

Rate Design Implications for EV Charging

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BGE TOU Pilot Overview

Comparison of BGE R and EV Rates			
	<u>R</u>	<u>EV</u>	
Customer Charge	\$7.50	\$7.50	
Distribution Charge (per kWh)*	\$0.03287	\$0.03287	
Total SOS rate (per kWh)**:		<u>On</u>	<u>Off</u>
Jun. 1, 2015 - Sep. 30, 2015	\$0.09481	\$0.16650	\$0.05642
Oct. 1, 2015 - May 31, 2016	\$0.09345	\$0.19704	\$0.05757
Jun. 1, 2016 - Sep. 30, 2016	\$0.09180	\$0.16350	\$0.05342
Notes * Excludes Rider 10 and 25			
** Excludes Rider 8			

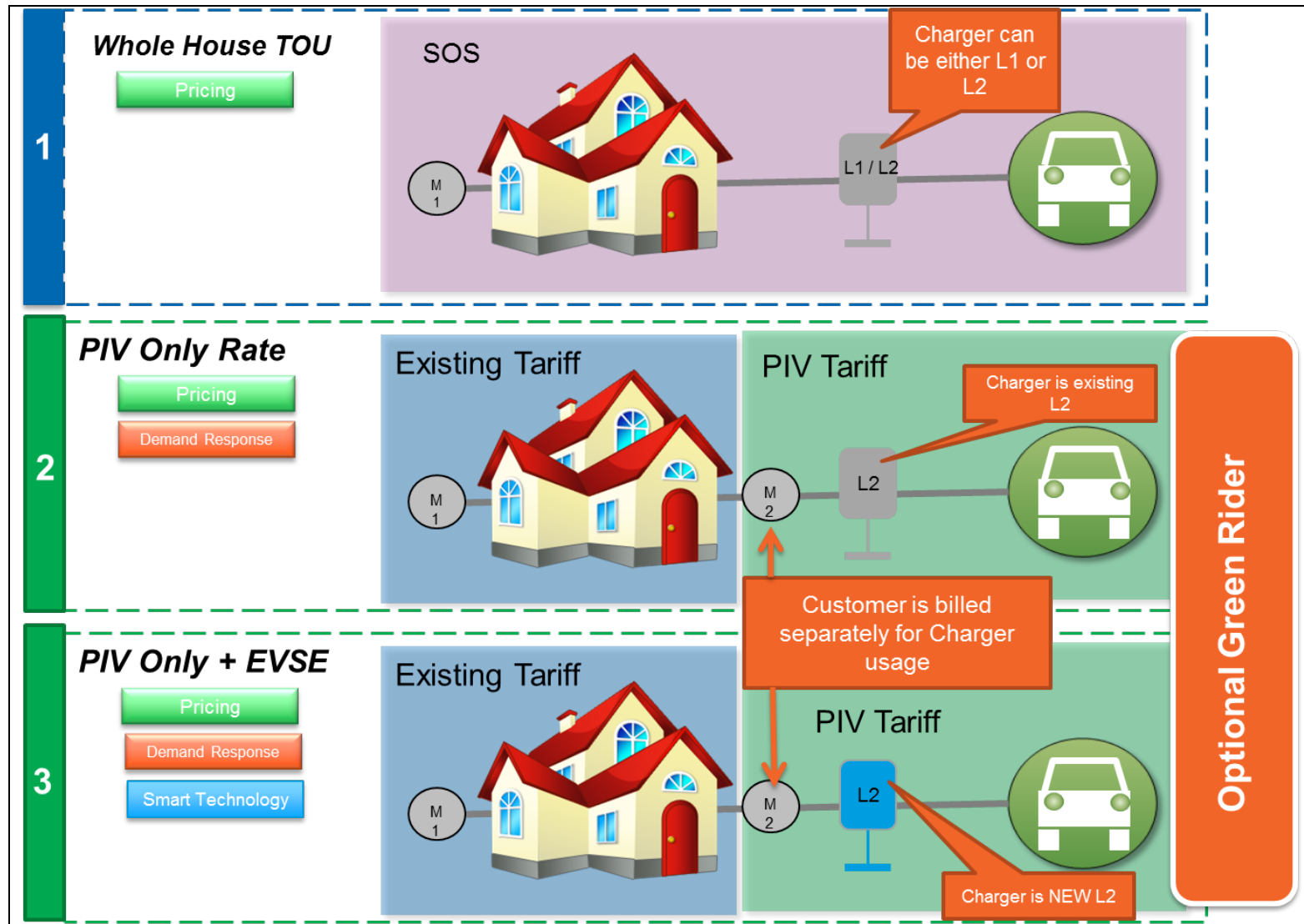


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Pepco Pilot Program Details



EV Rate Metrics

Metric Category	Description
Eligible Customers	<ul style="list-style-type: none"> Customers in BGE Service Territory that own or lease Electric Vehicle(s) Eligible EV Customers for EV Rate Pilot Program – EV, BGE Supply (no Retail Energy Supplier), Smart Meter (AMI) or TOU meter (no Net Meter)
Customer Participation	<ul style="list-style-type: none"> Number of Enrollments Number of Opt-outs during program
Communications & Customer Care	<ul style="list-style-type: none"> Number of EV Rate Inquiries BGE.com EV page views EV Survey results
Energy Usage Profiles	<ul style="list-style-type: none"> EV Rate Participant & Non-Participant hourly energy usage during Peak and Non-Peak periods EV Rate Participant Energy usage comparison from Peak to Non-Peak periods before & after EV Rate Pilot Program EV customer energy usage comparisons and non-EV residential customers
Customer Satisfaction & Feedback	<ul style="list-style-type: none"> Customer EV charging behavior moving from Peak to Non-Peak periods Customer Satisfaction with EV Rate Pilot Program EV Customer Survey comments



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BGE EV Pilot Participant Energy Use

Pilot participants showed a shift in energy use to off peak:

On Peak Energy Use		
	Pilot Participants	All residential
Summer 2014	50.7%	50.4%
Non-summer 2014	36.6%	38.1%
Summer 2015	43.4%	49.1%
Non-summer 2015	33.4%	37.1%
Difference (adjusted)	- 6% summer, - 2.3% non-summer	All residential showed a decrease of 1.3% summer and 0.9% non-summer which was adjusted from the EV Pilot analysis

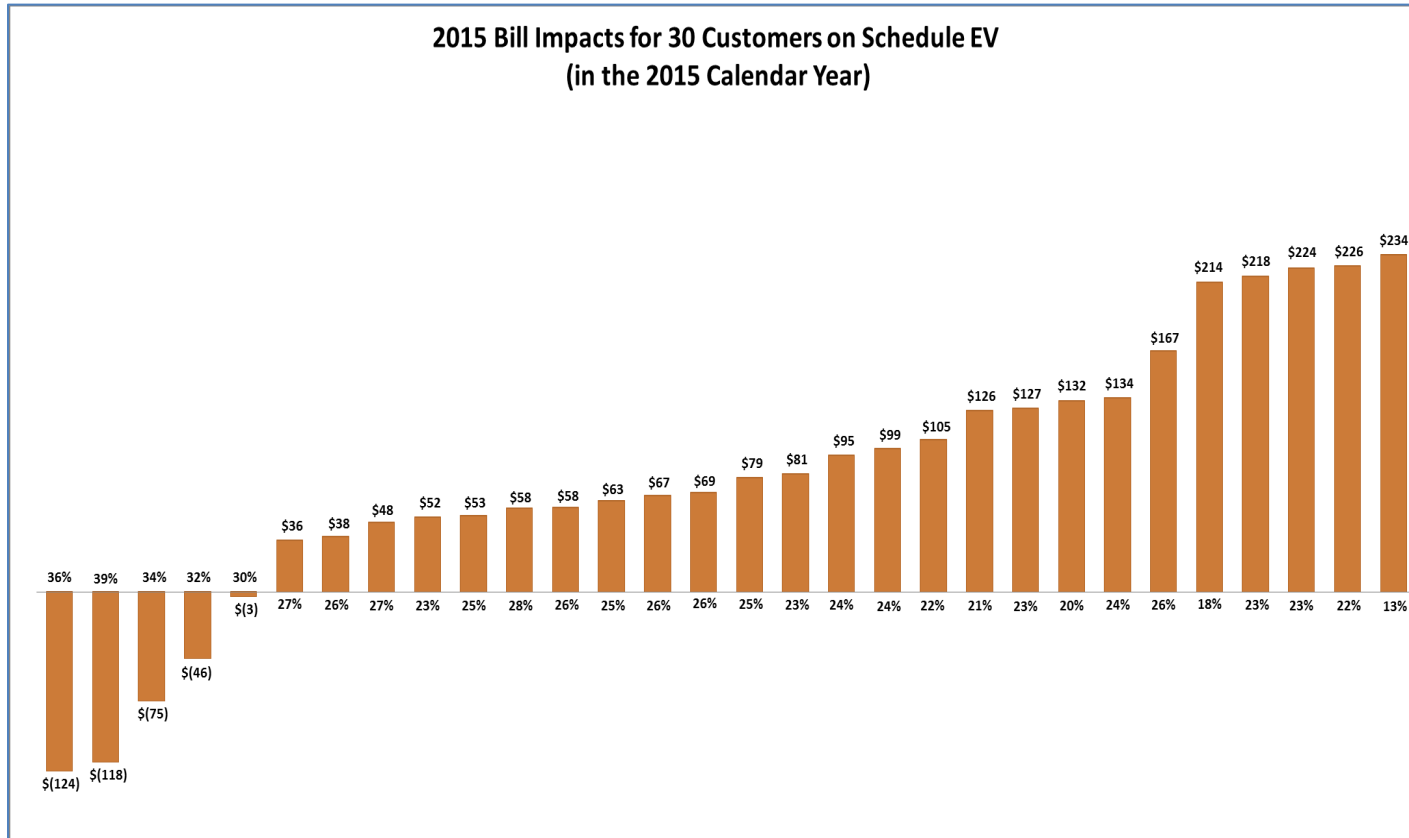


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BGE EV Pilot Participant Bill Impacts



Average participants savings was \$81 for the year, with one customers saving \$234
“Savers” had about 22% on peak use vs. 33% or more for those that did not save.



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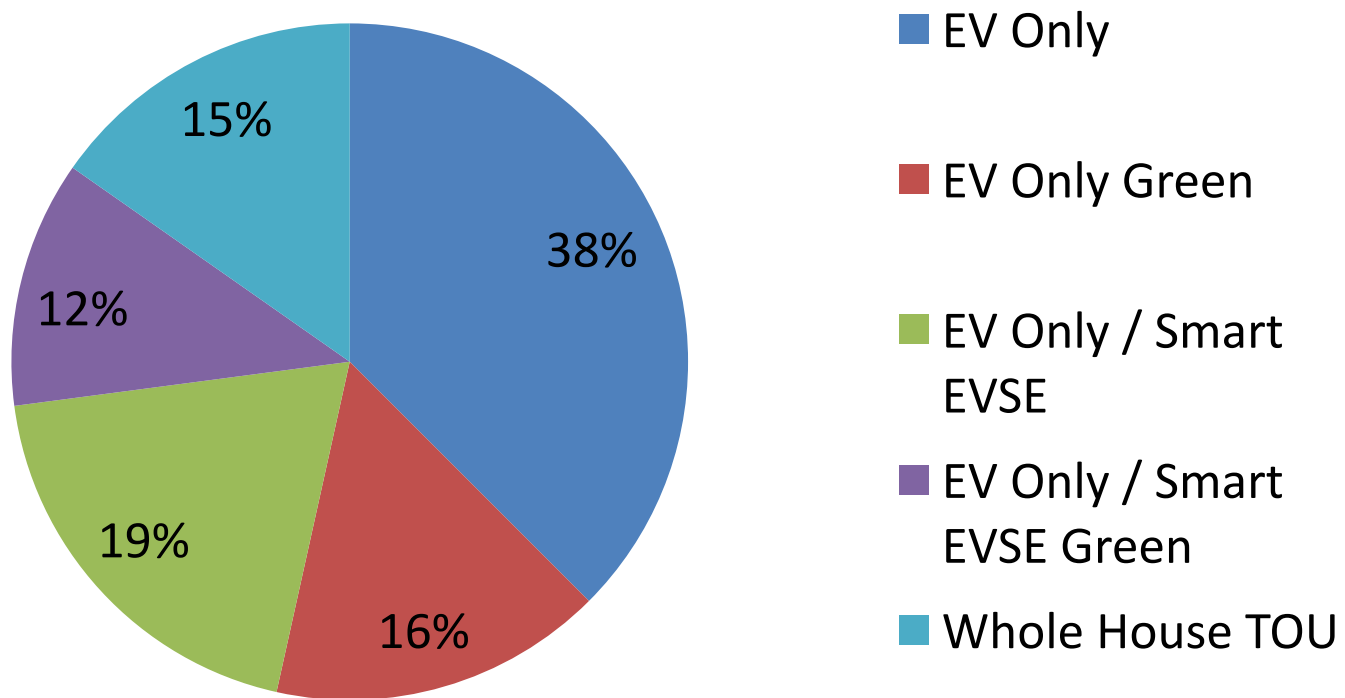
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Pepco MD EV Pilot Program Details

Completed 12/31/15

154 Total Participants



Pepco Pilot Results: Cost Average Monthly Savings

Average Monthly Energy Savings

Vehicle	Rate type	Total kWh	Energy Cost (\$) Off Peak	Energy Cost (\$) Peak	Total Energy Cost (\$) (Peak & Off Peak)	If SOS* rate was used	Savings (\$): SOS rates-Peak & Off Peak
Volt	PIV	189	\$14.08	\$3.60	\$17.68	\$25.81	\$8.13
	PIVGreen	203	\$17.51	\$5.84	\$23.35	\$27.66	\$4.30
Tesla	PIV	272	\$21.28	\$2.52	\$23.80	\$37.04	\$13.24
	PIVGreen	288	\$28.40	\$0.89	\$29.29	\$39.27	\$9.98
Leaf	PIV	187	\$13.52	\$4.44	\$17.96	\$25.50	\$7.54
	PIVGreen	187	\$16.72	\$4.23	\$20.95	\$25.55	\$4.60
Other	PIV	159	\$11.72	\$3.24	\$14.96	\$21.65	\$6.69
	PIVGreen	204	\$18.15	\$4.68	\$22.82	\$27.77	\$4.94
Average	PIV	202	\$15.15	\$3.45	\$18.60	\$27.50	\$8.90
	PIVGreen	221	\$20.20	\$3.91	\$24.10	\$30.06	\$5.96
	Total Average	211	\$17.67	\$3.68	\$21.35	\$28.78	\$7.43

Pepco Pilot Results: Charging Behavior Demand Response

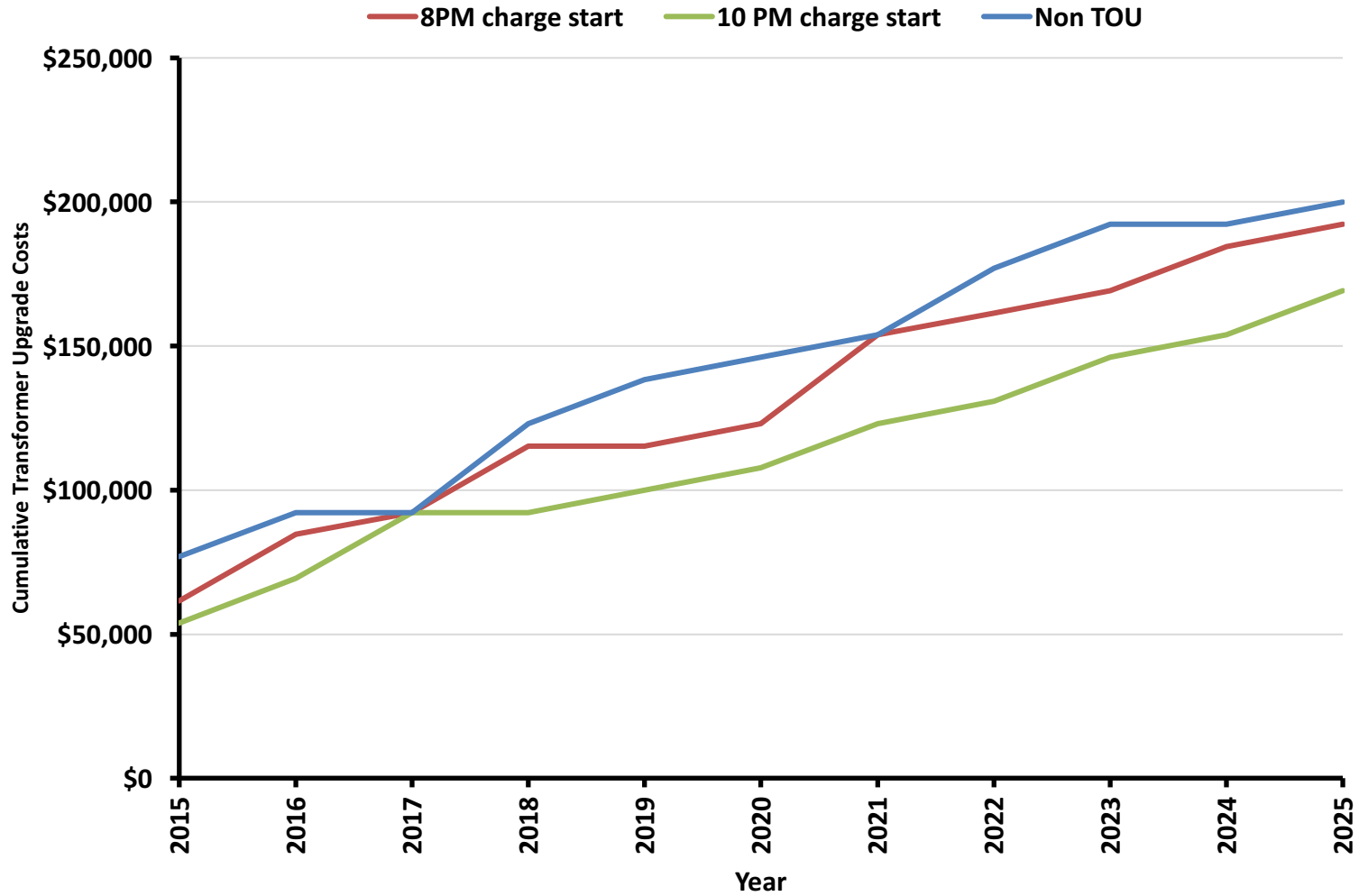
Demand Response logistics:

- Email the morning of the event
- Options:
 1. Not charge during the event
 2. Charge at level 1, peak charge rates apply
 3. 'Opt out': Charge at level 2, peak charge rates apply

Date	Time	Number of meter that received the DR event signal	Number of people charging during the event	Number Opted Out	Number of customers with reduced load
8/27/2014	2:00 PM-6:00 PM	9	2	1	1
9/2/2014	2:00 PM-6:00 PM	9			
7/21/2015	2:00 PM-6:00 PM	8			
8/3/2015	2:00 PM-6:00 PM	8	1		1
8/17/2015	2:00 PM-6:00 PM	9			
9/9/2015	2:00 PM-6:00 PM	10			
9/25/2015	2:00 PM-3:00 PM	11			

Pepco Pilot Results: Grid Impact

Hotspotter: Cumulative Upgrade Costs for 3 scenarios



Questions?

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