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Calculation of Revenue Requirement

Ex.6/Tab 1/Sch.1 - Determination of Net Utility Income

Ottawa River Power's current rates are based on Board approved rates effective May 1, 2014 through an IRM proceeding (EB-2013-0163). The existing and projected revenues are based on existing Board approved rates, which are used in calculating utility income. These are comprised of distribution revenue and other revenues.

Details on existing and projected distribution revenue at existing rates are presented in Exhibit 3, Tab 1. Other revenue is presented in Exhibit 3, Tab 2.

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Table 6.1: Distribution Revenues at Current Rates – 2016 Volumes

Customer Class Name	Test Year Projected Revenue from Existing Variable Charges							
	Variable Distribution Rate	per	Test Year Volume	Gross Variable Revenue	Transform. Allowance Rate	Transform. Allowance kW's	Transform. Allowance \$'s	Net Variable Revenue
Residential	\$0.0150	kWh	81190920	\$1,217,863.79			\$0.00	\$1,217,863.79
General Service < 50 kW	\$0.0105	kWh	32329405	\$339,458.75			\$0.00	\$339,458.75
General Service > 50 to 4999 kW	\$0.6489	kW	195150	\$126,633.11	-0.60	37083	-\$22,249.80	\$104,383.31
Sentinel Ligthing	\$7.8817	kW	685	\$5,395.03			\$0.00	\$5,395.03
Streetlights	\$12.1768	kW	3481	\$42,383.49			\$0.00	\$42,383.49
Unmetered Scattered Load	\$0.0020	kWh	444487	\$888.97			\$0.00	\$888.97
other classes	\$0.0000	0	1	\$0.00			\$0.00	\$0.00
other classes	\$0.0000	0	1	\$0.00			\$0.00	\$0.00
other classes	\$0.0000	0	1	\$0.00			\$0.00	\$0.00
Total Variable Revenue			114,164,130	\$1,732,623.15	-0.6	37083	-\$22,249.80	\$1,710,373.35

Test Year

Customer Class Name	Test Year Projected Revenue from Proposed Fixed Charges							
	Fixed Rate	Customers (Connections)	Fixed Charge Revenue	Variable Revenue	TOTAL	% Fixed Revenue	% Variable Revenue	% Total Revenue
Residential	\$10.9900	9,384	\$1,237,534.27	\$1,217,863.79	\$2,455,398.07	50.40%	49.60%	60.59%
General Service < 50 kW	\$22.9700	1,300	\$358,215.80	\$339,458.75	\$697,674.56	51.34%	48.66%	17.22%
General Service > 50 to 4999 kW	\$378.7200	146	\$663,517.44	\$104,383.31	\$767,900.75	86.41%	13.59%	18.95%
Sentinel Ligthing	\$2.6000	199	\$6,222.61	\$5,395.03	\$11,617.63	53.56%	46.44%	0.29%
Streetlights	\$2.2200	2,825	\$75,270.50	\$42,383.49	\$117,653.99	63.98%	36.02%	2.90%
Unmetered Scattered Load	\$6.2500	20	\$1,500.00	\$888.97	\$2,388.97	62.79%	37.21%	0.06%
other classes	\$0.0000	0	\$0.00	\$0.00	\$0.00			
other classes	\$0.0000	0	\$0.00	\$0.00	\$0.00			
other classes	\$0.0000	0	\$0.00	\$0.00	\$0.00			
Total Fixed Revenue		13,874	\$2,342,260.63	\$1,710,373.35	\$4,052,633.97			

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4 Ex.6/Tab 1/Sch.2 at the next section provide details and derivation of the revenue requirement
5 and its particulars.

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Ex.6/Tab 1/Sch.2 - Proposed Revenue Requirement

A utility's revenue requirement represents the amount of money that a utility must receive from its customers to cover its costs, operating expenses, taxes, interest paid on debts owed to investors and, if applicable, a deemed return (profit).

The proposed Base Revenue Requirement, representing the revenue to be recovered from base distribution rates, is equal to the total Service Revenue Requirement, less Revenue Offsets derived from other revenue sources in 2016. Table 2 below shows the proposed revenue requirement for the 2016 test year

Table 6.2: Test Year Revenue Requirement

	IFRS
Particular	2016
OM&A Expenses	\$3,294,964
Depreciation Expense	\$749,620
Property Taxes	\$0
Total Distribution Expenses	\$4,044,584
Regulated Return On Capital	\$953,246
Grossed up PILs	\$90,372
Service Revenue Requirement	\$5,088,202
Less: Revenue Offsets	-\$284 010
Base Revenue Requirement	\$4,,804,192

Ex.6/Tab 1/Sch.3 - Statement of Rate Base

Table 6.3: Statement of Rate Base

Debt				
Long-term Debt	56.00%	\$6,901,508	7.25%	\$500,359
Short-term Debt	4.00%	\$492,965	2.07%	\$10,204
Total Debt	60.0%	\$7,394,473	6.90%	\$510,564
Equity				
Common Equity	40.00%	\$4,929,649	8.98%	\$442,682
Preferred Shares		\$ -		\$ -
Total Equity	40.0%	\$4,929,649	8.98%	\$442,682
Total	100.0%	\$12,324,122	7.73%	\$953,246

The table above show the derivation of the Deemed Interest Expense and Return on Deemed Equity.

Ex.6/Tab 1/Sch.4 - Actual Utility Return on Rate Base

Table 6.4: Return on Rate Base

Return	
Deemed Interest Expense	\$510,564
Return on Deemed Equity	\$442,682
Total	\$968,964

1 **Ex.6/Tab 1/Sch.5 - Requested and Indicated Rate of Return**

- 2 The requested rate of return is 7.73% as per the OEB prescribed Cost of Capital Parameters.
- 3 Details of the calculation can be found at Tab 2 of this exhibit in Table 6.7 - Calculation of
- 4 Revenue Deficiency or Surplus.

Ex.6/Tab 1/Sch.6 - Utility Income at Proposed Revenue Requirement

Table 6.5: Utility Income under proposed Revenue Requirement

Operating Revenues:	
Distribution Revenue (at Proposed Rates)	\$4,804,192
Other Revenue	\$284,010
Total Operating Revenues	\$5,088,202
Operating Expenses:	
OM+A Expenses	\$3,294,964
Depreciation/Amortization	\$749,620
Property taxes	\$ -
Capital taxes	\$ -
Other expense	\$ -
Subtotal (lines 4 to 8)	\$4,044,584
Deemed Interest Expense	\$510,564
Total Expenses (lines 9 to 10)	\$4,555,148
Utility income before income taxes	\$533,054
Income taxes (grossed-up)	\$90,372
Utility net income	\$442,682

Ex.6/Tab 1/Sch.7 - Revenue Requirement Trend

Table 6.6 below presents Ottawa River Power's Revenue Requirement trend starting from the 2010 Board Approved to the 2016 proposed Revenue Requirement.

Table 6.6: Trend in Revenue Requirement

	CGAAP	CGAAP	CGAAP	CGAAP	CGAAP	NEWGAAP	NEWGAAP	NEWGAAP
Particular	Last Board Approved	2010	2011	2012	2013	2014	2015	2016
OM&A Expenses	\$2,570,853	\$2,343,269	\$2,684,062	\$2,655,844	\$3,093,547	\$2,902,242	\$3,123,984	\$3,294,964
<i>Year over year change</i>	<i>0.00%</i>	<i>-8.85%</i>	<i>14.54%</i>	<i>-1.05%</i>	<i>16.48%</i>	<i>-6.18%</i>	<i>7.64%</i>	<i>5.47%</i>
Depreciation Expense	\$791,805	\$807,594	\$772,867	\$680,566	\$671,670	\$685,156	\$681,339	\$749,620
<i>Year over year change</i>		<i>1.99%</i>	<i>-4.30%</i>	<i>-11.94%</i>	<i>-1.31%</i>	<i>2.01%</i>	<i>-0.56%</i>	<i>10.02%</i>
Total Distribution Expenses	\$3,334,908	\$3,150,863	\$3,456,929	\$3,336,410	\$3,765,217	\$3,587,398	\$3,805,323	\$4,044,584
<i>Year over year change</i>		<i>-5.52%</i>	<i>9.71%</i>	<i>-3.49%</i>	<i>12.85%</i>	<i>-4.72%</i>	<i>6.07%</i>	<i>6.29%</i>
Regulated Return On Capital	\$931,451	\$931,451	\$946,901	\$945,781	\$936,671	\$1,029,514	\$1,029,514	\$953,246
<i>Year over year change</i>		<i>0.00%</i>	<i>1.66%</i>	<i>-0.12%</i>	<i>-0.96%</i>	<i>9.91%</i>	<i>0.00%</i>	<i>-7.41%</i>
Service Revenue Requirement	\$4,323,252	\$4,082,314	\$4,403,830	\$4,282,191	\$4,701,887	\$4,616,912	\$4,924,837	\$5,088,202
<i>Year over year change</i>		<i>-5.57%</i>	<i>7.88%</i>	<i>-2.76%</i>	<i>9.80%</i>	<i>-1.81%</i>	<i>6.67%</i>	<i>3.32%</i>
Less: Revenue Offsets	-\$367,968	-\$389,736	-\$433,880	-\$454,779	-\$417,201	-\$306,060	-\$242,010	-\$284,010
<i>Year over year change</i>		<i>5.92%</i>	<i>11.33%</i>	<i>4.82%</i>	<i>-8.26%</i>	<i>-26.64%</i>	<i>-20.93%</i>	<i>17.35%</i>
Base Revenue Requirement	\$3,955,284	\$3,692,578	\$3,969,950	\$3,827,412	\$4,284,687	\$4,310,852	\$4,682,827	\$4,804,192
<i>Year over year change</i>		<i>-6.64%</i>	<i>7.51%</i>	<i>-3.59%</i>	<i>11.95%</i>	<i>0.61%</i>	<i>8.63%</i>	<i>2.59%</i>

The table above shows an increase in Revenue Requirement from 2010 Board Approved to 2016 of \$848K. The increase is due in part to OM&A expenses having increased by \$694K. OM&A expenses related to Operations have increased by \$270K. The utility underspent in capital work during 2011 to 2014 and is catching up on much needed capital work. Further details on the trend in capital expenditures can be found in the DSP at Exhibit 2. Variances related to Operations and Maintenance, Billing and Collecting, Community Relations and Administration are explained throughout Exhibit 4. Variances in the Revenue Offsets are explained in detail at Exhibit 3.

Revenue Deficiency or Surplus

Ex.6/Tab 2/Sch.1 - Calculation of Revenue Deficiency or Surplus

ORPC's net revenue deficiency under the proposed rates is \$674,940. This deficiency is calculated as the difference between the 2016 Test Year Revenue Requirement and the Forecast 2016 Test Year Revenue Requirement at the Applicant's 2014 approved distribution rates.

The Table of Revenue Deficit is presented at Exhibit 6.Tab 2.Schedule 2. This illustrates the revenue deficiency calculations for the 2016 Test Year at Existing 2014 rates.

The drivers of the revenue deficiency are detailed in Exhibit 6.Tab 2.Schedule 3.

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Table 6.7: Revenue Deficiency (RRWF)

Particulars	Initial Application	
	At Current Approved Rates	At Proposed Rates
Revenue Deficiency from Below		\$674,940
Distribution Revenue	\$4,125,223	\$4,129,252
Other Operating Revenue Offsets - net	\$284,010	\$284,010
Total Revenue	\$4,409,233	\$5,088,202
Operating Expenses	\$4,044,584	\$4,044,584
Deemed Interest Expense	\$510,564	\$510,564
Total Cost and Expenses	\$4,555,148	\$4,555,148
Utility Income Before Income Taxes	(\$145,915)	\$533,054
Tax Adjustments to Accounting Income per 2016 PILs model	(\$104,642)	(\$104,642)
Taxable Income	(\$250,557)	\$428,412
Income Tax Rate	20.35%	20.35%
Income Tax on Taxable Income	(\$50,977)	\$87,163
Income Tax Credits	\$ -	\$ -
Utility Net Income	(\$94,938)	\$442,682
Utility Rate Base	\$12,324,122	\$12,324,122
Deemed Equity Portion of Rate Base	\$4,929,649	\$4,929,649
Income/(Equity Portion of Rate Base)	-1.93%	8.98%
Target Return - Equity on Rate Base	8.98%	8.98%
Deficiency/Sufficiency in Return on Equity	-10.91%	0.00%
Indicated Rate of Return	3.37%	7.73%
Requested Rate of Return on Rate Base	7.73%	7.73%
Deficiency/Sufficiency in Rate of Return	-4.36%	0.00%
Target Return on Equity	\$442,682	\$442,682
Revenue Deficiency/(Sufficiency)	\$537,620	(\$0)
Gross Revenue Deficiency/(Sufficiency)	\$674,940	(1)

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Ex.6/Tab 2/Sch.2 - Causes of Revenue Deficiency or Surplus

ORPC's existing rates are based on the Board-approved rates in 2010 following a cost of service rate application, and adjustments to its base distribution rates in 2011-2015 under the Board's third Generation Incentive Regulation Mechanism.

As shown in Table of Revenue Deficit at the previous section, the Revenue Deficiency is determined to be \$674,940. The deficiency is due to the increase in the rate base and OM&A. The proposed rate base for 2016 is \$789k million higher than the 2010 Board-approved amount, an increase of 7%.

Based on a 7.73% overall cost of capital, the increase in the rate base drives an increase to the revenue requirement. The factors contributing to the change in the rate base are discussed in detail at Exhibit 2 but for the most part, are due to investments in the distribution system to accommodate growth and the inclusion of smart meters into rate base. Note that the decrease in WCA rate from 13% to 7.5% has reduced the Rate Base by \$1,479,340 and the Revenue Requirement by \$116k.

The increased expense for Operations, Maintenance and Administration (OM&A) is another reason for the revenue deficiency. Projected OM&A for 2016 is \$694k higher than the 2010 Board-approved amount, an increase of 26.7%. The cost drivers underlying this increase are presented in Exhibit 4.

1 **Table 6.8: Comparison of Revenue Deficiency (RRWF)**

Particulars (taken from RRWF- 8.Rev_Def_Suff)	2010 Board Approved	2016 Proposed Rates	Difference
Revenue Deficiency from Below	\$417,801	\$674,940	\$257,139.00
Distribution Revenue	\$3,554,741	\$4,129,252	\$574,511.00
Other Operating Revenue Offsets - net	\$377,968	\$284,010	(\$93,958.00)
Total Revenue	\$4,350,510	\$5,088,202	\$737,692.00
Operating Expenses	\$3,362,658	\$4,044,584	\$681,926.00
Deemed Interest Expense	\$477,180	\$510,564	\$33,384.00
Total Cost and Expenses	\$3,839,838	\$4,555,148	\$715,310.00
Utility Income Before Income Taxes	\$510,672	\$533,054	\$22,382.00
Tax Adjustments to Accounting Income per [Last Actual] PILs model	(\$155,352)	(\$104,642)	\$50,710.00
Taxable Income	\$355,320	\$428,412	\$73,092.00
Income Tax Rate	16.00%	20.35%	0.04%
Income Tax on Taxable Income	\$56,851	\$87,163	\$30,312.00
Income Tax Credits	\$-	\$ -	
Utility Net Income	\$453,821	\$442,682	(\$11,139.00)
Utility Rate Base	\$11,518,294	\$12,324,122	\$805,828.00
Deemed Equity Portion of Rate Base	\$4,607,318	\$4,929,649	\$322,331.00
Income/(Equity Portion of Rate Base)	9.85	8.98%	-9.76%
Target Return - Equity on Rate Base	9.85	8.98%	-9.76%
Deficiency/Sufficiency in Return on Equity	0.00%	0.00%	0.00%
Indicated Rate of Return	8.08%	7.73%	-0.35%
Requested Rate of Return on Rate Base	8.08%	7.73%	-0.35%
Deficiency/Sufficiency in Rate of Return	0.00%	0.00%	0.00%
Target Return on Equity	\$453,821	\$442,682	\$-11,139

Ex.6/Tab 2/Sch.3 - Impact of implementation of MIFRS on Revenue Deficiency or Surplus

The adoption of newly prescribed accounting policies has had a marginal impact on the allocation of the revenue requirement and determination of the rate base. The extension of the typical useful lives of ORPC's assets has caused the depreciation expense to decrease resulting in an increase in the value of the net fixed assets of the utility and ultimately an increase to the utility's rate base.

ORPC's OM&A has not been impacted by the policy which states that burdens which are longer eligible for capitalization have been removed from rate base and included as an operating expense. Ottawa River Power has never capitalized administrative or engineering burdens on capital projects.