company communicates its financial policy objectives, including public disclosures, investor presentation materials, and public commentary.
267. In some cases, however, a company may articulate its financial policy objectives to a limited number of key stakeholders, such as its main creditors or to credit rating agencies. In these situations, a company may still receive a supportive classification if we assess that there is a sufficient track record (more than three years) to demonstrate a commitment to its financial policy objectives.

c) Achievability and sustainability of financial policies

268. To assess the achievability and sustainability of a company's financial policies, we consider a variety of factors, including the entity's current and historical financial risk profile; the demands of its key stakeholders (including dividend and capital return expectations of equity holders); and the stability of the company's financial policies that we have observed over time. If there is evidence that the company is willing to alter its financial policy framework because of adverse business conditions or growth opportunities (including M&A), this could support an overall assessment of non-supportive.

4. Financial policy adjustments--examples

269. Example 1: A moderately leveraged company has just been sold to a new financial sponsor. The financial sponsor has not leveraged the company yet and there is no stated financial policy at the outset. We expect debt leverage to increase upon refinancing, but we are not able to factor it precisely in our forecasts yet. Likely outcome: FS-6 financial policy assessment, implying that we expect the new owner to implement an aggressive financial policy in the absence of any other evidence.
270. Example 2: A company has two owners—a family owns 75%, a strategic owner holds the remaining 25%. Although the company has provided Standard & Poor's with some guidance on long-term financial objectives, the overall financial policy framework is not sufficiently structured nor disclosed to a sufficient number of stakeholders to qualify for a supportive assessment. Recent history, however, does not provide any evidence of unexpected, aggressive financial transactions and we believe event risk is moderate. Likely outcome: Neutral financial policy impact, including an assessment of neutral for financial discipline. Although the company's financial framework does not support long-term visibility, historical evidence and stability of management suggest that event risk is not significant. The unsupportive financial framework assessment, however, prevents the company from qualifying for an overall positive financial policy assessment, should the conditions for positive financial discipline be met.
271. Example 3: A company (not owned by financial sponsors) has stated leverage targets equivalent to a significant financial risk profile assessment. The company continues to make debt-financed acquisitions yet remains within its leverage targets, albeit at the weaker end of these. Our forecasts are essentially built on expectations that excess cash flow will be fully used to fund M&A or, possibly pay share repurchases, but that management will overall remain within

its leverage targets.

Likely outcome: Neutral financial policy impact. Although management is fairly aggressive, the company consistently stays within its financial policy targets. We think our forecasts provide a realistic view of the evolution of the company's credit metrics over the next two years. No event risk adjustment is needed.

272. Example 4: A company (not owned by a financial sponsor) has just made a sizable acquisition (consistent with its long-term business strategy) that has brought its credit ratios out of line. Management expressed its commitment to rapidly improve credit ratios back to its long-term ratio targets—representing an acceptable range for the SACP—through asset disposals or a rights issue. We see their disposal plan (or rights issue) as realistic but precise value and timing are uncertain. At the same time, management has a supportive financial policy framework, a positive track record of five years, and assets are viewed as fairly easily tradable.
Likely outcome: Positive financial policy impact. Although forecast credit ratios will remain temporarily depressed, as we cannot fully factor in asset disposals (or rights issue) due to uncertainty on timing/value, or without leaking confidential information, the company's credit risk should benefit from management's positive track record and a supportive financial policy framework. The anchor will be better by one notch if management and governance is at least satisfactory and liquidity is at least adequate.
273. Example 5: A company (not owned by a financial sponsor) has very solid financial ratios, providing it with meaningful flexibility for M&A when compared with management's long-term stated financial policy. Also, its stock price performance is somewhat below that of its closest industry peers. Although we have no recent evidence of any aggressive financial policy steps, we fundamentally believe that, over the long-term term, the company will end up using its financial flexibility for the right M&A opportunity, or alternatively return cash to shareholders.
Likely outcome: Negative financial policy impact. Long-term event risk derived from M&A cannot be built into forecasts nor shareholder returns (share buybacks or one-off dividends) be built into forecasts to attempt aligning projected ratios with stated long-term financial policy levels. This is because our forecasts are based on realistic and reasonably predictable assumptions for the medium term. The anchor will be adjusted down, by one notch or more, because of the negative financial policy assessment.

F. Corporate Criteria Glossary

Anchor: The combination of an issuer's business risk profile assessment and its financial risk profile assessment determine the anchor. Additional rating factors can then modify the anchor to determine the final rating or SACP.

Asset profile: A descriptive way to look at the types and quality of assets that comprise a company (examples can include tangible versus intangible assets, those assets that require large and continuing maintenance, upkeep, or reinvestment, etc.).

Business risk profile: This measure comprises the risk and return potential for a company in the market in which it participates, the country risks within those markets, the competitive climate, and the competitive advantages and disadvantages the company has. The criteria combine the assessments for Corporate Industry and Country Risk Assessment (CICRA), and competitive position to determine a company's business risk profile assessment.

Capital-intensive company: A company exhibiting large ongoing capital spending to sales, or a large amount of

depreciation to sales. Examples of capital-intensive sectors include oil production and refining, telecommunications, and transportation sectors such as railways and airlines.

Cash available for debt repayment: Forecast cash available for debt repayment is defined as the net change in cash for the period before debt borrowings and debt repayments. This includes forecast discretionary cash flow adjusted for our expectations of: share buybacks, net of any share issuance, and M&A. Discretionary cash flow is defined as cash flow from operating activities less capital expenditures and total dividends.

Competitive position: Our assessment of a company's: 1) competitive advantage; 2) operating efficiency; 3) scale, scope, and diversity; and 4) profitability.

- Competitive advantage--The strategic positioning and attractiveness to customers of the company's products or services, and the fragility or sustainability of its business model.
- Operating efficiency--The quality and flexibility of the company's asset base and its cost management and structure.
- Scale, scope, and diversity--The concentration or diversification of business activities.
- Profitability--Our assessment of both the company's level of profitability and volatility of profitability.

Competitive Position Group Profile (CPGP): Used to determine the weights to be assigned to the three components of competitive position other than profitability. While industries are assigned to one of the six profiles, individual companies and industry subsectors can be classified into another CPGP because of unique characteristics. Similarly, national industry risk factors can affect the weighing. The six CPGPs are:

- Services and product focus,
- Product focus/scale driven,
- Capital or asset focus,
- Commodity focus/cost driven,
- Commodity focus/scale driven, and
- National industry and utilities.

Conglomerate: Companies that have at least three distinct business segments, each contributing between 10%-50% of EBITDA or FOCF. Such companies may benefit from the diversification/portfolio effect.

Controlling shareholders: Equity owners who are able to affect decisions of varying effect on operations, leverage, and shareholder reward without necessarily being a majority of shareholders.

Corporate Industry and Country Risk Assessment (CICRA): The result of the combination of an issuer's country risk assessment and industry risk assessment.

Debt co-insurance: The view that the joining-together of two or more firms whose earnings streams are less-than-perfectly correlated reduces the risk of default of the merged firms (i.e., the co-insurance effect) and thereby increases the "debt capacity" or "borrowing ability" of the combined enterprise. These financing alternatives became more valuable during the global financial crisis of 2007-2009.

Financial headroom: Measure of deviation tolerated in financial metrics without moving outside or above a pre-designated band or limit typically found in loan covenants (as in a debt to EBITDA multiple that places a constraint on leverage). Significant headroom would allow for larger deviations.

Financial risk profile: The outcome of decisions that management makes in the context of its business risk profile and its financial risk tolerances. This includes decisions about the manner in which management seeks funding for the company and how it constructs its balance sheet. It also reflects the relationship of the cash flows the organization can achieve, given its business risk profile, to its financial obligations. The criteria use cash flow/leverage analysis to determine a corporate issuer's financial risk profile assessment.

Financial sponsor: An entity that follows an aggressive financial strategy in using debt and debt-like instruments to maximize shareholder returns. Typically, these sponsors dispose of assets within a short to intermediate time frame. Financial sponsors include private equity firms, but not infrastructure and asset-management funds, which maintain longer investment horizons.

Profitability ratio: Commonly measured using return on capital and EBITDA margins but can be measured using sector-specific ratios. Generally calculated based on a five-year average, consisting of two years of historical data, and our projections for the current year and the next two financial years.

Shareholder remuneration policies: Management's stated shareholder reward plans (such as a buyback or dividend amount, or targeted payout ratios).

Stand-alone credit profile (SACP): Standard & Poor's opinion of an issue's or issuer's creditworthiness, in the absence of extraordinary intervention or support from its parent, affiliate, or related government or from a third-party entity such as an insurer.

Transfer and convertibility assessment: Standard & Poor's view of the likelihood of a sovereign restricting nonsovereign access to foreign exchange needed to satisfy the nonsovereign's debt service obligations.

Unconsolidated equity affiliates: Companies in which an issuer has an investment, but which are not consolidated in an issuer's financial statements. Therefore, the earnings and cash flows of the investees are not included in our primary metrics unless dividends are received from the investees.

Upstream/midstream/downstream: Referring to exploration and production, transport and storage, and refining and distributing, respectively, of natural resources and commodities (such as metals, oil, gas, etc.).

Volatility of profitability/SER: We base the volatility of profitability on the standard error of the regression (SER) for a company's historical EBITDA. The SER is a statistical measure that is an estimate of the deviation around a 'best fit' trend line. We combine it with the profitability ratio to determine the final profitability assessment. We only calculate SER when companies have at least seven years of historical annual data, to ensure that the results are meaningful.

Working-capital-intensive companies: Generally a company with large levels of working capital in relation to its sales in order to meet seasonal swings in working capital. Examples of working-capital-intensive sectors include retail, auto manufacturing, and capital goods.

Frequently Asked Questions

A. Volatility of cash flows

If a company exhibits volatile cash flow metrics, does Standard & Poor's capture this in the cash flow volatility adjustment or in the financial policy assessment?

We capture this in either analytic factor, as appropriate. As per paragraph 125, the volatility adjustment is the mechanism by which we factor a "cushion" of medium-term variance to current financial performance not otherwise captured in either the near-term base-case forecast or the long-term business risk assessment. We make this adjustment based on the following:

- The expectation of any potential cash flow/leverage ratio movement is both prospective and dependent on the current business or economic conditions.
- Stress scenarios include, but are not limited to, a recession, technology or competitive shifts, loss or renegotiation of major contracts or customers, and key product or input price movements, as typically defined in the company's industry risk profile and competitive position assessment.
- The volatility adjustment is not static and is company-specific. At the bottom of an economic cycle or during periods of stressed business conditions, already reflected in the general industry risk or specific competitive risk profile, the prospect of weakening ratios is far less than at the peak of an economic cycle or business conditions.
- The expectation of prospective ratio changes may be formed by observed historical performance over an economic, business, or product cycle by the company or by peers.
- The assessment of which classification to use when evaluating the prospective number of scoring category moves will be guided by how close the current ratios are to the transition point (i.e. "buffer" in the current scoring category) and the corresponding amount of EBITDA movement at each scoring transition.

As per paragraph 157, financial policy refines our view of a company's risks beyond the conclusions arising from the standard assumptions in the cash flow/leverage assessment. Those assumptions do not always reflect or entirely capture the short-to-medium term event risks or the longer-term risks stemming from a company's financial policy. To the extent movements in one of these factors cannot be confidently predicted within our forward-looking evaluation of cash flow/leverage, we capture that risk in our evaluation of financial policy.

What constitutes a period of stress when assessing whether a company has a volatile or highly volatile level of cash flow/leverage?

As guidance, our global default studies demonstrate significant correlation of defaults with weak points in business cycles and banking crises. The 1991 peak default rate occurred after a mild recession in the U.S., a severe but short recession in the U.K., and the Nordic banking crisis. Other developed-market speculative-grade default peaks were the U.S., at 10.6% in 2001 (the U.S. recession) and 11.4% in 2009 (the global banking crisis and recession); and Europe, at 12.3% in 2002 (due in part to the bursting of the technology/Internet bubble and failures of a large number of telecom start-ups). (Sources: "2012 Annual Global Corporate Default Study," published March 18, 2013, and "Understanding Standard & Poor's Rating Definitions," published June 3, 2009.)

Additional guidance can be found in "Methodology: Industry Risk," published Nov. 19, 2013, Appendix 1 where we considered sensitivity to economic cycles, as measured by the historical cyclical peak-to-trough decline in profitability and revenues for major recessions ('BBB' and 'BB' stress) mapped to specific industry sectors.

B. Profitability

If a company operates in a region or in a country where local inflation is high, and you believe that this affects the comparability of its profitability measures with industry peers', how do you incorporate this in your assessment?

When analyzing level of profitability, we use, where available, the numeric guidance provided in key credit factors (KCF) articles. These thresholds apply globally irrespective of the underlying level of inflation, although we also consider trends in the profitability ratio to determine the level of profitability assessment. However, high inflation environments are often associated with exposure to countries with a high country risk, in which case as per paragraph 87 we may adjust the volatility of profitability assessment to account for this exposure. Finally, to the extent not captured elsewhere in the analysis, we may incorporate this factor as part of the comparable ratings analysis.

These criteria represent the specific application of fundamental principles that define credit risk and ratings opinions. Their use is determined by issuer- or issue-specific attributes as well as Standard & Poor's Ratings Services' assessment of the credit and, if applicable, structural risks for a given issuer or issue rating. Methodology and assumptions may change from time to time as a result of market and economic conditions, issuer- or issue-specific factors, or new empirical evidence that would affect our credit judgment.

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Key Credit Factors For The Regulated Utilities Industry

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Key Credit Factors For The Regulated Utilities Industry

(Editor's Note: We originally published this criteria article on Nov. 19, 2013. We're republishing it following our criteria review completed on June 17, 2016. As a result of our review, we've updated contact information and criteria references and deleted outdated sections that previously appeared in paragraphs 2, 5, and 6 related to the initial publication of our criteria, and which were no longer relevant.)

1. This article presents S&P Global Ratings methodology and assumptions for Regulated Utilities. This article relates to "Corporate Methodology," Nov. 19, 2013 and "Principles Of Credit Ratings," Feb. 16, 2011.
2. [This paragraph has been deleted.]

SCOPE OF THE CRITERIA

3. These criteria apply to entities where regulated utilities represent a material part of their business, other than U.S. public power, water, sewer, gas, and electric cooperative utilities that are owned by federal, state, or local governmental bodies or by ratepayers. A regulated utility is defined as a corporation that offers an essential or near-essential infrastructure product, commodity, or service with little or no practical substitute (mainly electricity, water, and gas), a business model that is shielded from competition (naturally, by law, shadow regulation, or by government policies and oversight), and is subject to comprehensive regulation by a regulatory body or implicit oversight of its rates (sometimes referred to as tariffs), service quality, and terms of service. The regulators base the rates that they set on some form of cost recovery, including an economic return on assets, rather than relying on a market price. The regulated operations can range from individual parts of the utility value chain (water, gas, and electricity networks or "grids," electricity generation, retail operations, etc.) to the entire integrated chain, from procurement to sales to the end customer. In some jurisdictions, our view of government support can also affect the final rating outcome, as per our government-related entity criteria (see "General Criteria: Rating Government-Related Entities: Methodology and Assumptions," March 25, 2013).

SUMMARY OF THE CRITERIA

4. This article presents S&P Global Ratings criteria for analyzing regulated utilities, applying its corporate criteria. The criteria for evaluating the competitive position of regulated utilities amend and partially supersede the "Competitive Position" section of the corporate criteria when evaluating these entities. The criteria for determining the cash flow leverage assessment partially supersede the "Cash Flow/Leverage" section of the corporate criteria for the purpose of evaluating regulated utilities. The section on liquidity for regulated utilities partially amends existing criteria. All other sections of the corporate criteria apply to the analysis of regulated utilities.
5. [This paragraph has been deleted.]

6. [This paragraph has been deleted.]

METHODOLOGY

Part I--Business Risk Analysis

Industry risk

7. Within the framework of Standard & Poor's general criteria for assessing industry risk, we view regulated utilities as a "very low risk" industry (category '1'). We derive this assessment from our view of the segment's low risk ('2') cyclical and very low risk ('1') competitive risk and growth assessment.
8. In our view, demand for regulated utility services typically exhibits low cyclical, being a function of such key drivers as employment growth, household formation, and general economic trends. Pricing is non-cyclical, since it is usually based in some form on the cost of providing service.

Cyclical

9. We assess cyclical for regulated utilities as low risk ('2'). Utilities typically offer products and services that are essential and not easily replaceable. Based on our analysis of global Compustat data, utilities had an average peak-to-trough (PTT) decline in revenues of about 6% during recessionary periods since 1952. Over the same period, utilities had an average PTT decline in EBITDA margin of about 5% during recessionary periods, with PTT EBITDA margin declines less severe in more recent periods. The PTT drop in profitability that occurred in the most recent recession (2007-2009) was less than the long-term average.
10. With an average drop in revenues of 6% and an average profitability decline of 5%, utilities' cyclical assessment calibrates to low risk ('2'). We generally consider that the higher the level of profitability cyclical in an industry, the higher the credit risk of entities operating in that industry. However, the overall effect of cyclical on an industry's risk profile may be mitigated or exacerbated by an industry's competitive and growth environment.

Competitive risk and growth

11. We view regulated utilities as warranting a very low risk ('1') competitive risk and growth assessment. For competitive risk and growth, we assess four sub-factors as low, medium, or high risk. These sub-factors are:
 - Effectiveness of industry barriers to entry;
 - Level and trend of industry profit margins;
 - Risk of secular change and substitution by products, services, and technologies; and
 - Risk in growth trends.

Effectiveness of barriers to entry--low risk

12. Barriers to entry are high. Utilities are normally shielded from direct competition. Utility services are commonly naturally monopolistic (they are not efficiently delivered through competitive channels and often require access to public thoroughfares for distribution), and so regulated utilities are granted an exclusive franchise, license, or concession to serve a specified territory in exchange for accepting an obligation to serve all customers in that area and the regulation of its rates and operations.

Level and trend of industry profit margins--low risk

13. Demand is sometimes and in some places subject to a moderate degree of seasonality, and weather conditions can significantly affect sales levels at times over the short term. However, those factors even out over time, and there is little pressure on margins if a utility can pass higher costs along to customers via higher rates.

Risk of secular change and substitution of products, services, and technologies--low risk

14. Utility products and services are not overly subject to substitution. Where substitution is possible, as in the case of natural gas, consumer behavior is usually stable and there is not a lot of switching to other fuels. Where switching does occur, cost allocation and rate design practices in the regulatory process can often mitigate this risk so that utility profitability is relatively indifferent to the substitutions.

Risk in industry growth trends--low risk

15. As noted above, regulated utilities are not highly cyclical. However, the industry is often well established and, in our view, long-range demographic trends support steady demand for essential utility services over the long term. As a result, we would expect revenue growth to generally match GDP when economic growth is positive.

B. Country risk

16. In assessing "country risk" for a regulated utility, our analysis uses the same methodology as with other corporate issuers (see "Corporate Methodology").

C. Competitive position

17. In the corporate criteria, competitive position is assessed as ('1') excellent, ('2') strong, ('3') satisfactory, ('4') fair, ('5') weak, or ('6') vulnerable.
18. The analysis of competitive position includes a review of:
- Competitive advantage,
 - Scale, scope, and diversity,
 - Operating efficiency, and
 - Profitability.
19. In the corporate criteria we assess the strength of each of the first three components. Each component is assessed as either: (1) strong, (2) strong/adequate, (3) adequate, (4) adequate/weak, or (5) weak. After assessing these components, we determine the preliminary competitive position assessment by ascribing a specific weight to each component. The applicable weightings will depend on the company's Competitive Position Group Profile. The group profile for regulated utilities is "National Industries & Utilities," with a weighting of the three components as follows: competitive advantage (60%), scale, scope, and diversity (20%), and operating efficiency (20%). Profitability is assessed by combining two sub-components: level of profitability and the volatility of profitability.
20. "Competitive advantage" cannot be measured with the same sub-factors as competitive firms because utilities are not primarily subject to influence of market forces. Therefore, these criteria supersede the "competitive advantage" section of the corporate criteria. We analyze instead a utility's "regulatory advantage" (section 1 below).

Assessing regulatory advantage

21. The regulatory framework/ regime's influence is of critical importance when assessing regulated utilities' credit risk because it defines the environment in which a utility operates and has a significant bearing on a utility's financial performance.
22. We base our assessment of the regulatory framework's relative credit supportiveness on our view of how regulatory stability, efficiency of tariff setting procedures, financial stability, and regulatory independence protect a utility's credit quality and its ability to recover its costs and earn a timely return. Our view of these four pillars is the foundation of a utility's regulatory support. We then assess the utility's business strategy, in particular its regulatory strategy and its ability to manage the tariff-setting process, to arrive at a final regulatory advantage assessment.
23. When assessing regulatory advantage, we first consider four pillars and sub-factors that we believe are key for a utility to recover all its costs, on time and in full, and earn a return on its capital employed:
24. Regulatory stability:
 - Transparency of the key components of the rate setting and how these are assessed
 - Predictability that lowers uncertainty for the utility and its stakeholders
 - Consistency in the regulatory framework over time
25. Tariff-setting procedures and design:
 - Recoverability of all operating and capital costs in full
 - Balance of the interests and concerns of all stakeholders affected
 - Incentives that are achievable and contained
26. Financial stability:
 - Timeliness of cost recovery to avoid cash flow volatility
 - Flexibility to allow for recovery of unexpected costs if they arise
 - Attractiveness of the framework to attract long-term capital
 - Capital support during construction to alleviate funding and cash flow pressure during periods of heavy investments
27. Regulatory independence and insulation:
 - Market framework and energy policies that support long-term financeability of the utilities and that is clearly enshrined in law and separates the regulator's powers
 - Risks of political intervention is absent so that the regulator can efficiently protect the utility's credit profile even during a stressful event
28. We have summarized the key characteristics of the assessments for regulatory advantage in table 1.

Table 1

Preliminary Regulatory Advantage Assessment		
Qualifier	What it means	Guidance
Strong	The utility has a major regulatory advantage due to one or a combination of factors that support cost recovery and a return on capital combined with lower than average volatility of earnings and cash flows.	The utility operates in a regulatory climate that is transparent, predictable, and consistent from a credit perspective.

Table 1

Preliminary Regulatory Advantage Assessment (cont.)		
Qualifier	What it means	Guidance
	There are strong prospects that the utility can sustain this advantage over the long term.	The utility can fully and timely recover all its fixed and variable operating costs, investments and capital costs (depreciation and a reasonable return on the asset base).
	This should enable the utility to withstand economic downturns and political risks better than other utilities.	The tariff set may include a pass-through mechanism for major expenses such as commodity costs, or a higher return on new assets, effectively shielding the utility from volume and input cost risks.
		Any incentives in the regulatory scheme are contained and symmetrical.
		The tariff set includes mechanisms allowing for a tariff adjustment for the timely recovery of volatile or unexpected operating and capital costs.
		There is a track record of earning a stable, compensatory rate of return in cash through various economic and political cycles and a projected ability to maintain that record.
		There is support of cash flows during construction of large projects, and pre-approval of capital investment programs and large projects lowers the risk of subsequent disallowances of capital costs.
		The utility operates under a regulatory system that is sufficiently insulated from political intervention to efficiently protect the utility's credit risk profile even during stressful events.
Adequate	The utility has some regulatory advantages and protection, but not to the extent that it leads to a superior business model or durable benefit.	It operates in a regulatory environment that is less transparent, less predictable, and less consistent from a credit perspective.
	The utility has some but not all drivers of well-managed regulatory risk. Certain regulatory factors support the business's long-term stability and viability but could result in periods of below-average levels of profitability and greater profit volatility. However, overall these regulatory drivers are partially offset by the utility's disadvantages or lack of sustainability of other factors.	The utility is exposed to delays or is not, with sufficient certainty, able to recover all of its fixed and variable operating costs, investments, and capital costs (depreciation and a reasonable return on the asset base) within a reasonable time.
		Incentive ratemaking practices are asymmetrical and material, and could detract from credit quality.
		The utility is exposed to the risk that it doesn't recover unexpected or volatile costs in a full or less than timely manner due to lack of flexible reopeners or annual revenue adjustments.
		There is an uneven track record of earning a compensatory rate of return in cash through various economic and political cycles and a projected ability to maintain that record.
		There is little or no support of cash flows during construction, and investment decisions on large projects (and therefore the risk of subsequent disallowances of capital costs) rest mostly with the utility.
		The utility operates under a regulatory system that is not sufficiently insulated from political intervention and is sometimes subject to overt political influence.

Table 1

Preliminary Regulatory Advantage Assessment (cont.)

Qualifier	What it means	Guidance
Weak	The utility suffers from a complete breakdown of regulatory protection that places the utility at a significant disadvantage.	The utility operates in an opaque regulatory climate that lacks transparency, predictability, and consistency.
	The utility's regulatory risk is such that the long-term cost recovery and investment return is highly uncertain and materially delayed, leading to volatile or weak cash flows. There is the potential for material stranded assets with no prospect of recovery.	The utility cannot fully and/or timely recover its fixed and variable operating costs, investments, and capital costs (depreciation and a reasonable return on the asset base).
		There is a track record of earning minimal or negative rates of return in cash through various economic and political cycles and a projected inability to improve that record sustainably.
		The utility must make significant capital commitments with no solid legal basis for the full recovery of capital costs.
		Ratemaking practices actively harm credit quality.
		The utility is regularly subject to overt political influence.

29. After determining the preliminary regulatory advantage assessment, we then assess the utility's business strategy. Most importantly, this factor addresses the effectiveness of a utility's management of the regulatory risk in the jurisdiction(s) where it operates. In certain jurisdictions, a utility's regulatory strategy and its ability to manage the tariff-setting process effectively so that revenues change with costs can be a compelling regulatory risk factor. A utility's approach and strategies surrounding regulatory matters can create a durable "competitive advantage" that differentiates it from peers, especially if the risk of political intervention is high. The assessment of a utility's business strategy is informed by historical performance and its forward-looking business objectives. We evaluate these objectives in the context of industry dynamics and the regulatory climate in which the utility operates, as evaluated through the factors cited in paragraphs 24-27.
30. We modify the preliminary regulatory advantage assessment to reflect this influence positively or negatively. Where business strategy has limited effect relative to peers, we view the implications as neutral and make no adjustment. A positive assessment improves the preliminary regulatory advantage assessment by one category and indicates that management's business strategy is expected to bolster its regulatory advantage through favorable commission rulings beyond what is typical for a utility in that jurisdiction. Conversely, where management's strategy or businesses decisions result in adverse regulatory outcomes relative to peers, such as failure to achieve typical cost recovery or allowed returns, we adjust the preliminary regulatory advantage assessment one category worse. In extreme cases of poor strategic execution, the preliminary regulatory advantage assessment is adjusted by two categories worse (when possible; see table 2) to reflect management decisions that are likely to result in a significantly adverse regulatory outcome relative to peers.

Table 2

Preliminary regulatory advantage score	--Strategy modifier--			
	Positive	Neutral	Negative	Very negative
Strong	Strong	Strong	Strong/Adequate	Adequate

Table 2

Determining The Final Regulatory Advantage Assessment (cont.)				
--Strategy modifier--				
Preliminary regulatory advantage score	Positive	Neutral	Negative	Very negative
Strong/Adequate	Strong	Strong/Adequate	Adequate	Adequate/Weak
Adequate	Strong/Adequate	Adequate	Adequate/Weak	Weak
Adequate/Weak	Adequate	Adequate/Weak	Weak	Weak
Weak	Adequate/Weak	Weak	Weak	Weak

Scale, scope, and diversity

31. We consider the key factors for this component of competitive position to be primarily operational scale and diversity of the geographic, economic, and regulatory foot prints. We focus on a utility's markets, service territories, and diversity and the extent that these attributes can contribute to cash flow stability while dampening the effect of economic and market threats.
32. A utility that warrants a Strong or Strong/Adequate assessment has scale, scope, and diversity that support the stability of its revenues and profits by limiting its vulnerability to most combinations of adverse factors, events, or trends. The utility's significant advantages enable it to withstand economic, regional, competitive, and technological threats better than its peers. It typically is characterized by a combination of the following factors:
- A large and diverse customer base with no meaningful customer concentration risk, where residential and small to medium commercial customers typically provide most operating income.
 - The utility's range of service territories and regulatory jurisdictions is better than others in the sector.
 - Exposure to multiple regulatory authorities where we assess preliminary regulatory advantage to be at least Adequate. In the case of exposure to a single regulatory regime, the regulatory advantage assessment is either Strong or Strong/Adequate.
 - No meaningful exposure to a single or few assets or suppliers that could hurt operations or could not easily be replaced.
33. A utility that warrants a Weak or Weak/Adequate assessment lacks scale, scope, and diversity such that it compromises the stability and sustainability of its revenues and profits. The utility's vulnerability to, or reliance on, various elements of this sub-factor is such that it is less likely than its peers to withstand economic, competitive, or technological threats. It typically is characterized by a combination of the following factors:
- A small customer base, especially if burdened by customer and/or industry concentration combined with little economic diversity and average to below-average economic prospects;
 - Exposure to a single service territory and a regulatory authority with a preliminary regulatory advantage assessment of Adequate or Adequate/Weak; or
 - Dependence on a single supplier or asset that cannot easily be replaced and which hurts the utility's operations.
34. We generally believe a larger service territory with a diverse customer base and average to above-average economic growth prospects provides a utility with cushion and flexibility in the recovery of operating costs and ongoing investment (including replacement and growth capital spending), as well as lessening the effect of external shocks (i.e., extreme local weather) since the incremental effect on each customer declines as the scale increases.

35. We consider residential and small commercial customers as having more stable usage patterns and being less exposed to periodic economic weakness, even after accounting for some weather-driven usage variability. Significant industrial exposure along with a local economy that largely depends on one or few cyclical industries potentially contributes to the cyclicity of a utility's load and financial performance, magnifying the effect of an economic downturn.
36. A utility's cash flow generation and stability can benefit from operating in multiple geographic regions that exhibit average to better than average levels of wealth, employment, and growth that underpin the local economy and support long-term growth. Where operations are in a single geographic region, the risk can be ameliorated if the region is sufficiently large, demonstrates economic diversity, and has at least average demographic characteristics.
37. The detriment of operating in a single large geographic area is subject to the strength of regulatory assessment. Where a utility operates in a single large geographic area and has a strong regulatory assessment, the benefit of diversity can be incremental.

Operating efficiency

38. We consider the key factors for this component of competitive position to be:
 - Compliance with the terms of its operating license, including safety, reliability, and environmental standards;
 - Cost management; and
 - Capital spending: scale, scope, and management.
39. Relative to peers, we analyze how successful a utility management achieves the above factors within the levels allowed by the regulator in a manner that promotes cash flow stability. We consider how management of these factors reduces the prospect of penalties for noncompliance, operating costs being greater than allowed, and capital projects running over budget and time, which could hurt full cost recovery.
40. The relative importance of the above three factors, particularly cost and capital spending management, is determined by the type of regulation under which the utility operates. Utilities operating under robust "cost plus" regimes tend to be more insulated given the high degree of confidence costs will invariably be passed through to customers. Utilities operating under incentive-based regimes are likely to be more sensitive to achieving regulatory standards. This is particularly so in the regulatory regimes that involve active consultation between regulator and utility and market testing as opposed to just handing down an outcome on a more arbitrary basis.
41. In some jurisdictions, the absolute performance standards are less relevant than how the utility performs against the regulator's performance benchmarks. It is this performance that will drive any penalties or incentive payments and can be a determinant of the utilities' credibility on operating and asset-management plans with its regulator.
42. Therefore, we consider that utilities that perform these functions well are more likely to consistently achieve determinations that maximize the likelihood of cost recovery and full inclusion of capital spending in their asset bases. Where regulatory resets are more at the discretion of the utility, effective cost management, including of labor, may allow for more control over the timing and magnitude of rate filings to maximize the chances of a constructive outcome such as full operational and capital cost recovery while protecting against reputational risks.
43. A regulated utility that warrants a Strong or Strong/Adequate assessment for operating efficiency relative to peers

generates revenues and profits through minimizing costs, increasing efficiencies, and asset utilization. It typically is characterized by a combination of the following:

- High safety record;
- Service reliability is strong, with a track record of meeting operating performance requirements of stakeholders, including those of regulators. Moreover, the utility's asset profile (including age and technology) is such that we have confidence that it could sustain favorable performance against targets;
- Where applicable, the utility is well-placed to meet current and potential future environmental standards;
- Management maintains very good cost control. Utilities with the highest assessment for operating efficiency have shown an ability to manage both their fixed and variable costs in line with regulatory expectations (including labor and working capital management being in line with regulator's allowed collection cycles); or
- There is a history of a high level of project management execution in capital spending programs, including large one-time projects, almost invariably within regulatory allowances for timing and budget.

44. A regulated utility that warrants an Adequate assessment for operating efficiency relative to peers has a combination of cost position and efficiency factors that support profit sustainability combined with average volatility. Its cost structure is similar to its peers. It typically is characterized by a combination of the following factors:

- High safety performance;
- Service reliability is satisfactory with a track record of mostly meeting operating performance requirements of stakeholders, including those of regulators. We have confidence that a favorable performance against targets can be mostly sustained;
- Where applicable, the utility may be challenged to comply with current and future environmental standards that could increase in the medium term;
- Management maintains adequate cost control. Utilities that we assess as having adequate operating efficiency mostly manage their fixed and variable costs in line with regulatory expectations (including labor and working capital management being mostly in line with regulator's allowed collection cycles); or
- There is a history of adequate project management skills in capital spending programs within regulatory allowances for timing and budget.

45. A regulated utility that warrants a weak or weak/adequate assessment for operating efficiency relative to peers has a combination of cost position and efficiency factors that fail to support profit sustainability combined with below-average volatility. Its cost structure is worse than its peers. It typically is characterized by a combination of the following:

- Poor safety performance;
- Service reliability has been sporadic or non-existent with a track record of not meeting operating performance requirements of stakeholders, including those of regulators. We do not believe the utility can consistently meet performance targets without additional capital spending;
- Where applicable, the utility is challenged to comply with current environmental standards and is highly vulnerable to more onerous standards;
- Management typically exceeds operating costs authorized by regulators;
- Inconsistent project management skills as evidenced by cost overruns and delays including for maintenance capital spending; or
- The capital spending program is large and complex and falls into the weak or weak/adequate assessment, even if operating efficiency is generally otherwise considered adequate.

Profitability

46. A utility with above-average profitability would, relative to its peers, generally earn a rate of return at or above what regulators authorize and have minimal exposure to earnings volatility from affiliated unregulated business activities or market-sensitive regulated operations. Conversely, a utility with below-average profitability would generally earn rates of return well below the authorized return relative to its peers or have significant exposure to earnings volatility from affiliated unregulated business activities or market-sensitive regulated operations.
47. The profitability assessment consists of "level of profitability" and "volatility of profitability."

Level of profitability

48. Key measures of general profitability for regulated utilities commonly include ratios, which we compare both with those of peers and those of companies in other industries to reflect different countries' regulatory frameworks and business environments:
- EBITDA margin,
 - Return on capital (ROC), and
 - Return on equity (ROE).
49. In many cases, EBITDA as a percentage of sales (i.e., EBITDA margin) is a key indicator of profitability. This is because the book value of capital does not always reflect true earning potential, for example when governments privatize or restructure incumbent state-owned utilities. Regulatory capital values can vary with those of reported capital because regulatory capital values are not inflation-indexed and could be subject to different assumptions concerning depreciation. In general, a country's inflation rate or required rate of return on equity investment is closely linked to a utility company's profitability. We do not adjust our analysis for these factors, because we can make our assessment through a peer comparison.
50. For regulated utilities subject to full cost-of-service regulation and return-on-investment requirements, we normally measure profitability using ROE, the ratio of net income available for common stockholders to average common equity. When setting rates, the regulator ultimately bases its decision on an authorized ROE. However, different factors such as variances in costs and usage may influence the return a utility is actually able to earn, and consequently our analysis of profitability for cost-of-service-based utilities centers on the utility's ability to consistently earn the authorized ROE.
51. We will use return on capital when pass-through costs distort profit margins—for instance congestion revenues or collection of third-party revenues. This is also the case when the utility uses accelerated depreciation of assets, which in our view might not be sustainable in the long run.

Volatility of profitability

52. We may observe a clear difference between the volatility of actual profitability and the volatility of underlying regulatory profitability. In these cases, we could use the regulatory accounts as a proxy to judge the stability of earnings.
53. We use actual returns to calculate the standard error of regression for regulated utility issuers (only if there are at least seven years of historical annual data to ensure meaningful results). If we believe recurring mergers and acquisitions or

currency fluctuations affect the results, we may make adjustments.

Part II--Financial Risk Analysis

D. Accounting

54. Our analysis of a company's financial statements begins with a review of the accounting to determine whether the statements accurately measure a company's performance and position relative to its peers and the larger universe of corporate entities. To allow for globally consistent and comparable financial analyses, our rating analysis may include quantitative adjustments to a company's reported results. These adjustments also align a company's reported figures with our view of underlying economic conditions and give us a more accurate portrayal of a company's ongoing business. We discuss adjustments that pertain broadly to all corporate sectors, including this sector, in "Corporate Methodology: Ratios And Adjustments." Accounting characteristics and analytical adjustments unique to this sector are discussed below.

Accounting characteristics

55. Some important accounting practices for utilities include:

- For integrated electric utilities that meet native load obligations in part with third-party power contracts, we use our purchased power methodology to adjust measures for the debt-like obligation such contracts represent (see below).
- Due to distortions in leverage measures from the substantial seasonal working-capital requirements of natural gas distribution utilities, we adjust inventory and debt balances by netting the value of inventory against outstanding short-term borrowings. This adjustment provides an accurate view of the company's balance sheet by reducing seasonal debt balances when we see a very high certainty of near-term cost recovery (see below).
- We deconsolidate securitized debt (and associated revenues and expenses) that has been accorded specialized recovery provisions (see below).
- For water utilities that report under U.K. GAAP, we adjust ratios for infrastructure renewals accounting, which permits water companies to capitalize the maintenance spending on their infrastructure assets (see below). The adjustments aim to make those water companies that report under U.K. GAAP more comparable to those that report under accounting regimes that do not permit infrastructure renewals accounting.

56. In the U.S. and selectively in other regions, utilities employ "regulatory accounting," which permits a rate-regulated company to defer some revenues and expenses to match the timing of the recognition of those items in rates as determined by regulators. A utility subject to regulatory accounting will therefore have assets and liabilities on its books that an unregulated corporation, or even regulated utilities in many other global regions, cannot record. We do not adjust GAAP earnings or balance-sheet figures to remove the effects of regulatory accounting. However, as more countries adopt International Financial Reporting Standards (IFRS), the use of regulatory accounting will become more scarce. IFRS does not currently provide for any recognition of the effects of rate regulation for financial reporting purposes, but it is considering the use of regulatory accounting. We do not anticipate altering our fundamental financial analysis of utilities because of the use or non-use of regulatory accounting. We will continue to analyze the effects of regulatory actions on a utility's financial health.

Purchased power adjustment

57. We view long-term purchased power agreements (PPA) as creating fixed, debt-like financial obligations that represent substitutes for debt-financed capital investments in generation capacity. By adjusting financial measures to incorporate PPA fixed obligations, we achieve greater comparability of utilities that finance and build generation capacity and those that purchase capacity to satisfy new load. PPAs do benefit utilities by shifting various risks to the electricity generators, such as construction risk and most of the operating risk. The principal risk borne by a utility that relies on PPAs is recovering the costs of the financial obligation in rates.
58. We calculate the present value (PV) of the future stream of capacity payments under the contracts as reported in the financial statement footnotes or as supplied directly by the company. The discount rate used is the same as the one used in the operating lease adjustment, i.e., 7%. For U.S. companies, notes to the financial statements enumerate capacity payments for the coming five years, and a thereafter period. Company forecasts show the detail underlying the thereafter amount, or we divide the amount reported as thereafter by the average of the capacity payments in the preceding five years to get an approximation of annual payments after year five.
59. We also consider new contracts that will start during the forecast period. The company provides us the information regarding these contracts. If these contracts represent extensions of existing PPAs, they are immediately included in the PV calculation. However, a contract sometimes is executed in anticipation of incremental future needs, so the energy will not flow until some later period and there are no interim payments. In these instances, we incorporate that contract in our projections, starting in the year that energy deliveries begin under the contract. The projected PPA debt is included in projected ratios as a current rating factor, even though it is not included in the current-year ratio calculations.
60. The PV is adjusted to reflect regulatory or legislative cost-recovery mechanisms when present. Where there is no explicit regulatory or legislative recovery of PPA costs, as in most European countries, the PV may be adjusted for other mitigating factors that reduce the risk of the PPAs to the utility, such as a limited economic importance of the PPAs to the utility's overall portfolio. The adjustment reduces the debt-equivalent amount by multiplying the PV by a specific risk factor.
61. Risk factors based on regulatory or legislative cost recovery typically range between 0% and 50%, but can be as high as 100%. A 100% risk factor would signify that substantially all risk related to contractual obligations rests on the company, with no regulatory or legislative support. A 0% risk factor indicates that the burden of the contractual payments rests solely with ratepayers, as when the utility merely acts as a conduit for the delivery of a third party's electricity. These utilities are barred from developing new generation assets, and the power supplied to their customers is sourced through a state auction or third parties that act as intermediaries between retail customers and electricity suppliers. We employ a 50% risk factor in cases where regulators use base rates for the recovery of the fixed PPA costs. If a regulator has established a separate adjustment mechanism for recovery of all prudent PPA costs, a risk factor of 25% is employed. In certain jurisdictions, true-up mechanisms are more favorable and frequent than the review of base rates, but still do not amount to pure fuel adjustment clauses. Such mechanisms may be triggered by financial thresholds or passage of prescribed periods of time. In these instances, a risk factor between 25% and 50% is employed. Specialized, legislatively created cost-recovery mechanisms may lead to risk factors between 0% and 15%, depending on the legislative provisions for cost recovery and the supply function borne by the utility. Legislative

guarantees of complete and timely recovery of costs are particularly important to achieving the lowest risk factors. We also exclude short-term PPAs where they serve merely as gap fillers, pending either the construction of new capacity or the execution of long-term PPAs.

62. Where there is no explicit regulatory or legislative recovery of PPA costs, the risk factor is generally 100%. We may use a lower risk factor if mitigating factors reduce the risk of the PPAs on the utility. Mitigating factors include a long position in owned generation capacity relative to the utility's customer supply needs that limits the importance of the PPAs to the utility or the ability to resell power in a highly liquid market at minimal loss. A utility with surplus owned generation capacity would be assigned a risk factor of less than 100%, generally 50% or lower, because we would assess its reliance on PPAs as limited. For fixed capacity payments under PPAs related to renewable power, we use a risk factor of less than 100% if the utility benefits from government subsidies. The risk factor reflects the degree of regulatory recovery through the government subsidy.
63. Given the long-term mandate of electric utilities to meet their customers' demand for electricity, and also to enable comparison of companies with different contract lengths, we may use an evergreening methodology. Evergreen treatment extends the duration of short- and intermediate-term contracts to a common length of about 12 years. To quantify the cost of the extended capacity, we use empirical data regarding the cost of developing new peaking capacity, incorporating regional differences. The cost of new capacity is translated into a dollars-per-kilowatt-year figure using a proxy weighted-average cost of capital and a proxy capital recovery period.
64. Some PPAs are treated as operating leases for accounting purposes--based on the tenor of the PPA or the residual value of the asset on the PPA's expiration. We accord PPA treatment to those obligations, in lieu of lease treatment; rather, the PV of the stream of capacity payments associated with these PPAs is reduced to reflect the applicable risk factor.
65. Long-term transmission contracts can also substitute for new generation, and, accordingly, may fall under our PPA methodology. We sometimes view these types of transmission arrangements as extensions of the power plants to which they are connected or the markets that they serve. Accordingly, we impute debt for the fixed costs associated with such transmission contracts.
66. Adjustment procedures:
 - Data requirements:
 - Future capacity payments obtained from the financial statement footnotes or from management.
 - Discount rate: 7%.
 - Analytically determined risk factor.
 - Calculations:
 - Balance sheet debt is increased by the PV of the stream of capacity payments multiplied by the risk factor.
 - Equity is not adjusted because the recharacterization of the PPA implies the creation of an asset, which offsets the debt.
 - Property, plant, and equipment and total assets are increased for the implied creation of an asset equivalent to the debt.
 - An implied interest expense for the imputed debt is determined by multiplying the discount rate by the amount of

imputed debt (or average PPA imputed debt, if there is fluctuation of the level), and is added to interest expense.

- We impute a depreciation component to PPAs. The depreciation component is determined by multiplying the relevant year's capacity payment by the risk factor and then subtracting the implied PPA-related interest for that year. Accordingly, the impact of PPAs on cash flow measures is tempered.
- The cost amount attributed to depreciation is reclassified as capital spending, thereby increasing operating cash flow and funds from operations (FFO).
- Some PPA contracts refer only to a single, all-in energy price. We identify an implied capacity price within such an all-in energy price, to determine an implied capacity payment associated with the PPA. This implied capacity payment is expressed in dollars per kilowatt-year, multiplied by the number of kilowatts under contract. (In cases that exhibit markedly different capacity factors, such as wind power, the relation of capacity payment to the all-in charge is adjusted accordingly.)
- Operating income before depreciation and amortization (D&A) and EBITDA are increased for the imputed interest expense and imputed depreciation component, the total of which equals the entire amount paid for PPA (subject to the risk factor).
- Operating income after D&A and EBIT are increased for interest expense.

Natural gas inventory adjustment

67. In jurisdictions where a pass-through mechanism is used to recover purchased natural gas costs of gas distribution utilities within one year, we adjust for seasonal changes in short-term debt tied to building inventories of natural gas in non-peak periods for later use to meet peak loads in peak months. Such short-term debt is not considered to be part of the utility's permanent capital. Any history of non-trivial disallowances of purchased gas costs would preclude the use of this adjustment. The accounting of natural gas inventories and associated short-term debt used to finance the purchases must be segregated from other trading activities.

68. Adjustment procedures:

- Data requirements:
 - Short-term debt amount associated with seasonal purchases of natural gas devoted to meeting peak-load needs of captive utility customers (obtained from the company).
- Calculations:
 - Adjustment to debt--we subtract the identified short-term debt from total debt.

Securitized debt adjustment

69. For regulated utilities, we deconsolidate debt (and associated revenues and expenses) that the utility issues as part of a securitization of costs that have been segregated for specialized recovery by the government entity constitutionally authorized to mandate such recovery if the securitization structure contains a number of protective features:

- An irrevocable, non-bypassable charge and an absolute transfer and first-priority security interest in transition property;
- Periodic adjustments ("true-up") of the charge to remediate over- or under-collections compared with the debt service obligation. The true-up ensures collections match debt service over time and do not diverge significantly in the short run; and,
- Reserve accounts to cover any temporary short-term shortfall in collections.

70. Full cost recovery is in most instances mandated by statute. Examples of securitized costs include "stranded costs"

(above-market utility costs that are deemed unrecoverable when a transition from regulation to competition occurs) and unusually large restoration costs following a major weather event such as a hurricane. If the defined features are present, the securitization effectively makes all consumers responsible for principal and interest payments, and the utility is simply a pass-through entity for servicing the debt. We therefore remove the debt and related revenues and expenses from our measures. (See "Securitizing Stranded Costs," Jan. 18, 2001, for background information.)

71. Adjustment procedures:

- Data requirements:
 - Amount of securitized debt on the utility's balance sheet at period end;
 - Interest expense related to securitized debt for the period; and
 - Principal payments on securitized debt during the period.
- Calculations:
 - Adjustment to debt: We subtract the securitized debt from total debt.
 - Adjustment to revenues: We reduce revenue allocated to securitized debt principal and interest. The adjustment is the sum of interest and principal payments made during the year.
 - Adjustment to operating income after depreciation and amortization (D&A) and EBIT: We reduce D&A related to the securitized debt, which is assumed to equal the principal payments during the period. As a result, the reduction to operating income after D&A is only for the interest portion.
 - Adjustment to interest expense: We remove the interest expense of the securitized debt from total interest expense.
- Operating cash flows:
 - We reduce operating cash flows for revenues and increase for the assumed interest amount related to the securitized debt. This results in a net decrease to operating cash flows equal to the principal repayment amount.

Infrastructure renewals expenditure

72. In England and Wales, water utilities can report under either IFRS or U.K. GAAP. Those that report under U.K. GAAP are allowed to adopt infrastructure renewals accounting, which enables the companies to capitalize the maintenance spending on their underground assets, called infrastructure renewals expenditure (IRE). Under IFRS, infrastructure renewals accounting is not permitted and maintenance expenditure is charged to earnings in the year incurred. This difference typically results in lower adjusted operating cash flows for those companies that report maintenance expenditure as an operating cash flow under IFRS, than for those that report it as capital expenditure under U.K. GAAP. We therefore make financial adjustments to amounts reported by water issuers that apply U.K. GAAP, with the aim of making ratios more comparable with those issuers that report under IFRS and U.S. GAAP. For example, we deduct IRE from EBITDA and FFO.
73. IRE does not always consist entirely of maintenance expenditure that would be expensed under IFRS. A portion of IRE can relate to costs that would be eligible for capitalization as they meet the recognition criteria for a new fixed asset set out in International Accounting Standard 16 that addresses property, plant, and equipment. In such cases, we may refine our adjustment to U.K. GAAP companies so that we only deduct from FFO the portion of IRE that would not be capitalized under IFRS. However, the information to make such a refinement would need to be of high quality, reliable, and ideally independently verified by a third party, such as the company's auditor. In the absence of this, we assume that the entire amount of IRE would have been expensed under IFRS and we accordingly deduct the full expenditure

from FFO.

74. Adjustment procedures:

- Data requirements:
- U.K. GAAP accounts typically provide little information on the portion of capital spending that relates to renewals accounting, or the related depreciation, which is referred to as the infrastructure renewals charge. The information we use for our adjustments is, however, found in the regulatory cost accounts submitted annually by the water companies to the Water Services Regulation Authority, which regulates all water companies in England and Wales.
- Calculations:
- EBITDA: Reduced by the value of IRE that was capitalized in the period.
- EBIT: Adjusted for the difference between the adjustment to EBITDA and the reduction in the depreciation expense, depending on the degree to which the actual cash spending in the current year matches the planned spending over the five-year regulatory review period.
- Cash flow from operations and FFO: Reduced by the value of IRE that was capitalized in the period.
- Capital spending: Reduced by the value of infrastructure renewals spending that we reclassify to cash flow from operations.
- Free operating cash flow: No impact, as the reduction in operating cash flows is exactly offset by the reduction in capital spending.

E. Cash flow/leverage analysis

75. In assessing the cash flow adequacy of a regulated utility, our analysis uses the same methodology as with other corporate issuers (see "Corporate Methodology"). We assess cash flow/leverage on a six-point scale ranging from ('1') minimal to ('6') highly leveraged. These scores are determined by aggregating the assessments of a range of credit ratios, predominantly cash flow-based, which complement each other by focusing attention on the different levels of a company's cash flow waterfall in relation to its obligations.
76. The corporate methodology provides benchmark ranges for various cash flow ratios we associate with different cash flow leverage assessments for standard volatility, medial volatility, and low volatility industries. The tables of benchmark ratios differ for a given ratio and cash flow leverage assessment along two dimensions: the starting point for the ratio range and the width of the ratio range.
77. If an industry's volatility levels are low, the threshold levels for the applicable ratios to achieve a given cash flow leverage assessment are less stringent, although the width of the ratio range is narrower. Conversely, if an industry has standard levels of volatility, the threshold levels for the applicable ratios to achieve a given cash flow leverage assessment may be elevated, but with a wider range of values.
78. We apply the "low-volatility" table to regulated utilities that qualify under the corporate criteria and with all of the following characteristics:
- A vast majority of operating cash flows come from regulated operations that are predominantly at the low end of the utility risk spectrum (e.g., a "network," or distribution/transmission business unexposed to commodity risk and with very low operating risk);
 - A "strong" regulatory advantage assessment;
 - An established track record of normally stable credit measures that is expected to continue;

- A demonstrated long-term track record of low funding costs (credit spread) for long-term debt that is expected to continue; and
- Non-utility activities that are in a separate part of the group (as defined in our group rating methodology) that we consider to have "nonstrategic" group status and are not deemed high risk and/or volatile.

79. We apply the "medial volatility" table to companies that do not qualify under paragraph 78 with:

- A majority of operating cash flows from regulated activities with an "adequate" or better regulatory advantage assessment; or
- About one-third or more of consolidated operating cash flow comes from regulated utility activities with a "strong" regulatory advantage and where the average of its remaining activities have a competitive position assessment of '3' or better.

80. We apply the "standard-volatility" table to companies that do not qualify under paragraph 79 and with either:

- About one-third or less of its operating cash flow comes from regulated utility activities, regardless of its regulatory advantage assessment; or
- A regulatory advantage assessment of "adequate/weak" or "weak."

Part III--Rating Modifiers

F. Diversification/portfolio effect

81. In assessing the diversification/portfolio effect on a regulated utility, our analysis uses the same methodology as with other corporate issuers (see "Corporate Methodology").

G. Capital structure

82. In assessing the quality of the capital structure of a regulated utility, we use the same methodology as with other corporate issuers (see "Corporate Methodology").

H. Liquidity

83. In assessing a utility's liquidity/short-term factors, our analysis is consistent with the methodology that applies to corporate issuers (See "Methodology And Assumptions: Liquidity Descriptors For Global Corporate Issuers," Dec. 16, 2014) except for the standards for "adequate" liquidity set out in paragraph 84 below.

84. The relative certainty of financial performance by utilities operating under relatively predictable regulatory monopoly frameworks make these utilities attractive to investors even in times of economic stress and market turbulence compared to conventional industrials. For this reason, utilities with business risk profiles of at least "satisfactory" meet our definition of "adequate" liquidity based on a slightly lower ratio of sources to uses of funds of 1.1x compared with the standard 1.2x. Also, recognizing the cash flow stability of regulated utilities we allow more discretion when calculating covenant headroom. We consider that utilities have adequate liquidity if they generate positive sources over uses, even if forecast EBITDA declines by 10% (compared with the 15% benchmark for corporate issuers) before covenants are breached.

I. Financial policy

85. In assessing financial policy on a regulated utility, our analysis uses the same methodology as with other corporate issuers (see "Corporate Methodology").

J. Management and governance

86. In assessing management and governance on a regulated utility, our analysis uses the same methodology as with other corporate issuers (see "Corporate Methodology").

K. Comparable ratings analysis

87. In assessing the comparable ratings analysis on a regulated utility, our analysis uses the same methodology as with other corporate issuers (see "Corporate Methodology").

Appendix--Frequently Asked Questions

Does Standard & Poor's expect that the business strategy modifier to the preliminary regulatory advantage will be used extensively?

88. Globally, we expect management's influence will be neutral in most jurisdictions. Where the regulatory assessment is "strong," it is less likely that a negative business strategy modifier would be used due to the nature of the regulatory regime that led to the "strong" assessment in the first place. Utilities in "adequate/weak" and "weak" regulatory regimes are challenged to outperform due to the uncertainty of such regulatory regimes. For a positive use of the business strategy modifier, there would need to be a track record of the utility consistently outperforming the parameters laid down under a regulatory regime, and we would need to believe this could be sustained. The business strategy modifier is most likely to be used when the preliminary regulatory advantage assessment is "strong/adequate" because the starting point in the assessment is reasonably supportive, and a utility has shown it manages regulatory risk better or worse than its peers in that regulatory environment and we expect that advantage or disadvantage will persist. An example would be a utility that can consistently earn or exceed its authorized return in a jurisdiction where most other utilities struggle to do so. If a utility is treated differently by a regulator due to perceptions of poor customer service or reliability and the "operating efficiency" component of the competitive position assessment does not fully capture the effect on the business risk profile, a negative business strategy modifier could be used to accurately incorporate it into our analysis. We expect very few utilities will be assigned a "very negative" business strategy modifier.

Does a relatively strong or poor relationship between the utility and its regulator compared with its peers in the same jurisdiction necessarily result in a positive or negative adjustment to the preliminary regulatory advantage assessment?

89. No. The business strategy modifier is used to differentiate a company's regulatory advantage within a jurisdiction where we believe management's business strategy has and will positively or negatively affect regulatory outcomes beyond what is typical for other utilities in that jurisdiction. For instance, in a regulatory jurisdiction where allowed returns are negotiated rather than set by formula, a utility that is consistently authorized higher returns (and is able to earn that return) could warrant a positive adjustment. A management team that cannot negotiate an approved capital spending program to improve its operating performance could be assessed negatively if its performance lags behind peers in the same regulatory jurisdiction.

What is your definition of regulatory jurisdiction?

90. A regulatory jurisdiction is defined as the area over which the regulator has oversight and could include single or multiple subsectors (water, gas, and power). A geographic region may have several regulatory jurisdictions. For example, the Office of Gas and Electricity Markets and the Water Services Regulation Authority in the U.K. are considered separate regulatory jurisdictions. In Ontario, Canada, the Ontario Energy Board represents a single jurisdiction with regulatory oversight for power and gas. Also, in Australia, the Australian Energy Regulator would be considered a single jurisdiction given that it is responsible for both electricity and gas transmission and distribution networks in the entire country, with the exception of Western Australia.

Are there examples of different preliminary regulatory advantage assessments in the same country or jurisdiction?

91. Yes. In Israel we rate a regulated integrated power utility and a regulated gas transmission system operator (TSO). The power utility's relationship with its regulator is extremely poor in our view, which led to significant cash flow volatility in a stress scenario (when terrorists blew up the gas pipeline that was then Israel's main source of natural gas, the utility was unable to negotiate compensation for expensive alternatives in its regulated tariffs). We view the gas TSO's relationship with its regulator as very supportive and stable. Because we already reflected this in very different preliminary regulatory advantage assessments, we did not modify the preliminary assessments because the two regulatory environments in Israel differ and were not the result of the companies' respective business strategies.

How is regulatory advantage assessed for utilities that are a natural monopoly but are not regulated by a regulator or a specific regulatory framework, and do you use the regulatory modifier if they achieve favorable treatment from the government as an owner?

92. The four regulatory pillars remain the same. On regulatory stability we look at the stability of the setup, with more emphasis on the historical track record and our expectations regarding future changes. In tariff-setting procedures and design we look at the utility's ability to fully recover operating costs, investments requirements, and debt-service obligations. In financial stability we look at the degree of flexibility in tariffs to counter volume risk or commodity risk. The flexibility can also relate to the level of indirect competition the utility faces. For example, while Nordic district heating companies operate under a natural monopoly, their tariff flexibility is partly restricted by customers' option to change to a different heating source if tariffs are significantly increased. Regulatory independence and insulation is mainly based on the perceived risk of political intervention to change the setup that could affect the utility's credit profile. Although political intervention tends to be mostly negative, in certain cases political ties due to state ownership might positively influence tariff determination. We believe that the four pillars effectively capture the benefits from the close relationship between the utility and the state as an owner; therefore, we do not foresee the use of the regulatory modifier.

In table 1, when describing a "strong" regulatory advantage assessment, you mention that there is support of cash flows during construction of large projects, and preapproval of capital investment programs and large projects lowers the risk of subsequent disallowances of capital costs. Would this preclude a "strong" regulatory advantage assessment in jurisdictions where those practices are absent?

93. No. The table is guidance as to what we would typically expect from a regulatory framework that we would assess as "strong." We would expect some frameworks with no capital support during construction to receive a "strong" regulatory advantage assessment if in aggregate the other factors we analyze support that conclusion.

RELATED CRITERIA AND RESEARCH

- Corporate Methodology, Nov. 19, 2013
- Group Rating Methodology, Nov. 19, 2013
- Methodology: Industry Risk, Nov. 19, 2013
- Corporate Methodology: Ratios And Adjustments, Nov. 19, 2013
- Ratings Above The Sovereign--Corporate And Government Ratings: Methodology And Assumptions, Nov. 19, 2013
- Methodology And Assumptions: Liquidity Descriptors For Global Corporate Issuers, Dec. 16, 2014
- Collateral Coverage And Issue Notching Rules For '1+' And '1' Recovery Ratings On Senior Bonds Secured By Utility Real Property, Feb. 14, 2013
- Methodology: Management And Governance Credit Factors For Corporate Entities and Insurers, Nov. 13, 2012
- General Criteria: Principles Of Credit Ratings, Feb. 16, 2011
- General Criteria: Rating Government-Related Entities: Methodology And Assumptions, March 25, 2013

APPENDIX: MATERIAL RELATED TO INITIAL PUBLICATION OF THIS CRITERIA

These criteria became effective on Nov. 19, 2013.

This criteria article superseded

- "Key Credit Factors: Business And Financial Risks In The Investor-Owned Utilities Industry," published Nov. 26, 2008
- "Assessing U.S. Utility Regulatory Environments," Nov. 7, 2007, and
- "Revised Methodology For Adjusting Amounts Reported By U.K. GAAP Water Companies For Infrastructure Renewals Accounting," Jan. 27, 2010.

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94. These criteria represent the specific application of fundamental principles that define credit risk and ratings opinions. Their use is determined by issuer- or issue-specific attributes as well as Standard & Poor's Ratings Services' assessment of the credit and, if applicable, structural risks for a given issuer or issue rating. Methodology and assumptions may change from time to time as a result of market and economic conditions, issuer- or issue-specific factors, or new empirical evidence that would affect our credit judgment.
95. [This paragraph has been deleted.]

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REFERENCE:

Tab 6, Page 16

PREAMBLE TO IR (IF ANY):

QUESTION:

- a) Please provide a breakdown to explain the increase in finance expense between 2014/15 and 2016/17 separated each year into the following categories:
- i) Increases due to new projects coming in-service (and please provide references to the gross plant values underlying these changes);
 - ii) Changes from maturities, refinancing and new debt issues (including impacts of increases/(decreases) in average interest rates);
 - iii) Changes in capitalization policies and/or reporting method changes; and
 - iv) Other impacts.

RATIONALE FOR QUESTION:

RESPONSE:

- a) Please see Manitoba Hydro's response to Coalition/MH I-96d for an update to PUB MFR 55, which provides the increase in finance expense between 2014/15 and 2016/17 including actuals for 2016/17.
- i. With average annual spending on capital projects in excess of \$2 billion over the past three years, the volume of capital activity at Manitoba Hydro is extremely large. As capital spending ends on one project, funds are redirected to other projects such that there is a continuous flow of both projects coming into service and projects starting up. For fiscal 2017, approximately 2,000 separate capital projects were placed into service. As presented in the notes to the financial statements for the past three years, Manitoba Hydro has placed the following property, plant and equipment balances into service:

	<u>2015</u>	<u>2016</u>	<u>2017</u>
Projects placed in service (in billions)	\$1.6	\$0.8	\$0.7

Given the large volume of capital projects, Manitoba Hydro has selected a sample of project costs placed in service over the past three years with significant in service amounts (i.e. > \$50 million). The table below identifies the sample of specific projects, the amounts placed in service, and the increase in finance expense for the year the project was placed in service as well as the impact to 2017. The sample of in service amounts identified may not necessarily represent the total costs for the respective project as a project can have multiple in service amounts over the time of its construction.

**Impact on Finance Expense - PP&E projects placed in service
(in millions)**

Project	In Service Date Month-Year	In Service Amount	Increase in Finance Expense		
			2015	2016	2017
Pointe du Bois Spillway	Aug-14	294.0	10.1	16.5	15.9
	Sep-14	76.7	2.3	4.3	4.1
	Sep-15	93.6		2.4	5.1
Riel 230/500 kV Station	Aug-14	284.8	9.7	16.0	15.4
Great Falls Unit 4 Overhaul	Feb-16	49.6		0.2	2.7
Conawapa*	NA	379.3			5.1
Total			22.1	39.4	48.2

* Conawapa is a suspended project in CWIP, spending and interest capitalization ceased as of December 2016

On an overall basis, capitalized interest year over year has increased by \$31 million from fiscal 2015 to 2016 and \$71 million from fiscal 2016 to 2017 as a result of increased Bipole III and Keeyask capital spending.

- ii. Maturities, refinancing, and new debt issues are responsible for an increase to finance expense of \$52 million from fiscal 2015 to 2016 and \$57 million from fiscal 2016 to 2017, excluding foreign exchange impacts. These finance expense increases are comprised of volume increases of \$76 million from fiscal 2015 to 2016 and \$86 million from fiscal 2016 to 2017, which are due to increased borrowings to fund the

increasing capital program. The volume increases are partially offset by interest rate decreases of \$24 million from fiscal 2015 to 2016 and \$29 million from fiscal 2016 to 2017 which are due to Manitoba Hydro issuing new debt and taking advantage of low interest rates (weighted average interest rate on new debt; 3.37% in 2014/15, 2.87% in 2015/16, and 2.45% in 2016/17), and thereby decreasing the weighted average interest rate of its debt portfolio.

- iii. None of the increase in finance expense is due to changes in capitalization policies or reporting method changes.

- iv. There are other items that were responsible for the change in finance expense.

The increased borrowings discussed in part ii) also increased provincial guarantee fees paid to the Province of Manitoba by \$13 million from fiscal 2015 to 2016 and \$14 million from fiscal 2016 to 2017.

Foreign exchange impacts increased finance expense by \$24 million from fiscal 2015 to 2016 and \$26 million from fiscal 2016 to 2017. Under the Foreign Currency Risk Management Program, these foreign exchange losses are offset with the recognition of U.S. revenues in cash flow hedges thus mitigating the net income impact to Manitoba Hydro.

REFERENCE:

Tab 6, Page 16

PREAMBLE TO IR (IF ANY):

QUESTION:

- b) Manitoba Hydro indicated at Appendix 3.5 page 8 that Sinking Fund balances “can only be withdrawn for debt maturities”. Please indicate the source of this understanding on limit on withdrawal.
- c) In the current cash constrained and low interest rate environment, please indicate why Hydro continues to assume that investments in Sinking Funds will be maintained (Appendix 3.5 page 8). Has Hydro sought relief from the Sinking Fund requirements from the province?

RATIONALE FOR QUESTION:

RESPONSE:

Response to part b):

The *Manitoba Hydro Act* C.C.S.M. c. H190 limits the use of the sinking fund for repayment of borrowings under section 41:

“Investment by Minister of Finance

41(5) The Minister of Finance shall invest and keep invested the moneys and investments so held by the Minister of Finance, in securities authorized by *The Financial Administration Act* for the investment of funds, and shall apply them towards the repayment of advances made to, and moneys borrowed or assumed by, the corporation or liability for the repayment of which is an obligation of the corporation and to which reference is made in subsection (1), as they fall due; and the Minister of Finance shall pay to the corporation all interest earned from the investment of the moneys so reserved and set aside and paid to and held by the Minister of Finance.”

The reference to subsection (1) is as follows:

“Establishment of sinking fund

41(1) The board shall reserve and set aside, out of the reserves or funds of the corporation established and maintained under section 40 and out of such other revenues and funds of the corporation as may be available for such purposes,

(a) such annual or other periodic amounts as may be required to be reserved and set aside as a sinking fund under any agreement or undertaking entered into, or assumed, by the corporation or the responsibility for the performance or implementation of which is an obligation of the corporation, relative to the repayment of moneys borrowed by the corporation and

(b) such additional annual or other periodic amounts as the Lieutenant Governor in Council may from time to time direct to be reserved and set aside as a sinking fund for the repayment of any other moneys borrowed by, or advanced to, the corporation and applied to the cost of acquisition or construction of property and works of the corporation, or indebtedness assumed by the corporation or the liability for the repayment of which is an obligation of the corporation, in respect of the cost of any property or works of the corporation, or otherwise.”

Response to part c):

Amendment of legislation falls under the purview of the Province of Manitoba and not of Manitoba Hydro. Manitoba Hydro will continue to comply with legislated requirements unless and until they are amended.

Manitoba Hydro does state in the Debt Management Strategy on page 8 that: “In the next few years, in order to optimize the Corporation’s liquidity practices and to reduce finance expense, Manitoba Hydro will seek to minimize its sinking fund balances.”

REFERENCE:

Tab 3, Page 14

PREAMBLE TO IR (IF ANY):

Hydro states at page 14 of Tab 3 in its application:

In addition, the premium that has historically been applied to the long-term dependable forecast prices has been removed as the achievability of this premium has reduced significantly in the MISO market. Reflecting the continuing trend of low capacity value, a January 2017 update removed capacity value from the pricing of potential future uncommitted export sales from surplus dependable energy.

QUESTION:

- a) Was the long-term “dependable forecast price” premium historically applied by Manitoba Hydro or was it contained in the market forecast consultants’ export price forecasts?
- b) Was Hydro advised by its market forecast consultants to remove the export price premium? If so, when and by how many of the export price consultants?
- c) What is the annual export revenue change from IFF15 to IFF16 as a result of the premium removal?

RATIONALE FOR QUESTION:

RESPONSE:

- a) The long-term “dependable forecast price” premium was historically applied by Manitoba Hydro.
- b) Manitoba Hydro made the decision in the process of reviewing current market conditions as it was determined that a premium was not appropriate at this time for long term planning purposes.

- c) Please see Manitoba Hydro's response to PUB/MH I-50 which provides the net revenue impact associated with this change in planning assumption.

REFERENCE:

Tab 8, Pages 13 and 18

PREAMBLE TO IR (IF ANY):

QUESTION:

- a) With reference to PCOSS18, pages 18-19, for each row on the 2 pages please provide a break down by class of the noted costs.
- b) With respect to the C10 Customer Service table at page 18 of PCOSS18, please provide a discussion on each row (totalling \$13.9 million) as to why the costs are not predominately if not entirely related to distribution service.
- c) Does Manitoba Hydro “Line Locates” service play a role in locating transmission lines, or primarily distribution lines? Please provide a breakdown of locates by transmission versus distribution.
- d) Please provide a breakdown of the \$3.1 million in costs that Hydro incurs for building moves and overseeing work near electric plant (PCOSS18, page 18). What costs does this represent? Are these activities performed on a cost-recovery basis?
- e) Does Manitoba Hydro incur costs for “building moves and oversight of work conducted near electric plant” related to transmission plant, or does this only (or at least predominately) apply to activities that are in the vicinity of distribution lines?
- f) Please provide a description of the \$1.2 million in “Call Center Outage Calls” (PCOSS18, page 18) indicating the type of costs and what activities are performed by the call center. Is the call center not primarily oriented to serving distribution level customers, with transmission connected customers receiving their customer service contacts through the Industrial and Commercial Solutions group?

RATIONALE FOR QUESTION:

RESPONSE:

- a) The following table provides details on the allocation of Customer Service costs broken down by class.

Customer Service Activity		Class Share of Operating (\$ million)								
		Res	GSS ND	GSS D	GSM	GSL 0-30kV	GSL 30-100 kV	GSL >100k V	A&RL	Total
C10	Education & Safety	0.52	0.12	0.13	0.16	0.08	0.06	0.15	0.02	1.2
C10	Contact Center - Outages	0.51	0.12	0.12	0.16	0.08	0.06	0.15	0.02	1.2
C10	Rates & Regulatory	1.25	0.29	0.30	0.40	0.19	0.14	0.37	0.04	3.0
C10	Marketing R&D	0.56	0.13	0.13	0.18	0.08	0.06	0.17	0.02	1.3
C10	Line Locates	1.70	0.39	0.41	0.54	0.25	0.20	0.51	0.06	4.1
C10	Building Moves & Safety Watches	1.28	0.29	0.31	0.41	0.19	0.15	0.38	0.05	3.1
C23	Industrial & Commercial Solutions	-	-	-	-	1.14	0.89	2.29	-	4.3
C13	Customer & Community Service Work	2.33	0.54	0.57	0.74	-	-	-	0.08	4.3
C13	General Inquiries	1.11	0.25	0.27	0.35	-	-	-	0.04	2.0
C13	Power Quality	0.57	0.13	0.14	0.18	-	-	-	0.02	1.0
C13	Service Extensions	7.62	1.75	1.84	2.41	-	-	-	0.27	13.9
C11	Adjustments & Complex Billing	1.91	0.21	0.05	0.04	0.01	0.00	0.00	0.01	2.2
C11	Customer Accounts	0.59	0.06	0.01	0.01	0.00	0.00	0.00	0.00	0.7
C11	Field Billing	6.21	0.67	0.16	0.14	0.03	0.00	0.00	0.02	7.2
C11	CIS Admin	0.99	0.11	0.03	0.02	0.00	0.00	0.00	0.00	1.2
C11	Administrative	8.94	0.97	0.23	0.21	0.04	0.01	0.00	0.03	10.4
C12	Collections	10.68	0.83	0.19	0.03	-	-	-	-	11.7
C14	Inspections	1.29	1.69	0.40	0.07	0.01	0.00	0.00	-	3.5
C15	Meter Reading	8.62	1.12	0.54	0.09	0.01	0.00	0.00	-	10.4
Total		56.7	9.7	5.8	6.1	2.1	1.6	4.0	0.7	86.7

b) The activities listed on page 18 as C10 Customer Service General costs continue to be functionalized as Distribution Service in PCOSS18. Manitoba Hydro assumes the question was intended to seek clarification why the costs are not predominately if not entirely related to customers served at the distribution level.

The services included in this subfunction are not provided for the specific benefit of individual customers or class of customers, rather they are for the public good and applicable to all customer classes.

C10 Customer Service Activity	Rationale
Education & Safety	Programs include safety around dams, waterways, substations, and overhead powerlines. The programs are not specifically related to distribution plant, or customers served at the distribution level.
Contact Center - Outages	The contact center is the initial point of contact for all customers, and not specifically for customers served at the distribution level.
Rates & Regulatory	All customer classes participate in and benefit from the regulatory process.
Marketing R&D	Activities include creating marketing plans, customer surveys, maintaining customer coding databases, and enhancing business development in the province. These activities are not specifically related to customers served at the distribution level.
Line Locates	Service primarily relates to distribution facilities, but would also include transmission and subtransmission voltage facilities.
Building Moves & Safety Watches	Service primarily relates to distribution facilities, but would also include transmission and subtransmission voltage facilities.

c) Manitoba Hydro does not track the service by type of electric plant and is therefore unable to provide a breakdown of how much time or cost is specifically related to locating transmission versus distribution lines. Based on the installed length of underground transmission lines compared to underground distribution, it is reasonable to assume the service is primarily related to distribution facilities. However, Manitoba Hydro can confirm that the Line Locates category would include some activities related to locating transmission lines.

- d) In PCOSS18 approximately 60% of the \$3.1 million cost is related to building moves, and the remaining 40% is related to safety watch activities. Manitoba Hydro's cost recovery policies for the activities are summarized below. The cost recovery revenues are included as part of Other Revenue, and are functionalized broadly using the SAP Labour Allocator in the PCOSS.

Building moves - For building or structure moves originating in the province, Manitoba Hydro incurs costs for work provided during normal working hours to inspect the route, as specified by the mover prior to the move. During normal work hours, Manitoba Hydro cost shares on a 50/50 shared basis, one qualified Corporation representative who will accompany the movers and perform switching required due to the building or structure move. Manitoba Hydro recovers costs for work performed such as raising and lowering lines, rerouting lines, etc, and any time outside of normal working hours at the appropriate overtime rate. For buildings or structures originating outside of the province and being moved into or through the province Manitoba Hydro recovers full cost.

Overseeing Work Near Electric Plant - To ensure the safety of customers and their contractors when working in close proximity to facilities, Manitoba Hydro incurs a cost to provide residential homeowners and their contractor's safety watching services during normal working hours. For contractors, Manitoba Hydro incurs a cost to provide one (1) man hour at no cost, for switching or on-site safety watching per project, each day. The remainder of safety watching time is on a 50/50 shared basis with the contractor during normal work hours. All time associated with safety watching outside of regular business hours is charged to the contractor at the appropriate overtime rate.

- e) Manitoba Hydro does not track these services by type of electric plant and is therefore unable to provide a breakdown of how much time or cost is specifically related to transmission versus distribution lines. Given the nature of the work, it is reasonable to assume the service is primarily related to distribution facilities. However, Manitoba Hydro can confirm that the Building Moves & Safety Watch category would include some costs related to work in the vicinity of transmission lines.

- f) The customer contact centre activities are tracked by line of business (gas vs electric) as well as nature of the call (billings, collections, outages, call before you dig). The \$1.2 million represents the costs for call center staff fielding outage related calls. The contact center provides the initial point of contact for customers in all customer classes, which in the case of General Service Large customers the process will include notifying the client representatives from the Industrial and Commercial Solutions Division of the outage.

REFERENCE:

Appendix 8.1, Pages 3-4

PREAMBLE TO IR (IF ANY):

QUESTION:

- a) Please provide a version of Schedules 1.2 and 1.3 (previously B2 and B3) for the PCOSS14 Compliance Filing from Order 164/16 without deducting the Net Export Revenue (NER).
- b) Please provide a version of Schedules 1.2 and 1.3 (previously B2 and B3) for PCOSS18 without deducting the Net Export Revenue (NER).

RATIONALE FOR QUESTION:

RESPONSE:

Response to part a) and b):

The following schedules have been revised to show costs without deducting Net Export Revenue.

Manitoba Hydro
Prospective Cost Of Service Study - March 31, 2014
Functional Breakdown
PCOSS14 Reflecting Order 164/16
S U M M A R Y

Class	Total Cost (\$000)	Generation Cost (\$000)	%	Transmission Cost (\$000)	%	Subtransmission Cost (\$000)	%	Distribution Cust Service Cost (\$000)	%	Distribution Plant Cost (\$000)	%
Residential	713,281	394,976	55.4%	63,863	9.0%	33,099	4.6%	71,082	10.0%	150,261	21.1%
General Service - Small Non Demand	142,869	79,441	55.6%	11,379	8.0%	5,878	4.1%	18,487	12.9%	27,684	19.4%
General Service - Small Demand	157,495	99,228	63.0%	13,819	8.8%	7,133	4.5%	4,789	3.0%	32,527	20.7%
General Service - Medium	226,749	148,956	65.7%	19,506	8.6%	10,048	4.4%	6,733	3.0%	41,506	18.3%
General Service - Large <30kV	110,158	77,210	70.1%	9,536	8.7%	4,903	4.5%	3,701	3.4%	14,809	13.4%
General Service - Large 30-100kV	67,717	56,316	83.2%	6,263	9.2%	3,208	4.7%	1,859	2.7%	71	0.1%
General Service - Large >100kV	228,404	203,795	89.2%	22,504	9.9%	0	0.0%	2,075	0.9%	29	0.0%
SEP	973	509	52.4%	132	13.6%	0	0.0%	317	32.6%	14	1.5%
Area & Roadway Lighting	22,623	4,229	18.7%	391	1.7%	199	0.9%	555	2.5%	17,250	76.2%
Total General Consumers	1,670,270	1,064,659	63.7%	147,394	8.8%	64,468	3.9%	109,597	6.6%	284,151	17.0%
Diesel	9,948	9,361	94.1%	0	0.0%	0	0.0%	0	0.0%	587	5.9%
Export	49,114	49,114	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Total System	1,729,332	1,123,134	64.9%	147,394	8.5%	64,468	3.7%	109,597	6.3%	284,738	16.5%

Manitoba Hydro
Prospective Cost Of Service Study - March 31, 2014
Customer, Demand, Energy Cost Analysis
PCOSS14 Reflecting Order 164/16
SUMMARY

Class	CUSTOMER			DEMAND				ENERGY		
	Cost (\$000)	Number of Customers	Unit Cost \$/Month	Cost (\$000)	% Recovery	Billable Demand MVA	Unit Cost \$/KVA	Cost (\$000)	Metered Energy mWh	Unit Cost ¢/kWh
Residential	79,928	486,987	13.68	386,890	0%	n/a	n/a	246,463	7,404,453	8.55 **
GS Small - Non Demand	20,644	53,778	31.99	69,121	0%	n/a	n/a	53,104	1,605,511	7.61 **
GS Small - Demand	7,908	12,492	52.76	82,305	38%	2,390	13.05	67,282	2,047,715	5.78
General Service - Medium	7,581	1,974	320.03	115,179	87%	7,302	13.79	103,989	3,174,662	3.73
General Service - Large <30kV	3,913	288	n/a	50,957	100%	4,042	13.58 *	55,289	1,702,481	3.25
General Service - Large 30-100kV	1,930	40	n/a	23,793	100%	2,894	8.89 *	41,994	1,327,210	3.16
General Service - Large >100kV	2,105	16	n/a	73,433	100%	8,409	8.98 *	152,866	4,903,742	3.12
SEP	331	29	951.31	132	0%	n/a	n/a	509	26,500	2.42 **
Area & Roadway Lighting	15,878	155,024	8.54	3,400	0%	n/a	n/a	3,345	100,487	6.71 **
Total General Consumers	140,219	710,628		805,209		25,038		724,841	22,292,761	
Diesel	587	755	64.79	-	0%	n/a	n/a	9,361	13,754	68.06 **
Export	n/a	n/a	n/a	-	0%	n/a	n/a	49,114	9,013,000	0.54 ***
Total System	140,806	711,383		805,209		25,038		783,316	31,319,515	

* - includes recovery of customer costs

** - includes recovery of demand costs

*** -includes recovery of customer and demand costs

Manitoba Hydro
Prospective Cost Of Service Study - March 31, 2018
Functional Breakdown

S U M M A R Y

Class	Total Cost (\$000)	Generation		Transmission		Subtransmission		Distribution Cust Service Cost (\$000)		Distribution Plant Cost	
		Cost (\$000)	%	Cost (\$000)	%	Cost (\$000)	%	Cost (\$000)	%	(\$000)	%
Residential	810,916	422,919	52.2%	96,881	11.9%	37,236	4.6%	73,652	9.1%	180,228	22.2%
General Service - Small Non Demand	151,814	83,604	55.1%	16,924	11.1%	6,456	4.3%	12,656	8.3%	32,173	21.2%
General Service - Small Demand	185,200	107,752	58.2%	20,984	11.3%	7,984	4.3%	7,802	4.2%	40,679	22.0%
General Service - Medium	253,466	155,890	61.5%	28,617	11.3%	10,843	4.3%	8,298	3.3%	49,817	19.7%
General Service - Large <30kV	120,404	81,302	67.5%	13,768	11.4%	5,185	4.3%	2,916	2.4%	17,234	14.3%
General Service - Large 30-100kV	86,975	69,529	79.9%	10,903	12.5%	4,080	4.7%	2,182	2.5%	281	0.3%
General Service - Large >100kV	230,688	194,552	84.3%	30,310	13.1%	0	0.0%	5,585	2.4%	241	0.1%
SEP	737	580	78.7%	90	12.2%	0	0.0%	44	6.0%	23	3.1%
Area & Roadway Lighting	22,987	4,034	17.6%	725	3.2%	274	1.2%	912	4.0%	17,041	74.1%
Total General Consumers	1,863,186	1,120,163	60.1%	219,201	11.8%	72,057	3.9%	114,047	6.1%	337,717	18.1%
Diesel	8,996	8,599	95.6%	0	0.0%	0	0.0%	0	0.0%	396	4.4%
Export	38,159	38,159	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Total System	1,910,341	1,166,922	61.1%	219,201	11.5%	72,057	3.8%	114,047	6.0%	338,114	17.7%

Manitoba Hydro
Prospective Cost Of Service Study - March 31, 2018
Customer, Demand, Energy Cost Analysis

SUMMARY

Class	CUSTOMER			DEMAND				ENERGY		
	Cost (\$000)	Number of Customers	Unit Cost \$/Month	Cost (\$000)	% Recovery	Billable Demand MVA	Unit Cost \$/KVA	Cost (\$000)	Metered Energy mWh	Unit Cost ¢/kWh
Residential	77,814	508,242	12.76	466,869	0%	n/a	n/a	266,232	7,586,096	9.66 **
GS Small - Non Demand	13,971	54,988	21.17 †	81,277	0%	n/a	n/a	56,566	1,622,627	8.50 **
GS Small - Demand	12,317	12,867	79.77 †	98,515	37%	2,623	13.82	74,368	2,146,454	6.37
General Service - Medium	9,511	2,125	372.96	133,286	92%	7,722	15.88	110,669	3,204,436	3.79
General Service - Large <30kV	3,531	321	n/a	57,112	100%	4,302	14.10 *	59,762	1,745,362	3.42
General Service - Large 30-100kV	2,462	40	n/a	31,866	100%	3,358	10.22 *	52,647	1,578,519	3.34
General Service - Large >100kV	5,826	16	n/a	76,832	100%	7,815	10.58 *	148,029	4,504,939	3.29
SEP	67	31	181.17	90	0%	n/a	n/a	580	25,500	2.63 **
Area & Roadway Lighting	16,230	157,982	8.56	3,865	0%	n/a	n/a	2,892	82,415	8.20 **
Total General Consumers	141,729	736,612		949,712		25,818		771,745	22,496,347	
Diesel	396	785	42.06	-	0%	n/a	n/a	8,599	14,546	59.12 **
Export	n/a	n/a	n/a	-	0%	n/a	n/a	38,159	9,166,000	0.42 *** †
Total System	142,125	737,397		949,712		25,818		818,504	31,676,893	

* - includes recovery of customer costs

** - includes recovery of demand costs

*** -includes recovery of customer and demand costs

† Customer count (and unit cost) updated subsequent to May 26 2017 filing to include 3 phase customers

‡ Energy (and unit cost) updated subsequent to May 26 2017 filing

REFERENCE:

Appendix 3.5, Page 12

PREAMBLE TO IR (IF ANY):

QUESTION:

- a) Please extend Chart 7 and Chart 8 to include actual results back to 1986/87.
- b) For Chart 8, please provide underlying data, including separated information for interest rates and provincial guarantee fee.

RATIONALE FOR QUESTION:

To understand the impact of adding large scale assets, like the Limestone GS, to Hydro's debt management strategy and weighted average term to maturity of debt.

RESPONSE:

- a) Since 2006/07 Manitoba Hydro's debt management strategies and activities have been significantly impacted by the Corporation's increasing cash requirements. In preparation for the increasing levels of capital investment and debt financing, Manitoba Hydro adopted a leapfrogging strategy that favored longer dated debt maturities that largely skipped over the future period of large borrowings for new cash requirements, thereby enhancing debt stability by extending the debt portfolio's weighted average term to maturity (WATM) by over 5 years. The low interest rate environment during this time frame allowed Manitoba Hydro to take advantage of low cost long bonds and ultra-longs to extend the WATM while decreasing the debt portfolio's weighted average interest rate (WAIR) by over 2%.

During the construction of Limestone, circumstances were different and would have influenced debt management strategies. For example, interest rates during the construction of Limestone (1985-1990) were significantly higher than the more recent historically low interest rates. This higher interest rate environment may have impacted the chosen term to maturities of long term debt issuance at the time.

Chart 7 and Chart 8 updated to include actuals for the fiscal years ended March 31, 1988 through 2017. Please note that comparable data was not available for the year ended March 31, 1987.

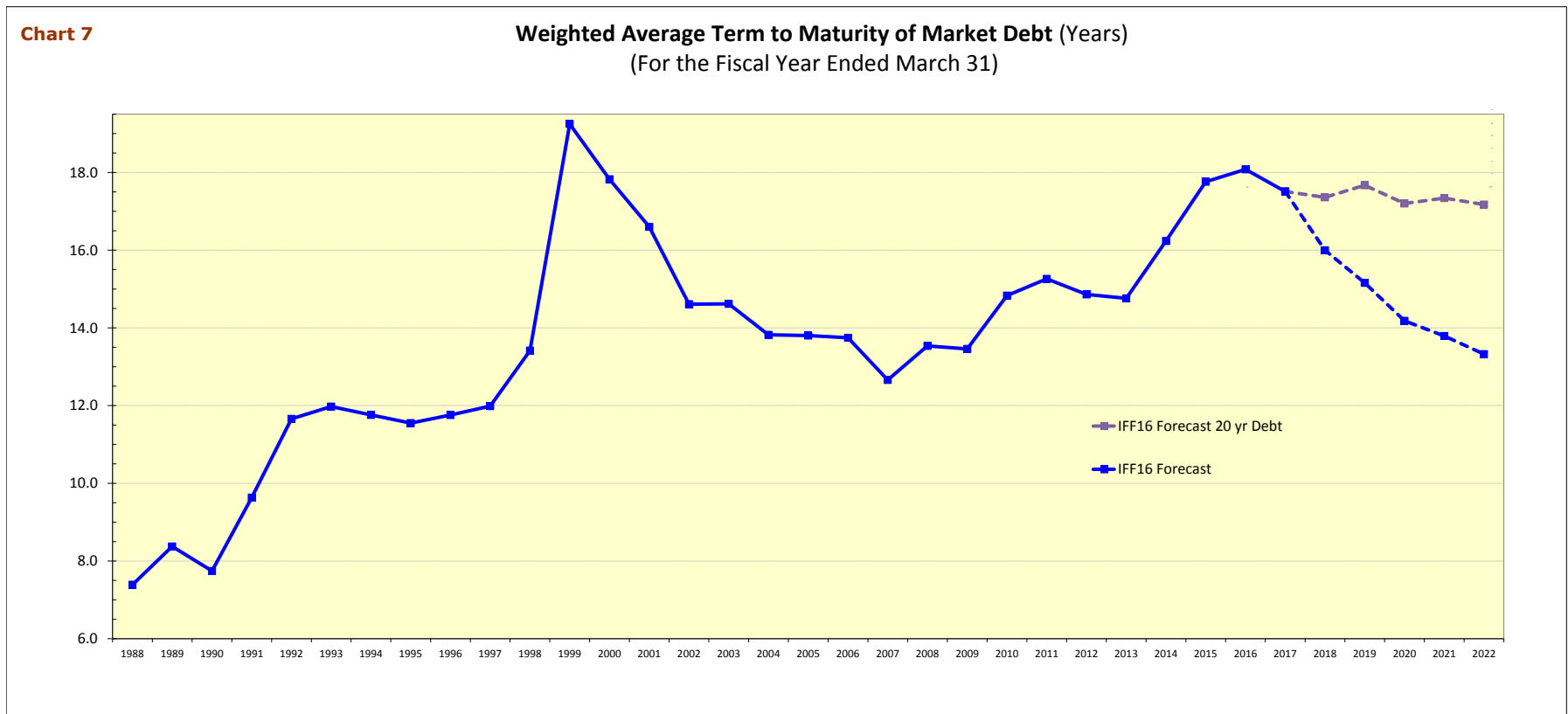
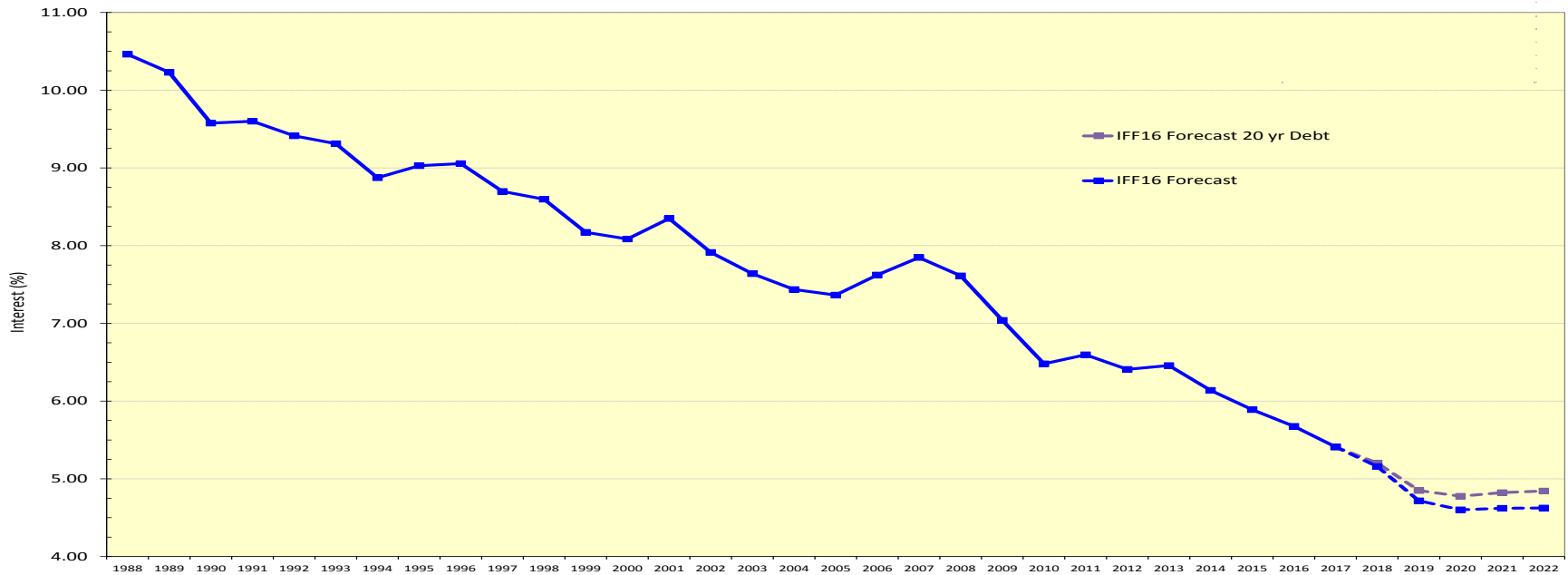


Chart 8

Weighted Average Interest Rate
For the Fiscal Year Ended March 31
(Including PGF)



b) Underlying data for Chart 8 with Provincial Guarantee Fee separated out:

Fiscal Year	WAIR	PGF	Total WAIR
1988	10.34%	0.13%	10.46%
1989	10.10%	0.13%	10.23%
1990	9.33%	0.25%	9.58%
1991	9.35%	0.25%	9.60%
1992	9.16%	0.25%	9.41%
1993	8.81%	0.50%	9.31%
1994	8.37%	0.50%	8.87%
1995	8.53%	0.50%	9.03%
1996	8.56%	0.50%	9.06%
1997	8.20%	0.50%	8.70%
1998	8.10%	0.50%	8.60%
1999	7.67%	0.50%	8.17%
2000	7.44%	0.65%	8.09%
2001	7.65%	0.70%	8.35%
2002	6.96%	0.95%	7.91%
2003	6.69%	0.95%	7.64%
2004	6.49%	0.95%	7.44%
2005	6.41%	0.95%	7.36%
2006	6.67%	0.95%	7.62%
2007	6.85%	1.00%	7.85%
2008	6.61%	1.00%	7.61%
2009	6.04%	1.00%	7.04%
2010	5.48%	1.00%	6.48%
2011	5.60%	1.00%	6.60%
2012	5.41%	1.00%	6.41%
2013	5.46%	1.00%	6.46%
2014	5.14%	1.00%	6.14%
2015	4.89%	1.00%	5.89%
2016	4.68%	1.00%	5.68%
2017	4.41%	1.00%	5.41%
2018	4.16%	1.00%	5.16%
2019	3.72%	1.00%	4.72%
2020	3.60%	1.00%	4.60%
2021	3.62%	1.00%	4.62%
2022	3.63%	1.00%	4.63%
2023	3.62%	1.00%	4.62%
2024	3.65%	1.00%	4.65%
2025	3.66%	1.00%	4.66%
2026	3.67%	1.00%	4.67%
2027	3.71%	1.00%	4.71%

REFERENCE:

PUB-MFR-55, Page 2

PREAMBLE TO IR (IF ANY):

QUESTION:

- a) Please show the calculations for 'Interest Allocated to Construction' by year (calculation of average rate, determination of balance of CWIP, etc).

RATIONALE FOR QUESTION:

RESPONSE:

Interest during construction is calculated on a project-by-project basis by applying the interest capitalization rate to the actual or forecasted previous month-end construction in progress balance of each project, until the corresponding asset becomes available for use, at which time the transfer to in-service property plant and equipment is made, interest expense allocated to construction ceases, and depreciation and finance expense charged to operations commences. Interest capitalized for each project is aggregated to form total interest allocated to construction as shown in PUB MFR 55.

It is not practical to show the Interest Allocated to Construction calculations for the hundreds of projects that comprise the total shown in PUB MFR 55. However, Manitoba Hydro has provided a sample project to show the mechanics of the calculation in the following table.

Manitoba Saskatchewan Transmission Project (CEF16)
(In thousands of \$)

	a	b	c = a x f	d	e = (a+b+c-d)	f
Date	Construction in Progress OB	Expenditures	Interest Capitalized	Plant In-Service	Construction in Progress CB	Nominal Monthly Interest Capitalized Rate
Mar-2016					45	
Apr-2016	45	249	0	-	295	0.44%
May-2016	295	263	1	-	559	0.46%
Jun-2016	559	263	2	-	824	0.44%
Jul-2016	824	250	4	-	1 077	0.46%
Aug-2016	1 077	276	5	-	1 358	0.46%
Sep-2016	1 358	250	6	-	1 614	0.44%
Oct-2016	1 614	250	7	-	1 871	0.46%
Nov-2016	1 871	263	8	-	2 142	0.44%
Dec-2016	2 142	237	10	-	2 388	0.46%
Jan-2017	2 388	250	11	-	2 649	0.46%
Feb-2017	2 649	237	11	-	2 896	0.41%
Mar-2017	2 896	276	13	-	3 185	0.46%
2016/17	45	3 061	80	-	3 185	5.40%
Apr-2017	3 185	276	14	-	3 475	0.43%
May-2017	3 475	322	15	-	3 812	0.44%
Jun-2017	3 812	307	16	-	4 136	0.43%
Jul-2017	4 136	292	18	-	4 446	0.44%
Aug-2017	4 446	324	20	-	4 790	0.44%
Sep-2017	4 790	278	20	-	5 088	0.43%
Oct-2017	5 088	309	22	-	5 420	0.44%
Nov-2017	5 420	325	23	-	5 768	0.43%
Dec-2017	5 768	264	25	-	6 057	0.44%
Jan-2018	6 057	311	27	-	6 395	0.44%
Feb-2018	6 395	280	25	-	6 700	0.40%
Mar-2018	6 700	312	29	-	7 042	0.44%
2017/18	3 185	3 601	256	-	7 042	5.18%
Apr-2018	7 042	147	29	-	7 218	0.41%
May-2018	7 218	171	31	-	7 420	0.43%
Jun-2018	7 420	155	31	-	7 606	0.41%
Jul-2018	7 606	164	32	-	7 803	0.43%
Aug-2018	7 803	172	33	-	8 008	0.43%
Sep-2018	8 008	140	33	-	8 181	0.41%
Oct-2018	8 181	173	35	-	8 389	0.43%
Nov-2018	8 389	173	35	-	8 597	0.41%
Dec-2018	8 597	140	37	-	8 774	0.43%
Jan-2019	8 774	165	37	-	8 976	0.43%
Feb-2019	8 976	149	35	-	9 160	0.39%
Mar-2019	9 160	158	39	-	9 357	0.43%
2018/19	7 042	1 908	407	-	9 357	5.03%

Manitoba Saskatchewan Transmission Project (CEF16)
(In thousands of \$)

Date	Construction in Progress OB	Expenditures	Interest Capitalized	Plant In-Service	Construction in Progress CB	Nominal Monthly Interest Capitalized Rate
Apr-2019	9 357	1 502	39	-	10 897	0.41%
May-2019	10 897	1 579	46	-	12 522	0.43%
Jun-2019	12 522	1 356	52	-	13 930	0.41%
Jul-2019	13 930	1 584	59	-	15 573	0.43%
Aug-2019	15 573	1 511	66	-	17 150	0.43%
Sep-2019	17 150	1 362	71	-	18 583	0.41%
Oct-2019	18 583	1 592	79	-	20 254	0.43%
Nov-2019	20 254	1 442	83	-	21 779	0.41%
Dec-2019	21 779	1 369	93	-	23 241	0.43%
Jan-2020	23 241	1 523	99	-	24 862	0.43%
Feb-2020	24 862	1 373	99	-	26 334	0.40%
Mar-2020	26 334	1 528	112	-	27 974	0.43%
2019/20	9 357	17 720	897	-	27 974	5.02%
Apr-2020	27 974	1 355	116	-	29 445	0.41%
May-2020	29 445	1 289	126	-	30 860	0.43%
Jun-2020	30 860	1 359	128	-	32 347	0.41%
Jul-2020	32 347	1 429	138	-	33 915	0.43%
Aug-2020	33 915	1 227	145	-	35 287	0.43%
Sep-2020	35 287	1 366	146	-	36 799	0.41%
Oct-2020	36 799	1 368	158	-	38 325	0.43%
Nov-2020	38 325	1 233	159	-	39 716	0.41%
Dec-2020	39 716	1 304	170	-	41 190	0.43%
Jan-2021	41 190	1 237	176	-	42 603	0.43%
Feb-2021	42 603	1 239	165	-	44 007	0.39%
Mar-2021	44 007	1 448	188	-	45 643	0.43%
2020/21	27 974	15 853	1 815	-	45 643	5.04%
Apr-2021	45 643	611	189	-	46 443	0.42%
May-2021	46 443	550	199	-	47 192	0.43%
Jun-2021	47 192	9 075	196	56 463	0	0.42%
Grand Total	45	52 379	4 039	56 463	0	

The CEF16 interest capitalization rate for 2016/17 is calculated based upon the estimated principal days outstanding and gross interest expense for the debt issues projected to be outstanding and issued in 2016/17. Thereafter, the interest capitalization is calculated based on the average debt balance and gross interest expense in each fiscal year of the previously approved forecast (IFF15) updated for the revised interest rates.

The calculation of the Interest Capitalization rate is shown below:

				A	$B = (1+A/2)^2 - 1$	$C = [(B+1)^{1/12} - 1] * 12$
For the year ended March 31	Adjusted Gross Finance Expense	Total Debt for WACD *	Average Debt **	WACD - Semi Annual	Effective Annual	Nominal Annual in SAP (Capital Est.)
2017	877	17 922	16 041	5.47%	5.54%	5.40%
2018	1 005	20 453	19 188	5.24%	5.31%	5.18%
2019	1 078	21 941	21 197	5.09%	5.15%	5.03%
2020	1 143	23 128	22 535	5.07%	5.14%	5.02%
2021	1 180	23 191	23 160	5.09%	5.16%	5.04%

* Used to calculate Average Debt for years 2018 on

** The debt volumes averaged over the period outstanding by issue for 2017.

REFERENCE:

PUB-MFR-55, Page 2

PREAMBLE TO IR (IF ANY):**QUESTION:**

- b) Provide a version of PUB-MFR-55 Table 1. Finance Expense by Category that reconciles to Interest Paid from the Projected Cash Flow Statement for the 20 year financial forecast.

RATIONALE FOR QUESTION:**RESPONSE:**

The following table reconciles gross interest from PUB MFR 55 Table 1. Finance Expense to Interest Paid from the Projected Cash Flow Statement for the 20 year financial forecast (IFF16).

IFF16	Forecast 2018	Forecast 2019	Forecast 2020	Forecast 2021	Forecast 2022	Forecast 2023	Forecast 2024	Forecast 2025	Forecast 2026	Forecast 2027	Forecast 2028	Forecast 2029	Forecast 2030	Forecast 2031	Forecast 2032	Forecast 2033	Forecast 2034	Forecast 2035	Forecast 2036
MFR55 - Gross Interest	758	781	828	856	872	859	850	840	821	800	802	802	757	749	711	692	666	645	615
Provincial Guarantee Fee	153	185	210	226	234	231	232	229	225	217	211	209	206	190	184	175	166	160	155
Intercompany Interest Receivable	(15)	(16)	(16)	(17)	(18)	(18)	(19)	(20)	(20)	(21)	(21)	(22)	(22)	(23)	(23)	(24)	(24)	(25)	(26)
Capitalized interest	(353)	(313)	(315)	(329)	(289)	(55)	(19)	(19)	(18)	(20)	(20)	(24)	(22)	(23)	(19)	(18)	(19)	(21)	(24)
Timing Difference	(14)	(9)	(12)	1	(2)	(4)	(2)	5	9	(2)	1	1	11	9	4	7	1	4	7
Cash Flow Stmt - Interest Paid	529	628	695	737	797	1,013	1,042	1,035	1,017	974	973	966	930	902	857	832	790	763	727

REFERENCE:

Appendix 4.4

PREAMBLE TO IR (IF ANY):**QUESTION:**

- a) Please provide a copy of all presentations and/or analysis, including content highlighting any issues of concern, Manitoba Hydro has provided to each of credit rating agencies for last 6 years.
- b) Please provide all internal emails providing instructions to Hydro staff with respect to the content of the presentations to and communications with credit rating agencies;
- c) Please provide a list identifying any documents containing third party communications or advice for the last 6 years on credit rating and credit rating issues as well as providing a copy of those communications or advice;
- d) Please provide for the last 6 years, copies of any communications with credit rating agencies;
- e) Please provide for the last 6 years, copies of any documents recording or summarizing communications with credit rating agencies.

RATIONALE FOR QUESTION:

To understand the considerations presented to credit rating agencies in rating reports and recommendations.

RESPONSE:

- a) Please see Manitoba Hydro's response to PUB/MH I-60b.
- b) Manitoba Hydro has not identified and is not aware of any internal emails providing instructions to Manitoba Hydro staff with respect to the content of the presentations to and communications with credit rating agencies.

Response to parts c) to e):

Manitoba Hydro summarizes its interaction with sub-sovereign analysts and utility analysts from the credit rating agencies as described below.

On an annual basis, each rating agency (DBRS, Moody's and S&P) usually visits Winnipeg to meet with senior staff from the Province of Manitoba. The credit rating agencies sometimes provide a list of topics to the Province via e-mail prior to the meeting. Staff at the Province forward this correspondence to Manitoba Hydro via e-mail. Please see Attachment 1 to this response for the correspondence for 2017.

Manitoba Hydro is usually present at these credit rating meetings to speak on behalf of Manitoba Hydro, although Manitoba Hydro was absent from the S&P meeting this year. A standard presentation is used for all rating agencies of which the format and topic content has not changed appreciably for the last several years. Please see Manitoba Hydro's response to PUB/MH I-60b for copies of presentations to the credit rating agencies.

Following the meeting, the credit rating agencies will usually prepare a rating report on the Province of Manitoba. A draft report is usually sent to the Province of Manitoba for review prior to publication and the Province of Manitoba usually shares the draft with Manitoba Hydro staff for review. No changes are permitted aside from Manitoba Hydro addressing factual errors in the draft or confidential information that may be removed from the report. Manitoba Hydro relays any such corrections to the Province either via e-mail or phone.

With respect to Utility analysts, contact is mostly conducted via conference calls. Both Moody's and DBRS will provide draft rating reports directly to Manitoba Hydro for review on an annual basis (correspondence with Moody's and DBRS for this past year is included in Attachment 2 to this response). S&P has not produced a report on Manitoba Hydro since 2013. Manitoba Hydro usually reviews the draft report with the utility analysts via phone or conference call.

After the S&P downgrade of the Province of Manitoba on July 14, 2016, Manitoba Hydro engaged in conference calls with the S&P Sub-sovereign analyst as well as the utility analyst to gain an understanding of S&P's definition of self-supporting. The content of those conference calls was consistent with the information provided in the Attachments to MIPUG/MH-I-8.

Stephen, Susan

From: Steski, Garry [Garry.Steski@leg.gov.mb.ca]
Sent: Monday, June 05, 2017 1:37 PM
To: Stephen, Susan
Subject: FW: S&P Global credit rating review
Attachments: SP_Credit_Rating_Agenda_MB_2017.pdf

This email originated from *outside* Manitoba Hydro. Search 'phishing' on MPower to learn about the risks.

Hi,

FYI. Attached is S & P's outline of topics they want to cover at our meeting scheduled for June 14th.

Thanks

Garry

From: Gillespie, Adam [mailto:adam.gillespie@spglobal.com]
Sent: Sunday, May 28, 2017 9:44 PM
To: Steski, Garry
Cc: Ogilvie, Stephen
Subject: S&P Global credit rating review

Hello Garry,

Please find attached a general outline of topics we would like to discuss at our upcoming meeting. Please forward to interested parties. Could you also please send me a list of the attendees, with titles, that you expect to be there from the Province?

Thank you and regards,

Adam Gillespie
Associate Director, Sovereign & International Public Finance Ratings

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S&P Global

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General Issues for Discussion – Manitoba

The following outlines a list of general topics we would like to cover in our management meeting scheduled for June 14, 2017. We would like to explore key areas that pertain to the economic and financial risk profiles of the province of Manitoba.

Economy

- General trends in local economy:
 - Overview of 2016 economic indicators, GDP, labour force trends, exports, investment, migration, etc.
 - Overview of challenges and key drivers of economic change; developments in major sectors
 - Significant changes at top public- and private-sector employers
- Economic forecast for 2017 and 2018 (and beyond)

Fiscal Policy

- Overview of fiscal 2016 and 2017 performance and significant variances from budget
- Overview of revenue and expenditure growth and measures taken to raise the former and manage the latter in fiscal 2017 and 2018 budget
- Update on measures taken and long-term plan to return to balance by end of second mandate and key risks to achieving targets
- Overview of government's response to economic challenges:
 - Targeted investments, economic development activities and initiatives, etc.
- Update on province's infrastructure plan and federal government infrastructure initiatives
- Update on federal transfers

Debt and Financing

- Update on province's borrowing in fiscal 2017 and requirements for fiscals 2018-2020
 - Core government borrowing
 - Manitoba Hydro borrowing
 - P3 obligations, debt of other related entities, pensions, etc.

Liquidity

- Update on provincial liquidity sources and uses in near-term
- Update on sinking fund balances
- General liquidity available for debt repayment

Contingent Liabilities

- Significant contingent liabilities, litigations, funding commitments, or other off-balance sheet items

Stephen, Susan

From: Paul LeBane [plebane@dbrs.com]
Sent: Wednesday, June 07, 2017 5:00 PM
To: Stephen, Susan
Subject: Re: DBRS Itinerary June 8, 2017 Treasury Division Boardroom

Hi Susan,

My apologies for the late response. We were traveling and in meetings for much of the day. I expect the prepared materials will cover most of my questions. I was also planning to ask whether any process, governance, or institutional changes are being considered for the PUB and for some guidance on the outlook for interprovincial or international sales.

Paul

On Jun 7, 2017, at 8:57 AM, Stephen, Susan <sstephen@hydro.mb.ca> wrote:

Hi Paul.

Are there any Hydro related questions which you may have which may not be included in our regular presentation?

The presentation usually covers financial results, capital program, export contracts, financing, financial targets & rates.

Thanks,
Susan

From: Delisle, Don [<mailto:Don.Delisle@leq.gov.mb.ca>]
Sent: Wednesday, May 31, 2017 1:43 PM
To: Paul LeBane (plebane@dbrs.com)
Cc: Hrichishen, Jim; Martel, Giselle (TBS); Steski, Garry; Budhia, Narendra (FIN); Stephen, Susan; Lamirande, Rachel
Subject: DBRS Itinerary June 8, 2017 Treasury Division Boardroom

This email originated from *outside* Manitoba Hydro. Search 'phishing' on MPower to learn about the risks.

Hi Paul

Here is the itinerary for next Thursday's meeting. Let me know if you have any questions.

Place: Treasury Division
Boardroom
350 – 363 Broadway

8:30 am – 8:45 am	Introduction , Jim Hrichishen, Deputy Minister of Finance
8:45 am – 9:45 am	Economy , Narendra Budhia, Director Fiscal Research Division
9:45 am – 10:45 am	Treasury Board , Giselle Martel, Assistant Deputy Minister
10:45 am – 11:30 am	Manitoba Hydro , Susan Stephen, Treasurer
11:30 am – 12:15 pm	Debt and Borrowing , Garry Steski, Assistant Deputy Minister Treasury Division

Best Regards

Don Delisle, CPA CA
Director, Capital Markets
Manitoba Finance, Treasury Division
350-363 Broadway
Winnipeg, Manitoba, R3C 3N9
T (204)945-5404, C (204)290-8631
don.delisle@leg.gov.mb.ca

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Stephen, Susan

From: Steski, Garry [Garry.Steski@leg.gov.mb.ca]
Sent: Wednesday, July 19, 2017 8:10 AM
To: Stephen, Susan
Subject: FW: Dates for Manitoba Review
Attachments: 2017 List of topics-Manitoba.docx

This email originated from *outside* Manitoba Hydro. Search 'phishing' on MPower to learn about the risks.

FYI. Finally got their list of topics for tomorrow's meeting.

From: Hardi, Adam [mailto:Adam.Hardi@moodys.com]
Sent: Tuesday, July 18, 2017 8:02 PM
To: Delisle, Don; Steski, Garry
Subject: RE: Dates for Manitoba Review

Hi Don, Garry

Looking forward to our meeting on Thursday. I realize that I don't believe I've sent you a list of topics for review. I've attached a list to this email, although I anticipate that your planned presentation covers the majority of these items.

Could you send me a detailed meeting agenda, and the specific meeting location? Michael Yake will accompany me on this visit.

Thanks
Adam

From: Hardi, Adam
Sent: Friday, May 05, 2017 2:26 PM
To: 'Delisle, Don' <Don.Delisle@leg.gov.mb.ca>
Cc: Steski, Garry <Garry.Steski@leg.gov.mb.ca>
Subject: RE: Dates for Manitoba Review

Excellent, thanks Don. Let's aim for a morning start on Thursday July 20. We will fly in the night before.

Once the audited financials are out, could you please send us your medium term debt projections (new issues, refinances, long-term vs short-term, FX).

Best
Adam

From: Delisle, Don [mailto:Don.Delisle@leg.gov.mb.ca]
Sent: Friday, May 05, 2017 2:10 PM
To: Hardi, Adam <Adam.Hardi@moodys.com>
Cc: Steski, Garry <Garry.Steski@leg.gov.mb.ca>
Subject: Dates for Manitoba Review

Hi Adam

Garry asked me to respond to you with possible dates during the week of July 17 that we would be available for your annual review of the Province. The best dates for that week are the afternoon of July 19th, all day of July 20th and all day of July 21st. Let us know what works best for you. Thanks and have a great weekend.

Best Regards

Don Delisle, CPA CA
Director, Capital Markets
Manitoba Finance, Treasury Division
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don.delisle@leg.gov.mb.ca

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Topics of Discussion

1 Economy

- Recent economic trends and medium term outlook with respect to GDP growth, interest rates, inflation, housing market, Canadian dollar
- Update on employment, population/migration/immigration trends, labor market conditions, and housing
- Please comment on recent and planned government initiatives to stimulate the economy

2 Financial results and 2017-18 Budget estimates and medium-term outlook

- Brief overview of 2016-17 financial results
- Overview of 2017-18 budget estimates, revenue and expenditure forecasts and pressures
- Please comment on deficit reduction initiatives (including planned new legislations)
- Please comment on expected future transfers to the Fiscal Stabilization Account
- Overview of collective bargaining agreements with unions
- Overview of expected federal transfers including medium-term outlook
- Please comment on current CPP discussions with the provinces and federal government

3 Debt and Liquidity Profile

- Overview of current and planned borrowings, debt targets as well as maturity and interest profile
- Expected borrowing amount to be on-lent to Crown corps and agencies
- Update on cash and investments, contingency fund, investments
- Update on pension obligations and contributions
- Please comment on material off-balance sheet contingencies, if any

4 Infrastructure Plan

- Overview of current projects under core infrastructure plan as well as discussion of future needs
- Please comment on project cost overruns and delays, if any
- Please comment on potential/current P3 projects
- Please comment on anticipated federal funding under various initiatives (PTIF, CWWF etc)

5 Crown Corporations

- Update on performance of major Crown corporations, their expected borrowing needs, expected future performance, stand-alone liquidity profile, and expected dividends from them
- Please comment on any planned or potential Crown asset sales or partial privatizations
- Manitoba Hydro:
 - Overview of operating performance and expected future changes to key ratios (debt, equity, interest coverage, cash flow from operations, capex)
 - Update on status of major capital projects, and any delays or cost overruns
 - Update on hydro-electricity exports and future opportunities/risks
 - Overview of planned rate increases in the medium term

Stephen, Susan

From: Stephen, Susan
Sent: Tuesday, August 22, 2017 6:02 PM
To: Stephen, Susan
Subject: FW: Confidential: Moody's Draft Research for your review

From: MacFarlane, Gavin [<mailto:Gavin.Macfarlane@moodys.com>]
Sent: Tuesday, November 15, 2016 9:16 AM
To: Stephen, Susan
Cc: Eydelnant, Gidon
Subject: Confidential: Moody's Draft Research for your review

Dear Susan,

Attached please find draft research that Moody's Investors Service (MIS) intends to publish. We are sending you this draft to give you the opportunity to identify, with specificity, any factual errors and/or inadvertent disclosure of confidential information regarding your organization. MIS retains ultimate editorial control over the form and content of all its publications, and will only consider comments that bear on the factual accuracy or confidentiality of the information in the draft research.

Please note that this draft research is strictly confidential and constitutes the valuable intellectual property of MIS. You may not disclose it to any other person except: (i) to your legal counsel acting in their capacity as such; (ii) to your other authorized agents acting in their capacity as such; and (iii) as required by law or regulation.

Please respond with any comments you have by close of business today.

Regards,

Gavin MacFarlane
Vice President - Senior Credit Officer
Global Infrastructure Finance
416-214-3864 tel
416.981.8846 fax
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Stephen, Susan

From: Stephen, Susan
Sent: Tuesday, August 22, 2017 6:07 PM
To: Stephen, Susan
Subject: FW: DBRS-Manitoba Hydro Rating Report
Attachments: Manitoba Hydro RR EDIT_November 15 2016.pdf; Manitoba Hydro F2016.xlsx

From: Tom Li [<mailto:TLi@dbrs.com>]
Sent: Tuesday, November 15, 2016 4:17 PM
To: Schulz, Manfred; Stephen, Susan
Cc: Ravikanth Rai
Subject: RE: DBRS-Manitoba Hydro Rating Report

Hi Manny & Susan,

Please find attached a copy of the draft Manitoba Hydro rating report along with our spreadsheet. We would appreciate any comments that you have. I have also highlighted a number on page 6 regarding the floating rate debt – it would be very helpful if you could provide that to us.

Thanks in advance for your help during this process. Please let me know if you have any questions/concerns.

Cheers,

The contents and draft documents, if attached to this email include references to DBRS rating opinions, which are the confidential information of DBRS and must not be disclosed prior to their public release by DBRS.

The draft documents are being provided to you in advance of general publication to allow you to confirm the following:

- 1. There are no factual errors.**
- 2. They do not contain any confidential information belonging to your organization that should not be disclosed.**

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Your cooperation is much appreciated.

Tom Li
Senior Financial Analyst
Corporate Research & Analysis



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CELL +1 416 433 9069

REFERENCE:

PUB-MFR-12

PREAMBLE TO IR (IF ANY):**QUESTION:**

- a) Please extend the provided table to include the 20-year financial forecast, with rate increases as requested by Manitoba Hydro in MH16 (Appendix 3.3).
- b) Please extend the provided table to include the 20-year financial forecast, with rate increases as provided in Appendix 3.4 (3.95% per year).
- c) Please extend the provided table to include the 20-year financial forecast, with rate increases as provided in PUB-MFR-73 (3.44% as per pages 2 – 7).

RATIONALE FOR QUESTION:**RESPONSE:**

- a) PUB MFR 12 has been extended and provided below, using the rate increases as requested by Manitoba Hydro in the MH16 Updated with Interim forecast (7.90% until 2023/24, 4.54% in 2024/25, 2.00% thereafter).

Year	% Rate Increase Requested	% Approved Interim	MB CPI	Revenues from Rate increases in Fiscal Year (\$millions)	Annualized Revenues from Rate Increases (\$ millions)	Cumulative % Increase (Approved)	Cumulative MB CPI	Cumulative Additional Annualized Rev. from Approved Rate Increases	% of Total Revenue from Domestic (Actual)	Consolidated Debt to Equity Ratio
2016/17*	3.95% Apr 1/16	3.36% Aug 1/16	1.4%	\$36.6	\$52.3	44.44%	39.73%	\$465.2	76%	84:16
2017/18	7.90% Aug 1/17	3.36% Aug 1/17	2.0%	\$37.3	\$52.4	49.30%	42.52%	\$517.6	80%	85:15
2018/19	7.90% Apr 1/18 prop	n/a	2.1%	\$127.2	\$127.2	61.09%	45.52%	\$644.8	78%	85:15
2019/20	7.90% Apr 1/19 prop	n/a	2.1%	\$136.6	\$136.6	73.82%	48.58%	\$780.8	78%	85:15
2020/21	7.90% Apr 1/20 prop	n/a	2.1%	\$146.0	\$146.0	87.55%	51.70%	\$924.3	75%	84:16
2021/22	7.90% Apr 1/21 prop	n/a	2.0%	\$158.3	\$158.3	102.37%	54.73%	\$1 084.6	73%	83:17
2022/23	7.90% Apr 1/22 prop	n/a	2.0%	\$170.6	\$170.6	118.36%	57.82%	\$1 254.4	72%	83:17
2023/24	7.90% Apr 1/23 prop	n/a	2.0%	\$184.1	\$184.1	135.61%	60.98%	\$1 438.5	75%	81:19
2024/25	4.54% Apr 1/24 prop	n/a	2.0%	\$114.9	\$114.9	146.30%	64.20%	\$1 559.7	76%	79:21
2025/26	2.00% Apr 1/25 prop	n/a	2.0%	\$53.4	\$53.4	151.23%	67.48%	\$1 622.5	80%	77:23
2026/27	2.00% Apr 1/26 prop	n/a	2.0%	\$55.0	\$55.0	156.25%	70.83%	\$1 688.9	80%	75:25
2027/28	2.00% Apr 1/27 prop	n/a	2.0%	\$56.7	\$56.7	161.38%	74.25%	\$1 757.6	81%	72:28
2028/29	2.00% Apr 1/28 prop	n/a	2.0%	\$58.4	\$58.4	166.61%	77.74%	\$1 827.8	81%	69:31
2029/30	2.00% Apr 1/29 prop	n/a	2.0%	\$60.2	\$60.2	171.94%	81.29%	\$1 901.1	81%	66:34
2030/31	2.00% Apr 1/30 prop	n/a	2.0%	\$62.0	\$62.0	177.38%	84.92%	\$1 977.5	81%	62:38
2031/32	2.00% Apr 1/31 prop	n/a	2.0%	\$64.2	\$64.2	182.93%	88.61%	\$2 064.9	81%	58:42
2032/33	2.00% Apr 1/32 prop	n/a	2.0%	\$66.6	\$66.6	188.58%	92.39%	\$2 156.9	82%	53:47
2033/34	2.00% Apr 1/33 prop	n/a	2.0%	\$69.0	\$69.0	194.36%	96.23%	\$2 252.5	83%	48:52
2034/35	2.00% Apr 1/34 prop	n/a	2.0%	\$71.6	\$71.6	200.24%	100.16%	\$2 352.4	83%	42:58
2035/36	2.00% Apr 1/35 prop	n/a	2.0%	\$74.2	\$74.2	206.25%	104.16%	\$2 456.7	85%	36:64

* Actuals

b) PUB MFR 12 has been extended and provided below, using the rate increases as provided in Appendix 3.4 (3.95% per year until 2028/29) and based on MH16 Update with Interim forecast.

Year	% Rate Increase Requested	% Approved Interim	MB CPI	Revenues from Rate increases in Fiscal Year (\$millions)	Annualized Revenues from Rate Increases (\$ millions)	Cumulative % Increase (Approved)	Cumulative MB CPI	Cumulative Additional Annualized Rev. from Approved Rate Increases	% of Total Revenue from Domestic (Actual)	Consolidated Debt to Equity Ratio
2016/17*	3.95% Apr 1/16	3.36% Aug 1/16	1.4%	\$36.6	\$52.3	44.44%	39.73%	\$465.2	76%	84:16
2017/18	7.90% Aug 1/17	3.36% Aug 1/17	2.0%	\$37.3	\$52.4	49.30%	42.52%	\$517.6	80%	85:15
2018/19	3.95% Apr 1/18 prop	n/a	2.1%	\$63.5	\$63.5	55.20%	45.52%	\$581.1	77%	85:15
2019/20	3.95% Apr 1/19 prop	n/a	2.1%	\$65.8	\$65.8	61.33%	48.58%	\$646.7	77%	86:14
2020/21	3.95% Apr 1/20 prop	n/a	2.1%	\$67.8	\$67.8	67.70%	51.70%	\$713.2	72%	86:14
2021/22	3.95% Apr 1/21 prop	n/a	2.0%	\$70.8	\$70.8	74.32%	54.73%	\$784.9	70%	86:14
2022/23	3.95% Apr 1/22 prop	n/a	2.0%	\$73.5	\$73.5	81.21%	57.82%	\$858.1	68%	87:13
2023/24	3.95% Apr 1/23 prop	n/a	2.0%	\$76.4	\$76.4	88.37%	60.98%	\$934.5	70%	87:13
2024/25	3.95% Apr 1/24 prop	n/a	2.0%	\$79.9	\$79.9	95.81%	64.20%	\$1 017.3	71%	87:13
2025/26	3.95% Apr 1/25 prop	n/a	2.0%	\$83.8	\$83.8	103.54%	67.48%	\$1 105.6	76%	87:13
2026/27	3.95% Apr 1/26 prop	n/a	2.0%	\$88.0	\$88.0	111.58%	70.83%	\$1 199.7	77%	88:12
2027/28	3.95% Apr 1/27 prop	n/a	2.0%	\$92.5	\$92.5	119.94%	74.25%	\$1 299.1	78%	87:13
2028/29	3.95% Apr 1/28 prop	n/a	2.0%	\$97.0	\$97.0	128.63%	77.74%	\$1 403.6	78%	87:13
2029/30	2.00% Apr 1/29 prop	n/a	2.0%	\$51.6	\$51.6	133.20%	81.29%	\$1 464.1	78%	86:14
2030/31	2.00% Apr 1/30 prop	n/a	2.0%	\$53.2	\$53.2	137.86%	84.92%	\$1 527.1	78%	85:15
2031/32	2.00% Apr 1/31 prop	n/a	2.0%	\$55.1	\$55.1	142.62%	88.61%	\$1 598.2	79%	84:16
2032/33	2.00% Apr 1/32 prop	n/a	2.0%	\$57.1	\$57.1	147.47%	92.39%	\$1 673.1	80%	82:18
2033/34	2.00% Apr 1/33 prop	n/a	2.0%	\$59.2	\$59.2	152.42%	96.23%	\$1 751.0	80%	80:20
2034/35	2.00% Apr 1/34 prop	n/a	2.0%	\$61.4	\$61.4	157.47%	100.16%	\$1 832.5	81%	78:22
2035/36	2.00% Apr 1/35 prop	n/a	2.0%	\$63.6	\$63.6	162.62%	104.16%	\$1 917.7	83%	76:24

* Actuals

c) PUB MFR 12 has been extended and provided below, using the rate increases as provided PUB-MFR-73 Updated (3.69% per year until 2035/36) and based on MH16 Update with Interim forecast.

Year	% Rate Increase Requested	% Approved Interim	MB CPI	Revenues from Rate increases in Fiscal Year (\$millions)	Annualized Revenues from Rate Increases (\$ millions)	Cumulative % Increase (Approved)	Cumulative MB CPI	Cumulative Additional Annualized Rev. from Approved Rate Increases	% of Total Revenue from Domestic (Actual)	Consolidated Debt to Equity Ratio
2016/17*	3.95% Apr 1/16	3.36% Aug 1/16	1.4%	\$36.6	\$52.3	44.44%	39.73%	\$465.2	76%	84:16
2017/18	7.90% Aug 1/17	3.36% Aug 1/17	2.0%	\$37.3	\$52.4	49.30%	42.52%	\$517.6	80%	85:15
2018/19	3.69% Apr 1/18 prop	n/a	2.1%	\$59.4	\$59.4	54.81%	45.52%	\$577.0	77%	85:15
2019/20	3.69% Apr 1/19 prop	n/a	2.1%	\$61.3	\$61.3	60.52%	48.58%	\$638.0	77%	86:14
2020/21	3.69% Apr 1/20 prop	n/a	2.1%	\$63.0	\$63.0	66.44%	51.70%	\$699.9	73%	86:14
2021/22	3.69% Apr 1/21 prop	n/a	2.0%	\$65.6	\$65.6	72.59%	54.73%	\$766.4	70%	86:14
2022/23	3.69% Apr 1/22 prop	n/a	2.0%	\$67.9	\$67.9	78.96%	57.82%	\$834.0	69%	87:13
2023/24	3.69% Apr 1/23 prop	n/a	2.0%	\$70.5	\$70.5	85.56%	60.98%	\$904.5	71%	87:13
2024/25	3.69% Apr 1/24 prop	n/a	2.0%	\$73.6	\$73.6	92.41%	64.20%	\$980.7	72%	88:12
2025/26	3.69% Apr 1/25 prop	n/a	2.0%	\$77.0	\$77.0	99.51%	67.48%	\$1 061.8	77%	88:12
2026/27	3.69% Apr 1/26 prop	n/a	2.0%	\$80.6	\$80.6	106.87%	70.83%	\$1 148.0	78%	88:12
2027/28	3.69% Apr 1/27 prop	n/a	2.0%	\$84.4	\$84.4	114.50%	74.25%	\$1 238.9	79%	89:11
2028/29	3.69% Apr 1/28 prop	n/a	2.0%	\$88.4	\$88.4	122.42%	77.74%	\$1 334.2	79%	88:12
2029/30	3.69% Apr 1/29 prop	n/a	2.0%	\$92.6	\$92.6	130.62%	81.29%	\$1 435.0	80%	88:12
2030/31	3.69% Apr 1/30 prop	n/a	2.0%	\$97.0	\$97.0	139.13%	84.92%	\$1 541.6	80%	87:13
2031/32	3.69% Apr 1/31 prop	n/a	2.0%	\$102.2	\$102.2	147.96%	88.61%	\$1 660.0	82%	85:15
2032/33	3.69% Apr 1/32 prop	n/a	2.0%	\$107.7	\$107.7	157.11%	92.39%	\$1 786.4	83%	83:17
2033/34	3.69% Apr 1/33 prop	n/a	2.0%	\$113.5	\$113.5	166.59%	96.23%	\$1 920.5	84%	81:19
2034/35	3.69% Apr 1/34 prop	n/a	2.0%	\$119.6	\$119.6	176.43%	100.16%	\$2 063.0	85%	78:22
2035/36	3.69% Apr 1/35 prop	n/a	2.0%	\$126.0	\$126.0	186.63%	104.16%	\$2 214.4	88%	75:25

REFERENCE:**PREAMBLE TO IR (IF ANY):****QUESTION:**

Please provide CVs for the following Manitoba Hydro staff who testified on behalf of the Corporation in the Needs For and Alternatives To (NFAT) review and other recent hearings, as these documents have been made available in these prior proceedings, including:

- Scott Thomson
- V.A. (Vince) Warden
- D.B. (Darren) Rainkie
- Ed Wojczynski
- Manfred Schulz

RATIONALE FOR QUESTION:**RESPONSE:**

The most recent CV for each of the former Manitoba Hydro staff noted above are provided as attachments to this response as follows:

- The CV for Scott Thompson was filed as part of Exhibit 32 during the 2015/16 & 2016/17 Electric General Rate Application and can be found as Attachment 1 to this response.
- The CV for V.A. (Vince) Warden was filed as part of Exhibit 12 during the 2012/13 & 2013/14 Electric General Rate Application and can be found as Attachment 2 of this response.
- The CV for D.B. (Darren) Rainkie was filed as part of Exhibit 14 during Centra's 2015/16 Cost of Gas Application and can be found as Attachment 3 of this response.
- The CV for Ed Wojczynski was filed as part of Exhibit 84 during the NFAT Review and can be found as Attachment 4 of this response.
- The CV for Manfred Schulz was filed as part of Exhibit 51 during the 2015/16 & 2016/17 Electric General Rate Application and can be found as Attachment 5 of this response.



EMPLOYEE NAME: S. A. (Scott) Thomson

PROFESSIONAL EDUCATION:

Honors Business Administration
Chartered Accountant

PROFESSIONAL AFFILIATIONS:

Member	Board of Directors - Canadian Gas Association
Vice-Chair	Board of Directors - Canadian Electricity Association
Member	SHED Oversight Committee
Member	Yes! Winnipeg Investor Council
Member	Winnipeg Chamber of Commerce

EMPLOYMENT HISTORY:

2012 – Present	President and Chief Executive Officer, Manitoba Hydro
2010 – 2011	Executive Vice-President, Finance, Regulatory Affairs & Energy Supply & Chief Financial Officer, Fortis BC Holdings Inc. (formerly Terasen Inc.)
2007 – 2010	Vice-President, Regulatory Affairs & Chief Financial Officer, Terasen Gas Inc.
2005 – 2007	Vice-President and Chief Financial Officer, Terasen Gas Inc.
2003 – 2005	Vice-President, Finance and Regulatory Affairs, Terasen Gas Inc.
1999 – 2003	Controller and Director of Finance & Strategic Planning, Terasen Gas Inc. (formerly BC Gas Utility Limited)
1997 – 1999	Principal (National Director of Value Management), Ernst & Young Management Consultants, Vancouver
1994 – 1997	Consulting Manager, Ernst & Young Management Consultants, Riyadh, Saudi Arabia
1990 – 1994	Senior Consultant, Ernst & Young Management Consultants, Vancouver and London, Canada
1986 – 1990	Audit Manager, Clarkson Gordon, London, Ontario



EMPLOYEE NAME: V. A. (Vince) Warden

PROFESSIONAL EDUCATION:

Certified Management Accountant (CMA)
Certified Management Accountant Fellowship (FCMA)

PROFESSIONAL AFFILIATIONS:

Canadian Electrical Association
Canadian Gas Association – Board Member
American Gas Association
Conference Board of Canada - Council of Financial Executives
Society of Management Accountants of Manitoba
Financial Executives Institute of Canada
MB Civil Service Superannuation Board – Investment Committee Member
Wuskwatim General Partnership – Board Member
Winnipeg Chamber of Commerce
YMCA/YWCA Board member

EMPLOYMENT HISTORY:

2009 - Present	Senior Vice-President, Finance & Administration and Chief Financial Officer
1999 – 2009	Vice-President, Finance & Administration and Chief Financial Officer
1996 – 1999	Vice-President, Customer Service and Marketing
1995 – 1996	Vice-President, Finance and Chief Financial Officer
1991 – 1994	Corporate Controller and Assistant to the President and Chief Executive Officer
1990 – 1991	Assistant to the President and Chief Executive Officer
1989 – 1990	Assistant to the Senior Vice-President, Finance & Administration and Chief Financial Officer
1987 – 1989	Manager, Customer Accounting Department
1981 – 1987	Financial Planning Supervisor
1974 – 1981	General Accounting Supervisor
1972 – 1974	Management Financial Advisor, Central Region
1969 – 1972	Plant Accounting Group Supervisor
1967 – 1969	General Accountant



EMPLOYEE NAME: D. B. (Darren) Rainkie

PROFESSIONAL EDUCATION:

Chartered Business Valuator, 1993
Chartered Accountant, 1991
Bachelor of Commerce Honours (with distinction), University of Manitoba, 1988

PROFESSIONAL AFFILIATIONS:

Wuskwatim General Partnership (Board Member)
Keyask Hydro Limited Partnership (Board Member)
Canadian Institute of Chartered Business Valuators (Member)
Canadian Institute of Chartered Accountants (Member)
Institute of Chartered Accountants of Manitoba (Member)

EMPLOYMENT HISTORY:

2015 – Present	Acting President and Chief Executive Officer and Vice-President, Finance & Regulatory and Chief Financial Officer, Manitoba Hydro
2013 – 2015	Vice-President, Finance & Regulatory, Manitoba Hydro
2008 – 2013	Corporate Controller, Corporate Controller Division, Manitoba Hydro
2006 – 2008	Corporate Treasurer, Treasury Division, Manitoba Hydro
1999 – 2006	Manager, Regulatory Services Department, Manitoba Hydro
1997 – 1999	Senior Coordinator, Regulatory Services Department, Centra Gas
1994 – 1997	Senior Financial Advisor, Financial & Accounting Services Department, Centra Gas
1990 – 1994	Assistant Manager, Financial Advisory Group, Price Waterhouse & Co.
1988 – 1990	Audit Senior, Audit & Business Advisory Group, Price Waterhouse & Co.



EMPLOYEE NAME: E. (Eduard) Wojczynski

PROFESSIONAL EDUCATION:

Western Executive Program, University of Western Ontario, October 1997
Utility Finance Course, EXNET, January 1997
Utility Planning, University of California, February 1989
M.Sc. Electrical Engineering (Power Systems), University of Saskatchewan, 1984
B.Sc. Electrical Engineering, Dean's Honour List, University of Manitoba, 1975

PROFESSIONAL AFFILIATIONS:

Association of Professional Engineers and Geoscientists of the Province of Manitoba (APEGM)
Institute of Electrical and Electronics Engineers (IEEE)
Canadian Hydropower Association (CHA), Past Chair Board of Directors, former Chair of Working Groups (Species at Risk, Regulatory Processes)
International Hydropower Association (IHA), Chair of Working Group
Environment Canada – Species at Risk Advisory Committee
Formerly: ArcticNet Board of Directors, Wuskwatim Power Limited Partnership Board of Directors, Climate Change National Electricity Table and Integrative Group, Mid-Continent Area Power Pool – Reserve Requirement Task Force, Canadian Electricity Association – Generation Planning Sub-Section, DFO National Science Advisory Council

EMPLOYMENT HISTORY:

2009 – Present	Manager of Portfolio Projects Management Division, Manitoba Hydro
2007 – 2009	Manager of Power Projects Development Division, Manitoba Hydro
2001 – 2007	Manager of Power Planning & Development Division, Manitoba Hydro
2000 – 2001	Manager of Power Planning & Operations Division, Manitoba Hydro
1990 – 2000	Manager of Resource Planning & Market Analysis Department, Manitoba Hydro
1985 – 1990	Generation Evaluation Engineer, Manitoba Hydro
1982 – 1985	Station Design Engineer, Transmission and Stations Department, Manitoba Hydro
1979 – 1981	Research Associate, Canadian Electrical Association Project Power System Research Group, University of Saskatchewan
1977 – 1978	Teaching and Research Assistant, Laser Optical Research Laboratory, Department of Electrical Engineering, University of Manitoba
1975 – 1977	Geophysical Exploration Engineer, Schlumberger Ltd., Paris (based in South-East Asia)



EMPLOYEE NAME: M. (Manny) Schulz

PROFESSIONAL EDUCATION:

Certified Management Accountant Fellowship (FCMA), 2009
Leadership Challenge, The Banff Centre, 2008
Leadership Excellence, The Banff Centre, 2007
Certified Management Accountant (CMA), 1995
Master of Business Administration, University of Manitoba, 1988
Enrolled in Bachelor of Arts (History & Psychology), University of Winnipeg, 1985-86
Bachelor of Environmental Studies (Architecture), University of Manitoba, 1981

PROFESSIONAL AFFILIATIONS:

Society of Management Accountants of Manitoba (Member)

EMPLOYMENT HISTORY:

2008 – Present	Corporate Treasurer, Manitoba Hydro
2006 – 2008	Corporate Controller, Manitoba Hydro
2006	Business Development Specialist, Canadian Wheat Board
2004 – 2006	Vice-President - Finance & Business Development, Dow BioProducts Ltd.
2000 – 2003	Director, Business Consulting Group, Grant Thornton LLP
1994 – 1999	Chief Operating/ Financial Officer, GBR Architects Limited
1993 – 1994	Director of Finance, GBR Architects Limited
1992 – 1993	Finance Manager, Registered Psychiatric Nurses' Association of Manitoba
Pre-1992	Various including Freelance Artist, and Labourer for Schulz Drywall

REFERENCE:

Tab 4, Page 8

PREAMBLE TO IR (IF ANY):

QUESTION:

In a format similar to MIPUG/MH I-8 from the 2015/16 GRA, please update the schedules regarding the five year and seven year drought impacts for MH16 and MH16 (Updated) if different.

RATIONALE FOR QUESTION:

RESPONSE:

Manitoba Hydro's methodology for the calculation of the drought impact is based on the difference in net revenues over the flow years of a representative drought with respect to the net revenues based on the average of all flow cases. The flow years, 1987/88 to 1991/92, inclusive, constitutes the representative 5-year drought. Flow years, 1936/37 to 1942/43, inclusive, make up the representative 7-year drought.

Table 1 below provides, from the MH16 revenue forecasts, the revenue and cost impacts (excluding financing costs) of a 5-year and a 7-year drought, with onset of the drought in 2018/19.

With respect to the MH16 Update, Table 2 contains the drought impact for the representative droughts with the onset of drought in 2019/20.

Table 1 - Drought Impact for MH16 Revenue Forecast

	2018/19	2019/20	2020/21	2021/22	2022/23	Total		
5-Year Drought Impact								
Impact of 5-Year Drought on Net Revenue (millions of nominal \$ Cdn)								
Revenue								
Extra-Provincial Sales	-153	-165	-114	-135	-164	-731		
Expense								
Water Rental	-30	-37	-17	-21	-19	-123		
Fuel & Power Purchase	173	318	39	65	16	610		
Net Revenue (Excluding Finance Expense)	-296	-446	-136	-179	-161	-1218		
Impact of 5-Year Drought on Energy (GWh/yr)								
Extra-Provincial Sales	-4112	-4342	-3004	-3232	-4169	-18858		
Hydro Generation	-8850	-11077	-5111	-6234	-5576	-36847		
Fuel & Power Purchase	4064	5872	1717	2544	937	15135		
	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	Total
7-Year Drought Impact								
Impact of 7-Year Drought on Net Revenue (millions of nominal \$ Cdn)								
Revenue								
Extra-Provincial Sales	-91	-104	-124	-150	-264	-243	-86	-1063
Expense								
Water Rental	-11	-11	-19	-29	-50	-28	-9	-157
Fuel & Power Purchase	-6	-15	46	139	410	59	-9	624
Net Revenue (Excluding Finance Expense)	-74	-78	-151	-260	-624	-275	-68	-1530
Impact of 7-Year Drought on Energy (GWh/yr)								
Extra-Provincial Sales	-2750	-3087	-3193	-3520	-5952	-5479	-2393	-26374
Hydro Generation	-3320	-3280	-5570	-8821	-15068	-8298	-2611	-46967
Fuel & Power Purchase	292	-106	1956	4702	8013	2153	-21	16989

Table 2 - Drought Impact for MH16 Update Revenue Forecast

	2019/20	2020/21	2021/22	2022/23	2023/24	Total		
5-Year Drought Impact								
Impact of 5-Year Drought on Net Revenue (millions of nominal \$ Cdn)								
Revenue								
Extra-Provincial Sales	-140	-159	-114	-183	-157	-753		
Expense								
Water Rental	-34	-37	-17	-24	-20	-132		
Fuel & Power Purchase	240	268	39	39	17	602		
Net Revenue (Excluding Finance Expense)	-345	-389	-136	-198	-154	-1223		
Impact of 5-Year Drought on Energy (GWh/yr)								
Extra-Provincial Sales	-3751	-3852	-2897	-4772	-4352	-19624		
Hydro Generation	-10259	-11009	-5087	-7162	-5904	-39421		
Fuel & Power Purchase	5806	6385	1804	1813	1057	16865		
	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	Total
7-Year Drought Impact								
Impact of 7-Year Drought on Net Revenue (millions of nominal \$ Cdn)								
Revenue								
Extra-Provincial Sales	-115	-92	-132	-219	-264	-223	-85	-1129
Expense								
Water Rental	-22	-11	-19	-33	-51	-28	-9	-173
Fuel & Power Purchase	59	2	42	95	389	52	-8	630
Net Revenue (Excluding Finance Expense)	-152	-83	-154	-280	-602	-247	-67	-1586
Impact of 7-Year Drought on Energy (GWh/yr)								
Extra-Provincial Sales	-3284	-2571	-3239	-5511	-6369	-5473	-2508	-28956
Hydro Generation	-6472	-3366	-5595	-9996	-15388	-8298	-2636	-51751
Fuel & Power Purchase	2747	511	1928	3734	7883	2159	-117	18844

REFERENCE:

PUB-MFR-59

PREAMBLE TO IR (IF ANY):

QUESTION:

- a) Please extend Table 1 for forecast years as provided in Appendix 3.3.
- b) Please update Table 1 (and extend for forecast years) for Appendix 3.6 (MH16 Update).

RATIONALE FOR QUESTION:

RESPONSE:

The following tables provide the principal amount of long term debt outstanding at fiscal year end, the relative proportion of long term debt maturing within specific time frames and the weighted average term to maturity of the total long term debt portfolio. Actuals are provided for the fiscal years ended March 31, 2004 through 2017. In part a) IFF16 forecast figures are provided for March 31, 2018 to March 31, 2036, and in part b) MH16 Update with Interim forecast figures are provided for the same time frame.

Note that the tables were prepared using debt maturities conforming to the Corporation's financial statement presentation, which specifies the most outward obligation dates on any debt series (the latter of physical debt or forward interest rate swap maturity dates). Also note that the forecasted long term debt percentages and weighted average terms to maturity ("WATM") will be affected by the simplifying forecast modeling assumption of a 12 year term to maturity for all new long term debt issuance. Actual terms to maturity for new long term debt issues will vary from forecast, and the distribution of the future transacted long term debt issues will have a combination of various maturities. Should underlying forecast assumptions (rate increases, cost savings, export prices, interest rates, in-service dates) not materialize as planned, Manitoba Hydro will re-evaluate and adjust its debt management strategy and the targeted WATM of new debt issuance as it deems necessary.

MANITOBA HYDRO

MIPUG-MH I-19 a) Finance Expense - Debt Levels

Actuals are shown for March 31, 2004 - 2017 and IFF16 forecast information shown for March 31, 2018 to 2036.

(\$ in CAD millions)

	Debt Maturing Less than 10 Years		Debt Maturing Between 10 - 20 Years		Debt Maturing Greater than 20 Years		Total Long Term Debt	Weighted Average Term to Maturity
	\$	% of Total	\$	% of Total	\$	% of Total	\$	(Years)
March 31, 2004	2,586	35.1 %	3,521	47.7 %	1,268	17.2 %	7,375	13.8
March 31, 2005	2,377	33.1 %	3,346	46.5 %	1,468	20.4 %	7,191	13.8
March 31, 2006	2,397	33.5 %	3,317	46.3 %	1,443	20.2 %	7,158	13.7
March 31, 2007	2,623	36.3 %	3,094	42.9 %	1,501	20.8 %	7,218	12.9
March 31, 2008	2,996	39.5 %	2,513	33.1 %	2,081	27.4 %	7,590	13.5
March 31, 2009	3,763	45.8 %	2,026	24.7 %	2,421	29.5 %	8,209	13.6
March 31, 2010	3,963	46.0 %	1,805	21.0 %	2,846	33.0 %	8,614	14.8
March 31, 2011	3,967	45.6 %	2,241	25.7 %	2,496	28.7 %	8,704	15.3
March 31, 2012	4,841	51.4 %	1,619	17.2 %	2,962	31.4 %	9,422	14.9
March 31, 2013	5,179	51.7 %	1,499	15.0 %	3,332	33.3 %	10,010	14.8
March 31, 2014	5,160	46.9 %	1,500	13.6 %	4,349	39.5 %	11,009	16.2
March 31, 2015	5,264	41.4 %	1,370	10.8 %	6,084	47.8 %	12,717	17.8
March 31, 2016	6,096	41.7 %	1,441	9.9 %	7,071	48.4 %	14,607	18.1
March 31, 2017	7,270	44.1 %	1,641	9.9 %	7,582	46.0 %	16,492	17.5
March 31, 2018 *	7,027	36.2 %	5,341	27.5 %	7,032	36.2 %	19,399	16.0
March 31, 2019 *	6,049	27.5 %	9,281	42.3 %	6,632	30.2 %	21,961	15.2
March 31, 2020 *	8,655	36.7 %	8,639	36.7 %	6,263	26.6 %	23,558	14.2
March 31, 2021 *	11,773	48.9 %	6,469	26.9 %	5,838	24.2 %	24,080	13.8
March 31, 2022 *	12,539	52.6 %	5,895	24.7 %	5,388	22.6 %	23,822	13.3
March 31, 2023 *	14,074	59.3 %	4,802	20.3 %	4,838	20.4 %	23,715	12.6
March 31, 2024 *	14,948	63.8 %	3,679	15.7 %	4,788	20.4 %	23,415	11.7
March 31, 2025 *	14,946	65.0 %	3,269	14.2 %	4,788	20.8 %	23,003	10.9
March 31, 2026 *	14,471	65.0 %	4,244	19.1 %	3,538	15.9 %	22,253	10.3
March 31, 2027 *	13,493	61.7 %	6,396	29.2 %	1,986	9.1 %	21,875	9.9
March 31, 2028 *	13,893	64.0 %	5,846	26.9 %	1,986	9.1 %	21,725	9.0
March 31, 2029 *	15,033	69.4 %	4,646	21.4 %	1,986	9.2 %	21,665	8.0
March 31, 2030 *	11,992	60.4 %	6,202	31.2 %	1,661	8.4 %	19,855	8.7
March 31, 2031 *	8,021	42.1 %	9,377	49.2 %	1,661	8.7 %	19,059	10.3
March 31, 2032 *	7,261	39.8 %	9,327	51.1 %	1,661	9.1 %	18,249	10.5
March 31, 2033 *	9,208	52.8 %	7,097	40.7 %	1,141	6.5 %	17,446	10.6
March 31, 2034 *	10,279	60.2 %	5,647	33.1 %	1,141	6.7 %	17,067	10.1
March 31, 2035 *	11,269	67.7 %	4,322	25.9 %	1,066	6.4 %	16,657	9.4
March 31, 2036 *	12,844	78.4 %	2,472	15.1 %	1,066	6.5 %	16,382	8.5

* The forecasted debt percentages and weighted average terms to maturity will be affected by the simplifying modeling assumption of a 12 year term to maturity for all new debt issuance. Actual terms to maturity will vary from forecast.

MANITOBA HYDRO

MIPUG-MH I-19 b) Finance Expense - Debt Levels

Actuals are shown for March 31, 2004 - 2017 and MH16 Update with Interim forecast information shown for March 31, 2018 to 2036.

(\$ in CAD millions)

	Debt Maturing Less than 10 Years		Debt Maturing Between 10 - 20 Years		Debt Maturing Greater than 20 Years		Total Long Term Debt	Weighted Average Term to Maturity
	\$	% of Total	\$	% of Total	\$	% of Total	\$	(Years)
March 31, 2004	2,586	35.1 %	3,521	47.7 %	1,268	17.2 %	7,375	13.8
March 31, 2005	2,377	33.1 %	3,346	46.5 %	1,468	20.4 %	7,191	13.8
March 31, 2006	2,397	33.5 %	3,317	46.3 %	1,443	20.2 %	7,158	13.7
March 31, 2007	2,623	36.3 %	3,094	42.9 %	1,501	20.8 %	7,218	12.9
March 31, 2008	2,996	39.5 %	2,513	33.1 %	2,081	27.4 %	7,590	13.5
March 31, 2009	3,763	45.8 %	2,026	24.7 %	2,421	29.5 %	8,209	13.6
March 31, 2010	3,963	46.0 %	1,805	21.0 %	2,846	33.0 %	8,614	14.8
March 31, 2011	3,967	45.6 %	2,241	25.7 %	2,496	28.7 %	8,704	15.3
March 31, 2012	4,841	51.4 %	1,619	17.2 %	2,962	31.4 %	9,422	14.9
March 31, 2013	5,179	51.7 %	1,499	15.0 %	3,332	33.3 %	10,010	14.8
March 31, 2014	5,160	46.9 %	1,500	13.6 %	4,349	39.5 %	11,009	16.2
March 31, 2015	5,264	41.4 %	1,370	10.8 %	6,084	47.8 %	12,717	17.8
March 31, 2016	6,096	41.7 %	1,441	9.9 %	7,071	48.4 %	14,607	18.1
March 31, 2017	7,270	44.1 %	1,641	9.9 %	7,582	46.0 %	16,492	17.5
March 31, 2018 *	7,027	38.0 %	4,441	24.0 %	7,032	38.0 %	18,499	16.2
March 31, 2019 *	6,049	28.7 %	8,381	39.8 %	6,632	31.5 %	21,061	15.4
March 31, 2020 *	7,555	33.1 %	9,039	39.5 %	6,263	27.4 %	22,858	14.4
March 31, 2021 *	10,873	45.7 %	7,069	29.7 %	5,838	24.6 %	23,780	13.9
March 31, 2022 *	11,639	49.0 %	6,709	28.3 %	5,388	22.7 %	23,735	13.5
March 31, 2023 *	13,995	57.3 %	5,604	22.9 %	4,838	19.8 %	24,437	12.7
March 31, 2024 *	14,871	61.6 %	4,479	18.6 %	4,788	19.8 %	24,137	11.8
March 31, 2025 *	15,669	66.0 %	3,269	13.8 %	4,788	20.2 %	23,726	11.0
March 31, 2026 *	15,194	66.1 %	4,244	18.5 %	3,538	15.4 %	22,976	10.4
March 31, 2027 *	14,216	63.5 %	6,196	27.7 %	1,986	8.9 %	22,398	10.0
March 31, 2028 *	14,616	65.8 %	5,556	25.0 %	1,986	8.9 %	22,203	9.0
March 31, 2029 *	15,556	70.1 %	4,646	20.9 %	1,986	9.0 %	22,188	8.0
March 31, 2030 *	13,415	68.2 %	4,602	23.4 %	1,661	8.4 %	19,678	8.0
March 31, 2031 *	9,444	51.7 %	7,177	39.3 %	1,661	9.1 %	18,282	9.5
March 31, 2032 *	7,684	44.5 %	7,927	45.9 %	1,661	9.6 %	17,272	9.8
March 31, 2033 *	8,204	50.5 %	6,897	42.5 %	1,141	7.0 %	16,242	10.3
March 31, 2034 *	8,679	56.1 %	5,647	36.5 %	1,141	7.4 %	15,467	10.1
March 31, 2035 *	9,269	64.1 %	4,122	28.5 %	1,066	7.4 %	14,457	9.8
March 31, 2036 *	10,644	75.1 %	2,472	17.4 %	1,066	7.5 %	14,182	9.0

* The forecasted debt percentages and weighted average terms to maturity will be affected by the simplifying modeling assumption of a 12 year term to maturity for all new debt issuance. Actual terms to maturity will vary from forecast.

REFERENCE:

Appendix 3.5, Page 17

PREAMBLE TO IR (IF ANY):

QUESTION:

- a) Please confirm this chart is for MH16. If not confirmed, please provide.
- b) Please extend Chart 13 backwards to 1998.
- c) Please provide the underlying data for the Chart (including added values for part b).
- d) Please reconcile values in part (b) with Appendix 3.3, projected cash flow statement for 20 year forecast, if different.
- e) Please update Chart 13 for MH16 Updated and provide underlying values.
- f) Please provide a version of Chart 13 corresponding with Appendix 3.4 with annual rate increases of 3.95% and underlying values.
- g) For each version of Chart 13 (MH16, Appendix 3.3 and Appendix 3.4), please specify between borrowings with maturity of under 10 years and borrowings for greater than 10 years.
 - i) For borrowings with maturity under 10 years, provide a schedule that shows how much is paid off versus refinanced in each forecast year.
- h) Please provide a version of Chart 13 for IFF16, also showing the underlying values, corresponding to the scenario shown in in Figure 2.5 of Tab 2 called "IFF16 Forecast 20yr Debt".

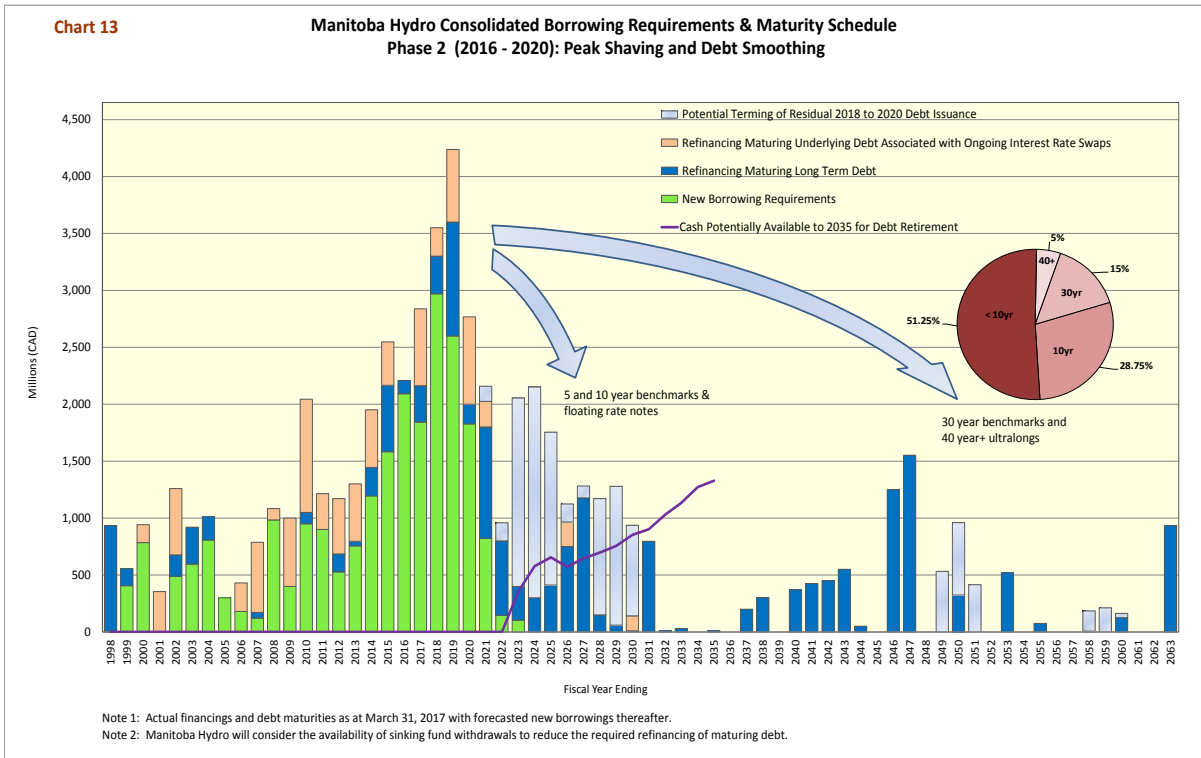
RATIONALE FOR QUESTION:

To understand Hydro's cash flow requirements regarding future borrowing and debt management plans, and the interaction with rate increase requests

RESPONSE:

- a) Confirmed, this chart is based on IFF16.

b) Please find below Chart 13 extended backwards to 1998.



c) The following table provides the underlying data for the Chart in part b).

Fiscal Year	Refinance Underlying Debt with Ongoing Swap	Refinance LTD Maturities	New Borrowings	Potential 2018-2020 Terming	Surplus Cash
1998	-	927.36	8.00	-	-
1999	-	149.10	406.08	-	-
2000	157.98	-	785.02	-	-
2001	355.00	-	0.00	-	-
2002	581.80	187.69	489.51	-	-
2003	-	328.98	591.02	-	-
2004	-	205.99	807.01	-	-
2005	-	-	300.00	-	-
2006	250.60	-	180.00	-	-
2007	616.00	50.00	121.70	-	-
2008	100.00	-	983.60	-	-
2009	600.00	-	400.00	-	-
2010	994.50	100.00	950.00	-	-
2011	315.00	-	900.00	-	-
2012	485.00	158.20	527.30	-	-
2013	504.00	41.10	755.30	-	-
2014	505.90	250.40	1,194.90	-	-
2015	381.00	583.10	1,583.50	-	-
2016	-	115.48	2,092.74	-	-
2017	675.76	319.51	1,843.29	-	-
2018	250.00	330.41	2,969.59	-	-
2019	638.00	1,000.67	2,599.33	-	-
2020	767.50	172.84	1,827.16	-	-
2021	225.00	975.41	824.59	133.13	-
2022	-	653.13	146.87	158.93	-
2023	-	296.36	103.65	1,656.91	356.00
2024	-	300.00	-	1,854.13	578.00
2025	-	411.64	-	1,343.91	656.00
2026	215.00	750.00	-	158.93	571.00
2027	-	1,177.84	-	103.78	646.00
2028	-	150.00	-	1,020.63	696.71
2029	-	60.00	-	1,218.43	755.19
2030	131.00	10.00	-	795.66	852.97
2031	-	795.76	-	-	901.97
2032	-	9.95	-	-	1,028.78
2033	-	30.00	-	-	1,134.24
2034	-	-	-	-	1,272.14
2035	-	10.00	-	-	1,328.10
2036	-	-	-	-	-
2037	-	200.00	-	-	-
2038	-	300.00	-	-	-
2039	-	-	-	-	-
2040	-	368.60	-	-	-
2041	-	425.00	-	-	-
2042	-	450.00	-	-	-
2043	-	550.00	-	-	-
2044	-	50.00	-	-	-
2045	-	-	-	-	-
2046	-	1,250.00	-	-	-
2047	-	1,552.13	-	-	-
2048	-	-	-	-	-
2049	-	-	-	532.50	-
2050	-	325.00	-	635.70	-
2051	-	-	-	415.13	-
2052	-	-	-	-	-
2053	-	520.00	-	-	-
2054	-	-	-	-	-
2055	-	75.00	-	-	-
2056	-	-	-	-	-
2057	-	-	-	-	-
2058	-	7.04	-	177.50	-
2059	-	-	-	211.90	-
2060	-	125.00	-	38.38	-
2061	-	-	-	-	-
2062	-	-	-	-	-
2063	-	934.00	-	-	-

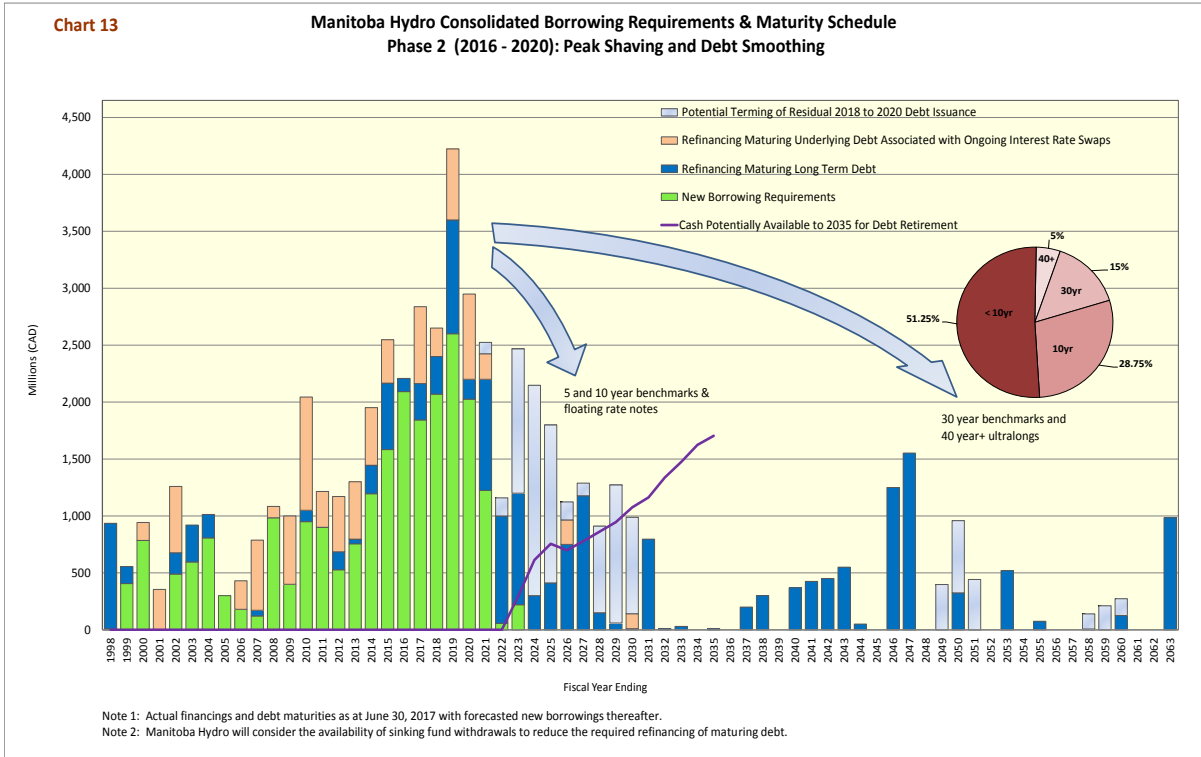
- d) Chart 13 in part b) portrays Manitoba Hydro's existing debt maturity schedule at March 31, 2017 based on requirements for actual physical debt issuance ('action date' basis) which include the refinancing of underlying debt attached to an ongoing interest rate swap. The IFF16 assumes that these debt streams mature and will be refinanced at the swap maturity date, therefore the forecasting model does not generate additional borrowings for these refinancings on the cash flow statement (and subsequently does not show the debt retirement either). However, the corporation will have to secure the funds to refinance the underlying maturing debt, therefore it is added in Chart 13 showing the total financing requirements. As such, the total financings in Chart 13 will be different in certain years from 'Proceeds from Long Term Debt' on the cash flow statement. Similarly, in Chart 13 the 'Refinancing Maturing Long Term Debt' will be different from the 'Retirement of Long Term Debt' on the cash flow statement.

As mentioned above, Chart 13 in part b) portrays Manitoba Hydro's existing debt maturity schedule at March 31, 2017 as well as the potential terming of the 2018-2020 debt issuance into the planned new weightings in various terms. The IFF16 cash flow statement reflects the maturity of the debt issued in 2018 in the year 2030 (and in a similar fashion after 12 years for 2019 and beyond) due to the simplifying assumption of a 12 year term to maturity in the forecasting model.

In addition, USD debt maturities in Chart 13 in part b) are translated at the foreign exchange (FX) rate at March 31, 2017, whereas the IFF16 cash flow statement utilizes the forecast FX rate for the given year to translate USD maturities into CAD dollars.

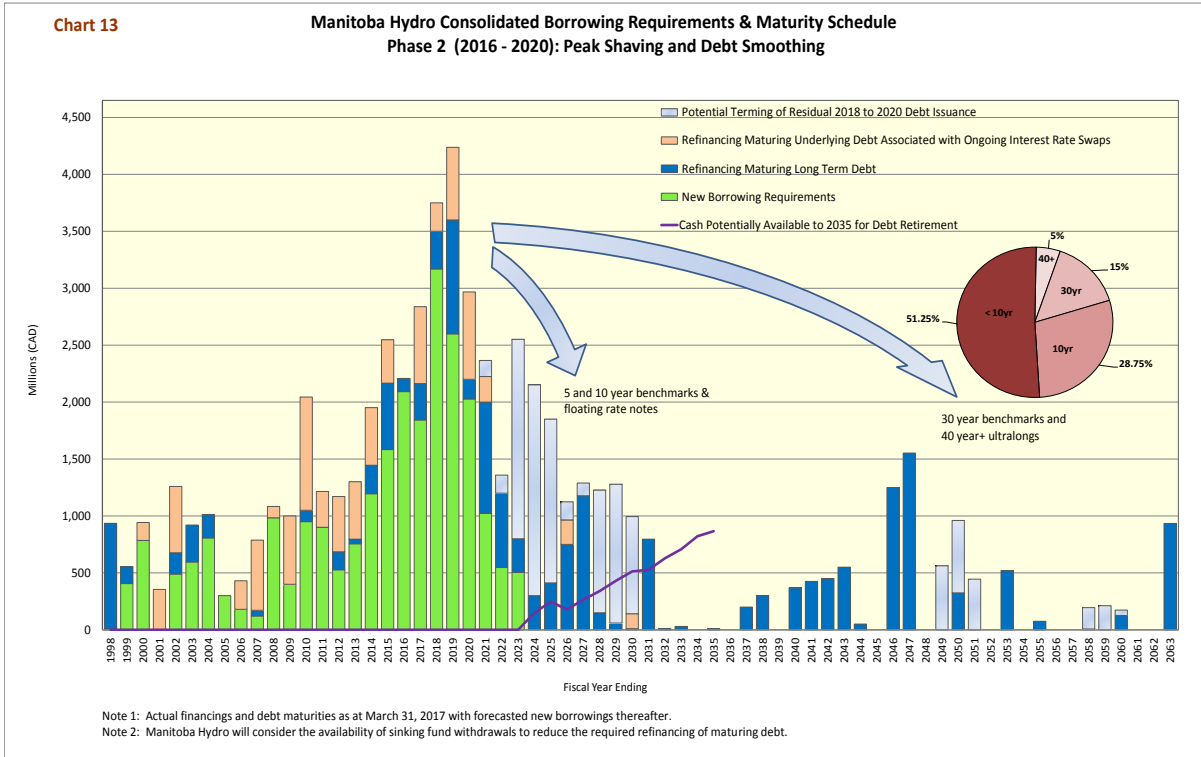
The 'Cash Potentially Available for Debt Retirement' in Chart 13 is calculated as Cash Flow from Operations less investment in Property, Plant & Equipment from the cash flow statement.

e) Please find below Chart 13 based on MH16 Update with Interim and a table including the underlying values.



Fiscal Year	Refinance Underlying Debt with Ongoing Swap	Refinance LTD Maturities	New Borrowings	Potential 2018-2020 Terming	Surplus Cash
1998	-	927.36	8.00	-	-
1999	-	149.10	406.08	-	-
2000	157.98	-	785.02	-	-
2001	355.00	-	-	-	-
2002	581.80	187.69	489.51	-	-
2003	-	328.98	591.02	-	-
2004	-	205.99	807.01	-	-
2005	-	-	300.00	-	-
2006	250.60	-	180.00	-	-
2007	616.00	50.00	121.70	-	-
2008	100.00	-	983.60	-	-
2009	600.00	-	400.00	-	-
2010	994.50	100.00	950.00	-	-
2011	315.00	-	900.00	-	-
2012	485.00	158.20	527.30	-	-
2013	504.00	41.10	755.30	-	-
2014	505.90	250.40	1,194.90	-	-
2015	381.00	583.10	1,583.50	-	-
2016	0.00	115.48	2,092.74	-	-
2017	675.76	319.51	1,843.29	-	-
2018	250.00	330.41	2,069.59	-	-
2019	623.82	999.55	2,600.45	-	-
2020	748.85	174.24	2,025.76	-	-
2021	225.00	975.41	1,224.59	99.38	-
2022	-	942.78	57.22	158.39	-
2023	-	979.71	220.30	1,269.96	294.35
2024	-	300.00	-	1,847.92	613.50
2025	-	411.64	-	1,389.50	754.92
2026	215.00	750.00	-	158.39	699.00
2027	-	1,177.84	-	110.58	779.04
2028	-	150.00	-	761.88	862.43
2029	-	60.00	-	1,214.35	946.12
2030	131.00	10.00	-	847.79	1,075.39
2031	-	795.76	-	-	1,162.70
2032	-	10.09	-	-	1,337.32
2033	-	30.00	-	-	1,473.68
2034	-	-	-	-	1,624.27
2035	-	10.00	-	-	1,703.73
2036	-	-	-	-	-
2037	-	200.00	-	-	-
2038	-	300.00	-	-	-
2039	-	-	-	-	-
2040	-	368.60	-	-	-
2041	-	425.00	-	-	-
2042	-	450.00	-	-	-
2043	-	550.00	-	-	-
2044	-	50.00	-	-	-
2045	-	-	-	-	-
2046	-	1,250.00	-	-	-
2047	-	1,552.13	-	-	-
2048	-	-	-	-	-
2049	-	-	-	397.50	-
2050	-	325.00	-	633.57	-
2051	-	-	-	442.33	-
2052	-	-	-	-	-
2053	-	520.00	-	-	-
2054	-	-	-	-	-
2055	-	75.00	-	-	-
2056	-	-	-	-	-
2057	-	-	-	-	-
2058	-	7.04	-	132.50	-
2059	-	-	-	211.19	-
2060	-	125.00	-	147.44	-
2061	-	-	-	-	-
2062	-	-	-	-	-
2063	-	984.00	-	-	-

f) Please see Chart 13 below based on IFF16 with 3.95% rate increases and a table including the underlying values:

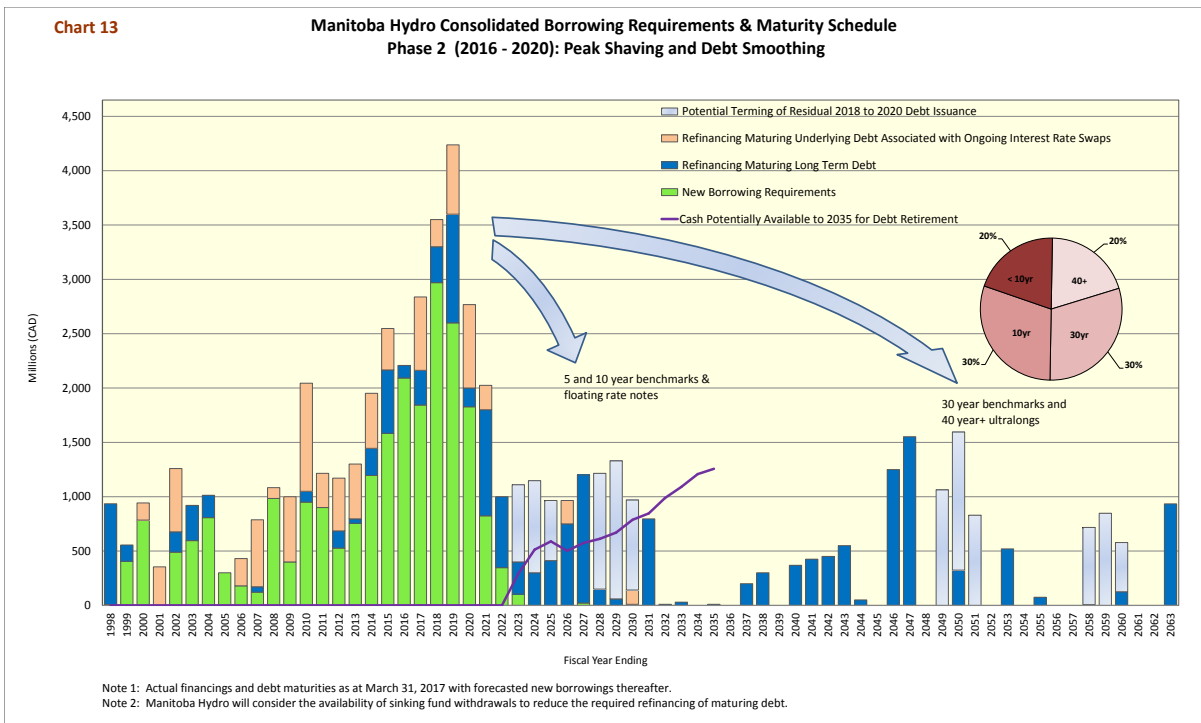


Fiscal Year	Refinance Underlying Debt with Ongoing Swap	Refinance LTD Maturities	New Borrowings	Potential 2018-2020 Terming	Surplus Cash
1998	-	927.36	8.00	-	-
1999	-	149.10	406.08	-	-
2000	157.98	-	785.02	-	-
2001	355.00	-	0.00	-	-
2002	581.80	187.69	489.51	-	-
2003	-	328.98	591.02	-	-
2004	-	205.99	807.01	-	-
2005	-	-	300.00	-	-
2006	250.60	-	180.00	-	-
2007	616.00	50.00	121.70	-	-
2008	100.00	-	983.60	-	-
2009	600.00	-	400.00	-	-
2010	994.50	100.00	950.00	-	-
2011	315.00	-	900.00	-	-
2012	485.00	158.20	527.30	-	-
2013	504.00	41.10	755.30	-	-
2014	505.90	250.40	1,194.90	-	-
2015	381.00	583.10	1,583.50	-	-
2016	-	115.48	2,092.74	-	-
2017	675.76	319.51	1,843.29	-	-
2018	250.00	330.41	3,169.59	-	-
2019	638.00	1,000.67	2,599.33	-	-
2020	767.50	172.84	2,027.16	-	-
2021	225.00	975.41	1,024.59	140.63	-
2022	-	653.13	546.87	158.93	-
2023	-	296.36	503.65	1,751.91	-
2024	-	300.00	-	1,854.13	149.65
2025	-	411.64	-	1,438.91	247.40
2026	215.00	750.00	-	158.93	178.65
2027	-	1,177.84	-	111.28	265.29
2028	-	150.00	-	1,078.13	339.95
2029	-	60.00	-	1,218.43	430.27
2030	131.00	10.00	-	853.16	512.62
2031	-	795.76	-	-	527.40
2032	-	9.95	-	-	627.80
2033	-	30.00	-	-	707.42
2034	-	-	-	-	821.59
2035	-	10.00	-	-	866.45
2036	-	-	-	-	-
2037	-	200.00	-	-	-
2038	-	300.00	-	-	-
2039	-	-	-	-	-
2040	-	368.60	-	-	-
2041	-	425.00	-	-	-
2042	-	450.00	-	-	-
2043	-	550.00	-	-	-
2044	-	50.00	-	-	-
2045	-	-	-	-	-
2046	-	1,250.00	-	-	-
2047	-	1,552.13	-	-	-
2048	-	-	-	-	-
2049	-	-	-	562.50	-
2050	-	325.00	-	635.70	-
2051	-	-	-	445.13	-
2052	-	-	-	-	-
2053	-	520.00	-	-	-
2054	-	-	-	-	-
2055	-	75.00	-	-	-
2056	-	-	-	-	-
2057	-	-	-	-	-
2058	-	7.04	-	187.50	-
2059	-	-	-	211.90	-
2060	-	125.00	-	48.38	-
2061	-	-	-	-	-
2062	-	-	-	-	-
2063	-	934.00	-	-	-

g) In each version of Chart 13, the short light blue arrow points to the potential terming of 2018 to 2020 debt issuance with terms of 10 years or less, and the longer light blue arrow points to the potential terming of debt issuance greater than 10 years.

In each version of Chart 13, 'Cash Potentially Available for Debt Retirement' is represented by the line graph. In each scenario, should all forecast assumptions hold (rate increases, cost savings, export prices, interest rate forecasts, in-service dates) this surplus cash could be available to retire debt or be used for other purposes. Any amount of cash made available for debt retirement would repay an equivalent amount of debt maturities which would otherwise need to be refinanced.

h) Please see the Chart 13 below based on IFF16 20 year debt and a table including the underlying data:



Fiscal Year	Refinance Underlying Debt with Ongoing Swap	Refinance LTD Maturities	New Borrowings	Potential 2018-2020 Terming	Surplus Cash
1998	-	927.36	8.00	-	-
1999	-	149.10	406.08	-	-
2000	157.98	-	785.02	-	-
2001	355.00	-	-	-	-
2002	581.80	187.69	489.51	-	-
2003	-	328.98	591.02	-	-
2004	-	205.99	807.01	-	-
2005	-	-	300.00	-	-
2006	250.60	-	180.00	-	-
2007	616.00	50.00	121.70	-	-
2008	100.00	-	983.60	-	-
2009	600.00	-	400.00	-	-
2010	994.50	100.00	950.00	-	-
2011	315.00	-	900.00	-	-
2012	485.00	158.20	527.30	-	-
2013	504.00	41.10	755.30	-	-
2014	505.90	250.40	1,194.90	-	-
2015	381.00	583.10	1,583.50	-	-
2016	-	115.48	2,092.74	-	-
2017	675.76	319.51	1,843.29	-	-
2018	250.00	330.41	2,969.59	-	-
2019	638.00	1,000.67	2,599.33	-	-
2020	767.50	172.84	1,827.16	-	-
2021	225.00	975.41	824.59	-	-
2022	-	653.13	346.87	-	-
2023	-	296.36	103.65	710.00	291.00
2024	-	300.00	-	847.60	513.00
2025	-	411.64	-	553.50	589.00
2026	215.00	750.00	-	-	502.00
2027	-	1,177.84	22.16	-	575.00
2028	-	150.00	-	1,065.00	612.71
2029	-	60.00	-	1,271.40	670.19
2030	131.00	10.00	-	830.25	786.97
2031	-	795.76	-	-	845.97
2032	-	9.95	-	-	987.78
2033	-	30.00	-	-	1,090.24
2034	-	-	-	-	1,208.14
2035	-	10.00	-	-	1,257.10
2036	-	-	-	-	-
2037	-	200.00	-	-	-
2038	-	300.00	-	-	-
2039	-	-	-	-	-
2040	-	368.60	-	-	-
2041	-	425.00	-	-	-
2042	-	450.00	-	-	-
2043	-	550.00	-	-	-
2044	-	50.00	-	-	-
2045	-	-	-	-	-
2046	-	1,250.00	-	-	-
2047	-	1,552.13	-	-	-
2048	-	-	-	-	-
2049	-	-	-	1,065.00	-
2050	-	325.00	-	1,271.40	-
2051	-	-	-	830.25	-
2052	-	-	-	-	-
2053	-	520.00	-	-	-
2054	-	-	-	-	-
2055	-	75.00	-	-	-
2056	-	-	-	-	-
2057	-	-	-	-	-
2058	-	7.04	-	710.00	-
2059	-	-	-	847.60	-
2060	-	125.00	-	453.50	-
2061	-	-	-	-	-
2062	-	-	-	-	-
2063	-	934.00	-	-	-

REFERENCE:

Appendix 3.5, Page 17

PREAMBLE TO IR (IF ANY):

QUESTION:

- i) Please provide the full IFF scenario and all interest rate assumptions and debt calculations (e.g., including PUB MFR-55) supporting the statement at Tab 2, page 7 that “The new debt term to maturity is forecast to reduce new borrowing costs by 50 basis points per year saving the Corporation approximately \$500 million over the 10-year forecast”.

RATIONALE FOR QUESTION:

To understand Hydro’s cash flow requirements regarding future borrowing and debt management plans, and the interaction with rate increase requests

RESPONSE:

Attached are the projected financial statements underpinning the MH16 12-year and 20-year scenarios along with a comparison between the two scenarios statements to support the calculation of the \$500 million in finance expense savings. The change in interest rate assumptions shows the reduction of new borrowing costs by approximately 50 basis points, predominantly influenced by the Long Term Canadian Interest Rates given 85% of new debt issues are assigned fixed debt and 15% of new debt issues are floating. The schedule in PUB MFR-55 is also provided for both the MH16 12-year and 20-year scenarios.

**ELECTRIC OPERATIONS
PROJECTED OPERATING STATEMENT**

**MH16 - 12 Year Debt
(In Millions of Dollars)**

For the year ended March 31

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
REVENUES											
General Consumers at approved rates	1 517	1 569	1 561	1 552	1 551	1 552	1 559	1 567	1 577	1 584	1 593
additional*	0	88	255	397	551	717	766	817	870	923	979
BP/III Reserve Account	(96)	(119)	9	71	71	71	71	24	0	0	0
Extraprovincial	468	454	432	455	578	696	795	818	844	707	714
Other	27	30	31	31	33	33	34	34	35	35	36
	<u>1 915</u>	<u>2 022</u>	<u>2 287</u>	<u>2 507</u>	<u>2 784</u>	<u>3 069</u>	<u>3 225</u>	<u>3 260</u>	<u>3 325</u>	<u>3 250</u>	<u>3 321</u>
EXPENSES											
Operating and Administrative	535	518	501	511	513	524	536	548	559	571	583
Finance Expense	613	574	662	721	774	829	1 049	1 072	1 057	1 033	999
Finance Income	18	16	20	27	27	32	38	17	21	22	17
Depreciation and Amortization	384	396	471	515	554	597	689	714	725	739	751
Water Rentals and Assessments	131	124	112	113	114	117	127	128	131	131	131
Fuel and Power Purchased	130	135	166	146	162	149	140	138	141	128	129
Capital and Other Taxes	118	132	144	154	161	165	173	174	174	174	174
Other Expenses	60	115	109	102	94	92	71	64	67	71	76
Corporate Allocation	8	8	8	8	8	8	8	8	8	8	8
	<u>1 997</u>	<u>2 019</u>	<u>2 194</u>	<u>2 298</u>	<u>2 407</u>	<u>2 512</u>	<u>2 831</u>	<u>2 862</u>	<u>2 883</u>	<u>2 875</u>	<u>2 867</u>
Net Income before Net Movement in Reg. Deferral	(47)	35	134	264	430	620	470	432	484	418	488
Net Movement in Regulatory Deferral	69	68	106	82	69	61	40	(49)	(49)	(48)	(45)
Net Income	<u>22</u>	<u>102</u>	<u>241</u>	<u>346</u>	<u>499</u>	<u>681</u>	<u>510</u>	<u>383</u>	<u>435</u>	<u>369</u>	<u>443</u>
Net Income Attributable to:											
Manitoba Hydro	34	111	242	344	494	673	500	372	432	367	440
Non-controlling Interest	(12)	(9)	(1)	2	5	8	9	11	3	2	3
* Additional General Consumers Revenue											
Percent Increase	0.00%	7.90%	7.90%	7.90%	7.90%	7.90%	2.00%	2.00%	2.00%	2.00%	2.00%
Cumulative Percent Increase	0.00%	7.90%	16.42%	25.62%	35.55%	46.25%	49.18%	52.16%	55.21%	58.31%	61.48%
Financial Ratios											
Equity	15%	15%	14%	15%	16%	18%	19%	20%	22%	23%	25%
EBITDA Interest Coverage	1.50	1.57	1.76	1.88	2.01	2.21	2.16	2.11	2.20	2.18	2.30
Capital Coverage	1.08	1.31	1.49	1.69	2.11	2.60	2.33	2.30	2.17	2.00	2.09

**ELECTRIC OPERATIONS
PROJECTED OPERATING STATEMENT
MH16 - 12 Year Debt
(In Millions of Dollars)**

For the year ended March 31

	2028	2029	2030	2031	2032	2033	2034	2035	2036
REVENUES									
General Consumers at approved rates	1 599	1 608	1 623	1 639	1 667	1 698	1 730	1 762	1 796
additional*	1 034	1 093	1 158	1 225	1 304	1 389	1 478	1 571	1 669
BP/III Reserve Account	0	0	0	0	0	0	0	0	0
Extraprovincial	708	721	733	744	745	743	739	732	654
Other	36	37	38	38	39	40	40	40	41
	<u>3 378</u>	<u>3 458</u>	<u>3 551</u>	<u>3 647</u>	<u>3 756</u>	<u>3 869</u>	<u>3 987</u>	<u>4 106</u>	<u>4 161</u>
EXPENSES									
Operating and Administrative	595	607	620	633	646	660	674	688	702
Finance Expense	989	973	938	913	871	835	791	752	712
Finance Income	26	38	25	16	18	19	23	35	47
Depreciation and Amortization	764	775	790	804	822	840	856	871	887
Water Rentals and Assessments	131	132	132	132	133	133	133	134	134
Fuel and Power Purchased	129	131	135	145	151	159	167	178	172
Capital and Other Taxes	174	175	176	177	178	179	180	181	187
Other Expenses	79	84	87	87	89	91	92	95	96
Corporate Allocation	8	8	5	2	2	2	2	2	2
	<u>2 896</u>	<u>2 923</u>	<u>2 908</u>	<u>2 909</u>	<u>2 910</u>	<u>2 916</u>	<u>2 918</u>	<u>2 935</u>	<u>2 939</u>
Net Income before Net Movement in Reg. Deferral	535	610	694	769	882	990	1 114	1 241	1 315
Net Movement in Regulatory Deferral	(43)	(40)	(35)	(33)	(31)	(28)	(28)	(28)	(30)
Net Income	<u>491</u>	<u>570</u>	<u>659</u>	<u>737</u>	<u>851</u>	<u>963</u>	<u>1 086</u>	<u>1 213</u>	<u>1 285</u>
Net Income Attributable to:									
Manitoba Hydro	488	565	652	728	841	950	1 073	1 198	1 270
Non-controlling Interest	4	5	7	9	11	12	14	15	15
* Additional General Consumers Revenue Percent Increase	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
Cumulative Percent Increase	64.71%	68.00%	71.36%	74.79%	78.28%	81.85%	85.49%	89.19%	92.98%
Financial Ratios									
Equity	27%	29%	32%	34%	38%	41%	45%	50%	55%
EBITDA Interest Coverage	2.39	2.51	2.67	2.79	3.04	3.28	3.60	3.96	4.30
Capital Coverage	2.14	2.19	2.36	2.35	2.52	2.64	2.79	2.71	2.76

**ELECTRIC OPERATIONS
PROJECTED BALANCE SHEET
MH16 - 12 Year Debt
(In Millions of Dollars)**

For the year ended March 31

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
ASSETS											
Plant in Service	13 256	13 881	19 254	19 876	20 938	26 363	30 693	31 222	31 858	32 522	33 133
Accumulated Depreciation	985	1 319	1 749	2 197	2 634	3 143	3 724	4 347	4 961	5 625	6 231
Net Plant in Service	14 241	15 201	21 003	22 073	23 572	29 506	34 417	35 569	36 819	38 148	39 364
Construction in Progress	6 943	9 308	6 596	7 378	7 870	3 693	224	312	276	272	269
Current and Other Assets	1 721	1 909	2 275	2 451	2 239	1 917	1 727	1 921	2 075	1 806	1 989
Goodwill and Intangible Assets	270	485	725	869	1 271	1 225	1 180	1 135	1 092	1 049	1 007
Total Assets before Reg. Deferral Debit Balance	21 206	24 264	27 101	28 377	29 684	30 054	30 099	30 244	30 340	30 024	30 168
Regulatory Deferral Debit Balance	459	526	633	1 094	1 163	1 225	1 265	1 216	1 167	1 118	1 074
	21 665	24 790	27 734	29 471	30 847	31 279	31 364	31 461	31 507	31 143	31 242
LIABILITIES AND EQUITY											
Long-Term Debt	15 578	17 920	21 157	21 782	22 554	22 881	22 905	22 474	21 786	20 525	21 167
Current and Other Liabilities	3 458	3 949	3 347	4 110	4 253	3 710	3 292	3 460	3 752	4 270	3 276
Provisions	19	19	19	18	17	16	16	15	14	14	14
Deferred Revenue	444	460	486	515	537	546	556	566	577	588	599
BP/III Reserve Account	196	316	307	236	165	94	24	(0)	(0)	(0)	(0)
Retained Earnings	2 730	2 841	3 083	3 427	3 921	4 594	5 094	5 466	5 898	6 265	6 705
Accumulated Other Comprehensive Income	(761)	(714)	(665)	(616)	(600)	(562)	(522)	(521)	(520)	(520)	(520)
	21 665	24 790	27 734	29 471	30 847	31 279	31 364	31 461	31 507	31 143	31 242
Net Debt	15 349	18 248	20 527	22 028	22 835	22 967	22 670	22 206	21 663	21 200	20 664
Total Equity	2 778	3 104	3 465	3 862	4 363	5 048	5 237	5 608	6 054	6 434	6 888
Equity Ratio	15%	15%	14%	15%	16%	18%	19%	20%	22%	23%	25%

**ELECTRIC OPERATIONS
PROJECTED BALANCE SHEET
MH16 - 12 Year Debt
(In Millions of Dollars)**

For the year ended March 31

	2028	2029	2030	2031	2032	2033	2034	2035	2036
ASSETS									
Plant in Service	33 741	34 487	35 147	35 978	36 754	37 549	38 293	39 095	40 163
Accumulated Depreciation	6 924	7 621	8 329	9 059	9 806	10 595	11 384	12 186	12 993
Net Plant in Service	40 666	42 108	43 476	45 036	46 561	48 144	49 676	51 282	53 156
Construction in Progress	351	313	348	258	232	224	264	319	115
Current and Other Assets	2 450	3 067	2 180	2 203	2 336	2 578	3 382	4 219	5 263
Goodwill and Intangible Assets	967	928	890	852	814	777	740	703	667
Total Assets before Reg. Deferral Debit Balance	30 584	31 173	30 236	30 232	30 330	30 533	31 295	32 151	33 215
Regulatory Deferral Debit Balance	1 030	990	955	923	892	864	836	807	777
	31 614	32 163	31 191	31 155	31 222	31 397	32 130	32 958	33 992
LIABILITIES AND EQUITY									
Long-Term Debt	21 120	17 702	15 049	16 670	16 080	16 264	16 318	15 907	15 791
Current and Other Liabilities	3 197	6 589	7 607	5 213	5 019	4 049	3 645	3 674	3 543
Provisions	14	14	14	14	14	14	14	14	14
Deferred Revenue	610	619	629	639	649	660	671	682	694
BP III Reserve Account	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
Retained Earnings	7 193	7 759	8 411	9 138	9 979	10 929	12 002	13 200	14 470
Accumulated Other Comprehensive Income	(520)	(520)	(520)	(520)	(520)	(520)	(520)	(520)	(520)
	31 614	32 163	31 191	31 155	31 222	31 397	32 130	32 958	33 992
Net Debt	20 079	19 428	18 678	17 877	16 949	15 913	14 738	13 497	12 186
Total Equity	7 390	7 966	8 624	9 360	10 209	11 168	12 249	13 456	14 736
Equity Ratio	27%	29%	32%	34%	38%	41%	45%	50%	55%

**ELECTRIC OPERATIONS
PROJECTED CASH FLOW STATEMENT**

MH16 - 12 Year Debt

(In Millions of Dollars)

For the year ended March 31

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
OPERATING ACTIVITIES											
Cash Receipts from Customers	2 007	2 131	2 268	2 425	2 701	2 986	3 141	3 224	3 313	3 237	3 308
Cash Paid to Suppliers and Employees	(876)	(917)	(881)	(880)	(903)	(908)	(923)	(937)	(954)	(952)	(964)
Interest Paid	(569)	(529)	(628)	(695)	(737)	(797)	(1 013)	(1 042)	(1 035)	(1 017)	(974)
Interest Received	7	5	12	21	17	17	9	8	14	14	10
	569	689	770	871	1 077	1 298	1 214	1 253	1 338	1 282	1 379
FINANCING ACTIVITIES											
Proceeds from Long-Term Debt	2 743	3 370	3 590	1 970	1 790	790	360	(10)	(10)	(50)	790
Sinking Fund Withdrawals	146	0	0	182	303	767	173	50	330	131	224
Retirement of Long-Term Debt	(1 030)	(330)	(1 002)	(336)	(1 278)	(1 020)	(449)	(290)	(412)	(715)	(1 178)
Other	10	(10)	(10)	(11)	(11)	(11)	11	(5)	(5)	(5)	(5)
	1 868	3 029	2 578	1 805	804	525	95	(255)	(97)	(639)	(169)
INVESTING ACTIVITIES											
Property, Plant and Equipment, net of contributions	(2 609)	(3 553)	(3 015)	(2 351)	(1 742)	(1 352)	(880)	(700)	(704)	(732)	(756)
Sinking Fund Payment	(146)	(246)	(210)	(244)	(282)	(334)	(235)	(241)	(246)	(238)	(235)
Other	(68)	(51)	(55)	(44)	(128)	(91)	(84)	(83)	(83)	(80)	(79)
	(2 822)	(3 850)	(3 280)	(2 639)	(2 152)	(1 777)	(1 199)	(1 024)	(1 033)	(1 050)	(1 070)
Net Increase (Decrease) in Cash	(384)	(131)	68	37	(272)	46	111	(26)	208	(408)	140
Cash at Beginning of Year	944	559	428	496	534	262	308	419	393	601	193
Cash at End of Year	559	428	496	534	262	308	419	393	601	193	333

**ELECTRIC OPERATIONS
PROJECTED CASH FLOW STATEMENT**

**MH16 - 12 Year Debt
(In Millions of Dollars)**

For the year ended March 31

	2028	2029	2030	2031	2032	2033	2034	2035	2036
OPERATING ACTIVITIES									
Cash Receipts from Customers	3 365	3 444	3 538	3 633	3 741	3 855	3 973	4 092	4 147
Cash Paid to Suppliers and Employees	(976)	(990)	(1 007)	(1 030)	(1 050)	(1 071)	(1 094)	(1 118)	(1 132)
Interest Paid	(973)	(966)	(930)	(902)	(857)	(832)	(790)	(763)	(727)
Interest Received	22	40	19	10	13	20	32	52	64
	1 438	1 529	1 621	1 712	1 847	1 972	2 121	2 263	2 352
FINANCING ACTIVITIES									
Proceeds from Long-Term Debt	(10)	(20)	1 780	3 580	1 160	940	350	(90)	(30)
Sinking Fund Withdrawals	150	60	445	361	0	30	0	10	275
Retirement of Long-Term Debt	(150)	(50)	(3 450)	(4 386)	(1 982)	(1 763)	(750)	(340)	(265)
Other	(5)	(5)	(5)	(5)	(5)	(7)	(4)	(4)	(5)
	(15)	(15)	(1 230)	(450)	(828)	(800)	(404)	(424)	(25)
INVESTING ACTIVITIES									
Property, Plant and Equipment, net of contributions	(767)	(798)	(793)	(832)	(840)	(857)	(870)	(948)	(966)
Sinking Fund Payment	(232)	(233)	(240)	(215)	(201)	(201)	(200)	(204)	(208)
Other	(78)	(72)	(70)	(71)	(70)	(69)	(68)	(66)	(65)
	(1 077)	(1 104)	(1 102)	(1 118)	(1 112)	(1 127)	(1 138)	(1 218)	(1 239)
Net Increase (Decrease) in Cash	346	410	(711)	144	(92)	45	579	621	1 088
Cash at Beginning of Year	333	679	1 089	378	521	429	474	1 054	1 674
Cash at End of Year	679	1 089	378	521	429	474	1 054	1 674	2 762

**ELECTRIC OPERATIONS
PROJECTED OPERATING STATEMENT
MH16 - 20 Year Debt
(In Millions of Dollars)**

For the year ended March 31

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
REVENUES											
General Consumers at approved rates additional*	1 517	1 569	1 561	1 552	1 551	1 552	1 559	1 567	1 577	1 584	1 593
BP/III Reserve Account	(96)	(119)	9	71	71	71	71	24	0	0	0
Extraprovincial	468	454	432	455	578	696	795	818	844	707	714
Other	27	30	31	31	33	33	34	34	35	35	36
	1 915	2 022	2 287	2 507	2 784	3 069	3 225	3 260	3 325	3 250	3 321
EXPENSES											
Operating and Administrative	535	518	501	511	513	524	536	548	559	571	583
Finance Expense	613	582	689	761	826	886	1 107	1 135	1 119	1 095	1 080
Finance Income	18	16	20	27	27	31	36	15	17	16	20
Depreciation and Amortization	384	396	471	515	554	597	689	714	725	739	751
Water Rentals and Assessments	131	124	112	113	114	117	127	128	131	131	131
Fuel and Power Purchased	130	135	166	146	162	149	140	138	141	128	129
Capital and Other Taxes	118	132	144	154	160	165	173	174	174	174	174
Other Expenses	60	115	109	102	94	92	71	64	67	71	76
Corporate Allocation	8	8	8	8	8	8	8	8	8	8	8
	1 997	2 027	2 221	2 338	2 459	2 568	2 887	2 923	2 942	2 932	2 952
Net Income before Net Movement in Reg. Deferral	(47)	26	107	223	378	562	409	368	418	350	409
Net Movement in Regulatory Deferral	69	68	106	82	69	61	40	(49)	(49)	(48)	(45)
Net Income	22	94	213	305	447	624	449	319	369	302	364
Net Income Attributable to:											
Manitoba Hydro	34	103	214	303	442	615	440	308	366	300	361
Non-controlling Interest	(12)	(9)	(1)	2	5	8	9	11	3	2	3
* Additional General Consumers Revenue											
Percent Increase	0.00%	7.90%	7.90%	7.90%	7.90%	7.90%	2.00%	2.00%	2.00%	2.00%	2.00%
Cumulative Percent Increase	0.00%	7.90%	16.42%	25.62%	35.55%	46.25%	49.18%	52.16%	55.21%	58.31%	61.48%
Financial Ratios											
Equity	15%	15%	14%	15%	16%	17%	18%	19%	21%	22%	23%
EBITDA Interest Coverage	1.50	1.56	1.71	1.81	1.92	2.10	2.04	1.99	2.07	2.05	2.13
Capital Coverage	1.08	1.30	1.44	1.61	2.01	2.49	2.21	2.19	2.07	1.90	1.99

**ELECTRIC OPERATIONS
PROJECTED OPERATING STATEMENT
MH16 - 20 Year Debt
(In Millions of Dollars)**

For the year ended March 31

	2028	2029	2030	2031	2032	2033	2034	2035	2036
REVENUES									
General Consumers at approved rates	1 599	1 608	1 623	1 639	1 667	1 698	1 730	1 762	1 796
additional*	1 034	1 093	1 158	1 225	1 304	1 389	1 478	1 571	1 669
BP/III Reserve Account	0	0	0	0	0	0	0	0	0
Extraprovincial	708	721	733	744	745	743	739	732	654
Other	36	37	38	38	39	40	40	40	41
	<u>3 378</u>	<u>3 458</u>	<u>3 551</u>	<u>3 647</u>	<u>3 756</u>	<u>3 869</u>	<u>3 987</u>	<u>4 106</u>	<u>4 161</u>
EXPENSES									
Operating and Administrative	595	607	620	633	646	660	674	688	702
Finance Expense	1 073	1 056	1 034	1 009	963	950	934	916	882
Finance Income	27	36	45	56	68	86	106	129	140
Depreciation and Amortization	764	775	790	804	822	840	856	871	887
Water Rentals and Assessments	131	132	132	132	133	133	133	134	134
Fuel and Power Purchased	129	131	135	145	151	159	167	178	172
Capital and Other Taxes	174	175	177	177	179	180	181	182	188
Other Expenses	79	84	87	87	89	91	92	95	96
Corporate Allocation	8	8	5	3	3	3	3	3	3
	<u>2 981</u>	<u>3 004</u>	<u>3 025</u>	<u>3 047</u>	<u>3 053</u>	<u>3 100</u>	<u>3 147</u>	<u>3 195</u>	<u>3 205</u>
Net Income before Net Movement in Reg. Deferral	452	526	616	712	838	941	1 053	1 169	1 236
Net Movement in Regulatory Deferral	(43)	(40)	(35)	(33)	(31)	(28)	(28)	(28)	(30)
Net Income	<u>408</u>	<u>486</u>	<u>582</u>	<u>679</u>	<u>807</u>	<u>913</u>	<u>1 024</u>	<u>1 141</u>	<u>1 206</u>
Net Income Attributable to:									
Manitoba Hydro	405	481	574	670	796	901	1 010	1 125	1 191
Non-controlling Interest	4	5	8	9	11	12	14	15	16
* Additional General Consumers Revenue									
Percent Increase	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
Cumulative Percent Increase	64.71%	68.00%	71.36%	74.79%	78.28%	81.85%	85.49%	89.19%	92.98%
Financial Ratios									
Equity	25%	27%	29%	31%	34%	38%	42%	46%	51%
EBITDA Interest Coverage	2.20	2.31	2.46	2.63	2.90	3.10	3.34	3.61	3.87
Capital Coverage	2.02	2.07	2.26	2.28	2.46	2.58	2.71	2.63	2.67

**ELECTRIC OPERATIONS
PROJECTED BALANCE SHEET**

**MH16 - 20 Year Debt
(In Millions of Dollars)**

For the year ended March 31

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
ASSETS											
Plant in Service	13 256	13 881	19 254	19 876	20 938	26 363	30 693	31 222	31 858	32 522	33 133
Accumulated Depreciation	985	1 319	1 749	2 197	2 634	3 143	3 724	4 347	4 961	5 625	6 231
Net Plant in Service	14 241	15 201	21 003	22 073	23 572	29 506	34 417	35 569	36 819	38 148	39 364
Construction in Progress	6 943	9 308	6 596	7 378	7 870	3 693	224	312	276	272	269
Current and Other Assets	1 721	1 904	2 246	2 383	2 125	1 949	1 695	1 815	1 903	1 615	2 079
Goodwill and Intangible Assets	270	485	725	869	1 271	1 225	1 180	1 135	1 092	1 049	1 007
Total Assets before Reg. Deferral Debit Balance	21 206	24 259	27 073	28 310	29 570	30 087	30 067	30 138	30 168	29 833	30 257
Regulatory Deferral Debit Balance	459	526	633	1 094	1 163	1 225	1 265	1 216	1 167	1 118	1 074
	21 665	24 785	27 705	29 404	30 733	31 311	31 332	31 354	31 335	30 952	31 331
LIABILITIES AND EQUITY											
Long-Term Debt	15 578	17 920	21 157	21 782	22 554	23 081	23 101	22 660	21 972	20 721	21 753
Current and Other Liabilities	3 458	3 952	3 353	4 119	4 266	3 728	3 307	3 474	3 766	4 323	3 298
Provisions	19	19	19	18	17	16	16	15	14	14	14
Deferred Revenue	444	460	486	515	537	546	556	566	577	588	599
BP/III Reserve Account	196	316	307	236	165	94	24	(0)	(0)	(0)	(0)
Retained Earnings	2 730	2 833	3 047	3 351	3 793	4 408	4 848	5 156	5 522	5 821	6 183
Accumulated Other Comprehensive Income	(761)	(714)	(665)	(616)	(600)	(562)	(518)	(517)	(516)	(516)	(516)
	21 665	24 785	27 705	29 404	30 733	31 311	31 332	31 354	31 335	30 952	31 331
Net Debt	15 349	18 253	20 556	22 095	22 949	23 136	22 897	22 498	22 021	21 626	21 160
Total Equity	2 778	3 096	3 429	3 787	4 235	4 862	4 995	5 301	5 681	5 994	6 370
Equity Ratio	15%	15%	14%	15%	16%	17%	18%	19%	21%	22%	23%

**ELECTRIC OPERATIONS
PROJECTED BALANCE SHEET
MH16 - 20 Year Debt
(In Millions of Dollars)**

For the year ended March 31

	2028	2029	2030	2031	2032	2033	2034	2035	2036
ASSETS									
Plant in Service	33 741	34 487	35 147	35 978	36 754	37 549	38 293	39 095	40 163
Accumulated Depreciation	6 924	7 621	8 329	9 059	9 806	10 595	11 384	12 186	12 993
Net Plant in Service	40 666	42 108	43 476	45 036	46 561	48 144	49 676	51 282	53 156
Construction in Progress	351	313	348	258	232	224	264	319	115
Current and Other Assets	2 466	2 989	3 838	3 805	4 698	5 669	6 791	7 959	8 914
Goodwill and Intangible Assets	967	928	890	852	814	777	740	703	667
Total Assets before Reg. Deferral Debit Balance	30 601	31 096	31 893	31 835	32 692	33 625	34 704	35 891	36 865
Regulatory Deferral Debit Balance	1 030	990	955	923	892	864	836	807	777
	31 631	32 086	32 848	32 757	33 584	34 489	35 539	36 698	37 643
LIABILITIES AND EQUITY									
Long-Term Debt	21 696	21 628	21 015	20 996	21 019	20 983	20 977	20 626	20 520
Current and Other Liabilities	3 239	3 271	4 062	3 311	3 308	3 338	3 373	3 746	3 594
Provisions	14	14	14	14	14	14	14	14	14
Deferred Revenue	610	619	629	639	649	660	671	682	694
BP III Reserve Account	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
Retained Earnings	6 588	7 069	7 643	8 313	9 109	10 010	11 020	12 145	13 336
Accumulated Other Comprehensive Income	(516)	(516)	(516)	(516)	(516)	(516)	(516)	(516)	(516)
	31 631	32 086	32 848	32 757	33 584	34 489	35 539	36 698	37 643
Net Debt	20 658	20 091	19 406	18 660	17 773	16 780	15 666	14 494	13 261
Total Equity	6 789	7 280	7 861	8 538	9 343	10 252	11 271	12 406	13 607
Equity Ratio	25%	27%	29%	31%	34%	38%	42%	46%	51%

**ELECTRIC OPERATIONS
PROJECTED CASH FLOW STATEMENT**

MH16 - 20 Year Debt

(In Millions of Dollars)

For the year ended March 31

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
OPERATING ACTIVITIES											
Cash Receipts from Customers	2 007	2 131	2 268	2 425	2 701	2 986	3 141	3 224	3 313	3 237	3 308
Cash Paid to Suppliers and Employees	(876)	(917)	(881)	(880)	(903)	(908)	(923)	(937)	(954)	(952)	(964)
Interest Paid	(569)	(534)	(652)	(733)	(785)	(849)	(1 075)	(1 105)	(1 097)	(1 079)	(1 048)
Interest Received	7	5	12	21	17	16	6	7	10	8	12
	569	684	747	833	1 030	1 244	1 150	1 189	1 272	1 214	1 309
FINANCING ACTIVITIES											
Proceeds from Long-Term Debt	2 743	3 370	3 590	1 970	1 790	990	360	(20)	(10)	(40)	1 180
Sinking Fund Withdrawals	146	0	0	182	303	767	173	52	332	133	226
Retirement of Long-Term Debt	(1 030)	(330)	(1 002)	(336)	(1 278)	(1 020)	(449)	(290)	(412)	(715)	(1 178)
Other	10	(10)	(10)	(11)	(11)	(11)	11	(5)	(5)	(5)	(5)
	1 868	3 029	2 578	1 805	804	725	95	(263)	(95)	(627)	224
INVESTING ACTIVITIES											
Property, Plant and Equipment, net of contributions	(2 609)	(3 553)	(3 015)	(2 351)	(1 742)	(1 352)	(880)	(700)	(704)	(732)	(756)
Sinking Fund Payment	(146)	(246)	(210)	(244)	(282)	(334)	(237)	(243)	(248)	(240)	(239)
Other	(68)	(51)	(55)	(44)	(128)	(91)	(84)	(83)	(83)	(80)	(79)
	(2 822)	(3 850)	(3 280)	(2 639)	(2 152)	(1 777)	(1 201)	(1 026)	(1 035)	(1 052)	(1 074)
Net Increase (Decrease) in Cash	(384)	(136)	44	(1)	(319)	193	44	(101)	142	(465)	458
Cash at Beginning of Year	944	559	423	468	466	148	340	385	284	426	(39)
Cash at End of Year	559	423	468	466	148	340	385	284	426	(39)	419

ELECTRIC OPERATIONS
PROJECTED CASH FLOW STATEMENT
MH16 - 20 Year Debt
(In Millions of Dollars)

For the year ended March 31

	2028	2029	2030	2031	2032	2033	2034	2035	2036
OPERATING ACTIVITIES									
Cash Receipts from Customers	3 365	3 444	3 538	3 633	3 741	3 855	3 973	4 092	4 147
Cash Paid to Suppliers and Employees	(976)	(990)	(1 008)	(1 030)	(1 051)	(1 072)	(1 095)	(1 119)	(1 133)
Interest Paid	(1 058)	(1 051)	(1 030)	(1 020)	(947)	(945)	(939)	(932)	(908)
Interest Received	24	41	55	74	63	91	121	154	168
	1 355	1 445	1 556	1 657	1 807	1 929	2 059	2 194	2 273
FINANCING ACTIVITIES									
Proceeds from Long-Term Debt	0	(20)	210	(10)	(10)	(50)	(40)	(50)	(30)
Sinking Fund Withdrawals	150	60	110	757	0	30	0	10	275
Retirement of Long-Term Debt	(150)	(60)	(80)	(796)	(12)	0	20	20	(275)
Other	(5)	(5)	(5)	(5)	(5)	(7)	(4)	(4)	(5)
	(5)	(25)	235	(54)	(28)	(27)	(24)	(24)	(35)
INVESTING ACTIVITIES									
Property, Plant and Equipment, net of contributions	(767)	(798)	(793)	(832)	(840)	(857)	(870)	(948)	(966)
Sinking Fund Payment	(238)	(240)	(246)	(253)	(225)	(234)	(242)	(251)	(261)
Other	(78)	(72)	(70)	(71)	(70)	(69)	(68)	(66)	(65)
	(1 083)	(1 110)	(1 109)	(1 156)	(1 136)	(1 160)	(1 180)	(1 265)	(1 292)
Net Increase (Decrease) in Cash	267	309	682	448	643	743	856	904	946
Cash at Beginning of Year	419	686	995	1 677	2 125	2 768	3 510	4 366	5 271
Cash at End of Year	686	995	1 677	2 125	2 768	3 510	4 366	5 271	6 217

**ELECTRIC OPERATIONS
PROJECTED OPERATING STATEMENT
12 Year Debt Less 20 Year Debt
(In Millions of Dollars)**

For the year ended March 31

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	Total 2017-2027
REVENUES												
General Consumers at approved rates	-	-	-	-	-	-	-	-	-	-	-	-
additional*	-	-	-	-	-	-	-	-	-	-	-	-
BP III Reserve Account	-	-	-	-	-	-	-	-	-	-	-	-
Extraprovincial	-	-	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-
EXPENSES												
Operating and Administrative	-	-	-	-	-	-	-	-	-	-	-	-
Finance Expense	-	(8)	(27)	(40)	(52)	(57)	(59)	(63)	(62)	(62)	(81)	(512)
Finance Income	(0)	(0)	(0)	(0)	0	(1)	(2)	(2)	(4)	(5)	3	(11)
Depreciation and Amortization	-	-	-	-	-	-	-	-	-	-	-	-
Water Rentals and Assessments	-	-	-	-	-	-	-	-	-	-	-	-
Fuel and Power Purchased	-	-	-	-	-	-	-	-	-	-	-	-
Capital and Other Taxes	-	-	-	-	-	-	-	-	-	-	-	-
Other Expenses	-	-	-	-	-	-	-	-	-	-	-	-
Corporate Allocation	-	-	-	-	-	-	-	-	-	-	-	-
	(0)	(8)	(27)	(41)	(52)	(58)	(61)	(64)	(66)	(68)	(79)	(523)
Net Income before Net Movement in Reg. Deferral	0	8	27	40	52	58	61	64	66	68	79	523
Net Movement in Regulatory Deferral	-	-	-	-	-	-	-	-	-	-	-	-
Net Income	0	8	27	40	52	58	61	64	66	68	79	523
Net Income Attributable to:												
Manitoba Hydro	0	8	27	40	52	58	61	64	66	68	79	523
Non-controlling Interest	-	-	-	-	-	-	-	-	-	-	-	-
* Additional General Consumers Revenue												
Percent Increase	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
Cumulative Percent Increase	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
Financial Ratios												
Equity	0%	0%	0%	0%	0%	1%	1%	1%	1%	2%	2%	
Interest Coverage	0.00	0.01	0.03	0.05	0.07	0.08	0.08	0.08	0.08	0.08	0.10	
EBITDA Interest Coverage	0.00	0.01	0.05	0.07	0.09	0.11	0.12	0.12	0.13	0.13	0.17	
Capital Coverage	(0.00)	0.01	0.05	0.07	0.09	0.11	0.12	0.12	0.11	0.11	0.11	

Interest Rate and Forecast Assumptions

12 Year Debt						20 Year Debt						12 Year Debt vs 20 Year Debt					
Fiscal Year Ended	Short Term Cdn	Long Term Cdn	Long Term USD	Cdn Floating Rates	USD Floating Rates	Fiscal Year Ended	Short Term Cdn	Long Term Cdn	Long Term USD	Cdn Floating Rates	USD Floating Rates	Fiscal Year Ended	Short Term Cdn	Long Term Cdn	Long Term USD	Cdn Floating Rates	USD Floating Rates
	Interest Rates	Interest Rates	Interest Rates				Interest Rates	Interest Rates	Interest Rates				Interest Rates	Interest Rates	Interest Rates		
2017	0.50%	2.20%	2.20%	1.38%	1.78%	2017	0.50%	2.80%	2.50%	1.38%	1.78%	2017	0.00%	-0.60%	-0.30%	0.00%	0.00%
2018	0.50%	2.50%	3.00%	1.43%	2.08%	2018	0.50%	3.15%	3.30%	1.43%	2.08%	2018	0.00%	-0.65%	-0.30%	0.00%	0.00%
2019	0.85%	2.95%	3.45%	1.73%	2.63%	2019	0.85%	3.50%	3.75%	1.73%	2.63%	2019	0.00%	-0.55%	-0.30%	0.00%	0.00%
2020	1.40%	3.25%	3.75%	2.33%	3.03%	2020	1.40%	3.80%	3.95%	2.33%	3.03%	2020	0.00%	-0.55%	-0.20%	0.00%	0.00%
2021	1.75%	3.45%	3.90%	2.63%	3.28%	2021	1.75%	4.00%	4.05%	2.63%	3.28%	2021	0.00%	-0.55%	-0.15%	0.00%	0.00%
2022	2.15%	3.75%	4.10%	3.03%	3.53%	2022	2.15%	4.25%	4.20%	3.03%	3.53%	2022	0.00%	-0.50%	-0.10%	0.00%	0.00%
2023 & on	2.70%	4.10%	4.25%	3.58%	3.73%	2023 & on	2.70%	4.55%	4.50%	3.58%	3.73%	2023 & on	0.00%	-0.45%	-0.25%	0.00%	0.00%

* Excludes the 1% Provincial Guarantee Fee

** 85% of new debt issues are fixed and 15% of new debt issues are floating



**Manitoba Hydro 2017/18 & 2018/19 General Rate Application
MIPUG/MH I-20i**

**MANITOBA HYDRO
Summary of Total Finance Expense
MH16 - 12 Year Debt**

	Outlook 2017	Forecast 2018	Forecast 2019	Forecast 2020	Forecast 2021	Forecast 2022	Forecast 2023	Forecast 2024	Forecast 2025	Forecast 2026	Forecast 2027
Interest on Short & Long Term Debt											
Gross Interest	709	758	781	828	856	872	859	850	840	821	800
Provincial Guarantee Fee	132	153	185	210	226	234	231	232	229	225	217
Amortization of (Premiums), Discounts, and Transaction Costs	2	1	1	1	3	3	2	(0)	1	1	2
Intercompany Interest Receivable	(14)	(15)	(16)	(16)	(17)	(18)	(18)	(19)	(20)	(20)	(21)
Total Interest on Short & Long Term Debt	829	898	951	1 023	1 068	1 091	1 074	1 063	1 050	1 027	998
Interest Allocated to Construction	(245)	(353)	(313)	(315)	(329)	(289)	(55)	(19)	(19)	(18)	(20)
Interest Earned on Sinking Fund	(0)	(1)	(7)	(13)	(13)	(12)	(2)	(2)	(3)	(3)	(4)
Realized Foreign Exchange (Gains) or Losses on Debt in Cash Flow Hedges	16	18	16	13	15	10	0	-	-	-	-
Revaluation of Dual Currency Bonds	1	1	1	1	1	2	2	2	2	1	-
Corporate Allocation	(18)	(18)	(18)	(18)	(18)	(18)	(18)	(18)	(18)	(18)	(18)
Other Amortization	30	30	31	31	50	46	48	47	45	44	43
Total Finance Expense	613	574	662	721	774	829	1 049	1 072	1 057	1 033	999

	Forecast 2028	Forecast 2029	Forecast 2030	Forecast 2031	Forecast 2032	Forecast 2033	Forecast 2034	Forecast 2035	Forecast 2036
Interest on Short & Long Term Debt									
Gross Interest	802	802	757	749	711	692	666	645	615
Provincial Guarantee Fee	211	209	206	190	184	175	166	160	155
Amortization of (Premiums), Discounts, and Transaction Costs	2	2	3	3	3	4	4	4	4
Intercompany Interest Receivable	(21)	(22)	(22)	(23)	(23)	(24)	(24)	(25)	(26)
Total Interest on Short & Long Term Debt	994	991	944	919	875	847	812	784	748
Interest Allocated to Construction	(20)	(24)	(22)	(23)	(19)	(18)	(19)	(21)	(24)
Interest Earned on Sinking Fund	(8)	(16)	(8)	(8)	(9)	(16)	(24)	(31)	(32)
Realized Foreign Exchange (Gains) or Losses on Debt in Cash Flow Hedges	-	-	-	-	-	-	-	-	-
Revaluation of Dual Currency Bonds	-	-	-	-	-	-	-	-	-
Corporate Allocation	(18)	(18)	(15)	(13)	(13)	(13)	(13)	(13)	(13)
Other Amortization	41	40	39	38	37	35	34	33	32
Total Finance Expense	989	973	938	913	871	835	791	752	712



**Manitoba Hydro 2017/18 & 2018/19 General Rate Application
MIPUG/MH I-20i**

**MANITOBA HYDRO
Summary of Total Finance Expense
MH16 - 20 Year Debt**

	Outlook 2017	Forecast 2018	Forecast 2019	Forecast 2020	Forecast 2021	Forecast 2022	Forecast 2023	Forecast 2024	Forecast 2025	Forecast 2026	Forecast 2027
Interest on Short & Long Term Debt											
Gross Interest	709	766	808	868	908	928	917	912	901	883	879
Provincial Guarantee Fee	132	153	185	210	226	235	233	234	231	227	221
Amortization of (Premiums), Discounts, and Transaction Costs	2	1	1	1	3	3	2	(0)	1	1	2
Intercompany Interest Receivable	(14)	(15)	(16)	(16)	(17)	(18)	(19)	(20)	(20)	(21)	(22)
Total Interest on Short & Long Term Debt	829	906	978	1 063	1 120	1 148	1 133	1 126	1 113	1 089	1 080
Interest Allocated to Construction	(245)	(353)	(313)	(315)	(329)	(289)	(55)	(19)	(19)	(18)	(20)
Interest Earned on Sinking Fund	(0)	(1)	(7)	(13)	(13)	(12)	(2)	(2)	(3)	(3)	(4)
Realized Foreign Exchange (Gains) or Losses on Debt in Cash Flow Hedges	16	18	16	13	15	10	0	-	-	-	-
Revaluation of Dual Currency Bonds	1	1	1	1	1	2	2	2	2	1	-
Corporate Allocation	(18)	(18)	(18)	(18)	(18)	(18)	(18)	(18)	(18)	(18)	(18)
Other Amortization	30	30	31	31	50	46	48	47	45	44	43
Total Finance Expense	613	582	689	761	826	886	1 107	1 135	1 119	1 095	1 080

	Forecast 2028	Forecast 2029	Forecast 2030	Forecast 2031	Forecast 2032	Forecast 2033	Forecast 2034	Forecast 2035	Forecast 2036
Interest on Short & Long Term Debt									
Gross Interest	883	882	865	851	782	780	778	777	752
Provincial Guarantee Fee	217	214	212	210	207	206	204	203	201
Amortization of (Premiums), Discounts, and Transaction Costs	2	2	3	3	3	4	4	4	4
Intercompany Interest Receivable	(23)	(23)	(23)	(24)	(24)	(25)	(25)	(27)	(27)
Total Interest on Short & Long Term Debt	1 079	1 076	1 056	1 040	969	965	961	957	929
Interest Allocated to Construction	(20)	(24)	(22)	(23)	(19)	(18)	(19)	(21)	(24)
Interest Earned on Sinking Fund	(9)	(18)	(24)	(32)	(10)	(19)	(29)	(39)	(42)
Realized Foreign Exchange (Gains) or Losses on Debt in Cash Flow Hedges	-	-	-	-	-	-	-	-	-
Revaluation of Dual Currency Bonds	-	-	-	-	-	-	-	-	-
Corporate Allocation	(18)	(18)	(16)	(14)	(14)	(14)	(14)	(14)	(14)
Other Amortization	41	40	39	38	37	35	34	33	32
Total Finance Expense	1 073	1 056	1 034	1 009	963	950	934	916	882

REFERENCE:

Appendix 7.1 & PUB-MFR-65 Attachment 1, Page 14

PREAMBLE TO IR (IF ANY):

QUESTION:

- a) Please provide the details of the Potential Large Industrial Load (PLIL) methodology in the industrial load forecast including:
 - i) when and why it was first introduced to the load forecast;
 - ii) the types of loads the PLIL was expected to capture in each load forecast (e.g., new customers as yet unknown, versus future plans not yet specified for existing customer;
 - iii) how much energy was included in each load forecast for PLIL, by year and by type (new customer versus future expansions of existing customers); and
 - iv) rationale for changes in approach and amount between load forecasts.
- b) Please explain and compare all method changes between the 2015 Load Forecast, 2016 Load Forecast and 2017 Load Forecast.

RATIONALE FOR QUESTION:

RESPONSE:

- a)
 - i. The Potential Large Industrial Load (“PLIL”) methodology was introduced in the 1988/89 Electric Load Forecast as a method of accounting for new potential large loads coming to Manitoba. New potential large loads capture both the possibility of new customers coming to Manitoba and existing uncommitted customer expansions.
 - ii. From the 1988/89 Electric Load Forecast to the 2000/01 Electric Load Forecast, PLIL was primarily accounting for new potential customers currently exploring opportunities in Manitoba and uncommitted but potential expansion plans in the

General Service Over 10 MW sector which were not explicitly included in the individual customer forecasts. Potential new customers and expansion projects were assessed a probability of occurrence within the forecast period and PLIL was calculated by multiplying the intensity of the load by the probability of the load energizing in Manitoba.

Starting in the 2001/02 Electric Load Forecast, the General Service over 10 MW was reclassified to the “Top Consumers” sector and the energy forecast under PLIL was primarily based on historical average growth.

From the 2014 Electric Load Forecast to the 2016 Electric Load Forecast, Top Consumers continued to be forecast in the short term (up to 6 years) with PLIL forecast using an econometric model based upon historic growth in new customers and changes in load for existing customers.

Starting in the 2017 Electric Load Forecast, Manitoba Hydro incorporated a more conservative approach to forecasting potential large industrial growth with the econometric model being based upon historic load growth or retraction of existing customers.

- iii. Please see Attachment 1 for a table displaying the amount of energy included for PLIL in each load forecast starting from the 1992/93 Load Forecast. Manitoba Hydro does not forecast PLIL by new customer versus future expansions of existing customers.
- iv. In the 2014 Electric Load Forecast, Manitoba Hydro introduced an econometric model to improve the PLIL forecast and address concerns brought forward during the Needs For and Alternatives To (NFAT) review that the future impact of rising electricity prices were not captured within the PLIL model. The forecast of PLIL for each forecast can be found in Attachment 1.

Please refer to Coalition/MH I-30 and Coalition/MH I-32 for the rationale associated with the changes implemented within the 2017 Load Forecast.

b) The original intent of PLIL was to capture potential changes of the existing Top Consumers and the potential of a new Top Consumer customer coming to Manitoba beyond the short-term planning horizon. In its findings in Order 73/15, the Public Utilities Board of Manitoba expressed concerns that the current approach for forecasting PLIL created “an inappropriate upward adjustment”. Following these findings, Manitoba Hydro sought to incorporate a more conservative approach to forecasting potential large industrial growth in the 2017 Load Forecast.

The following table identifies the key components of the Top Consumers Forecast between the 2015 Load Forecast, 2016 Load Forecast and 2017 Load Forecast.

2015 Load Forecast	2016 Load Forecast	2017 Load Forecast
<ul style="list-style-type: none"> · Short term plans forecast up to 6 years · PLIL forecast using econometric model based on historic growth in new and changes in load for existing customers · PLIL starting in year 4 (17 years) 	<ul style="list-style-type: none"> · Short term plans forecast up to 3 years · PLIL forecast using econometric model based on historic growth in new and changes in load for existing customers · PLIL starting in year 4 (17 years) 	<ul style="list-style-type: none"> · Short term plans forecast up to 5 years · PLIL forecast using econometric model based on historic changes in load for existing customers · PLIL starting in year 6 (15 years)

REFERENCE:

Appendix 7.1 & PUB-MFR-65 Attachment 1, Page 14

PREAMBLE TO IR (IF ANY):**QUESTION:**

c) Please add values for the 2017 Load Forecast to the response to MIPUG MFR-7.

RATIONALE FOR QUESTION:**RESPONSE:**

The tables below incorporate the data from MIPUG MFR-7 updated to include the 2017 Load Forecast and 2016/17 actual data.

**Figure 1.
LARGE 750-30 kV (Forecast GW.h)**

FIS YR ENDING	YEAR OF SYSTEM LOAD FORECAST																	
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
2001	1,175																	
2002	1,224	1,159																
2003	1,273	1,178	1,158															
2004	1,323	1,201	1,204	1,194														
2005	1,366	1,230	1,226	1,233	1,471													
2006	1,406	1,260	1,248	1,271	1,494	1,509												
2007	1,442	1,287	1,266	1,288	1,512	1,521	1,565											
2008	1,475	1,317	1,282	1,305	1,527	1,586	1,636	1,546										
2009	1,505	1,349	1,297	1,322	1,543	1,629	1,657	1,573	1,530									
2010	1,523	1,382	1,310	1,338	1,559	1,643	1,681	1,585	1,558	1,558								
2011	1,541	1,417	1,331	1,354	1,576	1,661	1,692	1,602	1,575	1,574	1,606							
2012	1,560	1,451	1,354	1,370	1,599	1,683	1,706	1,623	1,593	1,591	1,624	1,688						
2013	1,578	1,481	1,379	1,385	1,622	1,706	1,724	1,646	1,611	1,611	1,646	1,743	1,683					
2014	1,596	1,509	1,402	1,401	1,646	1,729	1,744	1,661	1,637	1,633	1,658	1,831	1,715	1,679				
2015	1,613	1,534	1,424	1,419	1,669	1,752	1,763	1,675	1,660	1,645	1,677	1,891	1,737	1,718	1,746			
2016	1,630	1,557	1,445	1,439	1,692	1,772	1,782	1,690	1,681	1,665	1,689	1,951	1,770	1,744	1,798	1,735		
2017	1,646	1,577	1,467	1,458	1,715	1,792	1,801	1,706	1,704	1,685	1,706	2,011	1,792	1,782	1,846	1,782	1,752	
2018	1,661	1,595	1,489	1,477	1,737	1,813	1,820	1,722	1,724	1,706	1,725	2,066	1,825	1,808	1,896	1,838	1,810	1,780
2019	1,675	1,611	1,511	1,496	1,758	1,834	1,840	1,743	1,743	1,729	1,746	2,116	1,847	1,847	1,951	1,875	1,869	1,828
2020	1,688	1,626	1,533	1,516	1,780	1,857	1,860	1,765	1,763	1,750	1,764	2,166	1,880	1,867	1,987	1,919	1,909	1,864
2021	1,701	1,638	1,556	1,536	1,801	1,879	1,880	1,788	1,781	1,770	1,783	2,216	1,902	1,900	2,028	1,953	1,950	1,834
2022		1,649	1,579	1,555	1,822	1,902	1,900	1,811	1,800	1,790	1,802	2,265	1,935	1,919	2,059	1,999	2,003	1,846
2023			1,603	1,575	1,842	1,925	1,920	1,833	1,819	1,811	1,822	2,315	1,957	1,952	2,101	2,035	2,040	1,842
2024				1,596	1,861	1,948	1,940	1,856	1,837	1,831	1,841	2,365	1,984	1,985	2,131	2,083	2,076	1,848
2025					1,880	1,971	1,960	1,878	1,856	1,851	1,861	2,415	2,012	2,005	2,176	2,121	2,123	1,907
2026						1,994	1,980	1,902	1,874	1,873	1,881	2,460	2,028	2,038	2,210	2,172	2,154	1,977

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2027	2,000	1,925	1,892	1,894	1,902	2,505	2,055	2,058	2,254	2,213	2,189	2,037
2028		1,950	1,911	1,916	1,923	2,550	2,072	2,091	2,289	2,255	2,236	2,112
2029			1,929	1,938	1,944	2,590	2,102	2,113	2,336	2,309	2,268	2,172
2030				1,961	1,966	2,630	2,131	2,148	2,372	2,354	2,336	2,247
2031					1,987	2,669	2,149	2,169	2,422	2,411	2,419	2,309
2032							2,178	2,199	2,459	2,480	2,488	2,386
2033								2,228	2,510	2,562	2,571	2,448
2034									2,550	2,635	2,642	2,526
2035										2,711	2,716	2,589
2036											2,803	2,668
2037												2,732

**Figure 2.
LARGE 30 - 100 kV (Forecast GW.h)**

FIS YR ENDING	YEAR OF SYSTEM LOAD FORECAST																	
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
2001	535																	
2002	623	505																
2003	682	646	679															
2004	739	758	694	784														
2005	743	772	701	888	736													
2006	746	785	708	891	771	807												
2007	750	798	715	877	806	1,022	861											
2008	753	810	723	863	837	1,277	990	964										
2009	757	821	730	849	867	1,457	1,117	1,218	990									
2010	760	833	737	835	897	1,605	1,257	1,368	1,154	944								
2011	763	845	745	821	900	1,628	1,396	1,474	1,273	853	912							
2012	764	848	752	807	898	1,627	1,451	1,479	1,345	868	844	1,049						
2013	766	851	755	809	896	1,624	1,453	1,483	1,353	855	845	1,067	1,223					
2014	768	854	759	812	895	1,622	1,455	1,488	1,356	906	910	1,219	1,334	1,324				
2015	770	857	761	814	895	1,620	1,457	1,492	1,358	1,091	914	1,243	1,321	1,377	1,438			
2016	772	860	763	816	896	1,622	1,458	1,496	1,361	1,095	968	1,292	1,409	1,425	1,634	1,566		
2017	774	863	766	819	897	1,624	1,460	1,499	1,362	1,099	1,045	1,366	1,437	1,459	1,804	1,764	1,712	
2018	776	866	768	821	899	1,627	1,462	1,503	1,365	1,102	1,048	1,399	1,462	1,476	2,045	1,701	1,652	1,723
2019	777	869	770	824	901	1,629	1,463	1,505	1,369	1,103	1,050	1,366	1,557	1,493	2,115	1,698	1,638	1,726
2020	779	871	773	826	903	1,631	1,464	1,507	1,372	1,107	1,055	1,414	1,474	1,514	2,332	1,693	1,651	1,753
2021	781	874	775	829	905	1,632	1,465	1,509	1,375	1,111	1,059	1,470	1,510	1,523	2,332	2,260	1,664	1,858
2022		876	778	831	907	1,634	1,467	1,511	1,379	1,116	1,063	1,478	1,518	1,540	2,344	2,254	1,664	2,312
2023			780	834	911	1,636	1,468	1,513	1,382	1,120	1,067	1,485	1,538	1,561	2,344	2,282	1,677	2,327
2024				836	914	1,638	1,469	1,515	1,386	1,124	1,072	1,493	1,538	1,561	2,356	2,282	1,690	2,327
2025					917	1,640	1,470	1,517	1,389	1,128	1,076	1,501	1,538	1,574	2,356	2,298	1,690	2,342
2026						1,641	1,471	1,519	1,392	1,132	1,081	1,508	1,550	1,574	2,368	2,300	1,703	2,342

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2027	1,472	1,522	1,396	1,136	1,085	1,516	1,550	1,587	2,368	2,311	1,716	2,357
2028		1,524	1,399	1,140	1,089	1,524	1,561	1,587	2,380	2,322	1,716	2,357
2029			1,403	1,144	1,094	1,531	1,561	1,600	2,380	2,322	1,729	2,371
2030				1,149	1,098	1,538	1,561	1,600	2,392	2,334	1,741	2,371
2031					1,103	1,545	1,573	1,613	2,392	2,334	1,741	2,386
2032							1,573	1,613	2,404	2,345	1,754	2,386
2033								1,613	2,404	2,345	1,754	2,401
2034									2,416	2,356	1,767	2,401
2035										2,367	1,780	2,416
2036											1,780	2,416
2037												2,431

Figure 3.
LARGE >100 (Forecast GW.h)

FIS YR	YEAR OF SYSTEM LOAD FORECAST																	
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
ENDING																		
2001	3,991																	
2002	4,319	4,173																
2003	4,385	4,445	4,474															
2004	4,426	4,607	4,480	4,687														
2005	4,526	4,739	4,577	4,880	4,833													
2006	4,626	4,871	4,673	4,950	5,132	5,089												
2007	4,726	5,003	4,789	5,061	5,436	5,122	5,135											
2008	4,826	5,085	4,905	5,163	5,580	5,205	5,213	5,158										
2009	4,926	5,168	5,021	5,244	5,714	5,309	5,285	5,378	5,390									
2010	5,026	5,250	5,137	5,325	5,828	5,442	5,545	5,823	5,633	5,018								
2011	5,121	5,332	5,254	5,406	5,928	5,536	5,805	6,011	5,952	5,354	4,700							
2012	5,176	5,402	5,370	5,498	5,828	5,469	5,995	6,195	6,246	5,635	5,079	4,718						
2013	5,231	5,472	5,470	5,588	5,728	5,349	6,055	6,371	6,531	5,829	5,207	4,928	4,645					
2014	5,286	5,542	5,570	5,668	5,648	5,229	6,115	6,547	6,591	5,920	5,496	5,084	4,919	4,651				
2015	5,341	5,612	5,640	5,748	5,658	5,109	6,175	6,709	6,651	6,078	5,620	5,092	4,934	4,705	4,610			
2016	5,396	5,682	5,710	5,828	5,668	5,184	6,235	6,871	6,711	6,178	5,738	4,882	4,866	4,740	4,554	4,524		
2017	5,451	5,752	5,780	5,908	5,678	5,259	6,295	6,997	6,731	6,278	5,859	4,873	4,844	4,742	4,331	4,574	4,558	
2018	5,506	5,822	5,850	5,988	5,738	5,334	6,355	7,123	6,831	6,338	5,919	4,934	4,934	4,733	4,449	4,642	4,531	4,393
2019	5,561	5,892	5,920	6,068	5,798	5,409	6,385	7,189	6,931	6,365	5,965	4,939	4,991	4,808	4,539	4,724	4,472	4,229
2020	5,616	5,962	5,990	6,148	5,858	5,459	6,415	7,255	7,031	6,465	6,065	5,049	5,044	4,890	4,603	4,611	4,543	4,238
2021	5,671	6,032	6,060	6,228	5,918	5,509	6,445	7,321	7,131	6,565	6,165	5,161	5,149	4,971	4,666	4,569	4,615	4,174
2022		6,102	6,130	6,308	5,978	5,559	6,475	7,387	7,231	6,665	6,265	5,261	5,251	5,072	4,750	4,649	4,687	4,162
2023			6,200	6,388	6,088	5,609	6,505	7,453	7,331	6,765	6,365	5,361	5,353	5,149	4,835	4,735	4,755	4,170
2024				6,468	6,198	5,659	6,535	7,519	7,431	6,865	6,465	5,461	5,453	5,249	4,921	4,818	4,825	4,226
2025					6,308	5,709	6,565	7,585	7,531	6,965	6,565	5,561	5,553	5,349	5,008	4,904	4,897	4,281
2026						5,759	6,595	7,651	7,631	7,065	6,665	5,661	5,653	5,449	5,097	4,990	4,969	4,338

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2027	6,625	7,717	7,731	7,165	6,765	5,761	5,753	5,549	5,187	5,076	5,044	4,395
2028		7,783	7,831	7,265	6,865	5,861	5,853	5,649	5,278	5,164	5,119	4,452
2029			7,931	7,365	6,965	5,961	5,953	5,749	5,370	5,253	5,197	4,511
2030				7,465	7,065	6,061	6,053	5,849	5,463	5,342	5,329	4,570
2031					7,165	6,161	6,153	5,949	5,557	5,433	5,464	4,629
2032							6,253	6,049	5,652	5,591	5,602	4,690
2033								6,149	5,749	5,751	5,743	4,751
2034									5,847	5,915	5,887	4,812
2035										6,083	6,034	4,875
2036											6,184	4,938
2037												5,002

**Figure 4. General Service Large
Actual GWh 2000 – 2017**

FISC YR ENDING	LARGE 750-30	LARGE 30-100	LARGE >100
2000	1,101	492	3,473
2001	1,132	474	3,975
2002	1,130	457	4,282
2003	1,180	620	4,574
2004	1,463	735	4,615
2005	1,487	782	4,871
2006	1,531	776	5,115
2007	1,545	856	5,094
2008	1,546	905	5,154
2009	1,534	936	5,140
2010	1,545	941	4,523
2011	1,630	972	4,401
2012	1,599	1,164	4,412
2013	1,643	1,222	4,397
2014	1,687	1,283	4,222
2015	1,704	1,433	4,370
2016	1,676	1,532	4,385
2017	1,654	1,664	4,575

REFERENCE:

Appendix 3.6

PREAMBLE TO IR (IF ANY):

QUESTION:

Please provide the 20 year financial forecast schedules for MH16 (Updated) that separately tracks Conawapa cost treatment in the projected operating statement, balance sheet and cash flow statement.

RATIONALE FOR QUESTION:

RESPONSE:

Please see the MH16 Update with Interim financial statements below with the cost treatment of Conawapa separately tracked.

ELECTRIC OPERATIONS
PROJECTED OPERATING STATEMENT
MH16 Update with Interim Reflecting Conawapa Cost Treatment
(In Millions of Dollars)

For the year ended March 31

	ACTUAL										
	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
REVENUES											
Domestic Revenue at approved rates additional*	1 515	1 578	1 565	1 551	1 537	1 544	1 542	1 542	1 553	1 567	1 583
BPIII Reserve Account	(96)	(151)	1	80	80	80	80	27	-	-	-
Extraprovincial	460	514	469	420	567	693	779	788	805	667	671
Other	28	30	31	31	33	33	34	34	35	35	36
	<u>1 907</u>	<u>2 008</u>	<u>2 246</u>	<u>2 398</u>	<u>2 674</u>	<u>2 970</u>	<u>3 223</u>	<u>3 364</u>	<u>3 487</u>	<u>3 426</u>	<u>3 513</u>
EXPENSES											
Operating and Administrative	536	518	501	511	513	524	536	548	559	571	583
<i>Gross Finance Expense</i>	<i>623</i>	<i>587</i>	<i>677</i>	<i>744</i>	<i>817</i>	<i>882</i>	<i>1 115</i>	<i>1 140</i>	<i>1 123</i>	<i>1 092</i>	<i>1 056</i>
<i>Conawapa Generation</i>	<i>(15)</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>
Finance Expense	608	587	677	744	817	882	1 115	1 140	1 123	1 092	1 056
Finance Income	(17)	(17)	(21)	(28)	(35)	(34)	(39)	(18)	(24)	(27)	(21)
Depreciation and Amortization	375	396	471	515	555	597	689	714	726	739	752
Water Rentals and Assessments	131	130	120	110	117	127	128	128	131	131	131
Fuel and Power Purchased	132	124	140	158	165	156	140	135	138	127	129
Capital and Other Taxes	119	132	145	154	161	165	174	175	175	175	176
<i>Gross Other Expenses</i>	<i>60</i>	<i>116</i>	<i>109</i>	<i>102</i>	<i>94</i>	<i>92</i>	<i>71</i>	<i>64</i>	<i>67</i>	<i>71</i>	<i>76</i>
<i>Conawapa Generation</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>380</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>
Other Expenses	60	116	109	481	94	92	71	64	67	71	76
Corporate Allocation	8	8	8	8	8	8	8	8	8	8	8
	<u>1 952</u>	<u>1 995</u>	<u>2 150</u>	<u>2 655</u>	<u>2 392</u>	<u>2 507</u>	<u>2 822</u>	<u>2 893</u>	<u>2 904</u>	<u>2 887</u>	<u>2 889</u>
Net Income before Net Movement in Reg. Deferral	(46)	13	96	(257)	283	463	401	470	582	540	625
<i>Gross Net Movement in Regulatory Deferral</i>	<i>66</i>	<i>72</i>	<i>114</i>	<i>96</i>	<i>84</i>	<i>76</i>	<i>55</i>	<i>(35)</i>	<i>(37)</i>	<i>(36)</i>	<i>(32)</i>
<i>Conawapa Generation</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>368</i>	<i>(13)</i>	<i>(13)</i>	<i>(13)</i>	<i>(13)</i>	<i>(13)</i>	<i>(13)</i>	<i>(13)</i>
Net Movement in Regulatory Deferral	66	72	114	464	71	64	43	(48)	(50)	(49)	(45)
Non-recurring Gain	20	-	-	-	-	-	-	-	-	-	-
<i>Gross Net Income</i>	<i>26</i>	<i>85</i>	<i>209</i>	<i>219</i>	<i>366</i>	<i>539</i>	<i>456</i>	<i>436</i>	<i>545</i>	<i>504</i>	<i>593</i>
<i>Conawapa Generation</i>	<i>15</i>	<i>-</i>	<i>-</i>	<i>(12)</i>	<i>(13)</i>	<i>(13)</i>	<i>(13)</i>	<i>(13)</i>	<i>(13)</i>	<i>(13)</i>	<i>(13)</i>
Net Income	41	85	209	208	354	526	443	423	533	491	580
Net Income Attributable to:											
Manitoba Hydro before Non-recurring Item	33	93	211	205	349	518	434	411	530	489	577
Non-recurring Gain	20	-	-	-	-	-	-	-	-	-	-
<i>Gross Manitoba Hydro</i>	<i>38</i>	<i>93</i>	<i>211</i>	<i>217</i>	<i>361</i>	<i>530</i>	<i>446</i>	<i>424</i>	<i>542</i>	<i>501</i>	<i>589</i>
<i>Conawapa Generation</i>	<i>15</i>	<i>0</i>	<i>0</i>	<i>(12)</i>	<i>(13)</i>	<i>(13)</i>	<i>(13)</i>	<i>(13)</i>	<i>(13)</i>	<i>(13)</i>	<i>(13)</i>
Manitoba Hydro	53	93	211	205	349	518	434	411	530	489	577
Non-controlling Interest	(12)	(8)	(1)	2	5	9	10	11	3	2	3
	<u>41</u>	<u>85</u>	<u>209</u>	<u>208</u>	<u>354</u>	<u>526</u>	<u>443</u>	<u>423</u>	<u>533</u>	<u>491</u>	<u>580</u>
* Additional Domestic Revenue											
Percent Increase		3.36%	7.90%	7.90%	7.90%	7.90%	7.90%	7.90%	4.54%	2.00%	2.00%
Cumulative Percent Increase		3.36%	11.53%	20.34%	29.84%	40.10%	51.17%	63.11%	70.52%	73.93%	77.40%
Financial Ratios											
Equity	16%	15%	14%	14%	15%	17%	17%	19%	21%	23%	25%
EBITDA Interest Coverage	1.51	1.54	1.71	1.72	1.84	2.01	2.03	2.08	2.22	2.24	2.36
Capital Coverage	1.53	1.40	1.48	1.47	1.88	2.34	2.25	2.37	2.34	2.20	2.29

ELECTRIC OPERATIONS
PROJECTED OPERATING STATEMENT
MH16 Update with Interim Reflecting Conawapa Cost Treatment
(In Millions of Dollars)

For the year ended March 31

	2028	2029	2030	2031	2032	2033	2034	2035	2036
REVENUES									
Domestic Revenue at approved rates	1 599	1 614	1 630	1 647	1 673	1 701	1 729	1 757	1 786
additional*	1 294	1 364	1 438	1 515	1 603	1 696	1 793	1 894	1 999
BPIII Reserve Account	-	-	-	-	-	-	-	-	-
Extraprovincial	662	677	697	709	705	701	696	694	602
Other	36	37	38	38	39	40	40	40	41
	<u>3 591</u>	<u>3 693</u>	<u>3 803</u>	<u>3 910</u>	<u>4 021</u>	<u>4 138</u>	<u>4 257</u>	<u>4 385</u>	<u>4 428</u>
EXPENSES									
Operating and Administrative	595	607	620	633	646	660	674	688	702
Gross Finance Expense	1 037	1 020	994	909	850	800	742	675	618
Conawapa Generation	-	-	-	-	-	-	-	-	-
Finance Expense	1 037	1 020	994	909	850	800	742	675	618
Finance Income	(29)	(46)	(57)	(18)	(19)	(19)	(26)	(32)	(50)
Depreciation and Amortization	765	776	790	805	822	840	857	872	888
Water Rentals and Assessments	132	132	132	133	133	133	134	134	134
Fuel and Power Purchased	131	134	138	147	129	128	134	143	133
Capital and Other Taxes	177	177	178	179	180	181	183	184	190
Gross Other Expenses	79	84	87	87	89	91	92	95	96
Conawapa Generation	-	-	-	-	-	-	-	-	-
Other Expenses	79	84	87	87	89	91	92	95	96
Corporate Allocation	8	8	5	3	3	3	3	3	3
	<u>2 694</u>	<u>2 892</u>	<u>2 888</u>	<u>2 878</u>	<u>2 833</u>	<u>2 818</u>	<u>2 792</u>	<u>2 762</u>	<u>2 714</u>
Net Income before Net Movement in Reg. Deferral	698	801	915	1 032	1 189	1 320	1 465	1 623	1 714
Gross Net Movement in Regulatory Deferral	(31)	(28)	(22)	(20)	(18)	(15)	(16)	(16)	(17)
Conawapa Generation	(13)	(13)	(13)	(13)	(13)	(13)	(13)	(13)	(13)
Net Movement in Regulatory Deferral	(44)	(40)	(35)	(33)	(31)	(28)	(28)	(28)	(30)
Non-recurring Gain	-	-	-	-	-	-	-	-	-
Gross Net Income	667	773	893	1 012	1 170	1 305	1 449	1 607	1 697
Conawapa Generation	(13)	(13)	(13)	(13)	(13)	(13)	(13)	(13)	(13)
Net Income	654	761	880	999	1 158	1 292	1 437	1 595	1 684
Net Income Attributable to:									
Manitoba Hydro before Non-recurring Item	650	755	873	989	1 147	1 280	1 423	1 579	1 668
Non-recurring Gain	-	-	-	-	-	-	-	-	-
Gross Manitoba Hydro	663	768	885	1 002	1 159	1 292	1 435	1 592	1 681
Conawapa Generation	(13)	(13)	(13)	(13)	(13)	(13)	(13)	(13)	(13)
Manitoba Hydro	650	755	873	989	1 147	1 280	1 423	1 579	1 668
Non-controlling Interest	4	5	8	10	11	13	14	15	16
	<u>654</u>	<u>761</u>	<u>880</u>	<u>999</u>	<u>1 158</u>	<u>1 292</u>	<u>1 437</u>	<u>1 595</u>	<u>1 684</u>
* Additional Domestic Revenue									
Percent Increase	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
Cumulative Percent Increase	80.95%	84.57%	88.26%	92.03%	95.87%	99.79%	103.78%	107.86%	112.01%
Financial Ratios									
Equity	27%	30%	33%	37%	41%	46%	52%	57%	64%
EBITDA Interest Coverage	2.48	2.65	2.85	3.09	3.45	3.79	4.25	4.86	5.52
Capital Coverage	2.39	2.47	2.68	2.71	2.93	3.08	3.25	3.16	3.23

ELECTRIC OPERATIONS
PROJECTED BALANCE SHEET
MH16 Update with Interim Reflecting Conawapa Cost Treatment
(In Millions of Dollars)

<i>For the year ended March 31</i>	ACTUAL	ACTUAL										
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
ASSETS												
Plant in Service		13 065	13 679	19 062	19 684	20 747	26 168	30 504	31 034	31 670	32 334	32 945
Accumulated Depreciation		(972)	(1 301)	(1 731)	(2 178)	(2 616)	(3 125)	(3 705)	(4 328)	(4 942)	(5 607)	(6 212)
Net Plant in Service		12 093	12 378	17 332	17 506	18 131	23 043	26 799	26 706	26 727	26 727	26 732
<i>Gross Construction in Progress</i>		6 699	9 091	6 365	7 522	8 012	3 836	367	454	418	414	411
<i>Conawapa Generation</i>	361	380	380	380	-	-	-	-	-	-	-	-
Construction in Progress		7 079	9 471	6 745	7 522	8 012	3 836	367	454	418	414	411
<i>Gross Current and Other Assets</i>		1 776	1 918	2 272	2 500	2 572	1 946	1 775	1 992	2 233	2 088	2 202
<i>Conawapa Generation</i>		(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)
Current and Other Assets		1 773	1 915	2 269	2 498	2 569	1 943	1 773	1 989	2 230	2 086	2 199
Goodwill and Intangible Assets		327	541	782	926	1 348	1 302	1 256	1 211	1 167	1 123	1 081
Total Assets before Regulatory Deferral		21 272	24 305	27 127	28 452	30 060	30 123	30 194	30 360	30 542	30 350	30 423
<i>Gross Regulatory Deferral Balance</i>		462	533	647	743	827	903	959	924	887	851	818
<i>Conawapa Generation</i>		-	-	-	368	356	343	330	318	305	292	280
Regulatory Deferral Balance		462	533	647	1 111	1 182	1 246	1 289	1 241	1 192	1 143	1 098
		21 733	24 839	27 774	29 563	31 243	31 369	31 483	31 601	31 734	31 493	31 522
LIABILITIES AND EQUITY												
Long-Term Debt		15 725	18 141	21 376	22 189	22 994	22 850	23 674	23 173	22 485	21 223	21 666
Current and Other Liabilities		3 204	3 643	3 046	3 815	4 356	4 142	3 020	3 174	3 455	3 976	2 976
Provisions		70	50	49	48	46	45	43	42	41	40	39
Deferred Revenue		450	465	491	520	542	551	561	571	582	593	603
BPIII Reserve Account		196	347	346	266	186	106	27	(0)	(0)	(0)	(0)
<i>Gross Retained Earnings</i>		2 734	2 827	3 037	3 254	3 615	4 146	4 592	5 016	5 558	6 060	6 649
<i>Conawapa Generation</i>		15	15	15	3	(9)	(22)	(35)	(47)	(60)	(72)	(85)
Retained Earnings		2 749	2 842	3 053	3 258	3 606	4 124	4 557	4 969	5 498	5 987	6 564
Accumulated Other Comprehensive Income		(709)	(699)	(636)	(580)	(537)	(497)	(449)	(377)	(376)	(375)	(375)
Total Liabilities and Equity before Regulatory Deferral		21 684	24 790	27 725	29 515	31 194	31 321	31 434	31 552	31 685	31 444	31 473
Regulatory Deferral Balance		49	49	49	49	49	49	49	49	49	49	49
		21 733	24 839	27 774	29 563	31 243	31 369	31 483	31 601	31 734	31 493	31 522
Net Debt		15 427	18 473	20 743	22 407	23 296	23 609	23 388	22 831	22 201	21 613	20 947
Total Equity		2 856	3 163	3 511	3 770	4 143	4 666	4 783	5 262	5 806	6 309	6 900
Equity Ratio		16%	15%	14%	14%	15%	17%	17%	19%	21%	23%	25%

ELECTRIC OPERATIONS
PROJECTED BALANCE SHEET
MH16 Update with Interim Reflecting Conawapa Cost Treatment
(In Millions of Dollars)

For the year ended March 31

	2028	2029	2030	2031	2032	2033	2034	2035	2036
ASSETS									
Plant in Service	33 553	34 299	34 958	35 790	36 566	37 361	38 104	38 907	39 975
Accumulated Depreciation	(6 906)	(7 603)	(8 311)	(9 040)	(9 788)	(10 577)	(11 366)	(12 168)	(12 975)
Net Plant in Service	26 647	26 696	26 647	26 749	26 778	26 785	26 739	26 739	26 999
<i>Gross Construction in Progress Conawapa Generation</i>	493	454	490	400	374	366	406	461	257
Construction in Progress	493	454	490	400	374	366	406	461	257
<i>Gross Current and Other Assets Conawapa Generation</i>	2 827	3 633	2 362	2 044	2 281	2 628	3 632	4 071	5 512
Current and Other Assets	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)
Goodwill and Intangible Assets	2 824	3 630	2 359	2 041	2 278	2 625	3 629	4 069	5 509
Total Assets before Regulatory Deferral	1 040	1 001	962	924	885	848	810	773	736
<i>Gross Regulatory Deferral Balance Conawapa Generation</i>	788	760	738	718	700	684	669	653	636
Regulatory Deferral Balance	267	254	242	229	216	204	191	178	166
	32 058	32 796	31 438	31 061	31 231	31 511	32 444	32 873	34 303
LIABILITIES AND EQUITY									
Long-Term Debt	21 598	19 221	14 928	15 788	14 751	14 977	14 280	13 859	13 743
Current and Other Liabilities	2 920	5 271	7 325	5 089	5 140	3 906	4 103	3 363	3 230
Provisions	38	37	36	35	34	33	32	31	30
Deferred Revenue	615	624	634	644	654	665	676	687	699
BPIII Reserve Account	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
<i>Gross Retained Earnings Conawapa Generation</i>	7 311	8 080	8 965	9 967	11 126	12 418	13 853	15 445	17 126
Retained Earnings	(98)	(110)	(123)	(136)	(148)	(161)	(174)	(186)	(199)
Accumulated Other Comprehensive Income	7 214	7 969	8 842	9 831	10 977	12 257	13 680	15 259	16 927
Total Liabilities and Equity before Regulatory Deferral	(375)	(375)	(375)	(375)	(375)	(375)	(375)	(375)	(375)
Regulatory Deferral Balance	32 010	32 747	31 389	31 012	31 183	31 463	32 395	32 824	34 254
	49	49	49	49	49	49	49	49	49
	32 058	32 796	31 438	31 061	31 231	31 511	32 444	32 873	34 303
Net Debt	20 197	19 357	18 386	17 327	16 094	14 725	13 200	11 587	9 877
Total Equity	7 564	8 325	9 206	10 203	11 357	12 645	14 077	15 665	17 343
Equity Ratio	27%	30%	33%	37%	41%	46%	52%	57%	64%

ELECTRIC OPERATIONS
PROJECTED CASH FLOW STATEMENT
MH16 Update with Interim Reflecting Conawapa Cost Treatment
(In Millions of Dollars)

For the year ended March 31

	ACTUAL										
	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
OPERATING ACTIVITIES											
Cash Receipts from Customers	1 901	2 152	2 233	2 307	2 582	2 877	3 130	3 325	3 474	3 414	3 500
Cash Paid to Suppliers and Employees	(555)	(892)	(843)	(870)	(885)	(894)	(904)	(935)	(953)	(953)	(966)
<i>Gross Interest Paid</i>	(568)	(531)	(635)	(700)	(762)	(834)	(1 063)	(1 112)	(1 101)	(1 072)	(1 037)
<i>Conawapa Generation</i>	15	-	-	-	-	-	-	-	-	-	-
Interest Paid	(553)	(531)	(635)	(700)	(762)	(834)	(1 063)	(1 112)	(1 101)	(1 072)	(1 037)
Interest Received	17	5	12	22	26	20	8	10	17	20	14
	810	734	767	759	961	1 169	1 171	1 287	1 437	1 408	1 512
FINANCING ACTIVITIES											
Proceeds from Long-Term Debt	2 166	3 468	3 600	2 160	2 190	990	1 160	(10)	(10)	(50)	590
Sinking Fund Withdrawals	146	0	0	120	318	813	182	46	337	138	232
Sinking Fund Payment	(146)	(182)	(222)	(260)	(296)	(353)	(240)	(249)	(253)	(245)	(242)
Retirement of Long-Term Debt	(320)	(407)	(1 002)	(349)	(1 293)	(1 366)	(1 141)	(290)	(412)	(715)	(1 178)
Other	(5)	(10)	(10)	(11)	(11)	(11)	11	(5)	(5)	(5)	(5)
	1 841	2 869	2 366	1 661	908	73	(28)	(507)	(342)	(877)	(603)
INVESTING ACTIVITIES											
<i>Gross PP&E</i>	(2 907)	(3 660)	(3 002)	(2 391)	(1 760)	(1 368)	(898)	(700)	(704)	(732)	(756)
<i>Conawapa Generation</i>	(18)	-	-	-	-	-	-	-	-	-	-
Property, Plant and Equipment, net of contributions	(2 925)	(3 660)	(3 002)	(2 391)	(1 760)	(1 368)	(898)	(700)	(704)	(732)	(756)
Other	(35)	(89)	(57)	(46)	(89)	(109)	(99)	(96)	(96)	(82)	(81)
	(2 960)	(3 749)	(3 059)	(2 438)	(1 850)	(1 477)	(997)	(796)	(800)	(814)	(838)
<i>Gross Net Increase (Decrease in Cash)</i>	(306)	(145)	74	(18)	19	(236)	146	(16)	295	(283)	71
<i>Conawapa Generation</i>	(3)	-	-	-	-	-	-	-	-	-	-
Net Increase (Decrease) in Cash	(309)	(145)	74	(18)	19	(236)	146	(16)	295	(283)	71
Cash at Beginning of Year	943	634	488	562	544	564	328	474	458	754	471
<i>Gross Cash at End of Year</i>	637	491	565	547	566	331	477	461	757	473	544
<i>Conawapa Generation</i>	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)
Cash at End of Year	634	488	562	544	564	328	474	458	754	471	541

ELECTRIC OPERATIONS
PROJECTED CASH FLOW STATEMENT
MH16 Update with Interim Reflecting Conawapa Cost Treatment
(In Millions of Dollars)

For the year ended March 31

	2028	2029	2030	2031	2032	2033	2034	2035	2036
OPERATING ACTIVITIES									
Cash Receipts from Customers	3 578	3 679	3 789	3 896	4 007	4 123	4 243	4 370	4 413
Cash Paid to Suppliers and Employees	(980)	(996)	(1 012)	(1 035)	(1 030)	(1 043)	(1 063)	(1 087)	(1 097)
<i>Gross Interest Paid</i>	<i>(1 019)</i>	<i>(1 014)</i>	<i>(997)</i>	<i>(908)</i>	<i>(837)</i>	<i>(795)</i>	<i>(742)</i>	<i>(696)</i>	<i>(632)</i>
<i>Conawapa Generation</i>	-	-	-	-	-	-	-	-	-
Interest Paid	(1 019)	(1 014)	(997)	(908)	(837)	(795)	(742)	(696)	(632)
Interest Received	26	51	63	20	15	22	36	49	67
	1 604	1 720	1 843	1 972	2 155	2 307	2 473	2 637	2 752
FINANCING ACTIVITIES									
Proceeds from Long-Term Debt	(10)	(10)	170	2 990	1 150	1 140	360	(100)	(30)
Sinking Fund Withdrawals	150	60	310	520	0	30	36	10	275
Sinking Fund Payment	(237)	(239)	(243)	(218)	(195)	(193)	(188)	(189)	(184)
Retirement of Long-Term Debt	(150)	(60)	(2 440)	(4 396)	(2 173)	(2 190)	(908)	(1 100)	(265)
Other	(5)	(5)	(5)	(5)	(5)	(7)	(4)	(4)	(5)
	(252)	(254)	(2 208)	(1 109)	(1 223)	(1 219)	(704)	(1 383)	(209)
INVESTING ACTIVITIES									
<i>Gross PP&E</i>	<i>(767)</i>	<i>(798)</i>	<i>(793)</i>	<i>(832)</i>	<i>(840)</i>	<i>(857)</i>	<i>(870)</i>	<i>(948)</i>	<i>(966)</i>
<i>Conawapa Generation</i>	-	-	-	-	-	-	-	-	-
Property, Plant and Equipment, net of contributions	(767)	(798)	(793)	(832)	(840)	(857)	(870)	(948)	(966)
Other	(80)	(74)	(72)	(73)	(72)	(71)	(70)	(68)	(67)
	(847)	(873)	(864)	(905)	(913)	(928)	(940)	(1 016)	(1 033)
<i>Gross Net Increase (Decrease in Cash)</i>	<i>505</i>	<i>594</i>	<i>(1 229)</i>	<i>(41)</i>	<i>19</i>	<i>160</i>	<i>829</i>	<i>238</i>	<i>1 510</i>
<i>Conawapa Generation</i>	-	-	-	-	-	-	-	-	-
Net Increase (Decrease) in Cash	505	594	(1 229)	(41)	19	160	829	238	1 510
Cash at Beginning of Year	541	1 047	1 640	411	370	389	549	1 378	1 616
<i>Gross Cash at End of Year</i>	<i>1 049</i>	<i>1 643</i>	<i>414</i>	<i>373</i>	<i>392</i>	<i>552</i>	<i>1 381</i>	<i>1 619</i>	<i>3 128</i>
<i>Conawapa Generation</i>	<i>(3)</i>	<i>(3)</i>	<i>(3)</i>	<i>(3)</i>	<i>(3)</i>	<i>(3)</i>	<i>(3)</i>	<i>(3)</i>	<i>(3)</i>
Cash at End of Year	1 047	1 640	411	370	389	549	1 378	1 616	3 126

REFERENCE:

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PREAMBLE TO IR (IF ANY):

QUESTION:

- a) Please provide a schedule of rate increases that would be required to target customer class Revenue to Cost Comparison (RCC) ratios of 100% for each class over 5 years, based on PCOSS18 results.
- b) Please provide a schedule of estimated rate increases that would be required to target customer class RCC ratios of 100% for each class over 5 years including estimated impacts on the PCOSS from Bipole III coming into service.

RATIONALE FOR QUESTION:

RESPONSE:

- a) Please see Manitoba Hydro's response to PUB/MH 1-137 which provides required increases by class to reach 100% in 5 years.
- b) To provide a high level indication of the anticipated shift in functionalized costs and revenue cost ratios once Bipole III is placed in service, the following assumptions have been made:
 - The estimated carrying and operating costs of the major new G&T projects as provided in PUB MFR 20 are functionalized and added to the PCOSS18 revenue requirement as follows:
 - Additional DSM and Conawapa: Financing of Sunk Costs have been added to the Generation function
 - BPIII and Riel convertor station costs, excluding the Riel 230/500 kV Station that is already included in PCOSS18 Transmission, have been functionalized as Generation.

- The residual revenue requirement, which was not specifically attributed to a new major G&T project, is assumed related to existing assets and has been functionalized by cost category in proportion to the PCOSS18 revenue requirement.
- The funding provided by amortization of the Bipole III Reserve Account has been distributed equally based on class revenues as described in the response to PUB/MH 1-139.
- Domestic revenues were adjusted on an across-the-board basis in order to offset the remaining increase in revenue requirement.

The following table shows the additional annual differentiation in class rate changes required to achieve a Revenue Cost Coverage ratio of unity in five years, after including the estimated impacts of Bipole III.

	Estimated 2020 RCC with BPIII In Service	Annual Differentiati on 5 Years
Residential	96.7%	0.80%
GSS Non Demand	115.3%	-3.29%
GSS Demand	101.3%	-0.30%
GSM	97.4%	0.64%
GSL 0-30 kV	96.5%	0.88%
GSL 30-100 kV	103.5%	-0.88%
GSL >100 kV	101.5%	-0.39%
Area & Roadway Lighting	118.2%	-3.46%