

The Empire District Electric Company  
Rate Design and Bill Impact Analyses

The Empire District Electric Company  
Missouri Jurisdiction  
Case No. ER-2021-0312  
Schedule TSL-10  
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**Empire District Electric (MISSOURI)**  
**Residential General Rate Design**

**Base Revenues** **Base Rates**

Target Base Rates	238,002,124
Current Base Rates	216,643,580
\$ Difference	21,358,544
% Difference	9.9%

	Winter	Summer
Annual Usage - First Block	521,023,455	276,092,815
Annual Usage - Second Block	547,566,908	327,989,204
Annual Usage - Third Block	-	-
Number of Bills	1,598,913	
Average Annual Use (kWh)	12,554	

**Residential General Rate Design** **Rate** **Units** **Revenues**

**Proposed Rates**

Customer Charge	\$	16.00	1,598,913	\$	25,582,608
1st Block kWh - Winter	\$	0.13564	521,023,455		70,674,115
2nd Block kWh - Winter	\$	0.10922	547,566,908		59,804,826
1st Block kWh - Summer	\$	0.13564	276,092,815		37,450,551
2nd Block kWh - Summer	\$	0.13564	327,989,204		44,490,025

<b>Revenue at Proposed Rates</b>	<b>\$</b>	<b>238,002,124</b>
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**Current Rates**

Customer Charge	\$	13.00	1,598,913	\$	20,785,869
1st Block kWh - Winter	\$	0.12535	521,023,455		65,310,290
2nd Block kWh - Winter	\$	0.10093	547,566,908		55,265,928
1st Block kWh - Summer	\$	0.12535	276,092,815		34,608,234
2nd Block kWh - Summer	\$	0.12535	327,989,204		41,113,447

<b>Revenue at Current Rates</b>	<b>\$</b>	<b>217,083,768</b>
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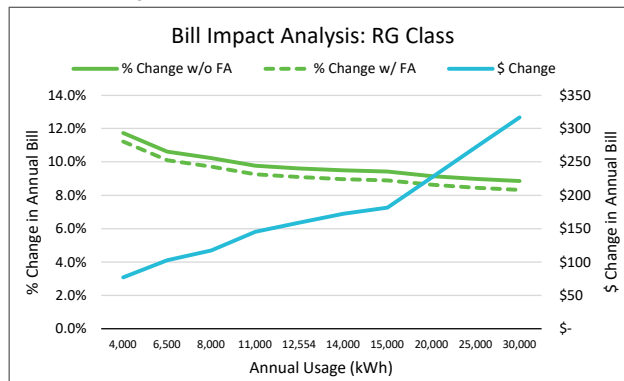
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Bill Impact Analysis - RG Rate			Base Rate Comparison				Annual Bill Comparison			
Annual Use	Cumulative Bills	Cumulative Use	Proposed Base Rates	Current Base Rates	Difference (\$)	Difference (%)	Proposed Annual Bill	Current Annual Bill	Difference (\$)	Difference (%)
4,000	6.1%	0.9%	\$ 735	\$ 657	\$ 77	11.7%	\$ 765	\$ 688	\$ 77	11.2%
6,500	14.5%	4.0%	1,071	968	103	10.6%	1,120	1,017	103	10.1%
8,000	22.0%	7.7%	1,264	1,147	117	10.2%	1,324	1,207	117	9.7%
11,000	39.1%	18.8%	1,629	1,484	145	9.8%	1,712	1,567	145	9.3%
<b>12,554</b>	<b>47.3%</b>	<b>25.5%</b>	<b>1,815</b>	<b>1,655</b>	<b>159</b>	<b>9.6%</b>	<b>1,909</b>	<b>1,750</b>	<b>159</b>	<b>9.1%</b>
14,000	54.7%	32.2%	1,987	1,815	172	9.5%	2,092	1,920	172	9.0%
15,000	59.5%	37.0%	2,106	1,925	181	9.4%	2,219	2,038	181	8.9%
20,000	78.1%	59.1%	2,702	2,475	226	9.1%	2,853	2,626	226	8.6%
25,000	89.5%	76.4%	3,298	3,026	272	9.0%	3,486	3,214	272	8.5%
30,000	95.1%	86.9%	3,893	3,576	317	8.9%	4,119	3,802	317	8.3%

The current annual bill includes a Storm Uri Charge of \$0.00708; and EECR of \$0.00045

The proposed annual bill includes a Storm Uri Charge of \$0.00708; and EECR of \$0.00045



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**Empire District Electric (MISSOURI)  
Commercial Rate Design**

**Base Revenues**

Target Base Rates	48,746,420
Current Base Rates	43,154,231
\$ Difference	5,592,189
% Difference	13.0%

	Winter	Summer
Annual Usage - First Block	60,320,573	30,703,583
Annual Usage - Second Block	122,974,444	100,902,958
Annual Usage - Third Block	-	-
Number of Bills	220,260	
Average Annual Use (kWh)	17,156	

Commercial Rate Design	Rate	Units	Revenues
<b>Proposed Rates</b>			
Customer Charge	\$ 25.00	220,260	\$ 5,506,500
1st Block kWh - Winter	\$ 0.14318	60,320,573	8,636,869
2nd Block kWh - Winter	\$ 0.12815	122,974,444	15,758,671
1st Block kWh - Summer	\$ 0.14318	30,703,583	4,396,225
2nd Block kWh - Summer	\$ 0.14318	100,902,958	14,447,568
Adjustments			586
<b>Revenue at Proposed Rates</b>			<b>\$ 48,746,420</b>

<b>Current Rates</b>			
Customer Charge	\$ 22.69	220,260	\$ 4,997,699
1st Block kWh - Winter	\$ 0.12712	60,320,573	7,667,951
2nd Block kWh - Winter	\$ 0.11377	122,974,444	13,990,802
1st Block kWh - Summer	\$ 0.12712	30,703,583	3,903,039
2nd Block kWh - Summer	\$ 0.12712	100,902,958	12,826,784
Adjustments			586
<b>Revenue at Current Rates</b>			<b>\$ 43,386,863</b>

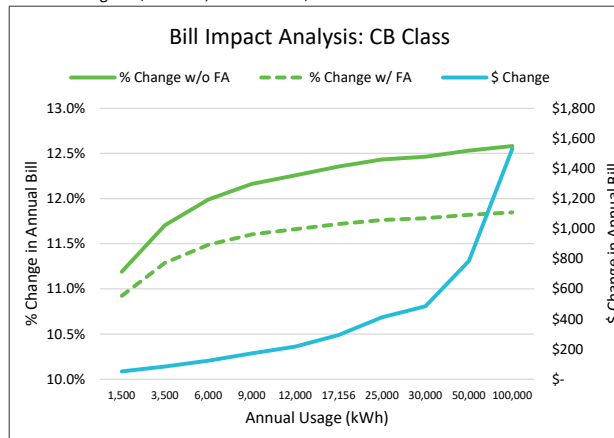
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Bill Impact Analysis - CB Rate			Base Rate Comparison				Annual Bill Comparison			
Annual Use	Cumulative Bills	Cumulative Use	Proposed Base Rates	Current Base Rates	Difference (\$)	Difference (%)	Proposed Annual Bill	Current Annual Bill	Difference (\$)	Difference (%)
1,500	11.7%	0.4%	\$ 514	\$ 463	\$ 52	11.2%	\$ 526	\$ 474	\$ 52	10.9%
3,500	22.7%	1.6%	801	717	84	11.7%	827	743	84	11.3%
6,000	33.2%	3.8%	1,159	1,035	124	12.0%	1,204	1,080	124	11.5%
9,000	43.1%	7.0%	1,579	1,407	171	12.2%	1,646	1,475	171	11.6%
12,000	50.7%	10.6%	1,983	1,766	217	12.3%	2,073	1,857	217	11.7%
<b>17,156</b>	<b>61.3%</b>	<b>17.3%</b>	<b>2,670</b>	<b>2,376</b>	<b>294</b>	<b>12.4%</b>	<b>2,799</b>	<b>2,505</b>	<b>294</b>	<b>11.7%</b>
25,000	71.5%	26.7%	3,715	3,304	411	12.4%	3,903	3,492	411	11.8%
30,000	76.3%	32.5%	4,381	3,895	486	12.5%	4,607	4,121	486	11.8%
50,000	87.1%	50.9%	7,045	6,260	784	12.5%	7,421	6,637	784	11.8%
100,000	97.0%	81.6%	13,705	12,174	1,532	12.6%	14,458	12,927	1,532	11.8%

The current annual bill includes a Storm Uri Charge of \$0.00708; and EECR of \$0.00045

The proposed annual bill includes a Storm Uri Charge of \$0.00708; and EECR of \$0.00045



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**Empire District Electric (MISSOURI)  
Small Heating**

**Base Revenues**

Target Base Rates	10,616,573
Current Base Rates	<u>9,356,671</u>
\$ Difference	1,259,903
% Difference	13.5%

	Winter	Summer
Annual Usage - First Block	10,989,891	6,232,390
Annual Usage - Second Block	41,981,018	20,552,195
Annual Usage - Third Block	-	-
Number of Bills	38,353	
Average Annual Use (kWh)	24,954	

	Rate	Units	Revenues
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**Proposed Rates**

Customer Charge	\$ 25.00	38,353	\$ 958,825
1st Block kWh - Winter	\$ 0.14053	10,989,891	1,544,391
2nd Block kWh - Winter	\$ 0.10360	41,981,018	4,349,363
1st Block kWh - Summer	\$ 0.14053	6,232,390	875,827
2nd Block kWh - Summer	\$ 0.14053	20,552,195	2,888,166

Revenue at Proposed Rates	\$	10,616,573
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**Current Rates**

Customer Charge	\$ 22.69	38,353	\$ 870,230
1st Block kWh - Winter	\$ 0.12441	10,989,891	1,367,252
2nd Block kWh - Winter	\$ 0.09172	41,981,018	3,850,499
1st Block kWh - Summer	\$ 0.12441	6,232,390	775,372
2nd Block kWh - Summer	\$ 0.12441	20,552,195	2,556,899

Revenue at Current Rates	\$	9,420,251
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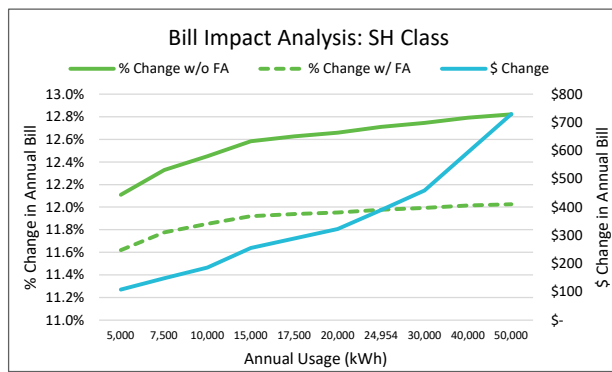
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Bill Impact Analysis - SH Rate			Base Rate Comparison				Annual Bill Comparison			
Annual Use	Cumulative Bills	Cumulative Use	Proposed Base Rates	Current Base Rates	Difference (\$)	Difference (%)	Proposed Annual Bill	Current Annual Bill	Difference (\$)	Difference (%)
5,000	13.7%	1.0%	\$ 1,003	\$ 894	\$ 108	12.1%	\$ 1,040	\$ 932	\$ 108	11.6%
7,500	19.6%	2.1%	1,354	1,205	149	12.3%	1,410	1,262	149	11.8%
10,000	26.3%	4.0%	1,679	1,493	186	12.4%	1,754	1,569	186	11.9%
15,000	38.9%	8.8%	2,282	2,027	255	12.6%	2,395	2,140	255	11.9%
17,500	43.3%	11.0%	2,578	2,289	289	12.6%	2,709	2,420	289	11.9%
20,000	48.1%	13.8%	2,874	2,551	323	12.7%	3,024	2,701	323	12.0%
<b>24,954</b>	<b>55.9%</b>	<b>19.2%</b>	<b>3,460</b>	<b>3,070</b>	<b>390</b>	<b>12.7%</b>	<b>3,648</b>	<b>3,258</b>	<b>390</b>	<b>12.0%</b>
30,000	63.0%	25.3%	4,057	3,598	459	12.7%	4,283	3,824	459	12.0%
40,000	72.3%	35.3%	5,240	4,646	594	12.8%	5,542	4,947	594	12.0%
50,000	79.2%	45.0%	6,424	5,694	730	12.8%	6,800	6,070	730	12.0%

The current annual bill includes a Storm Uri Charge of \$0.00708; and EECR of \$0.00045

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**Empire District Electric (MISSOURI)  
General Power Rate Design**

**Base Revenues**

Target Base Rates	91,638,698
Current Base Rates	<u>82,423,398</u>
\$ Difference	9,215,300
% Difference	11.2%

	Winter	Summer
First 150 Hours kWh	224,543,408	130,408,257
Next 200 Hours kWh	209,259,917	129,796,163
All Additional kWh	87,731,429	55,586,493
Facility Demand kW	2,272,998	1,145,438
Billed Demand kW	1,649,837	924,245
Number of Bills	21,648	
Average Annual Use	464,149	

General Power Rate Design	Rate	Units	Revenues
<b>Proposed Rates</b>			
Customer Charge	\$ 80.00	21,648	\$ 1,731,840
First 150 Hours - Winter	\$ 0.08274	224,543,408	18,578,178
Next 200 Hours - Winter	\$ 0.06737	209,259,917	14,098,662
All Additional - Winter	\$ 0.06681	87,731,429	5,861,214
First 150 Hours - Summer	\$ 0.09637	130,408,257	12,567,703
Next 200 Hours - Summer	\$ 0.07477	129,796,163	9,704,541
All Additional - Summer	\$ 0.06713	55,586,493	3,731,525
Facility Demand kW - Winter	\$2.29	2,272,998	5,215,556
Billed Demand kW - Winter	\$6.33	1,649,837	10,442,594
Facility Demand kW - Summer	\$2.29	1,145,438	2,628,288
Billed Demand kW - Summer	\$8.13	924,245	7,509,698
Other Adjustments			<u>(431,099)</u>
Revenue at Proposed Rates			\$ 91,638,698
<b>Current Rates</b>			
Customer Charge	\$ 69.49	21,648	\$ 1,504,320
First 150 Hours - Winter	\$ 0.07464	224,543,408	16,759,920
Next 200 Hours - Winter	\$ 0.06078	209,259,917	12,718,818
All Additional - Winter	\$ 0.06027	87,731,429	5,287,573
First 150 Hours - Summer	\$ 0.08694	130,408,257	11,337,694
Next 200 Hours - Summer	\$ 0.06745	129,796,163	8,754,751
All Additional - Summer	\$ 0.06056	55,586,493	3,366,318
Facility Demand kW - Winter	\$2.07	2,272,998	4,705,106
Billed Demand kW - Winter	\$5.71	1,649,837	9,420,571
Facility Demand kW - Summer	\$2.07	1,145,438	2,371,056
Billed Demand kW - Summer	\$7.33	924,245	6,774,719
Other Adjustments			<u>(431,099)</u>
Revenue at Current Rates			\$ 82,569,746

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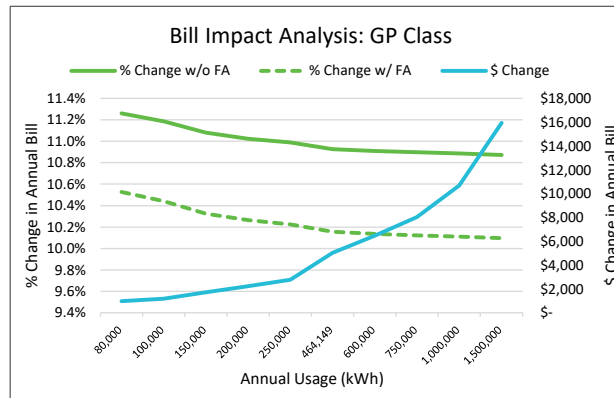
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Bill Impact Analysis - GP Rate			Base Rate Comparison				Annual Bill Comparison			
Annual Use	Cumulative Bills	Cumulative Use	Proposed Base Rates	Current Base Rates	Difference (\$)	Difference (%)	Proposed Annual Bill	Current Annual Bill	Difference (\$)	Difference (%)
80,000	5.5%	0.6%	\$ 9,591	\$ 8,620	\$ 971	11.3%	\$ 10,194	\$ 9,223	\$ 971	10.5%
100,000	10.0%	1.5%	11,749	10,567	1,182	11.2%	12,502	11,320	1,182	10.4%
150,000	28.0%	6.3%	17,143	15,433	1,710	11.1%	18,273	16,563	1,710	10.3%
200,000	41.7%	11.4%	22,538	20,300	2,238	11.0%	24,044	21,806	2,238	10.3%
250,000	49.4%	15.0%	27,932	25,166	2,766	11.0%	29,815	27,049	2,766	10.2%
<b>464,149</b>	<b>72.5%</b>	<b>31.4%</b>	<b>51,036</b>	<b>46,009</b>	<b>5,027</b>	<b>10.9%</b>	<b>54,532</b>	<b>49,505</b>	<b>5,027</b>	<b>10.2%</b>
600,000	80.2%	40.0%	65,693	59,232	6,462	10.9%	70,211	63,750	6,462	10.1%
750,000	85.0%	46.9%	81,877	73,831	8,045	10.9%	87,524	79,479	8,045	10.1%
1,000,000	89.7%	55.3%	108,849	98,163	10,685	10.9%	116,379	105,694	10,685	10.1%
1,500,000	95.0%	69.4%	162,793	146,828	15,965	10.9%	174,088	158,124	15,965	10.1%

Bill Impact calculated based on Average kW Demand Usage

The current annual bill includes a Storm Uri Charge of \$0.00708; and EECR of \$0.00045

The proposed annual bill includes a Storm Uri Charge of \$0.00708; and EECR of \$0.00045





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**Empire District Electric (MISSOURI)**  
**TS Rate Design**

**Base Revenues**

Target Base Rates	4,595,972
Current Base Rates	4,394,565
\$ Difference	201,407
% Difference	4.6%

	Winter	Summer
On-Peak Period kWh	21,417,863	4,842,352
Shoulder Period kWh	-	6,515,055
Off-Peak Period kWh	24,732,965	11,969,519
Facility Demand kW	65,208	32,775
Billed Demand kW	65,017	32,703
Number of Bills	12	
Average Annual Use	69,477,754	

TS Rate Design	Rate	Units	Revenues
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<b>Proposed Rates</b>			
Customer Charge	\$ 275.00	12	\$ 3,300
On-Peak Period kWh - Winter	\$ 0.04084	21,417,863	874,758
Shoulder Period kWh - Winter	\$ -	-	-
Off-Peak Period kWh - Winter	\$ 0.03341	24,732,965	826,237
On-Peak Period kWh - Summer	\$ 0.05874	4,842,352	284,457
Shoulder Period kWh - Summer	\$ 0.04690	6,515,055	305,555
Off-Peak Period kWh - Summer	\$ 0.03556	11,969,519	425,694
Facility Demand kW - Winter	\$0.57	65,208	36,847
Billed Demand kW - Winter	\$19.33	65,017	1,256,461
Facility Demand kW - Summer	\$0.57	32,775	18,520
Billed Demand kW - Summer	\$28.43	32,703	929,856
Other Adjustments			(365,712)
Revenue at Proposed Rates			\$ 4,595,972

<b>Current Rates</b>			
Customer Charge	\$ 259.01	12	\$ 3,108
On-Peak Period kWh - Winter	\$ 0.03614	21,417,863	774,042
Shoulder Period kWh - Winter	\$ -	-	-
Off-Peak Period kWh - Winter	\$ 0.02956	24,732,965	731,106
On-Peak Period kWh - Summer	\$ 0.05198	4,842,352	251,705
Shoulder Period kWh - Summer	\$ 0.04150	6,515,055	270,375
Off-Peak Period kWh - Summer	\$ 0.03147	11,969,519	376,681
Facility Demand kW - Winter	\$ 0.50	65,208	32,604
Billed Demand kW - Winter	\$ 17.10	65,017	1,111,796
Facility Demand kW - Summer	\$ 0.50	32,775	16,388
Billed Demand kW - Summer	\$ 25.16	32,703	822,795
Other Adjustments			(365,712)
Revenue at Current Rates			\$ 4,024,888

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**Empire District Electric (MISSOURI)**  
**Total Electric Building Rate Design**

**Base Revenues**

Target Base Rates	39,039,004
Current Base Rates	<u>35,162,161</u>
\$ Difference	3,876,842
% Difference	11.0%

	Winter	Summer
First 150 Hours kWh	117,132,890	58,498,092
Next 200 Hours kWh	81,271,204	52,083,551
All Additional kWh	17,023,992	14,325,618
Facility Demand kW	1,169,689	575,604
Billed Demand kW	863,740	408,256
Number of Bills	11,184	
Average Annual Use	365,167	

**Total Electric Building Rate Design**      **Rate**      **Units**      **Revenues**

**Proposed Rates**

Customer Charge	\$ 72.00	11,184	\$ 805,248
First 150 Hours - Winter	\$ 0.08769	117,132,890	10,271,383
Next 200 Hours - Winter	\$ 0.07022	81,271,204	5,707,113
All Additional - Winter	\$ 0.06881	17,023,992	1,171,469
First 150 Hours - Summer	\$ 0.11607	58,498,092	6,790,013
Next 200 Hours - Summer	\$ 0.08992	52,083,551	4,683,454
All Additional - Summer	\$ 0.08091	14,325,618	1,159,019
Facility Demand kW - Winter	\$ 2.37	1,169,689	2,766,546
Billed Demand kW - Winter	\$ 3.20	863,740	2,762,252
Facility Demand kW - Summer	\$ 2.37	575,604	1,361,417
Billed Demand kW - Summer	\$ 3.89	408,256	1,586,679
Other Adjustments			<u>(25,589)</u>
Revenue at Proposed Rates			\$ 39,039,004

**Current Rates**

Customer Charge	\$ 69.49	11,184	\$ 777,176
First 150 Hours - Winter	\$ 0.07897	117,132,890	9,249,984
Next 200 Hours - Winter	\$ 0.06324	81,271,204	5,139,591
All Additional - Winter	\$ 0.06197	17,023,992	1,054,977
First 150 Hours - Summer	\$ 0.10453	58,498,092	6,114,806
Next 200 Hours - Summer	\$ 0.08098	52,083,551	4,217,726
All Additional - Summer	\$ 0.07286	14,325,618	1,043,765
Facility Demand kW - Winter	\$ 2.13	1,169,689	2,491,437
Billed Demand kW - Winter	\$ 2.88	863,740	2,487,570
Facility Demand kW - Summer	\$ 2.13	575,604	1,226,036
Billed Demand kW - Summer	\$ 3.50	408,256	1,428,897
Other Adjustments			<u>(25,589)</u>
Revenue at Current Rates			\$ 35,206,376

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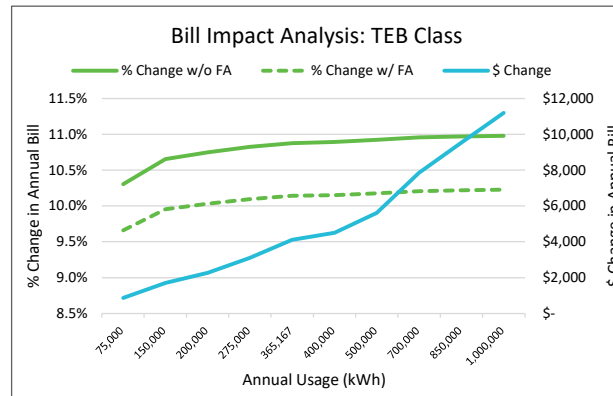
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Bill Impact Analysis - TEB Rate			Base Rate Comparison				Annual Bill Comparison			
Annual Use	Cumulative Bills	Cumulative Use	Proposed Base Rates	Current Base Rates	Difference (\$)	Difference (%)	Proposed Annual Bill	Current Annual Bill	Difference (\$)	Difference (%)
75,000	3.9%	0.5%	\$ 9,295	\$ 8,427	\$ 869	10.3%	\$ 9,860	\$ 8,991	\$ 869	9.7%
150,000	24.5%	6.4%	17,726	16,020	1,707	10.7%	18,856	17,149	1,707	10.0%
200,000	39.1%	12.8%	23,347	21,081	2,266	10.7%	24,853	22,587	2,266	10.0%
275,000	55.6%	22.5%	31,779	28,674	3,104	10.8%	33,849	30,745	3,104	10.1%
<b>365,167</b>	<b>66.2%</b>	<b>31.2%</b>	<b>41,915</b>	<b>37,803</b>	<b>4,112</b>	<b>10.9%</b>	<b>44,665</b>	<b>40,552</b>	<b>4,112</b>	<b>10.1%</b>
400,000	69.1%	34.0%	45,831	41,329	4,502	10.9%	48,843	44,341	4,502	10.2%
500,000	77.9%	44.0%	57,072	51,453	5,620	10.9%	60,837	55,218	5,620	10.2%
700,000	86.1%	56.4%	79,556	71,700	7,855	11.0%	84,827	76,972	7,855	10.2%
850,000	91.3%	66.7%	96,418	86,886	9,532	11.0%	102,819	93,287	9,532	10.2%
1,000,000	95.0%	75.2%	113,281	102,072	11,209	11.0%	120,811	109,602	11,209	10.2%

Bill Impact calculated based on Average kW Demand Usage

The current annual bill includes a Storm Uri Charge of \$0.00708; and EECR of \$0.00045

The proposed annual bill includes a Storm Uri Charge of \$0.00708; and EECR of \$0.00045



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**Empire District Electric (MISSOURI)  
Feed Mill and Grain Elevator Service (PFM)**

**Base Revenues**

Target Base Rates	87,934
Current Base Rates	78,262
\$ Difference	9,672
% Difference	12.4%

	Winter	Summer
Annual Usage - First Block	38,750	21,741
Annual Usage - Second Block	256,480	135,740
Annual Usage - Third Block	-	-

Number of Bills	119
Average Annual Use (kWh)	45,652

Feed Mill and Grain Elevator Service (PFM)	Rate	Units	Revenues
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**Proposed Rates**

Customer Charge	\$ 28.50	119	\$ 3,392
1st Block kWh - Winter	\$ 0.19731	38,750	7,646
2nd Block kWh - Winter	\$ 0.17867	256,480	45,824
1st Block kWh - Summer	\$ 0.19731	21,741	4,290
2nd Block kWh - Summer	\$ 0.19731	135,740	26,783

Revenue at Proposed Rates	\$	87,934
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**Current Rates**

Customer Charge	\$ 27.65	119	\$ 3,290
1st Block kWh - Winter	\$ 0.17527	38,750	6,792
2nd Block kWh - Winter	\$ 0.15871	256,480	40,706
1st Block kWh - Summer	\$ 0.17527	21,741	3,811
2nd Block kWh - Summer	\$ 0.17527	135,740	23,791

Revenue at Current Rates	\$	78,390
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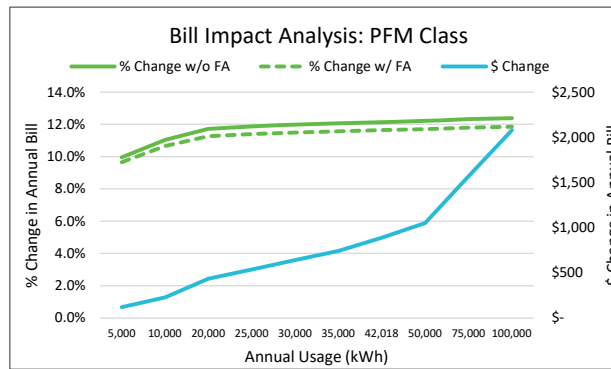
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Bill Impact Analysis - PFM Rate			Base Rate Comparison				Annual Bill Comparison			
Annual Use	Cumulative Bills	Cumulative Use	Proposed Base Rates	Current Base Rates	Difference (\$)	Difference (%)	Proposed Annual Bill	Current Annual Bill	Difference (\$)	Difference (%)
5,000	25.0%	1.8%	\$ 1,329	\$ 1,208	\$ 120	10.0%	\$ 1,366	\$ 1,246	\$ 120	9.7%
10,000	50.0%	5.1%	2,280	2,054	227	11.0%	2,356	2,129	227	10.6%
20,000	62.5%	9.5%	4,134	3,700	434	11.7%	4,285	3,851	434	11.3%
25,000	62.5%	9.5%	5,056	4,519	537	11.9%	5,244	4,707	537	11.4%
30,000	62.5%	9.5%	5,978	5,339	640	12.0%	6,204	5,564	640	11.5%
35,000	62.5%	9.5%	6,900	6,157	743	12.1%	7,163	6,421	743	11.6%
<b>42,018</b>	<b>75.0%</b>	<b>19.5%</b>	<b>8,194</b>	<b>7,307</b>	<b>887</b>	<b>12.1%</b>	<b>8,510</b>	<b>7,623</b>	<b>887</b>	<b>11.6%</b>
50,000	75.0%	19.5%	9,666	8,614	1,052	12.2%	10,042	8,991	1,052	11.7%
75,000	75.0%	19.5%	14,276	12,709	1,566	12.3%	14,840	13,274	1,566	11.8%
100,000	87.5%	42.2%	18,885	16,804	2,081	12.4%	19,638	17,557	2,081	11.9%

The current annual bill includes a Storm Uri Charge of \$0.00708; and EECR of \$0.00045

The proposed annual bill includes a Storm Uri Charge of \$0.00708; and EECR of \$0.00045



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**Empire District Electric (MISSOURI)**  
**Large Power Rate Design**

**Base Revenues**

Target Base Rates	75,073,862
Current Base Rates	67,281,045
\$ Difference	7,792,817
% Difference	11.6%

	Winter	Summer
First 350 Hours	375,924,703	202,005,124
All Additional	186,464,372	110,341,729
Facility Demand kW	1,191,938	585,026
Billed Demand kW	1,106,393	593,390
Number of Bills	515	
Average Annual Use	20,370,297	

**Large Power Rate Design**

	Rate	Units	Revenues
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**Proposed Rates**

Customer Charge	\$ 325.00	515	\$ 167,473
First 350 Hours - Winter	\$ 0.05778	375,924,703	21,720,929
All Additional - Winter	\$ 0.04528	186,464,372	8,443,107
First 350 Hours - Summer	\$ 0.06543	202,005,124	13,217,195
All Additional - Summer	\$ 0.05293	110,341,729	5,840,388
Facility Demand kW - Winter	\$ 1.88	1,191,938	2,240,843
Billed Demand kW - Winter	\$ 10.24	1,106,393	11,332,344
Facility Demand kW - Summer	\$ 1.88	585,026	1,099,849
Billed Demand kW - Summer	\$ 18.56	593,390	11,011,734
Other Adjustments			-
Revenue at Proposed Rates			\$ 75,073,862

**Current Rates**

Customer Charge	\$ 283.55	515	\$ 146,114
First 350 Hours - Winter	\$ 0.05778	375,924,703	21,720,929
All Additional - Winter	\$ 0.03270	186,464,372	6,097,385
First 350 Hours - Summer	\$ 0.06543	202,005,124	13,217,195
All Additional - Summer	\$ 0.03400	110,341,729	3,751,619
Facility Demand kW - Winter	\$ 1.88	1,191,938	2,240,843
Billed Demand kW - Winter	\$ 8.66	1,106,393	9,581,361
Facility Demand kW - Summer	\$ 1.88	585,026	1,099,849
Billed Demand kW - Summer	\$ 15.69	593,390	9,310,289
Other Adjustments			-
Revenue at Current Rates			\$ 67,165,584

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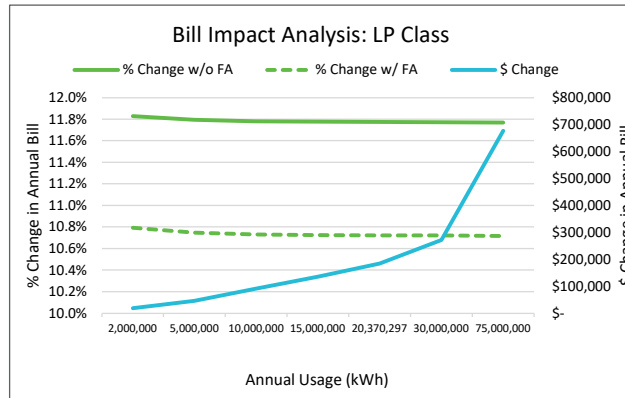
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Bill Impact Analysis - LP Rate			Base Rate Comparison				Annual Bill Comparison			
Annual Use	Cumulative Bills	Cumulative Use	Proposed Base Rates	Current Base Rates	Difference (\$)	Difference (%)	Proposed Annual Bill	Current Annual Bill	Difference (\$)	Difference (%)
2,000,000			\$ 175,166	\$ 156,636	\$ 18,530	11.8%	\$ 190,227	\$ 171,697	\$ 18,530	10.8%
5,000,000			432,066	386,487	45,579	11.8%	469,717	424,138	45,579	10.7%
10,000,000			860,231	769,571	90,661	11.8%	935,535	844,874	90,661	10.7%
15,000,000			1,288,397	1,152,655	135,743	11.8%	1,401,352	1,265,609	135,743	10.7%
<b>20,370,297</b>			<b>1,748,273</b>	<b>1,564,110</b>	<b>184,163</b>	<b>11.8%</b>	<b>1,901,667</b>	<b>1,717,505</b>	<b>184,163</b>	<b>10.7%</b>
30,000,000			2,572,894	2,301,907	270,988	11.8%	2,798,804	2,527,816	270,988	10.7%
75,000,000			6,426,386	5,749,663	676,723	11.8%	6,991,160	6,314,437	676,723	10.7%

Bill Impact calculated based on Average kW Demand Usage

The current annual bill includes a Storm Uri Charge of \$0.00708; and EECR of \$0.00045

The proposed annual bill includes a Storm Uri Charge of \$0.00708; and EECR of \$0.00045



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**Empire District Electric (MISSOURI)**  
**Miscellaneous Service (MS)**

**Base Revenues**

Target Base Rates	15,976
Current Base Rates	<u>14,031</u>
\$ Difference	1,944
% Difference	13.9%

**kWh Usage**

All Usage 136,106

Number of Bills 26  
Average Annual Use (kWh) 62,818

Miscellaneous Service (MS)	Rate	Units	Revenues
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**Proposed Rates**

Customer Charge	\$ 21.00	26	\$ 546
All Usage	\$ 0.11336	136,106	15,430

Other Adjustments -

Revenue at Proposed Rates \$ 15,976

**Current Rates**

Customer Charge	\$ 19.51	26	\$ 507
All Usage	\$ 0.09940	136,106	13,529

Other Adjustments -

Revenue at Current Rates \$ 14,036



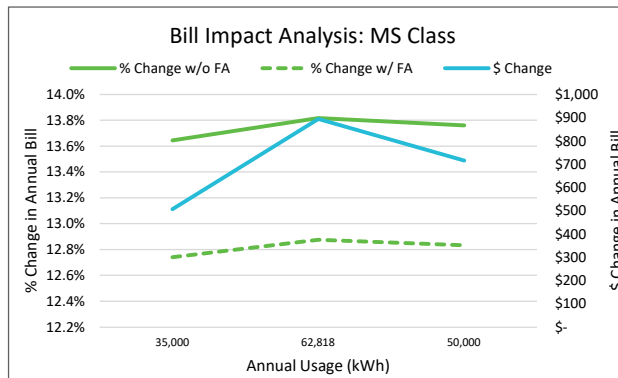
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Bill Impact Analysis - MS Rate			Base Rate Comparison				Annual Bill Comparison			
Annual Use	Cumulative Bills	Cumulative Use	Proposed Base Rates	Current Base Rates	Difference (\$)	Difference (%)	Proposed Annual Bill	Current Annual Bill	Difference (\$)	Difference (%)
35,000	0.0%	0.0%	\$ 4,220	\$ 3,713	\$ 507	13.6%	\$ 4,483	\$ 3,977	\$ 507	12.7%
62,818	0.0%	0.0%	7,373	6,478	895	13.8%	7,846	6,951	895	12.9%
50,000	0.0%	0.0%	5,920	5,204	716	13.8%	6,297	5,581	716	12.8%

The current annual bill includes a Storm Uri Charge of \$0.00708; and EECR of \$0.00045

The proposed annual bill includes a Storm Uri Charge of \$0.00708; and EECR of \$0.00045



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**Empire District Electric (MISSOURI)  
Street Lighting Rate Design**

**Base Revenues**

Target Base Rates	2,567,778
Current Base Rates	<u>2,177,341</u>
\$ Difference	390,437
% Difference	17.9%

**kWh Usage**

Annual Usage	17,854,334
Number of Bills	70
Average Annual Use (kWh)	3,060,743

Street Lighting - SPL Rate Design	Current Charges	Proposed Increase	Proposed Charges
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**Facilities Charges**

Incandescent Lamp Sizes

4,000 Lumen	\$	62.71	\$	11.25	73.96
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Mercury Vapor Lamp Sizes

7,000 Lumen Mercury	\$	85.16	\$	15.27	100.43
11,000 Lumen Mercury	\$	102.21	\$	18.33	120.54
20,000 Lumen Mercury	\$	146.33	\$	26.24	172.57
53,000 Lumen Mercury	\$	246.88	\$	44.27	291.15

High Pressure Sodium Vapor Lamp Sizes

6,000 Lumen HP Sodium	\$	79.80	\$	14.31	94.11
16,000 Lumen HP Sodium	\$	99.90	\$	17.91	117.81
27,500 Lumen HP Sodium	\$	130.01	\$	23.31	153.32
50,000 Lumen HP Sodium	\$	185.28	\$	33.22	218.50
130,000 Lumen HP Sodium	\$	299.00	\$	53.62	352.62

Metal Halide Lamp Sizes

12,000 Lumen MetalH	\$	124.89	\$	22.40	147.29
20,500 Lumen MetalH	\$	153.05	\$	27.44	180.49
36,000 Lumen MetalH	\$	204.74	\$	36.71	241.45
110,000 Lumen MetalH	\$	452.44	\$	81.13	533.57

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**Empire District Electric (MISSOURI)  
Private Lighting Rate Design**

**Base Revenues**

Target Base Rates	4,336,444
Current Base Rates	3,983,150
\$ Difference	353,294
% Difference	8.9%

**kWh Usage**

Annual Usage	12,566,733
Number of Bills	2,935

<b>Private Lighting - PL Rate Design</b>	<b>Current Charges</b>	<b>Proposed Increase</b>	<b>Proposed Charges</b>
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**Installation Charge: Standard Street Lighting**

<b>Mercury Vapor Lamp Sizes</b>			
6,800 Lumen Std Mercury	\$ 15.32	\$ 1.36	\$ 16.68
20,000 Lumen Std Mercury	\$ 25.50	\$ 2.26	\$ 27.76
54,000 Lumen Std Mercury	\$ 48.88	\$ 4.34	\$ 53.22

<b>Sodium Vapor Lamp Sizes</b>			
6,000 Lumen Std Sodium	\$ 14.15	\$ 1.26	\$ 15.41
16,000 Lumen Std Sodium	\$ 20.59	\$ 1.83	\$ 22.42
27,500 Lumen Std Sodium	\$ 29.76	\$ 2.64	\$ 32.40
50,000 Lumen Std Sodium	\$ 34.52	\$ 3.06	\$ 37.58

<b>Metal Halide Lamp Sizes</b>			
12,000 Lumen Std MetalH	\$ 23.87	\$ 2.12	\$ 25.99
20,500 Lumen Std MetalH	\$ 31.86	\$ 2.83	\$ 34.69
36,000 Lumen Std MetalH	\$ 35.74	\$ 3.17	\$ 38.91

**Installation Charge: Standard Flood Lighting**

<b>Mercury Vapor Lamp Sizes</b>			
20,000 Lumen Mercury FL	\$ 35.74	\$ 3.17	\$ 38.91
54,000 Lumen Mercury FL	\$ 59.01	\$ 5.23	\$ 64.24

<b>Sodium Vapor Lamp Sizes</b>			
27,500 Lumen Sodium FL	\$ 34.62	\$ 3.07	\$ 37.69
50,000 Lumen Sodium FL	\$ 47.49	\$ 4.21	\$ 51.70
140,000 Lumen Sodium FL	\$ 69.39	\$ 6.15	\$ 75.54

<b>Metal Halide Lamp Sizes</b>			
12,000 Lumen MetalH FL	\$ 24.76	\$ 2.20	\$ 26.96
20,500 Lumen MetalH FL	\$ 32.79	\$ 2.91	\$ 35.70
36,000 Lumen MetalH FL	\$ 48.34	\$ 4.29	\$ 52.63
110,000 Lumen MetalH FL	\$ 70.64	\$ 6.27	\$ 76.91

<b>Additional Charges</b>			
Regular Wood Pole	\$ 1.97	\$ 0.17	\$ 2.14
Transformer	\$ 1.97	\$ 0.17	\$ 2.14
Guy and Anchor	\$ 1.97	\$ 0.17	\$ 2.14
Conductor	\$ 0.02	\$ 0.00	\$ 0.02

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**Empire District Electric (MISSOURI)  
Special Lighting Rate Design**

**Base Revenues**

Target Base Rates	90,348
Current Base Rates	80,482
\$ Difference	9,867
% Difference	12.3%

**kWh Usage**

Annual Usage - First Block	307,507
Annual Usage - Second Block	98,465
Number of Bills	1,462
Average Annual Use (kWh)	3,332

Special Lighting Rate Design	Rate	Units	Revenues
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**Proposed Rates**

Customer Charge	\$ -	1,462	\$ -
1st Block kWh	\$ 0.19349	307,507	59,499
2nd Block kWh	\$ 0.15004	98,465	14,774
Other Adjustments			16,076
Revenue at Proposed Rates			\$ 90,348

**Current Rates**

Customer Charge	\$ -	1,462	\$ -
1st Block kWh	\$ 0.16838	307,507	51,778
2nd Block kWh	\$ 0.13057	98,465	12,857
Other Adjustments			16,076
Revenue at Current Rates			\$ 80,710

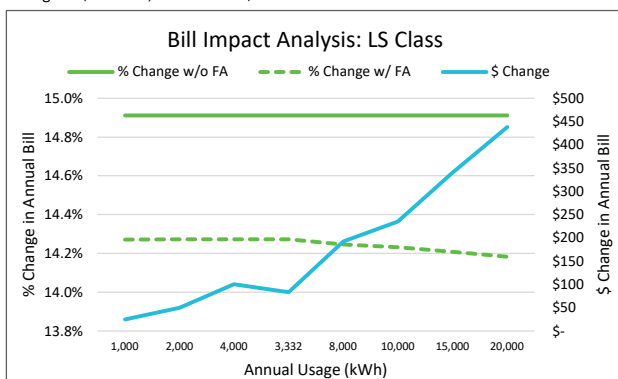
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Bill Impact Analysis - LS Rate			Annual Bill (w/o FA)				Annual Bill (w/ FA)			
Annual Use	Cumulative Bills	Cumulative Use	Proposed Annual Bill	Current Annual Bill	Difference (\$)	Difference (%)	Proposed Annual Bill	Current Annual Bill	Difference (\$)	Difference (%)
1,000	9.1%	0.4%	\$ 193	\$ 168	\$ 25	14.9%	\$ 201	\$ 176	\$ 25	14.3%
2,000	18.2%	2.3%	387	337	50	14.9%	402	352	50	14.3%
4,000	27.3%	4.7%	774	674	100	14.9%	804	704	100	14.3%
<b>3,332</b>	<b>45.5%</b>	<b>13.1%</b>	<b>645</b>	<b>561</b>	<b>84</b>	<b>14.9%</b>	<b>670</b>	<b>586</b>	<b>84</b>	<b>14.3%</b>
8,000	45.5%	13.1%	1,481	1,289	192	14.9%	1,541	1,349	192	14.2%
10,000	54.5%	21.7%	1,814	1,579	235	14.9%	1,890	1,654	235	14.2%
15,000	63.6%	31.7%	2,624	2,283	340	14.9%	2,737	2,396	340	14.2%
20,000	90.9%	77.2%	3,376	2,938	438	14.9%	3,526	3,088	438	14.2%

The current annual bill includes a Storm Uri Charge of \$0.00708; and EECR of \$0.00045

The proposed annual bill includes a Storm Uri Charge of \$0.00708; and EECR of \$0.00045



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Empire District Electric (MISSOURI)							
Summary of Costs	Total Company	Res Gen RG	Comm CB	Small Heating SH	Gen Pow GP	Total Elect Bldg TEB	
<b>Customer Charges</b>							
Proposed	\$	16.00	\$ 25.00	\$ 25.00	\$ 80.00	\$	72.00
Current	\$	13.00	\$ 22.69	\$ 22.69	\$ 69.49	\$	69.49
<b>Billing Determinants</b>							
Customers	157,958	133,243	18,355	3,196	1,804		932
Usage (MWh)	4,220,620	1,672,672	314,902	79,755	837,326		340,335
Revenue Requirement	\$ 708,225,333	\$ 314,277,199	\$ 63,270,070	\$ 14,251,189	\$ 129,577,749	\$	54,467,748
<b>Customer Costs</b>							
Basic customer costs	\$ 57,521,222	\$ 43,929,572	\$ 6,595,085	\$ 1,149,389	\$ 1,024,546	\$	525,111
\$ per customer	\$ 30.35	\$ 27.47	\$ 29.94	\$ 29.97	\$ 47.33	\$	46.95
Fully-loaded customer costs	\$ 111,365,952	\$ 88,183,278	\$ 12,120,602	\$ 2,119,345	\$ 1,666,027	\$	849,539
\$ per customer	\$ 58.75	\$ 55.15	\$ 55.03	\$ 55.26	\$ 76.96	\$	75.96
<b>Revenue Requirement</b>							
Revenue Requirement	\$ 708,225,333	\$ 314,277,199	\$ 63,270,070	\$ 14,251,189	\$ 129,577,749	\$	54,467,748
\$ per customer	\$ 373.64	\$ 196.56	\$ 287.25	\$ 371.58	\$ 5,985.67	\$	4,870.15
\$ per MWh	\$ 1,678.01	\$ 1,878.89	\$ 2,009.20	\$ 1,786.86	\$ 1,547.52	\$	1,600.41

Empire District Electric (MISSOURI)							
Summary of Costs	Feed Mill PFM	Large Power LP	Misc. Service MS	Street Lts SPL	Private Lts PL	Spec Lts LS	
<b>Customer Charges</b>							
Proposed	\$ 28.50	\$ 325.00	\$ 21.00		\$		-
Current	\$ 27.65	\$ 283.55	\$ 19.51		\$		-
<b>Billing Determinants</b>							
Customers	10	43	2	6	245		122
Usage (MWh)	453	874,736	136	17,854	12,567		406
Revenue Requirement	\$ 109,226	\$ 114,776,031	\$ 22,039	\$ 4,417,117	\$ 4,973,992	\$	109,357
<b>Customer Costs</b>							
Basic customer costs	\$ 4,610	\$ 662,636	\$ 2,792	\$ 2,254,556	\$ 1,238,400	\$	114,092
\$ per customer	\$ 38.74	\$ 1,285.92	\$ 107.39	\$ 32,207.95	\$ 421.94	\$	78.04
Fully-loaded customer costs	\$ 8,185	\$ 1,887,603	\$ 12,690	\$ 2,794,568	\$ 1,521,413	\$	146,396
\$ per customer	\$ 68.78	\$ 3,663.11	\$ 488.06	\$ 39,922.40	\$ 518.37	\$	100.13
<b>Revenue Requirement</b>							
Revenue Requirement	\$ 109,226	\$ 114,776,031	\$ 22,039	\$ 4,417,117	\$ 4,973,992	\$	109,357
\$ per customer	\$ 917.87	\$ 222,735.97	\$ 847.67	\$ 63,101.68	\$ 1,694.72	\$	74.80
\$ per MWh	\$ 2,412.71	\$ 1,312.12	\$ 1,619.29	\$ 2,473.97	\$ 3,958.06	\$	2,693.72

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Class	Average Customer Count	Average Annual Customer Impact		Aggregate Annual Impact	
		Bill Change \$	Bill Change %	Annual Change \$	Annual Change %
RG-Residential	133,243	\$ 160	9.3%	\$ 21,358,544	9.3%
CB-Commercial	18,355	305	12.3%	5,592,189	12.3%
SH-Small Heating	3,196	394	12.7%	1,259,903	12.7%
GP-General Power	1,804	5,108	10.4%	9,215,300	10.4%
TS-Transmission Service	1	201,407	4.1%	201,407	4.1%
TEB-Total Electric Bldg	932	4,160	10.3%	3,876,842	10.3%
PFM-Feed Mill/Grain Elev	10	975	11.8%	9,672	11.8%
LP-Large Power	43	181,474	10.5%	7,792,817	10.5%
MS-Miscellaneous	2	897	12.9%	1,944	12.9%
SPL-Municipal St Lighting	6	66,932	16.9%	390,437	16.9%
PL-Private Lighting	245	1,444	8.7%	353,294	8.7%
LS-Special Lighting	122	81	11.8%	9,867	11.8%
<b>Total</b>	<b>157,958</b>		<b>0.0%</b>	<b>\$ 50,062,217</b>	<b>0.0%</b>

(1) The current annual bill reflects the current base rates; a Storm Uri Charge of \$0.00708; and EECR of \$0.00045  
The proposed annual bill reflects the proposed base rates; a Storm Uri Charge of \$0.00708; and EECR of \$0.00045