Paul E. Russell Associate General Counsel

Two North Ninth Street Allentown, PA 18101-1179 Tel. 610.774.4254 Fax 610.774.6726 perussell@pplweb.com



Federal Express

June 5, 2014

Rosemary Chiavetta, Secretary Pennsylvania Public Utility Commission Commonwealth Keystone Building 400 North Street Harrisburg, Pennsylvania 17120 RECEIVED

JUN 05 2014

PA PUBLIC UTILITY COMMISSION SECRETARY'S BUREAU

M-2009-2093216

Re: PPL Electric Utilities Corporation _____2013 Time of Use Annual Report

Dear Secretary Chiavetta:

Enclosed for filing on behalf of PPL Electric Utilities Corporation ("PPL Electric") is a copy of PPL Electric's Time of Use Annual Report for calendar year 2013. This report is being filed pursuant to the provisions of 66 Pa.C.S. § 2807(f)(5).

This report was originally filed on May 30, 2014 but was rejected as this is not a permitted E-filing document type.

Pursuant to 52 Pa. Code § 1.11, the enclosed document is to be deemed filed on June 5, 2014, which is the date it was deposited with an overnight delivery service. In addition, please date and time-stamp the enclosed extra copy of this letter and rerun it to me in the envelope provided.

If you have any questions regarding the enclosed report, please call me or Kimberly A. Golden, PPL Electric's Manager - Load/Data Analytics & Forecasting at (610) 774-5910.

Very truly yours,

Russell Juns

Paul E. Russell⁷

Enclosures

cc: Tanya J. McCloskey, Esquire Mr. John R. Evans J. Edward Simms, Esquire

PPL Electric Utilities Corporation Time-of-Use Program Annual Report



JUN 0 5 2014

Period of Study: Year 2013

PA PUBLIC UTILITY COMMISSION SECRETARY'S BUREAU

Overview

Pursuant to 66 Pa. C.S. § 2807(f) (5), PPL Electric Utilities Corporation ("PPL Electric" or the "Company") hereby files this Annual Report regarding its Time-of-Use ("TOU") program. This Annual Report assesses the impact of PPL Electric Utilities' Time-of-Use program offered to its residential and small commercial and industrial (Small C&I) customer classes on load shifting, energy prices and consumption.

The objective of the TOU program is to encourage customers to shift their electricity usage from the on-peak to the off-peak periods. The intent is that lower on-peak usage will ultimately lower energy and capacity prices, not just for the participants in the TOU program, but for all customers. For the purpose of this report, a range of components including, but not limited to, load, customer participation, shopping, pricing and change in capacity were evaluated across different rate schedules for the year 2013.

The TOU program offered by PPL Electric Utilities is available to all residential and small C&I customers served under rate schedules RS, RTS(R), GS-1, and GH-2. The program is also available to rate schedule GS-3 customers with a demand of less than 500 kW. However, only customers who have PPL Electric as their default supplier are eligible to participate in PPL's TOU Program. Customers who choose to purchase competitive generation supply are ineligible to participate.

Summary

During 2013, there were less than 2,200 customers on the TOU rate, and the customer counts declined steadily over the year. As shown in Table 1 below, as of December 2013, only 1,682 (0.12%) of PPL's 1.4 million customers were enrolled. Almost all of these were customers who have remained on the rate for at least two years; only 5 customers entered the TOU rate during 2013.

Since the summer of 2011 (pursuant to the PUC's order entered August 25, 2011 at Docket No. M-2011-2258733), PPL Electric's TOU rate option has been frozen. As a result, customers on the TOU rates are paying appreciably higher rates – for <u>both</u> on-peak and off-peak - than the fixed default service price to compare ("PTC"). This likely explains the continual drop in participation. The 1,700 customers remaining on the program may lack motivation to change rates.

Table 1:	TOU	Partici	pation	as of	December	2013
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Rate Schedule	Bill Count	Monthly Billed kWh
TR1 (TOU for RS)	1,515	2,040,563
TR3 (TOU for RTS)	73	175,644
TH2 (TOU for GH2)	0	0
TG1 (TOU for G1D)	93	54,421
TG3 (TOU for GS3)	1	0
TOTAL	1,682	2,270,628
Percentage Share	0.12%	. 0.07%

Methodology

The primary focus of this study is to measure the percentage of load shift from the on-peak to the off-peak period under the TOU program. However, customer participation and load shift based on TOU pricing relative to the PTC was also measured in this study. For the scope of this study, only summer months' load shapes for customers served under rate schedules RS, RTS(R) and GS-1 were analyzed to compare usage during on-peak and off-peak periods for each rate schedule. Peak load hours in the summer months determine the need for capacity within PJM. Reductions in on-peak usage during the summer months would reduce the capacity Peak Load Contribution ("PLC") for customers on the TOU programs, which would reduce the capacity needs for all of PJM, thus reducing the cost of capacity for all customers. Summer is defined as June 1 through September 30. The on-peak and off-peak definitions are shown in Figure 1.

Figure 1

Rate schedule

Summer peak hours . (June – September)

RS, RTS(R), Volunteer Fire Company served under rate schedules GS-1 and GS-3

1:00 PM to 6:00 PM .

GS-1, GS-3, and GH-2

7:00 AM to 7:00 PM

Note: On-peak hours occur only during weekdays with the exception of holidays which are considered to be off-peak.

In order to measure any change or shift in consumption between the on-peak and off-peak periods, comparison was made between the control group and their corresponding TOU group. A control group is defined as the primary traditional rate group not participating in any TOU program. Monthly aggregations were used to measure the on-peak and off-peak average use.

Influence of Shopping on TOU Participation

Participation in the TOU program is only available to customers who choose PPL Electric as their default supplier rather than an alternate/ competitive supplier. Because PPL Electric's fixed price default service rates have been lower than the TOU rates, only a few customers entered the TOU program during 2013 and for most of these the enrollment was short-lived. About 500 TOU customers went off the rate during 2013.

In contrast to the TOU program's dwindling counts, shopping gained a slightly larger foothold during the year, as shown in Figure 2.



Figure 2

Price Effect on TOU Participation

There has been a continuous drop in TOU participation during 2013, as shown in Figures 3 through Figure 5. Program prices may have prompted customers to go off the program during this time. Throughout the year, both on-peak and off-peak prices remained higher than the price-to-compare (PTC) offered to the non-TOU customers.



Figure 3





The decline in enrollment for both the RS and the RTS(R) TOU rates (TR1 and TR3) was nearly continuous from month to month during 2013. Presumably, the customers are responding to the price signals, which are disadvantageous on TOU.

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Figure 5

Participation also dropped for the GS-1 TOU rate (TG-1), but then became fairly steady in the latter half of the year. The average use of the customers on this TG-1 rate tends to be much lower than that of the GS-1 customers. Because the price signal for many of these TG-1 customers is therefore very small, there may not be much motivation to research alternative lower rates.

Analysis of Load Shift

Hourly average use during 2013 was analyzed to measure the consumption pattern between on-peak and off-peak periods during the summer months. Average use was compared between the TOU and control group for each of the three rate schedules – RS, RTS and GS1.

Control group to TOU - Residential

Tables 2 and 3 compare the on-peak and off-peak usage split for both the residential rate schedules. As shown, the difference in the splits for the RS vs. TR1 groups are minor, with the TR1 group using 0.29 percentage points more off-peak, at most, in any month. The RTS splits are even closer, with 3 of the 4 months being almost identical.

Month	Control Group (RS)		TOU Group (TR1)		Percentage
	On-Peak %	Off-Peak %	On-peak %	Off-Peak %	point change in On-Peak
June	15.85	84.15	15.71	84.29	-0.14
July	17.48	82.52	17.52	82.48	+0.04
August	17.57	82.43	17.32	82.68	-0.25
September	14.98	85.02	14.69	85.31	-0.29
Total	16.60	83.40	16.46	83.54	-0.14

Table 2: RS rate schedule – Comparison of On-Peak vs. Off-Peak Usage Splits

Table 3: RTS rate schedule - Comparison of On-Peak vs. Off-Peak Usage Splits

Month	Control Group (RTS)		TOU Group (TR3)		Percentage
	On-Peak %	Off-Peak %	On-peak %	Off-Peak %	point change in On-Peak
June	15.83	84.17	15.80	84.20	-0.03
July	17.77	82.23	17.87	82.13	+0.10
August	17.61	82.39	17.56	82.44	-0.05
September	14.56	85.44 ·	14.20	85.80	-0.36
		<u></u>			
Total	16.56	83.44	16.46	83.54	-0.10

Additionally, Figure 6 shows the hourly average use for RS and TR1 customers. Interestingly, while the hourly load shapes are similar, TR1's average hourly use is higher than RS across all hours.





All hours are depicted. On-peak hours are weekdays, 1-6 PM (hours ending 1400-1800), excluding holidays.

Control group to TOU – Small C&I (GS1)

For customers on rate schedule GS-1, the differences between the on and offpeak splits are more pronounced. In June and July, the TOU customers had almost 6 percentage points more on-peak usage than the control group; however, the kWh impact is small considering that the TOU TG1 population has a much lower hourly average use than the GS1 control group (0.62 kWh vs. 1.72) and there were only 91-95 customers on the rate. For September, the TOU group appears to achieve a notably higher proportion off-peak in September than the control. This is mainly due a few distributed generation customers with extensive excess generation.

Month	Control Group (GS1)		TOU Group (TG1)		Percentage
	On-Peak %	Off-Peak %	On-peak %	Off-Peak %	in On-Peak
June	42.46	57.54	48.20	51.80	+5.74
July	44.96	55.04	50.81	49.19	+5.85
August	45.21	54.79	44.46	55.54	- 0.75
September	42.17	57.83	34.99	65.01	-7.18
Total	43.81	56.19	37.03	62.97	-6.78

Table 4: GS1 rate schedule - Comparison of On-Peak vs. Off-Peak Usage Splits

*There were 13 distributed generation customers on TOU for at least part of 2013. Those DG accounts on TR1 or TG3 had a combined nameplate capacity of about 150 KW. Additionally, the lone TG-3 TOU account is a distributed generation customer with 1MW capacity.

Impact on Market Prices

Energy

Prices for energy vary by hour. The Locational Marginal Price ("LMP") is determined through the wholesale market at PJM for each zone, and is a function of overall demand (which is highly dependent upon weather), generation availability, and fuel prices. In theory, lower demand during peak hours would result in a lower LMP, as higher priced generation would not be required. However, quantifying the impact on an hourly basis is difficult – there is no way of knowing what the LMP would have been absent the demand reduction. In addition, any load shifted to off-peak hours could result in higher prices in these hours, so the net impact in a TOU rate on energy prices would be the net of 1) the savings in the on-peak hours and 2) the higher cost in the off-peak hours.

Given the small number of customers on the TOU rates and the evidence that the onpeak versus off-peak usage is not much different from the control population, the effect on market prices made by the general TOU population could be presumed to be minimal.

Capacity

Overall capacity costs are based on the PJM Base Residual Auction, which procures capacity 3 years in advance. Any lower demand in the 5 Coincident Peak (CP) hours of PJM could potentially result in lower bid prices in the auction, but it is not possible to quantify the impact.

For the 2014/2015 Delivery Year (June 1-May 31), the Base Residual Auction held in 2011 resulted in a capacity price of \$135.25 per MW-day. The 3 incremental auctions for the 2014/2015 DY have had posted results of \$137.60, \$138.36, and \$137.52 for the auctions conducted in 2012, July 2013, and Feb 24, 2014 respectively. These auction prices are appreciably lower than those posted in last year's TOU report (which were based on the final auction for the 2013/2014 DY of \$232.55) because of an increase in the capacity transfer margin into the MAAC and EMAAC regions.

Conclusion

Only about 1 of every thousand of PPL's customers is currently on the TOU program and this enrollment is continually dropping, reflecting the program's unattractive pricing. The TOU rate is higher than the fixed price default service rate, such that a customer consuming electricity would be paying more than the fixed price default service rate *even if* he successfully shifted 100% of his load off-peak. For the summer months analyzed, the residential TOU customers appear to use a similar proportion of their usage off-peak as do their counterparts on the traditional rate. The Small Commercial customers on the TOU rates show some differences in the on-peak and off-peak splits from the control group; however, that is mainly the result of a few distributed generation customers.

Many customers went on the TOU rates in early 2011, when both the on- and offpeak rates were lower than the PTC. Even after this situation ended, and prices went higher later in 2011, many customers continued on the rate. Almost all of the 1,700 customers in the program in December 2013 have been on the TOU program for over two years.

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