

Method 2: Enter Detailed Data

OM&A Data

5005	Operation Supervision and Engineering	1,901,468	1,406,927	1,564,846	1,704,944	1,739,042.88	1,773,824	1,809,300.21	Enter Values
5010	Load Dispatching	721,306	705,809	821,037	774,805	790,301.10	806,107	822,229.26	Enter Values
5012	Station Buildings and Fixtures	336,478	126,132	157,348	462,307	471,553.14	480,984	490,603.89	Enter Values
5014	Transformer Station Equipment - Operation Labor	-	-	-	-	-	-	-	Enter Values
5015	Expenses	-	-	-	-	-	-	-	Enter Values
5016	Distribution Station Equipment - Operation Labor	501,402	471,712	503,827	435,828	444,544.56	453,435	462,504.16	Enter Values
5017	Distribution Station Equipment - Operation Supplies and Expenses	181,258	182,448	164,902	249,040	254,020.80	259,101	264,283.24	Enter Values
5020	Overhead Distribution Lines and Feeders - Operation Labor	127,142	78,949	91,643	210,397	214,604.94	218,897	223,274.98	Enter Values
5025	Overhead Distribution Lines and Feeders - Operation Supplies and Expenses	405,251	351,269	372,679	408,048	416,208.96	424,533	433,023.80	Enter Values
5035	Overhead Distribution Transformers - Operation	104,178	127,724	98,716	150,316	153,322.32	156,389	159,516.54	Enter Values
5040	Underground Distribution Lines and Feeders - Operation Labor	19,009	11,054	15,642	16,242	16,566.84	16,898	17,236.14	Enter Values
5045	Underground Distribution Lines and Feeders - Operation Supplies and Expenses	11,665	7,843	4,896	5,908	6,026.16	6,147	6,269.62	Enter Values
5055	Overhead Distribution Lines and Feeders	76,126	127,112	110,984	132,332	134,978.64	137,678	140,431.78	Enter Values
5065	Meter Expense	789,018	732,334	835,962	790,446	806,254.92	822,380	838,827.62	Enter Values
5070	Customer Premises - Operation Labor	548,479	420,605	475,204	420,025	428,425.50	436,994	445,733.89	Enter Values
5075	Customer Premises - Operation Materials and Supplies	-	255,607	60,199	90,475	92,284.50	94,130	96,012.79	Enter Values
5085	Miscellaneous Distribution Expense	897,741	589,896	723,761	1,012,927	1,033,185.54	1,053,849	1,074,926.24	Enter Values
5090	Underground Distribution Lines and Feeders - Rental Paid	-	-	-	-	-	-	-	Enter Values
5095	Overhead Distribution Lines and Feeders - Rental Paid	87,727	93,507	83,996	166,694	170,027.88	173,428	176,897.01	Enter Values
5096	Other Rent (Distribution)	-	-	-	-	-	-	-	Enter Values
	Subtotal: Operation	6,708,247	5,688,927	6,085,642	7,030,734	7,171,349	7,314,776	7,461,071	Formula
5105	Maintenance Supervision and Engineering	-	-	-	-	-	-	-	Enter Values
5110	Maintenance of Buildings and Fixtures	42,540	66,953	44,591	147,452	150,401.04	153,409	156,477.24	Enter Values
5112	Maintenance of Transformer Station Equipment	-	-	-	-	-	-	-	Enter Values
5114	Maintenance of Distribution Station Equipment	52,607	79,530	136,846	133,233	135,897.66	138,616	141,387.93	Enter Values
5120	Maintenance of Poles, Towers and Fixtures	260,391	242,699	208,976	152,598	155,649.96	158,763	161,938.22	Enter Values
5125	Maintenance of Overhead Conductors and Devices	210,042	255,743	212,848	292,953	298,812.06	304,788	310,884.07	Enter Values
5130	Maintenance of Overhead Services	270,123	157,694	188,361	305,603	311,715.06	317,949	324,308.35	Enter Values
5135	Overhead Distribution Lines and Feeders - Right of Way	432,627	506,752	528,647	538,067	548,828.34	559,805	571,001.00	Enter Values
5145	Maintenance of Underground Conduit	159,964	163,477	110,224	115,134	117,436.68	119,785	122,181.12	Enter Values
5150	Maintenance of Underground Conductors and Devices	58,629	32,402	58,715	55,578	56,689.56	57,823	58,979.82	Enter Values
5155	Maintenance of Underground Services	200,129	104,892	135,664	147,777	150,732.54	153,747	156,822.13	Enter Values
5160	Maintenance of Line Transformers	102,763	207,163	123,998	156,750	159,885.00	163,083	166,344.35	Enter Values
5175	Maintenance of Meters	20,138	16,311	2,367	3,267	3,332.34	3,399	3,466.97	Enter Values
	Subtotal: Maintenance	1,809,952	1,833,617	1,751,237	2,048,412	2,089,380	2,131,168	2,173,791	Formula
5305	Supervision (Billing and Collection)	-	230,783	249,351	256,394	261,521.88	266,752	272,087.36	Enter Values
5310	Meter Reading Expense	16,894	20,891	22,500	22,500	22,950.00	23,409	23,877.18	Enter Values
5315	Customer Billing	1,496,147	1,763,176	1,735,647	1,790,905	1,826,723.10	1,863,258	1,900,522.71	Enter Values
5320	Collecting	203,703	193,684	235,003	217,991	222,350.82	226,798	231,333.79	Enter Values
5325	Collecting - Cash Over and Short	-	-	-	-	-	-	-	Enter Values
5330	Collection Charges	-	-	-	-	-	-	-	Enter Values
5340	Miscellaneous Customer Account Expenses	75,859	76,149	74,788	77,151	78,694.02	80,268	81,873.26	Enter Values
	Subtotal : Billing and Collections	1,792,603	2,284,683	2,317,289	2,364,941	2,412,240	2,460,485	2,509,694	Formula
5405	Supervision (Community Relations)	-	-	-	-	-	-	-	Enter Values
5410	Community Relations - Sundry	-	-	-	-	-	-	-	Enter Values
5420	Community Safety Program	-	-	-	-	-	-	-	Enter Values
5425	Miscellaneous Customer Service and Informational Expenses	-	-	-	-	-	-	-	Enter Values
	Subtotal: Community Relations	-	-	-	-	-	-	-	Formula
5605	Executive Salaries and Expenses	714,247	859,081	1,122,693	1,187,606	1,211,358.12	1,235,585	1,260,296.99	Enter Values
5610	Management Salaries and Expenses	535,115	661,359	737,677	750,679	765,692.58	781,006	796,626.56	Enter Values
5615	General Administrative Salaries and Expenses	663,696	768,362	562,068	703,916	717,994.32	732,354	747,001.29	Enter Values
5620	Office Supplies	143,695	56,050	68,659	75,940	77,458.80	79,008	80,588.14	Enter Values
5625	Administrative Expense Transferred - Credit	-	-	-	-	-	-	-	Enter Values
5630	Outside Services Employed	43,552	78,741	42,000	47,000	47,940.00	48,899	49,876.78	Enter Values
5640	Injuries and Damages	-	-	-	-	-	-	-	Enter Values
5645	OMERS Pensions and Benefits	-	-	-	-	-	-	-	Enter Values
5646	Employee Pensions and OPEB	-	592,797	965,555	357,800	364,956.00	372,255	379,700.22	Enter Values
5647	Employee Sick Leave	-	-	-	-	-	-	-	Enter Values
5650	Franchise Requirements	-	-	-	-	-	-	-	Enter Values
5655	Regulatory Expenses	502,816	497,863	558,882	697,576	711,527.52	725,758	740,273.23	Enter Values
5665	Miscellaneous General Expenses	396,223	256,286	333,643	408,364	416,531.28	424,862	433,359.14	Enter Values
5670	Rent (Administrative and General)	42,000	-	-	-	-	-	-	Enter Values
5672	Lease Payment Expense	-	-	-	-	-	-	-	Enter Values
5675	Maintenance of General Plant	293,633	585,270	581,163	577,620	589,172.40	600,956	612,974.96	Enter Values
5680	Electrical Safety Authority Fees	-	-	-	-	-	-	-	Enter Values
	Subtotal: A&G Expenses	3,334,977	4,355,808	4,972,340	4,806,501	4,902,631	5,000,684	5,100,697	Formula

5635	Property Insurance	-	139,276	141,473	141,473	144,302.46	147,189	150,132.28	Enter Values
6210	Life Insurance	-	-	-	-	-	-	-	Enter Values
	Subtotal: Insurance	-	139,276	141,473	141,473	144,302	147,189	150,132	Formula
5515	Advertising	-	-	-	-	-	-	-	Enter Values
	Subtotal Advertising	-	-	-	-	-	-	-	Formula
	2A Total of Above Accounts Used for Benchmarking	13,645,780	14,302,312	15,267,981	16,392,061	16,719,902	17,054,300	17,395,386	Formula
	Adjustments to OM&A for Benchmarking								
	5014	-	-	-	-	-	-	-	Formula
	5015	-	-	-	-	-	-	-	Formula
	5112	-	-	-	-	-	-	-	Formula
	2B Subtotal: HV Adjustment (to subtract from cost)	-	-	-	-	-	-	-	Formula
	2C LV Adjustment	91,023							Enter Values

Benchmarking Calculations for LDC Forecasting

Selected LDC:

Greater Sudbury Hydro Inc.

Line Reference Number	Row Nu	Account	Forecasted Values						Data Item Number
			2016	2017	2018	2019	2020	2021	
Section 1: Source Data and OM&A Calculations									
1		OM&A Data (Detail may be hidden or expanded using the +/- buttons to the left of the row numbers)							
2	5005	2 Operation Supervision and Engineering		1,901,468					
3	5010	3 Load Dispatching		721,306					
4	5012	4 Station Buildings and Fixtures		336,478					
5	5014	5 Transformer Station Equipment - Operation Labor		-					
6	5015	6 Transformer Station Equipment - Operation Supplies and Expenses		-					
7	5016	7 Distribution Station Equipment - Operation Labor		501,402					
8	5017	8 Distribution Station Equipment - Operation Supplies and Expenses		181,258					
9	5020	9 Overhead Distribution Lines and Feeders - Operation Labor		127,142					
10	5025	10 Overhead Distribution Lines and Feeders - Operation Supplies and Expenses		405,251					
11	5035	11 Overhead Distribution Transformers - Operation		104,178					
12	5040	12 Underground Distribution Lines and Feeders - Operation Labor		19,009					
13	5045	13 Underground Distribution Lines and Feeders - Operation Supplies and Expenses		11,665					
14	5055	14 Overhead Distribution Lines and Feeders		76,126					
15	5065	15 Meter Expense		789,018					
16	5070	16 Customer Premises - Operation Labor		548,479					
17	5075	17 Customer Premises - Operation Materials and Supplies		-					
18	5085	18 Miscellaneous Distribution Expense		897,741					
19	5090	19 Underground Distribution Lines and Feeders - Rental Paid		-					
20	5095	20 Overhead Distribution Lines and Feeders - Rental Paid		87,727					
21	5096	21 Other Rent (Distribution)		-					
22		Subtotal: Operation		6,708,247					
23	5105	22 Maintenance Supervision and Engineering		-					
24	5110	23 Maintenance of Buildings and Fixtures		42,540					
25	5112	24 Maintenance of Transformer Station Equipment		-					
26	5114	25 Maintenance of Distribution Station Equipment		52,607					
27	5120	26 Maintenance of Poles, Towers and Fixtures		260,391					
28	5125	27 Maintenance of Overhead Conductors and Devices		210,042					
29	5130	28 Maintenance of Overhead Services		270,123					
30	5135	29 Overhead Distribution Lines and Feeders - Right of Way		432,627					
31	5145	30 Maintenance of Underground Conduit		159,964					
32	5150	31 Maintenance of Underground Conductors and Devices		58,629					
33	5155	32 Maintenance of Underground Services		200,129					
34	5160	33 Maintenance of Line Transformers		102,763					
35	5175	34 Maintenance of Meters		20,138					
36		Subtotal: Maintenance		1,809,952					
37	5305	35 Supervision (Billing and Collection)		-					
38	5310	36 Meter Reading Expense		16,894					
39	5315	37 Customer Billing		1,486,147					
40	5320	38 Collecting		203,703					
41	5325	39 Collecting - Cash Over and Short		-					
42	5330	40 Collection Charges		-					
43	5340	41 Miscellaneous Customer Account Expenses		75,859					
44		Subtotal : Billing and Collections		1,792,603					
45	5405	42 Supervision (Community Relations)		-					
46	5410	43 Community Relations - Sundry		-					
47	5420	44 Community Safety Program		-					
48	5425	45 Miscellaneous Customer Service and Informational Expenses		-					
49		Subtotal: Community Relations		-					
50	5605	47 Executive Salaries and Expenses		714,247					
51	5610	48 Management Salaries and Expenses		535,115					
52	5615	49 General Administrative Salaries and Expenses		683,996					
53	5620	50 Office Supplies		143,695					
54	5625	51 Administrative Expense Transferred - Credit		-					
55	5630	52 Outside Services Employed		43,552					
56	5640	53 Injuries and Damages		-					
57	5645	54 OMERS Pensions and Benefits		-					
58	5646	55 Employee Pensions and OPEB		-					
59	5647	56 Employee Sick Leave		-					
60	5650	57 Franchise Requirements		-					
61	5655	58 Regulatory Expenses		502,816					
62	5665	59 Miscellaneous General Expenses		396,223					
63	5670	60 Rent (Administrative and General)		42,000					
64	5672	61 Lease Payment Expense		-					
65	5675	62 Maintenance of General Plant		293,633					
66	5680	63 Electrical Safety Authority Fees		-					
67		Subtotal: A&G Expenses		3,334,977					
68	5635	64 Property Insurance		-					
69	6210	65 Life Insurance		-					
70		Subtotal: Insurance		-					
71	5515	46 Advertising		-					
72		Subtotal Advertising		-					
73		Total of Above Accounts Used for Benchmarking		13,645,780					

147	Company-Specific Parameter Estimates*							
148	91 Constant	12.8161	12.8161	12.8161	12.8161	12.8161	12.8161	12.8161
149	92 Capital Price / OM&A Price (WK)	0.6275	0.6275	0.6275	0.6275	0.6275	0.6275	0.6275
150	93 Customers (Y1)	0.4386	0.4386	0.4386	0.4386	0.4386	0.4386	0.4386
151	94 Capacity (Y2)	0.1646	0.1646	0.1646	0.1646	0.1646	0.1646	0.1646
152	95 Deliveries (Y3)	0.1043	0.1043	0.1043	0.1043	0.1043	0.1043	0.1043
153	96 WKWK	0.1300	0.1300	0.1300	0.1300	0.1300	0.1300	0.1300
154	97 Y1Y1	(0.3927)	(0.3927)	(0.3927)	(0.3927)	(0.3927)	(0.3927)	(0.3927)
155	98 Y2Y2	0.1811	0.1811	0.1811	0.1811	0.1811	0.1811	0.1811
156	99 Y3Y3	0.1641	0.1641	0.1641	0.1641	0.1641	0.1641	0.1641
157	100 WKY1	0.0552	0.0552	0.0552	0.0552	0.0552	0.0552	0.0552
158	101 WKY2	0.0088	0.0088	0.0088	0.0088	0.0088	0.0088	0.0088
159	102 WKY3	(0.0004)	(0.0004)	(0.0004)	(0.0004)	(0.0004)	(0.0004)	(0.0004)
160	103 Y1Y2	0.1538	0.1538	0.1538	0.1538	0.1538	0.1538	0.1538
161	104 Y1Y3	0.0690	0.0690	0.0690	0.0690	0.0690	0.0690	0.0690
162	105 Y2Y3	(0.1999)	(0.1999)	(0.1999)	(0.1999)	(0.1999)	(0.1999)	(0.1999)
163	106 Average Line Length	0.2883	0.2883	0.2883	0.2883	0.2883	0.2883	0.2883
164	107 Customers Added in last 10 years	0.0157	0.0157	0.0157	0.0157	0.0157	0.0157	0.0157
165	108 Trend	0.0172	0.0172	0.0172	0.0172	0.0172	0.0172	0.0172
166								
167	Sample Mean Values							
168	Constant	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
170	Capital Price / OM&A Price (WK)	0.1644	0.1644	0.1644	0.1644	0.1644	0.1644	0.1644
171	Customers (Y1)	63,422.3118	63,422.3118	63,422.3118	63,422.3118	63,422.3118	63,422.3118	63,422.3118
172	Capacity (Y2)	345,129.0146	345,129.0146	345,129.0146	345,129.0146	345,129.0146	345,129.0146	345,129.0146
173	Deliveries (Y3)	1,630,327.994	1,630,327.994	1,630,327.994	1,630,327.994	1,630,327.994	1,630,327.994	1,630,327.994
174	WKWK	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
175	Y1Y1	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
176	Y2Y2	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
177	Y3Y3	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
178	WKY1	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
179	WKY2	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
180	WKY3	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
181	Y1Y2	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
182	Y1Y3	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
183	Y2Y3	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
184	Average Line Length	2.723	2.723	2.723	2.723	2.723	2.723	2.723
185	Customers Added in last 10 years	0.1286	0.1286	0.1286	0.1286	0.1286	0.1286	0.1286
186								
187								
188								
189	2013 Values Logged and Mean Scaled (where applicable)							
190								
191	Constant	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
192	Capital Price / OM&A Price (WK)	(0.1765)	(0.1463)	(0.1463)	(0.1463)	(0.1463)	(0.1463)	(0.1463)
193	Customers (Y1)	(0.2906)	(0.2864)	(0.2859)	(0.2832)	(0.2805)	(0.2777)	(0.2750)
194	Capacity (Y2)	(0.5115)	(0.5115)	(0.5115)	(0.5115)	(0.5115)	(0.5115)	(0.5115)
195	Deliveries (Y3)	(0.6547)	(0.6126)	(0.6435)	(0.6543)	(0.6543)	(0.6543)	(0.6543)
196	WKWK	0.0156	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107
197	Y1Y1	0.0422	0.0410	0.0409	0.0401	0.0393	0.0386	0.0378
198	Y2Y2	0.1308	0.1308	0.1308	0.1308	0.1308	0.1308	0.1308
199	Y3Y3	0.2209	0.1876	0.2071	0.2140	0.2140	0.2140	0.2140
200	WKY1	0.0513	0.0419	0.0418	0.0414	0.0410	0.0406	0.0402
201	WKY2	0.0903	0.0748	0.0748	0.0748	0.0748	0.0748	0.0748
202	WKY3	0.1173	0.0896	0.0942	0.0957	0.0957	0.0957	0.0957
203	Y1Y2	0.1487	0.1465	0.1462	0.1448	0.1435	0.1421	0.1407
204	Y1Y3	0.1932	0.1755	0.1840	0.1853	0.1835	0.1817	0.1799
205	Y2Y3	0.3400	0.3133	0.3292	0.3347	0.3347	0.3347	0.3347
206	Average Line Length	(1.0730)	(1.0674)	(1.0626)	(1.0583)	(1.0546)	(1.0510)	(1.0477)
207	Customers Added in last 10 years	16.34%	16.34%	16.34%	16.34%	16.34%	16.34%	16.34%
208	Trend	11.0000	12.0000	13.0000	14.0000	15.0000	16.0000	17.0000
209								
210	Product of Parameter and 2013 Values							

212	Constant	12.816	12.816	12.816	12.816	12.816	12.816	12.816
213	Capital Price / OM&A Price (WK)	(0.111)	(0.092)	(0.092)	(0.092)	(0.092)	(0.092)	(0.092)
214	Customers (Y1)	(0.127)	(0.126)	(0.125)	(0.124)	(0.123)	(0.122)	(0.121)
215	Capacity (Y2)	(0.084)	(0.084)	(0.084)	(0.084)	(0.084)	(0.084)	(0.084)
216	Deliveries (Y3)	(0.069)	(0.064)	(0.067)	(0.068)	(0.068)	(0.068)	(0.068)
217	WKWK	0.002	0.001	0.001	0.001	0.001	0.001	0.001
218	Y1Y1	(0.017)	(0.016)	(0.016)	(0.016)	(0.015)	(0.015)	(0.015)
219	Y2Y2	0.024	0.024	0.024	0.024	0.024	0.024	0.024
220	Y3Y3	0.036	0.031	0.034	0.035	0.035	0.035	0.035
221	WKY1	0.003	0.002	0.002	0.002	0.002	0.002	0.002
222	WKY2	0.001	0.001	0.001	0.001	0.001	0.001	0.001
223	WKY3	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
224	Y1Y2	0.023	0.023	0.022	0.022	0.022	0.022	0.022
225	Y1Y3	0.013	0.012	0.013	0.013	0.013	0.013	0.012
226	Y2Y3	(0.068)	(0.063)	(0.066)	(0.067)	(0.067)	(0.067)	(0.067)
227	Average Line Length	(0.309)	(0.308)	(0.306)	(0.305)	(0.304)	(0.303)	(0.302)
228	Customers Added in last 10 years	0.003	0.003	0.003	0.003	0.003	0.003	0.003
229	Trend	0.189	0.206	0.223	0.240	0.257	0.275	0.292
230								
231	Log of Predicted Total Cost / OM&A Price	12.3235	12.3660	12.3822	12.4009	12.4202	12.4396	12.4588
232	Real Predicted Total Cost / OM&A Price	224,926	234,687	238,516	243,009	247,765	252,598	257,508
233	OM&A Price	123.62	126.12	128.67	131.27	133.92	136.62	139.38
234	Predicted Total Cost	27,805,977	29,598,774	30,689,348	31,899,102	33,180,452	34,510,964	35,892,570
235								
236								

Section 4: Benchmarking Results

237	Actual Cost	29,854,613	31,613,477	33,317,739	35,088,674	36,255,438	37,212,657	38,181,906
238	Predicted Cost	27,805,977	29,598,774	30,689,348	31,899,102	33,180,452	34,510,964	35,892,570
239	Actual less Predicted Cost	2,048,636	2,014,703	2,628,391	3,189,572	3,074,986	2,701,693	2,289,336
240	Percentage Difference (Arithmetic for Comparison)	7.37%	6.81%	8.56%	10.00%	9.27%	7.83%	6.38%
241								
24200.00%	Percent Difference (Logarithmic)	7.11%	6.59%	8.22%	9.53%	8.86%	7.54%	6.18%

Summary of Cost Benchmarking Results

Greater Sudbury Hydro Inc.

	2017 (History)	2018 (History)	2019 (Bridge)	2020 (Test Year)	2021 Projection	2022 Projection	2023 Projection
Cost Benchmarking Summary							
Actual Total Cost	29,854,613	31,613,477	33,317,739	35,088,674	36,255,438	37,212,657	38,181,906
Predicted Total Cost	27,805,977	29,598,774	30,689,348	31,899,102	33,180,452	34,510,964	35,892,570
Difference	2,048,636	2,014,703	2,628,391	3,189,572	3,074,986	2,701,693	2,289,336
Percentage Difference (Cost Performance)	7.1%	6.6%	8.2%	9.53%	8.86%	7.54%	6.18%
Three-Year Average Performance			7.3%	8.11%	8.87%	8.64%	7.53%
Stretch Factor Cohort							
Annual Result	3	3	3	3	3	3	3
Three Year Average			3	3	3	3	3