

## Pricing Analysis and TOU Pricing Multiplier Calculations

### Step 1: PJM PECO Day-Ahead Locational Marginal Pricing (LMP) Analysis

Year	PJM PECO Day-Ahead (DA) Average LMP Prices					LMP Price Ratios		
	Peak (PP)	Off-Peak (OP)	Super Off-Peak (SOPP)	5-Year Average	PP-to-OP	PP-to-SOPP	OP-to-SOPP	
2014	\$64.44	\$55.67	\$39.31	\$52.59	1.16	1.64	1.42	
2015	\$43.03	\$34.87	\$24.17	\$33.13	1.23	1.78	1.44	
2016	\$33.42	\$25.06	\$17.02	\$24.01	1.33	1.96	1.47	
2017	\$34.41	\$29.02	\$20.95	\$27.62	1.19	1.64	1.39	
2018	\$39.94	\$35.38	\$26.71	\$33.74	1.13	1.49	1.32	
<b>5-Year Average</b>	<b>\$43.05</b>	<b>\$35.99</b>	<b>\$25.63</b>	<b>\$34.21</b>	<b>1.20</b>	<b>1.68</b>	<b>1.40</b>	

### Pricing Analysis and TOU Pricing Multiplier Calculations

#### Step 2A: Allocate Capacity Costs to TOU Periods (GSA 1)

Determine highest hourly demand within the TOU Peak Period for each of the 25 PJM RTO CP days from 2014-2018.

Year	PJM RTO 5CP Dates		PECO GSA 1 Demand in Proposed TOU Peak Period (Hour-Ending MWH)					MAX
	Month	Day	15	16	17	18		
2014	6	17	2,806	3,000	3,253	3,408	3,408	
2014	6	18	3,048	3,254	3,494	3,638	3,638	
2014	7	1	3,049	3,259	3,462	3,593	3,593	
2014	7	22	2,543	2,728	2,923	3,119	3,119	
2014	9	5	2,651	2,848	3,097	3,131	3,131	
2015	7	20	3,491	3,636	3,795	3,945	3,945	
2015	7	28	3,019	3,188	3,380	3,584	3,584	
2015	7	29	3,260	3,428	3,625	3,740	3,740	
2015	8	17	3,223	3,355	3,476	3,572	3,572	
2015	9	3	3,004	3,201	3,390	3,517	3,517	
2016	7	25	3,657	3,808	3,777	3,864	3,864	
2016	7	27	3,212	3,382	3,583	3,762	3,762	
2016	8	10	3,104	3,295	3,514	3,680	3,680	
2016	8	11	3,541	3,726	3,875	3,949	3,949	
2016	8	12	3,809	3,868	3,871	3,755	3,871	
2017	6	12	2,999	3,197	3,427	3,635	3,635	
2017	6	13	3,243	3,431	3,648	3,845	3,845	
2017	7	19	3,311	3,491	3,682	3,878	3,878	
2017	7	20	3,498	3,650	3,826	3,964	3,964	
2017	7	21	3,355	3,497	3,674	3,836	3,836	
2018	6	18	3,176	3,361	3,549	3,708	3,708	
2018	8	27	3,027	3,218	3,433	3,615	3,615	
2018	8	28	3,511	3,706	3,909	4,069	4,069	
2018	9	4	3,366	3,567	3,774	3,960	3,960	
2018	9	5	3,396	3,583	3,785	3,954	3,954	
			<b>5-Year Average:</b>				<b>3,713</b>	<b>4,238</b>
			<b>Total GSA 1 average daily capacity obligation, 2014-2018:</b>					<b>4,238</b>

The ratio of these two averages represents the class's historical TOU peak period contribution to the class's overall capacity obligation for its class.

The resulting percentage is proposed as the capacity cost allocator to the TOU Peak Period price.

All remaining capacity costs are allocated to the TOU Off-Peak Period price.

No capacity cost is allocated to the TOU Super Off-Peak Price.

Resulting GSA 1 Capacity Cost Allocators	
Peak	87.6%
Off-Peak	12.4%
Super Off-Peak	0%

**Pricing Analysis and TOU Pricing Multiplier Calculations**

**Step 2B: Allocate Capacity Costs to TOU Periods (GSA 2)**

(A) Determine highest hourly demand within the TOU Peak Period for each of the 25 PJM RTO CP days from 2014-2018.

PJM RTO 5CP Dates			PECO GSA 2 Load in Proposed TOU Peak Period (Hour-Ending MWh)					
Year	Month	Day	15	16	17	18	MAX	
2014	6	17	979	967	913	865	979	
2014	6	18	1,014	999	930	888	1,014	
2014	7	1	1,022	1,004	948	900	1,022	
2014	7	22	975	958	939	863	975	
2014	9	5	916	932	886	817	932	
2015	7	20	1,062	1,053	1,003	928	1,062	
2015	7	28	1,033	1,022	983	907	1,033	
2015	7	29	1,061	1,052	1,011	931	1,061	
2015	8	17	1,039	1,020	965	876	1,039	
2015	9	3	1,052	1,043	1,001	917	1,052	
2016	7	25	1,099	1,087	1,014	922	1,099	
2016	7	27	1,060	1,051	1,017	941	1,060	
2016	8	10	1,056	1,050	1,017	935	1,056	
2016	8	11	1,112	1,105	1,062	969	1,112	
2016	8	12	1,111	1,081	1,017	910	1,111	
2017	6	12	1,024	1,018	982	908	1,024	
2017	6	13	1,075	1,067	1,032	955	1,075	
2017	7	19	1,093	1,087	1,049	975	1,093	
2017	7	20	1,122	1,109	1,072	992	1,122	
2017	7	21	1,072	1,057	1,020	947	1,072	
2018	6	18	1,020	1,015	978	900	1,020	
2018	8	27	1,013	1,006	972	891	1,013	
2018	8	28	1,090	1,081	1,047	969	1,090	
2018	9	4	1,082	1,073	1,032	955	1,082	
2018	9	5	1,091	1,083	1,047	969	1,091	
			<b>5-Year Average:</b>					<b>1,052</b>
			<b>Total GSA 1 average daily capacity obligation, 2014-2018:</b>					<b>1,424</b>

The ratio of these two averages represents the class's historical TOU peak period contribution to the class's overall capacity obligation for its class.

The resulting percentage is proposed as the capacity cost allocator to the TOU Peak Period price.

All remaining capacity costs are allocated to the TOU Off-Peak Period price.

No capacity cost is allocated to the TOU Super Off-Peak Price.

Resulting GSA 1 Capacity Cost Allocators	
Peak	73.9%
Off-Peak	26.1%
Super Off-Peak	0%

Pricing Analysis and TOU Pricing Multiplier Calculations

Step 3A: Calculate TOU Pricing Multipliers for GSA 1 (labeled below as "Factor vs. Super Off-Peak")

GSA 1 Capacity Cost Allocators			Using Loads, Capacity Obligations, and LMPs from 2014			Using Loads, Capacity Obligations, and LMPs from 2015			Using Loads, Capacity Obligations, and LMPs from 2016			Using Loads, Capacity Obligations, and LMPs from 2017			Using Loads, Capacity Obligations, and LMPs from 2018							
	Peak	Off-Peak	Off-Peak	Super Off-Peak	Super Off-Peak	Peak	Off-Peak	Super Off-Peak	Super Off-Peak	Peak	Off-Peak	Super Off-Peak	Super Off-Peak	Peak	Off-Peak	Super Off-Peak	Super Off-Peak	Peak	Off-Peak	Super Off-Peak	Super Off-Peak	
Peak	87.6%																					
Off-Peak		12.4%																				
Super Off-Peak			0%																			
<b>Energy</b>																						
Energy Cost (\$)	132,521,458	621,209,387	136,755,841	890,486,686	890,486,686	90,287,906	390,214,046	82,948,840	563,450,792	74,089,129	274,635,339	52,570,874	401,295,342	66,556,990	296,782,338	62,105,417	425,444,744	85,580,996	397,368,498	90,730,272	573,679,267	
Load (MWH)	1,773,991	9,674,397	2,883,751	14,332,140	14,332,140	1,839,142	10,055,245	2,946,479	14,840,866	1,842,636	10,085,271	2,904,847	14,832,754	1,733,073	9,604,639	2,773,505	14,111,217	1,893,769	10,188,619	3,010,047	15,092,435	
Energy Cost (\$/MWH)	\$74.70	\$64.21	\$47.42	\$62.13	\$62.13	\$49.09	\$38.81	\$28.15	\$37.97	\$40.21	\$27.23	\$18.10	\$27.05	\$38.40	\$30.90	\$22.39	\$30.15	\$45.19	\$39.00	\$30.14	\$38.01	
<b>Capacity</b>																						
Allocated Capacity Cost (\$)	244,541,725	34,548,546	279,090,272	279,090,272	279,090,272	200,994,101	28,396,193	229,390,294	229,390,294	218,198,074	30,826,749	249,024,823	249,024,823	218,427,968	30,859,228	249,287,196	249,287,196	274,657,744	38,803,299	313,461,043		
Load (MWH)	1,773,991	9,674,397	14,332,140	14,332,140	14,332,140	1,839,142	10,055,245	14,840,866	14,840,866	1,842,636	10,085,271	14,832,754	14,832,754	1,733,073	9,604,639	14,111,217	14,111,217	1,893,769	10,188,619	15,092,435		
Capacity Cost (\$/MWH)	\$137.85	\$3.57	\$19.47	\$19.47	\$19.47	\$109.29	\$2.82	\$15.46	\$15.46	\$118.42	\$3.06	\$16.79	\$16.79	\$126.04	\$3.21	\$17.67	\$17.67	\$145.03	\$3.81	\$20.77		
<b>Capacity + Energy</b>																						
Energy + Capacity Cost (\$/MWH)	\$212.55	\$67.78	\$47.42	\$81.61	\$81.61	\$158.38	\$41.63	\$53.42	\$53.42	\$158.62	\$30.29	\$18.10	\$43.84	\$164.44	\$34.11	\$22.39	\$47.82	\$190.22	\$42.81	\$30.14	\$58.78	
<b>Rate Factors</b>																						
Factor vs. Total	2.60	0.83	0.58	1.00	1.00	2.96	0.78	0.53	1.00	3.62	0.69	0.41	1.00	3.44	0.71	0.47	1.00	3.24	0.73	0.51	1.00	
Factor vs. Super Off-Peak	4.48	1.43	1.00	1.72	1.72	5.63	1.48	1.00	1.90	8.76	1.67	1.00	2.42	7.34	1.52	1.00	2.14	6.31	1.42	1.00	1.95	

Resulting GSA 1 TOU Pricing Multipliers		
Factor vs. Total	3.17	0.50
Factor vs. Super Off-Peak	6.51	1.00

Pricing Analysis and TOU Pricing Multiplier Calculations

Step 3A: Calculate TOU Pricing Multipliers for GSA 2 (labeled below as "Factor vs. Super Off-Peak")

GSA 2 Capacity Cost Allocators	
Peak	73.9%
Off-Peak	26.1%
Super Off-Peak	0%

	Using Loads, Capacity Obligations, and LMPs from 2014			Using Loads, Capacity Obligations, and LMPs from 2015			Using Loads, Capacity Obligations, and LMPs from 2016			Using Loads, Capacity Obligations, and LMPs from 2017			Using Loads, Capacity Obligations, and LMPs from 2018							
	Peak	Off-Peak	Super Off-Peak	Peak	Off-Peak	Super Off-Peak	Peak	Off-Peak	Super Off-Peak	Peak	Off-Peak	Super Off-Peak	Peak	Off-Peak	Super Off-Peak					
<b>Energy</b>																				
Energy Cost (\$)	48,423,918	203,856,030	43,653,244	295,933,193	33,721,403	127,277,358	26,927,232	187,925,993	26,913,424	88,959,821	17,788,655	133,661,900	26,247,819	100,516,336	21,861,531	148,625,686	31,074,197	126,383,486	29,335,744	187,193,427
Load (MWH)	723,624	3,352,212	991,555	5,067,391	743,331	3,372,402	1,017,964	5,132,719	743,331	3,363,136	1,019,546	5,126,013	732,096	3,343,478	1,013,584	5,089,158	744,190	3,395,633	1,036,277	5,176,101
Energy Cost (\$/MWH)	\$66.92	\$60.81	\$44.03	\$58.40	\$45.43	\$37.74	\$26.45	\$36.61	\$36.21	\$26.45	\$17.45	\$26.08	\$35.85	\$30.06	\$21.57	\$29.20	\$41.76	\$37.28	\$28.50	\$36.16
<b>Capacity</b>																				
Allocated Capacity Cost (\$)	77,683,235	27,492,347		105,175,582	65,199,816	23,074,425		88,274,240	63,314,741	22,407,291		85,722,031	54,220,170	19,188,693		73,408,862	67,422,689	23,861,107	91,283,796	
Load (MWH)	723,624	3,352,212		5,067,391	742,352	3,372,402		5,132,719	743,331	3,363,136		5,126,013	732,096	3,343,478		5,089,158	744,190	3,395,633	5,176,101	
Capacity Cost (\$/MWH)	\$107.36	\$8.20		\$20.76	\$87.83	\$6.84		\$17.20	\$85.18	\$6.66		\$16.72	\$74.07	\$5.74		\$14.42	\$90.60	\$7.03	\$17.64	
<b>Capacity + Energy</b>																				
Energy + Capacity Cost (\$/MWH)	\$174.28	\$69.01	\$44.03	\$79.15	\$133.26	\$44.58	\$26.45	\$53.81	\$121.39	\$33.11	\$17.45	\$42.80	\$109.92	\$35.80	\$21.57	\$43.63	\$132.36	\$44.30	\$28.50	\$53.80
<b>Rate Factors</b>																				
Factor vs. Total	2.20	0.87	0.56	1.00	2.48	0.83	0.49	1.00	2.84	0.77	0.41	1.00	2.52	0.82	0.49	1.00	2.46	0.82	0.53	1.00
Factor vs. Super Off-Peak	3.96	1.57	1.00	1.80	5.04	1.69	1.00	2.03	6.96	1.90	1.00	2.45	5.10	1.66	1.00	2.02	4.64	1.55	1.00	1.89

Resulting GSA 2 TOU Pricing Multipliers	
Factor vs. Total	2.50
Factor vs. Super Off-Peak	5.14