

Summary of Cost Benchmarking Results

EnWin Utilities Ltd.

	2017 (History)	2018 (Forecast)	2019 (Bridge)	2020 (Test Year)	2021 Projection	2022 Projection	2023 Projection
Cost Benchmarking Summary							
Actual Total Cost	62,552,073	67,452,243	67,453,529	68,492,898	69,623,714	70,437,511	71,183,134
Predicted Total Cost	59,322,569	65,340,149	70,222,460	74,948,505	79,544,736	81,393,793	85,971,804
Difference	3,229,504	2,112,095	(2,768,931)	(6,455,607)	(9,921,022)	(10,956,282)	(14,788,670)
Percentage Difference (Cost Performance)	5.3%	3.2%	-4.0%	-9.01%	-13.32%	-14.46%	-18.88%
Three-Year Average Performance			1.5%	-3.28%	-8.78%	-12.26%	-15.55%
Stretch Factor Cohort							
Annual Result	3	3	3	3	2	2	2
Three Year Average			3	3	3	2	2

Benchmarking Calculations for LDC Forecasting

Selected LDC:

EnWin Utilities Ltd.

			Forecasted Values								
Line	Reference	Row Nu	Account	2016	2017	2018	2019	2020	2021	2022	2023
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	2,629,756	2,282,694.00	2,445,314.03	2,527,562.37	2,550,418.22	2,524,705.56	2,556,155.86	
3	5010	4	Load Dispatching	398,550	281,267.00	483,614.06	482,792.64	493,354.00	503,089.00	507,315.00	
4	5012	3	Station Buildings and Fixtures	-	-	-	-	-	-	-	
5	5014	5	Transformer Station Equipment - Operation Labor	-	269,276.00	254,399.00	262,926.00	268,184.52	273,548.21	279,019.17	
6	5015	6	Transformer Station Equipment - Operation Supplies and Expenses	-	770.00	9,263.00	9,263.00	9,448.26	9,637.23	9,829.97	
7	5016	7	Distribution Station Equipment - Operation Labor	-	-	-	-	-	-	-	
8	5017	8	Distribution Station Equipment - Operation Supplies and Expenses	-	-	-	-	-	-	-	
9	5020	9	Overhead Distribution Lines and Feeders - Operation Labor	1,738,847	1,901,852.00	1,685,197.77	1,686,890.80	1,684,861.20	1,665,479.70	1,631,833.06	
10	5025	10	Overhead Distribution Lines and Feeders - Operation Supplies and Expenses	427,510	160,518.00	730,199.00	681,740.00	695,374.80	709,282.30	723,467.94	
11	5035	11	Overhead Distribution Transformers - Operation	62,049	68,345.00	61,327.43	63,858.72	64,269.00	66,503.00	68,065.00	
12	5040	12	Underground Distribution Lines and Feeders - Operation Labor	732,496	959,873.00	701,175.31	707,506.22	712,994.16	717,622.34	714,363.53	
13	5045	13	Underground Distribution Lines and Feeders - Operation Supplies and Expenses	310,288	167,528.00	380,563.00	377,442.00	384,990.84	392,690.66	400,544.47	
14	5055	14	Overhead Distribution Lines and Feeders	242,432	232,382.00	255,515.77	261,229.99	262,735.00	267,062.00	267,023.00	
15	5065	15	Meter Expense	651,911	456,041.00	605,994.74	583,826.57	627,631.00	637,166.00	652,842.00	
16	5070	16	Customer Premises - Operation Labor	13,869	60,767.00	18,392.07	18,495.52	17,897.58	16,251.81	15,083.57	
17	5075	17	Customer Premises - Operation Materials and Supplies	4,248	5,192.00	18,056.00	15,871.00	16,188.42	16,512.19	16,842.43	
18	5085	18	Miscellaneous Distribution Expense	57,903	36,024.00	49,659.83	49,659.83	49,660.00	50,653.00	51,666.00	
19	5090	19	Underground Distribution Lines and Feeders - Rental Paid	-	-	-	-	-	-	-	
20	5095	20	Overhead Distribution Lines and Feeders - Rental Paid	-	-	-	-	-	-	-	
21	5096	21	Other Rent (Distribution)	-	-	-	-	-	-	-	
22			Subtotal: Operation	7,269,859	6,882,529.00	7,698,671.02	7,729,064.67	7,838,007.00	7,850,203.00	7,894,051.00	
23	5105	22	Maintenance Supervision and Engineering	-	-	-	-	-	-	-	
24	5110	23	Maintenance of Buildings and Fixtures	-	-	-	-	-	-	-	
25	5112	24	Maintenance of Transformer Station Equipment	237,821	311,300.00	374,514.06	387,506.85	351,092.00	357,190.00	356,644.00	
26	5114	25	Maintenance of Distribution Station Equipment	51,816	35,737.00	45,146.02	44,797.15	39,853.00	39,943.00	39,890.00	
27	5120	26	Maintenance of Poles, Towers and Fixtures	-	-	-	-	-	-	-	
28	5125	27	Maintenance of Overhead Conductors and Devices	-	-	-	-	-	-	-	
29	5130	28	Maintenance of Overhead Services	758,586	912,525.00	958,829.08	935,922.46	936,662.00	930,818.00	919,217.00	
30	5135	29	Overhead Distribution Lines and Feeders - Right of Way	867,897	1,081,488.00	1,149,968.02	1,093,782.55	1,163,043.00	1,167,123.00	1,171,740.00	
31	5145	30	Maintenance of Underground Conduit	-	-	-	-	-	-	-	
32	5150	31	Maintenance of Underground Conductors and Devices	-	-	-	-	-	-	-	
33	5155	32	Maintenance of Underground Services	535,919	538,920.00	659,792.52	659,693.17	667,246.00	670,568.00	669,122.00	
34	5160	33	Maintenance of Line Transformers	35,197	62,867.00	54,912.66	52,911.16	52,831.00	52,347.00	51,395.00	
35	5175	34	Maintenance of Meters	-	-	-	-	-	-	-	
36			Subtotal: Maintenance	2,487,236	2,942,837.00	3,243,162.37	3,174,613.34	3,210,727.00	3,217,989.00	3,208,008.00	
37	5305	35	Supervision (Billing and Collection)	-	-	-	-	-	-	-	
38	5310	36	Meter Reading Expense	603,240	726,464.00	748,635.33	777,859.53	767,497.00	761,596.00	779,289.00	
39	5315	37	Customer Billing	1,389,774	1,508,529.00	1,551,987.83	1,581,072.41	1,600,208.00	1,632,975.00	1,678,428.00	
40	5320	38	Collecting	102,367	101,786.00	102,464.76	104,420.74	105,000.00	107,316.00	110,201.00	
41	5325	39	Collecting - Cash Over and Short	-	-	-	-	-	-	-	
42	5330	40	Collection Charges	-	-	-	-	-	-	-	
43	5340	41	Miscellaneous Customer Account Expenses	-	-	-	-	-	-	-	
44			Subtotal : Billing and Collections	2,095,381	2,336,779.00	2,403,087.91	2,463,352.68	2,472,705.00	2,501,887.00	2,567,918.00	
45	5405	42	Supervision (Community Relations)	-	-	-	-	-	-	-	
46	5410	43	Community Relations - Sundry	132,385	175,829.00	182,709.00	147,723.00	218,076.00	222,624.00	227,277.00	
47	5420	44	Community Safety Program	-	-	-	-	-	-	-	
48	5425	45	Miscellaneous Customer Service and Informational Expenses	-	-	-	-	-	-	-	
49			Subtotal: Community Relations	132,385	175,829.00	182,709.00	147,723.00	218,076.00	222,624.00	227,277.00	
50	5605	47	Executive Salaries and Expenses	-	-	-	-	-	-	-	
51	5610	48	Management Salaries and Expenses	1,476,557	1,333,240.00	1,446,580.00	1,480,845.00	1,514,164.01	1,548,232.70	1,583,067.94	
52	5615	49	General Administrative Salaries and Expenses	3,855,780	4,814,236.00	4,285,615.86	4,429,325.23	4,513,699.99	4,612,993.30	4,721,470.06	
53	5620	50	Office Supplies	676,458	591,230.00	521,881.37	527,378.79	529,121.00	536,239.00	543,504.00	
54	5625	51	Administrative Expense Transferred - Credit	-	2,302,845.00	-	-	-	-	-	
55	5630	52	Outside Services Employed	2,302,845	2,196,283.00	2,674,820.07	2,172,479.48	2,184,690.00	2,216,761.00	2,271,809.00	
56	5640	53	Injuries and Damages	267,043	376,052.00	374,544.53	398,285.12	394,792.00	401,168.00	407,650.00	
57	5645	54	OMERS Pensions and Benefits	-	-	-	-	-	-	-	
58	5646	55	Employee Pensions and OPEB	2,893,267	2,943,063.00	3,000,711.93	3,060,919.20	3,121,666.00	3,183,673.00	3,247,868.00	
59	5647	56	Employee Sick Leave	-	-	-	-	-	-	-	
60	5650	57	Franchise Requirements	-	-	-	-	-	-	-	
61	5655	58	Regulatory Expenses	408,676	432,974.00	594,940.00	430,935.20	439,009.00	447,789.00	456,745.00	
62	5665	59	Miscellaneous General Expenses	126,137	149,860.00	123,474.42	125,274.72	127,121.00	129,664.00	132,257.00	
63	5670	60	Rent (Administrative and General)	-	-	-	-	-	-	-	
64	5672	61	Lease Payment Expense	-	-	-	-	-	-	-	
65	5675	62	Maintenance of General Plant	2,236,054	2,247,361.00	1,569,446.08	1,716,143.85	1,522,093.00	1,550,407.00	1,577,565.00	
66	5680	63	Electrical Safety Authority Fees	42,011	42,888.00	43,781.46	44,657.09	45,550.00	46,461.00	47,390.00	
67			Subtotal: A&G Expenses	14,284,826	17,430,032.00	14,635,795.72	14,386,243.68	14,391,906.00	*****	14,989,326.00	
68	5635	64	Property Insurance	449,340	467,832.00	479,188.84	488,772.84	498,548.00	508,520.00	518,689.00	
69	6210	65	Life Insurance	-	-	-	-	-	-	-	
70			Subtotal: Insurance	449,340	467,832.00	479,188.84	488,772.84	498,548.00	508,520.00	518,689.00	
71	5515	46	Advertising	-	-	-	-	-	-	-	
72			Subtotal Advertising	-	-	-	-	-	-	-	
73			Total of Above Accounts Used for Benchmarking	26,719,026	30,235,838.00	28,642,614.86	28,389,770.22	28,629,969.00	*****	29,405,269.00	
74											
75			Adjustments to OM&A for Benchmarking								
76		5014		-	-	-	-	-	-	-	
77		5015		-	581,346	638,176	659,696	628,725	640,375	645,493	
78		5112		237,821	-	-	-	-	-	-	
79			Subtotal: HV Adjustment (to subtract from cost)	237,821	581,346	638,176	659,696	628,725	640,375	645,493	
80			LV Adjustment	-	-	-	-	-	-	-	
81			Total Adjusted OM&A Expense	26,481,205	29,654,492	28,004,439	27,730,074	28,001,244	28,334,236	28,759,776	11
82											
83			Gross Capital Cost Additions Data								
84			Total Gross Capital Additions	16,024,514	15,894,000	25,809,000	22,810,000	18,965,000	16,872,000	16,662,000	1
85			HV Gross Capital Additions	1,086,645	528,000	475,000	275,000	425,000	1,725,000	2,925,000	2
86											
87			Output and Other Business Conditions								
88			Number of Customers	88,422	88,759	89,093	89,428	89,428	89,428	89,428	3
89			Delivery Volume	2,357,005,920	2,373,403,713	2,307,487,797	2,230,875,607	2,230,875,607	*****	2,230,875,607	4
90			Annual Peak Demand	464,200	464,200	464,200	464,200	464,200	464,200	464,200	5
91			Distribution Circuit km	4,777	4,777	4,777	4,777	4,777	4,777	4,777	6
92											
93											
Section 2: Actual Cost Calculations											
94			Actual Cost								
95											
96	OM&A			26,481,205.32	29,654,492.00	28,004,438.80	27,730,074.37	28,001,244.22	*****	28,759,775.86	
97											

129	2002-2013 Average Line km	1,385.06	1,611.19	1,809.05	1,983.64	2,138.83	2,285.39	2,423.81
130	Customers Ten Years Ago	84,757						
131	Ten Year Customer Growth Percentage	4.32%	0.44%	0.44%	0.44%	0.44%	0.44%	0.44%
132								
133	(Details of the predicted cost calculations may be hidden by using the +/- button to the left of row 248)							
134								
135	Company Values for Variables Used in the Prediction Equation							
136								
137	Constant	1.00	1.00	1.00	1.00	1.00	1.00	1.00
138	Capital Price / OM&A Price (WK)	0.1148	0.1182	0.1180	0.1177	0.1175	0.1173	0.1171
139	Customers (Y1)	88,422	88,759	89,093	89,428	89,428	89,428	89,428
140	Capacity (Y2)	656,700	656,700	656,700	656,700	656,700	656,700	656,700
141	Deliveries (Y3)	2,357,005,920	2,373,403,713	2,307,487,797	2,230,875,607	2,230,875,607	2,230,875,607	2,230,875,607
142	Average Line Length	1,385.1	1,611.2	1,809.1	1,983.6	2,138.8	2,285.4	2,423.8
143	Customers Added in last 10 years	4.32%	0.44%	0.44%	0.44%	0.44%	0.44%	0.44%
144	Trend	11	12	13	14	15	14	15
145								
146								
147	Company-Specific Parameter Estimates*							
148	91 Constant	12.8191	12.8191	12.8191	12.8191	12.8191	12.8191	12.8191
149	92 Capital Price / OM&A Price (WK)	0.6267	0.6267	0.6267	0.6267	0.6267	0.6267	0.6267
150	93 Customers (Y1)	0.4524	0.4524	0.4524	0.4524	0.4524	0.4524	0.4524
151	94 Capacity (Y2)	0.1670	0.1670	0.1670	0.1670	0.1670	0.1670	0.1670
152	95 Deliveries (Y3)	0.0864	0.0864	0.0864	0.0864	0.0864	0.0864	0.0864
153	96 WKWK	0.1220	0.1220	0.1220	0.1220	0.1220	0.1220	0.1220
154	97 Y1Y1	(0.4593)	(0.4593)	(0.4593)	(0.4593)	(0.4593)	(0.4593)	(0.4593)
155	98 Y2Y2	0.1579	0.1579	0.1579	0.1579	0.1579	0.1579	0.1579
156	99 Y3Y3	0.1548	0.1548	0.1548	0.1548	0.1548	0.1548	0.1548
157	100 WKY1	0.0529	0.0529	0.0529	0.0529	0.0529	0.0529	0.0529
158	101 WKY2	0.0109	0.0109	0.0109	0.0109	0.0109	0.0109	0.0109
159	102 WKY3	(0.0003)	(0.0003)	(0.0003)	(0.0003)	(0.0003)	(0.0003)	(0.0003)
160	103 Y1Y2	0.2028	0.2028	0.2028	0.2028	0.2028	0.2028	0.2028
161	104 Y1Y3	0.0877	0.0877	0.0877	0.0877	0.0877	0.0877	0.0877
162	105 Y2Y3	(0.2188)	(0.2188)	(0.2188)	(0.2188)	(0.2188)	(0.2188)	(0.2188)
163	106 Average Line Length	0.2905	0.2905	0.2905	0.2905	0.2905	0.2905	0.2905
164	107 Customers Added in last 10 years	0.0174	0.0174	0.0174	0.0174	0.0174	0.0174	0.0174
165	108 Trend	0.0170	0.0170	0.0170	0.0170	0.0170	0.0170	0.0170
166								
167	Sample Mean Values							
168	Constant	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
169	Capital Price / OM&A Price (WK)	0.1644	0.1644	0.1644	0.1644	0.1644	0.1644	0.1644
170	Customers (Y1)	63,422,3118	63,422,3118	63,422,3118	63,422,3118	63,422,3118	63,422,3118	63,422,3118
171	Capacity (Y2)	345,129,0146	345,129,0146	345,129,0146	345,129,0146	345,129,0146	345,129,0146	345,129,0146
172	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
173	WKWK	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
174	Y1Y1	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
175	Y2Y2	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
176	Y3Y3	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
177	WKY1	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
178	WKY2	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
179	WKY3	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
180	Y1Y2	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
181	Y1Y3	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
182	Y2Y3	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
183	Average Line Length	2.723	2.723	2.723	2.723	2.723	2.723	2.723
184	Customers Added in last 10 years	0.1286	0.1286	0.1286	0.1286	0.1286	0.1286	0.1286
185								
186								
187								
188								
189								
190	2013 Values Loaded and Mean Scaled (where applicable)							
191	Constant	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
192	Capital Price / OM&A Price (WK)	(0.3587)	(0.3303)	(0.3320)	(0.3338)	(0.3355)	(0.3373)	(0.3390)
193	Customers (Y1)	0.3323	0.3361	0.3399	0.3436	0.3436	0.3436	0.3436
194	Capacity (Y2)	0.6433	0.6433	0.6433	0.6433	0.6433	0.6433	0.6433
195	Deliveries (Y3)	0.3686	0.3755	0.3474	0.3136	0.3136	0.3136	0.3136
196	WKWK	0.0643	0.0545	0.0551	0.0557	0.0563	0.0569	0.0575
197	Y1Y1	0.0552	0.0565	0.0578	0.0590	0.0590	0.0590	0.0590
198	Y2Y2	0.2069	0.2069	0.2069	0.2069	0.2069	0.2069	0.2069
199	Y3Y3	0.0679	0.0705	0.0603	0.0492	0.0492	0.0492	0.0492
200	WKY1	(0.1192)	(0.1110)	(0.1128)	(0.1147)	(0.1153)	(0.1159)	(0.1165)
201	WKY2	(0.2307)	(0.2125)	(0.2136)	(0.2147)	(0.2158)	(0.2170)	(0.2181)
202	WKY3	(0.1322)	(0.1240)	(0.1153)	(0.1052)	(0.1052)	(0.1058)	(0.1063)
203	Y1Y2	0.2138	0.2162	0.2186	0.2211	0.2211	0.2211	0.2211
204	Y1Y3	0.1225	0.1262	0.1181	0.1078	0.1078	0.1078	0.1078
205	Y2Y3	0.2371	0.2416	0.2235	0.2018	0.2018	0.2018	0.2018
206	Average Line Length	(0.6759)	(0.5247)	(0.4089)	(0.3167)	(0.2414)	(0.1751)	(0.1163)
207	Customers Added in last 10 years	33.62%	3.46%	3.46%	3.46%	3.46%	3.46%	3.46%
208	Trend	11.0000	12.0000	13.0000	14.0000	15.0000	14.0000	15.0000
209								
210	Product of Parameter and 2013 Values							
211	Constant	12.819	12.819	12.819	12.819	12.819	12.819	12.819
212	Capital Price / OM&A Price (WK)	(0.225)	(0.207)	(0.208)	(0.209)	(0.210)	(0.211)	(0.212)
213	Customers (Y1)	0.150	0.152	0.154	0.155	0.155	0.155	0.155
214	Capacity (Y2)	0.107	0.107	0.107	0.107	0.107	0.107	0.107
215	Deliveries (Y3)	0.032	0.032	0.030	0.027	0.027	0.027	0.027
216	WKWK	0.008	0.007	0.007	0.007	0.007	0.007	0.007
217	Y1Y1	(0.025)	(0.026)	(0.027)	(0.027)	(0.027)	(0.027)	(0.027)
218	Y2Y2	0.033	0.033	0.033	0.033	0.033	0.033	0.033
219	Y3Y3	0.011	0.011	0.009	0.008	0.008	0.008	0.008
220	WKY1	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
221	WKY2	(0.003)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
222	WKY3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
223	Y1Y2	0.043	0.044	0.044	0.045	0.045	0.045	0.045
224	Y1Y3	0.011	0.011	0.010	0.009	0.009	0.009	0.009
225	Y2Y3	(0.052)	(0.053)	(0.049)	(0.044)	(0.044)	(0.044)	(0.044)
226	Average Line Length	(0.196)	(0.152)	(0.119)	(0.092)	(0.070)	(0.051)	(0.034)
227	Customers Added in last 10 years	0.006	0.001	0.001	0.001	0.001	0.001	0.001
228	Trend	0.187	0.203	0.220	0.237	0.254	0.237	0.254
229								
230	Log of Predicted Total Cost / OM&A Price	12.8991	12.9739	13.0242	13.0676	13.1054	13.1066	13.1396
231	Real Predicted Total Cost / OM&A Price	399,934	431,026	453,266	473,363	491,583	492,187	508,686
232	OM&A Price	148.33	151.59	154.93	158.33	161.81	165.37	169.01
233	Predicted Total Cost	59,322,569	65,340,149	70,222,460	74,948,505	79,544,736	81,393,793	85,971,804
234								
235								
236								

Section 4: Benchmarking Results

237	Actual Cost	62,552,073	67,452,243	67,453,529	68,492,898	69,623,714	70,437,511	71,193,134
238	Predicted Cost	59,322,569	65,340,149	70,222,460	74,948,505	79,544,736	81,393,793	85,971,804
239	Actual less Predicted Cost	3,229,504	2,112,095	(2,768,931)	(6,455,607)	(9,921,022)	(10,956,282)	(14,788,670)
240	Percentage Difference (Arithmetic for Comparison)	5.44%	3.23%	-3.94%	-8.61%	-12.47%	-13.46%	-17.20%
241								
24200.00%	Percent Difference (Logarithmic)	6.50%	3.18%	-4.02%	-9.01%	-13.32%	-14.46%	-18.88%