

Thompson & Associates

Addendum to Report of Investigation

of Electric Utility Operating Characteristics Relevant to a Restructured
Market in Oklahoma

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Thompson and Associates
Investigation of Electric Utility Operating Characteristics
Relevant to a Restructured Market in Oklahoma
Addendum to Reports 1 and 2

Introduction

In April, 2020, Thompson And Associates submitted the first in a planned series of reports related to possible market structures and the economic feasibility of a competitive market for electricity in the state of Oklahoma. The first report dealt primarily with possible market structures and presented statistics pertinent to several different market structures. In September, 2020 a second report was submitted providing estimates of possible consumer savings associated with the implementation of the market structure recommended in Report 1.

After reviewing the reports, it has become apparent that certain numerical inconsistencies exist between the various tables included in the two reports. This was a consequence, in part, of using different sources for the sales statistics for the two reports. "Cost of Service" tables were used as the primary source of sales information in Report 1 while "Proof of Revenue" statistics were the primary source of information in Report 2. In addition, it appears that other errors occurred, including a multiple application of loss factors which impacted some of the Report 1 statistics.

While none of the table revisions served to create significant changes to our conclusions regarding the competitive market opportunities for any of the major service classes, it was deemed important to arrive at a consistent set of sales statistics. Revised tables have been prepared and are included herein.

Although some of the table revisions resulted no substantive changes, all of the tables are presented herein as revised tables for convenience of review. It should be

noted that the yellow highlights on Tables 2A and 2B in Report 1 are to identify the division between rate classes regarding the competitive versus non-competitive markets for the market structure under discussion related to these tables in report 1. The same thing applies to the highlights on Tables 5A and 5B.

We regret any inconvenience the revision of the tables might have occasioned but believe the convenience afforded by having a consistent set of statistics throughout the two reports is a worthwhile addition. The revised reports comprise the remainder of this addendum.

Report 1

Table 1-A - Revision 1				
PSO Energy and Demand by Rate Class				
Customer Class	<u>Energy Deliveries</u>		<u>Peak Demands</u>	
	kWh for Class (Millions)	kWh per Customer (X 1,000)	<u>At System Peak</u>	
			for Class (kW X 1,000)	kW per Customer
Large Power and Light	6,280	11,695	973	1,812
Power and Light	1,356	904	242	161
Primary Non Demand	20	522	4	111
General Service Schools	253	353	96	134
General Service	2,409	284	589	69
Municipal Pumping	11	138	2	26
Low Use General Service Sc	33	23	10	7
Low Use General Service	1,030	17	238	4
Residential	6,202	13	1,885	4
Total	17,595			

Report 1

Table 1-B Revision 1				
OG&E Energy and Demand by Rate Class				
Customer Class	<u>Energy Deliveries</u>		<u>Peak Demands</u>	
	kWh for Class (Millions)	kWh per Customer (X 1,000)	<u>At System Peak</u>	
			for Class (kW X 1,000)	kW per Customer
Large Power and Light	6,477	53,531	1,298	10,730
Power and Light	7,139	7	1,138	70
Schools Large	186	185,956	29	83
Municipal Pumping	133	133,471	16	12
Schools Small	223	92	36	15
Oil & Gas	391	391,469	33	7
General Service	1,473	17	354	4
Residential	8,446	13	2,652	4
Total	24,470			

Report 1

Table 2-A Revision 1						
PSO Market Share Analysis 1						
Customer Class	Energy Deliveries			Peak	Customers	
	kWh for Class (Millions)	Percent of Total Retail	Cumulative Percentage	Demand (kW X 1,000)	Number of Customers	Cum No Customers
Large Power and Light	6,280	36%	36%	973	537	537
Power and Light	1,356	8%	43%	242	1,500	2,037
Primary Non Demand	20	0%	44%	4	39	2,076
General Service Schools	253	1%	45%	96	717	2,793
General Service	2,409	14%	59%	589	8,493	11,286
Municipal Pumping	11	0%	59%	2	79	11,365
Low Use General Service Schools	33	0%	59%	10	1,412	12,777
Low Use General Service	1,030	6%	65%	238	60,442	73,219
Residential	6,202	35%	100%	1,885	475,922	549,141
Total	17,595				550,406	

Report 1

Table 2-B Revision 1						
OG&E Market Share Analysis 1						
Customer Class	Energy Deliveries			Peak	Customers	
	kWh for Class (Millions)	Percent of Total Retail	Cumulative Percentage	Demand (kW X 1,000)	Number of Customers	Cum No Customers
Large Power and Light	6,477	26%	26%	1,298	121	121
Power and Light	7,139	29%	56%	1,138	16,268	16,389
Schools Large	186	1%	56%	29	349	16,738
Municipal Pumping	133	1%	57%	16	1,359	18,097
Schools Small	223	1%	58%	36	2,415	20,512
Oil & Gas	391	2%	59%	33	5,061	25,574
General Service	1,473	6%	65%	354	84,885	110,458
Residential	8,446	35%	100%	2,652	671,861	782,319
Total	24,470				784,159	

Report 1

Table 3-A Revision 1						
PSO Market Share Analysis 2						
Customer Class	Energy Deliveries			Peak	Customers	
	kWh for Class (Millions)	Percent of Total Retail	Cumulative Percentage	Demand (kW X 1,000)	Number of Customers	Cum No Customers
Level 1	955	5%	5%	122	31	31
Level 2	2,999	17%	22%	506	54	85
Level 3	2,347	13%	36%	127	70	155
Level 4	135	1%	36%	21	936	1,091
Level 5	11,217	64%	100%	3,043	547,913	549,004
Total	17,653					

Report 1

Table 3-B Revision 1						
OG&E Market Share Analysis 2						
Customer Class	Energy Deliveries			Peak	Customers	
	kWh for Class (Millions)	Percent of Total Retail	Cumulative Percentage	Demand (kW X 1,000)	Number of Customers	Cum No Customers
Level 1	784	3%	3%	92	18	18
Level 2	4,500	18%	22%	1,049	83	101
Level 3	1,909	8%	29%	213	750	851
Level 4	641	3%	32%	91	381	1,232
Level 5	16,503	67%	99%	4,113	781,087	782,319
Total	24,470					

Report 1

Table 4-A Revision 1A				
PSO Energy and Demand by Rate Class and Voltage Level				
Customer Class	Energy Deliveries		Peak Demands	
	kWh	kWh per	At System Peak	
	for Class	Customer	for Class	kW per
	(Millions)	(X 1,000)	(kW X 1,000)	Customer
Large Power and Light S/L 2	2,999	55,537	506	9,373
Large Power and Light S/L 1	955	30,808	122	3,950
Large Power and Light S/L 3	2,326	5,142	344	762
Power and Light S/L 4	73	4,574	12	765
General Service S/L 4	58	1,524	8	205
Power and Light S/L 5	1,283	865	229	155
Primary Non Demand S/L 3	20	522	4	111
General Service Schools S/L 5	253	347	96	134
General Service S/L 5	2,300	278	569	69
Municipal Pumping S/L 5	11	138	2	26
Low Use General Service Schools S/L 5	33	23	10	7
Low Use General Service S/L 5	1,026	17	237	4
Low Use General Service S/L 4	4	16	1	1
Residential S/L 5	6,202	13	1,885	4
Total	17,543			

Report 1

Table 4-B Revision 1A				
OG&E Energy and Demand by Rate Class and Service Level				
Customer Class	Energy Deliveries		Peak Demands	
	kWh	kWh per	At System Peak	
	for Class	Customer	for Class	kW per
	(Millions)	(X 1,000)	(kW X 1,000)	Customer
Large Power & Light S/L 2	4,293	76,668	1,027	18,336
Large Power & Light S/L 1	757	63,088	90	7,513
Large Power & Light S/L 4	263	37,558	101	14,384
Large Power & Light S/L 3	789	26,310	42	1,410
Large Power & Light S/L 5	375	23,414	90	5,635
PL S/L 2	206	10,844	22	932
PL S/L 1	27	4,449	2	301
PL S/L 4	340	3,819	42	475
PL S/L 3	959	2,720	106	302
Schools - Lge S/L 4	15	1,342	2	161
Schools - Lge S/L 3	8	1,080	1	183
MP S/L 3	5	1,049	1	122
Oil & Gas S/L 3	131	532	1	4
Schools - Lge S/L 5	164	494	26	78
Schools - Sm S/L 4	3	436	1	70
PL S/L 5	5,557	352	966	61
Schools - Sm S/L 3	8	210	1	33
GS S/L 4	3	140	1	33
MP TOU	1	135	0	16
GS S/L 3	8	113	2	26
Schools - Sm S/L 5	212	89	35	15
MP S/L 5	118	88	352	262
Oil & Gas S/L 5	169	55	21	4
Oil & Gas S/L 4	8	32	12	48
GS S/L 5	1,462	17	352	4
GS S/L 2	1	8	0	2
MP S/L 4	9	7	1	1
Residential S/L 5	8,446	0	2,652	4
Total	24,469			

Report 1

Table 5-A Revision 1A
PSO Market Share Analysis 3

Customer Class	Energy Deliveries			Peak Demand for Class (kW X 1,000)	Customers	
	kWh for Class (Millions)	Percent of Total Retail	Cumulative Percentage		Number of Customers	Cum No Customers
	Large Power and Light S/L 2	2,999	17%	17%	506	54
Large Power and Light S/L 1	955	5%	22%	122	31	85
Large Power and Light S/L 3	2,326	13%	36%	344	452	537
Power and Light S/L 4	73	0%	36%	12	16	553
General Service S/L 4	58	0%	36%	8	38	591
Power and Light S/L 5	1,283	7%	44%	229	1,483	2,074
Primary Non Demand S/L 3	20	0%	44%	4	39	2,113
General Service Schools S/L 5	253	1%	45%	96	717	2,830
General Service S/L 5	2,300	13%	58%	569	8,286	11,116
Municipal Pumping S/L 5	11	0%	58%	2	79	11,195
Low Use General Service Schools S/L 5	33	0%	58%	10	1,412	12,607
Low Use General Service S/L 5	1,026	6%	64%	237	59,560	72,167
Low Use General Service S/L 4	4	0%	64%	1	882	73,049
Residential S/L 5	6,202	35%	99%	1,885	475,922	548,971
All Others	110				2,665	551,636
Total	17,653				551,636	

Report 1

Table 5-B Revision 1A
OG&E Market Share Analysis 3

Customer Class	Energy Deliveries			Peak Demand for Class (kW X 1,000)	Customers	
	kWh for Class (Millions)	Percent of Total Retail	Cumulative Percentage		Number of Customers	Cum No Customers
	Large Power & Light S/L 2	4,293	18%		18%	1,027
Large Power & Light S/L 1	757	3%	21%	90	12	68
Large Power & Light S/L 4	375	2%	22%	101	16	84
Large Power & Light S/L 3	260	1%	23%	42	24	108
Large Power & Light S/L 5	789	3%	26%	90	30	138
PL S/L 2	263	1%	28%	22	7	145
PL S/L 1	27	0%	28%	2	6	151
PL S/L 4	340	1%	29%	42	89	240
PL S/L 3	955	4%	33%	106	351	591
Schools - Lge S/L 4	15	0%	33%	1	11	602
Schools - Lge S/L 3	9	0%	33%	1	7	609
MP S/L 3	8	0%	33%	2	7	616
Oil & Gas S/L 3	5	0%	33%	1	5	621
Schools - Lge S/L 5	131	1%	34%	1	247	868
Schools - Sm S/L 4	164	1%	34%	1	331	1,199
PL S/L 5	3	0%	34%	26	8	1,207
Schools - Sm S/L 3	5,557	23%	57%	1	15,798	17,005
GS S/L 4	8	0%	57%	966	37	17,042
MP TOU	1	0%	57%	35	3	17,045
GS S/L 3	3	0%	57%	21	19	17,064
Schools - Sm S/L 5	1	0%	57%	0	7	17,071
MP S/L 5	8	0%	57%	1	73	17,144
Oil & Gas S/L 5	212	1%	58%	2	2,370	19,514
Oil & Gas S/L 4	118	0%	58%	352	1,340	20,854
GS S/L 5	252	1%	59%	12	4,574	25,429
GS S/L 2	8	0%	60%	352	240	25,669
MP S/L 4	1,462	6%	65%	0	12	25,681
Residential S/L 5	8,446	35%	100%	2,652	671,861	697,542
Total	24,470					

Report 1

Table 6-A Revision 1						
PSO Market Share Analysis 4						
c	Energy Deliveries			Peak Demand	Customers	
	kWh for Class (Millions)	Percent of Total Retail	Cumulative Percentage	for Class (kW X 1,000)	Number of Customers	Cum No Customers
Competitive Market	11,393	64%	64%	1,356	64,706	64,706
Residential	6,202	35%	99%	47	475,922	540,628
All Others	58	1%	100%		11,008	551,636
Total Retail	17,653				551,636	

Report 1

Table 6-B Revision 1						
OG&E Market Share Analysis 4						
Customer Class	Energy Deliveries			Peak Demand	Customers	
	kWh for Class (Millions)	Percent of Total Retail	Cumulative Percentage	for Class (kW X 1,000)	Number of Customers	Cum No Customers
Competitive Market	16,024	65%	65%	3,295	25,669	25,669
Residential	8,446	35%	100%	2,652	671,861	697,530
Total	24,470					

Report 2

Table 1 Revision 1							
Annual Savings in \$/mWh including Transition Costs - OG&E System							
Class	Annual mWh Sold	No of Customers	kWh/Cust	Est Savings/MWH		Approx % Savings	
				Low Estimate	High Estimate	Low Estimate	High Estimate
Large Power & Light TOU	6,477,294	120	53,977,450	\$ (2.54)	\$ (1.95)	-6%	-5%
Power & Light	3,898,476	18,486	210,893	\$ 4.55	\$ 6.81	7%	10%
Power & Light TOU	3,240,541	3,085	1,050,447	\$ (1.08)	\$ (0.91)	-2%	-2%
General Service	1,217,340	77,464	15,715	\$ (0.14)	\$ 13.05	0%	11%
OIL & Gas	359,191	4,521	79,442	\$ 1.27	\$ 1.27	3%	3%
Public Schools Large TOU	139,833	253	552,701	\$ 2.07	\$ 5.23	3%	7%
General Service VPP	137,285	4,581	29,966	\$ 3.01	\$ 8.74	3%	10%
Municipal Pumping	132,527	1,352	97,999	\$ (1.71)	\$ (0.01)	-3%	0%
Public Schools Small VPP	120,116	1,217	98,692	\$ (1.51)	\$ 7.50	-2%	10%
General Service TOU	118,690	3,711	31,988	\$ (5.54)	\$ 2.53	-7%	3%
Public Schools Small TOU	69,151	541	127,742	\$ (5.12)	\$ 4.09	-6%	5%
Public Schools Large	46,123	96	480,446	\$ 3.39	\$ 6.29	4%	8%
Public Schools Small	33,978	657	51,716	\$ (2.45)	\$ 7.64	-2%	8%
OIL & Gas TOU	24,076	214	112,503	\$ (0.52)	\$ 0.65	-1%	1%
OIL & Gas VPP	8,202	112	73,231	\$ (7.23)	\$ (6.02)	-12%	-10%
Municipal Pumping TOU	943	7	134,780	\$ (4.12)	\$ (3.80)	-6%	-6%

Report 2

Table 2 Revision 1							
Annual Savings in \$/MWh including Transition Costs - PSO System							
Class	Annual mWh Sold	No of Customers	kWh per Customer	Est Savings		Approx % Savings	
				Low Estimate	High Estimate	Low Estimate	High Estimate
Large Power and Light	6,280,383	523	12,008,380	\$ (2.86)	\$ (2.06)	-9%	-6%
General Service	2,357,457	8312	283,621	\$ 8.14	\$ 9.06	12%	13%
Power and Light	1,356,308	1,494	907,837	\$ 9.94	\$ 10.06	17%	18%
Low Use General Service	1,015,899	59,380	17,108	\$ 6.19	\$ 7.16	8%	9%
General Service Public Schools	253,054	717	352,935	\$ 6.79	\$ 7.12	10%	10%
General Service TOU	51,793	169	306,469	\$ 4.81	\$ 5.59	7%	9%
Low Use General Service Public Schools	32,829	1,412	23,250	\$ 3.08	\$ 3.73	5%	6%
Primary Non Demand	20,358	39	522,002	\$ (5.58)	\$ (5.34)	-9%	-9%
Low Use General Service TOU	13,729	285	48,171	\$ 7.60	\$ 8.54	15%	17%
Municipal Pumping	10,958	63	173,934	\$ 3.90	\$ 4.78	8%	9%

Report 2

Table 3 Revision 1					
Estimated OG&E "Price to Compare" Values					
By Customer Class					
	Price to	Price to	Price to	Value	Value
Rate	Compare	Compare	Compare	(\$ X 1,000)	(\$ X 1,000)
Class	\$/kWh	\$/kWh	Difference		
	Low Case	High Case	\$/kWh	Low Case	High Case
Large Power and Light TOU	\$ 0.027	\$ 0.033	\$ 0.006	\$ 178,021	\$ 214,782
Power and Light	\$ 0.030	\$ 0.044	\$ 0.013	\$ 118,237	\$ 170,233
Power and Light TOU	\$ 0.035	\$ 0.038	\$ 0.002	\$ 114,132	\$ 121,615
General Service	\$ 0.042	\$ 0.056	\$ 0.013	\$ 51,723	\$ 68,115
Oil & Gas	\$ 0.030	\$ 0.036	\$ 0.006	\$ 10,939	\$ 12,926
Public Schools Large TOU	\$ 0.037	\$ 0.046	\$ 0.009	\$ 5,131	\$ 6,437
General Service VPP	\$ 0.040	\$ 0.050	\$ 0.010	\$ 5,516	\$ 6,903
Municipal Pumping	\$ 0.032	\$ 0.037	\$ 0.006	\$ 4,209	\$ 4,953
Public Schools Small VPP	\$ 0.038	\$ 0.049	\$ 0.011	\$ 4,570	\$ 5,853
General Service TOU	\$ 0.038	\$ 0.046	\$ 0.008	\$ 4,521	\$ 5,472
Public Schools Small TOU	\$ 0.049	\$ 0.049	\$ 0.001	\$ 3,361	\$ 3,403
Public Schools Large	\$ 0.036	\$ 0.045	\$ 0.009	\$ 1,678	\$ 2,098
Public Schools Small	\$ 0.040	\$ 0.051	\$ 0.011	\$ 1,343	\$ 1,727
Oil & Gas TOU	\$ 0.030	\$ 0.035	\$ 0.005	\$ 713	\$ 833
Oil & Gas VPP	\$ 0.029	\$ 0.034	\$ 0.005	\$ 237	\$ 281
Municipal Pumping TOU	\$ 0.033	\$ 0.040	\$ 0.006	\$ 31	\$ 38
<u>Averages/Totals</u>	\$ 0.0354	\$ 0.0431	\$ 0.008	<u>\$ 504,364</u>	<u>\$ 625,670</u>

Report 2

Table 4 Revision 1					
Estimated PSO "Price to Compare" Values					
By Customer Class					
Rate Class	Price to Compare \$/kWh	Price to Compare \$/kWh	Price to Compare Difference \$/kWh	Value (\$ X 1,000)	Value (\$ X 1,000)
	Low Case	High Case		Low Case	High Case
Large Power and Light	\$ 0.022	\$ 0.024	\$ 0.001	\$ 140,906	\$ 148,466
General Service	\$ 0.040	\$ 0.044	\$ 0.004	\$ 94,512	\$ 103,798
Power and Light	\$ 0.037	\$ 0.040	\$ 0.003	\$ 50,138	\$ 54,076
Low Use General Service	\$ 0.041	\$ 0.045	\$ 0.004	\$ 42,025	\$ 45,880
General Service Public Schools	\$ 0.041	\$ 0.045	\$ 0.004	\$ 10,423	\$ 11,431
General Service TOU	\$ 0.039	\$ 0.042	\$ 0.003	\$ 2,009	\$ 2,182
Low Use General Service Public Schools	\$ 0.042	\$ 0.046	\$ 0.004	\$ 1,384	\$ 1,505
Primary Non Demand	\$ 0.032	\$ 0.034	\$ 0.003	\$ 644	\$ 701
Low Use General Service TOU	\$ 0.041	\$ 0.045	\$ 0.004	\$ 558	\$ 612
Municipal Pumping	\$ 0.036	\$ 0.039	\$ 0.002	\$ 399	\$ 422
Averages/Totals	\$ 0.037	\$ 0.040	\$ 0.003	\$ 342,997	\$ 369,074

[End]