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COMPANY NAME: Portland General Electric Company

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Report is required by: OAR 860-084-0380

Statute

Order

Note: A one-time submission required by an order is a compliance filing and not a report (file compliance in the applicable docket)

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Is this report associated with a specific docket/case? No Yes, docket number: RE 97

List Key Words for this report. We use these to improve search results.

Solar Photovoltaic Pilot Programs Rate Impact Estimate

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Portland General Electric Company

121 SW Salmon Street • Portland, Oregon 97204

PortlandGeneral.com

November 9, 2018

Public Utility Commission of Oregon
Attn: Filing Center
201 High Street, S.E.
P.O. Box 1088
Salem, OR 97308-1088

RE: RE 97 –OAR 860-084-0380(2) Solar Photovoltaic Pilot Programs Rate Impact Estimate

This informational filing provides updated estimates of the rate impact of PGE's Solar Payment Option Pilot Program for each customer class pursuant to OAR 860-084-0380(2). PGE previously filed this report in 2012 and 2014. PGE provides this report in 2018 at the request of Staff.

Should you have any questions or comments regarding this filing, please contact Colin Wright at (503) 464-8011.

Please direct all formal correspondence and requests to the following email address pge.opuc.filings@pge.com

Sincerely,

A handwritten signature in blue ink, appearing to read "Karla Wenzel", is written over a light blue circular stamp.

Karla Wenzel
Manager, Pricing & Tariffs

Enclosure

**Solar Photovoltaic Pilot Programs
 Preliminary Estimate of Rate Impact By Customer Class
 Estimated Rate Impact of Program**

Year	SPO Estimated Program Costs	PERCENT IMPACT					
		Residential	Small and Medium	Large	Total		
					High	Low	
2018	\$ 6,977,100	0.38%	0.38%	0.38%	0.41%	-	0.38%
2019	\$ 7,080,137	0.39%	0.39%	0.39%	0.40%	-	0.38%
2020	\$ 6,991,219	0.39%	0.39%	0.39%	0.39%	-	0.36%
2021	\$ 6,706,992	0.37%	0.37%	0.37%	0.38%	-	0.34%
2022	\$ 6,678,468	0.37%	0.37%	0.37%	0.37%	-	0.33%
2023	\$ 6,604,804	0.36%	0.36%	0.36%	0.36%	-	0.31%
2024	\$ 6,880,097	0.38%	0.38%	0.38%	0.35%	-	0.32%
2025	\$ 6,880,097	0.38%	0.38%	0.38%	0.34%	-	0.31%
2026	\$ 4,547,227	0.25%	0.25%	0.25%	0.22%	-	0.20%
2027	\$ 3,010,597	0.17%	0.17%	0.17%	0.14%	-	0.13%
2028	\$ 1,706,895	0.09%	0.09%	0.09%	0.08%	-	0.07%
2029	\$ 578,574	0.03%	0.03%	0.03%	0.02%	-	0.02%

Note: Assumes 3% annual revenue growth. Apportioned the estimated pilot program costs based on projected revenues by rate class.

Solar Photovoltaic Pilot Program Costs
PGE Solar Payment Option Pilot Program
Estimated Rate Impact of Program

Year	Total Revenue	<u>SPO Estimated Program Payments</u> * does not include offsets to deferral	<u>Percent of Impact</u>
2018	\$ 1,812,976,837	\$ 7,473,501	0.41%
2019	\$ 1,867,366,142	\$ 7,473,501	0.40%
2020	\$ 1,923,387,126	\$ 7,473,501	0.39%
2021	\$ 1,981,088,740	\$ 7,473,501	0.38%
2022	\$ 2,040,521,402	\$ 7,473,501	0.37%
2023	\$ 2,101,737,044	\$ 7,473,501	0.36%
2024	\$ 2,164,789,156	\$ 7,473,501	0.35%
2025	\$ 2,229,732,830	\$ 7,473,501	0.34%
2026	\$ 2,296,624,815	\$ 5,009,841	0.22%
2027	\$ 2,365,523,560	\$ 3,346,021	0.14%
2028	\$ 2,436,489,267	\$ 1,864,220	0.08%
2029	\$ 2,509,583,945	\$ 538,877	0.02%

*Assumes 3% annual revenue growth.

0.2865%

Percent of Impact is the estimated program costs divided by total revenue.

Solar Photovoltaic Pilot Programs
Estimated Forecast of Photovoltaic Pilot Programs
Base Scenario

	1	2	3	4	Total = 1 + 2 - (3 + 4)
Year	Incremental Pilot Program Implementation Costs	VIR Payments	Avoided Energy Value	Other Fees	Total
2010*	\$ 213,824	\$ 20,257	\$ 1,250	\$ 4,689	\$ 228,144
2011*	\$ 242,719	\$ 1,270,738	\$ 76,054	\$ 39,866	\$ 1,397,538
2012*	\$ 294,112	\$ 3,169,822	\$ 220,763	\$ 78,686	\$ 3,164,485
2013*	\$ 660,750	\$ 4,909,699	\$ 400,832	\$ 208,227	\$ 4,961,390
2014*	\$ 537,259	\$ 6,357,461	\$ 581,456	\$ 145,731	\$ 6,167,533
2015*	\$ 541,435	\$ 6,573,745	\$ 573,392	\$ 155,734	\$ 6,386,054
2016*	\$ 362,002	\$ 6,778,284	\$ 244,944	\$ 410,833	\$ 6,484,510
2017*	\$ 255,499	\$ 7,002,121	\$ 874,317	\$ 165,198	\$ 6,218,105
2018	\$ 255,499	\$ 7,473,501	\$ 616,944	\$ 134,955	\$ 6,977,100
2019	\$ 255,499	\$ 7,473,501	\$ 513,907	\$ 134,955	\$ 7,080,137
2020	\$ 255,499	\$ 7,473,501	\$ 602,825	\$ 134,955	\$ 6,991,219
2021	\$ 255,499	\$ 7,473,501	\$ 887,052	\$ 134,955	\$ 6,706,992
2022	\$ 255,499	\$ 7,473,501	\$ 915,576	\$ 134,955	\$ 6,678,468
2023	\$ 255,499	\$ 7,473,501	\$ 989,240	\$ 134,955	\$ 6,604,804
2024	\$ 255,499	\$ 7,473,501	\$ 713,947	\$ 134,955	\$ 6,880,097
2025	\$ 255,499	\$ 7,473,501	\$ 713,947	\$ 134,955	\$ 6,880,097
2026	\$ 255,499	\$ 5,009,841	\$ 583,158	\$ 134,955	\$ 4,547,227
2027	\$ 255,499	\$ 3,346,021	\$ 455,967	\$ 134,955	\$ 3,010,597
2028	\$ 255,499	\$ 1,864,220	\$ 277,868	\$ 134,955	\$ 1,706,895
2029	\$ 255,499	\$ 538,877	\$ 80,846	\$ 134,955	\$ 578,574

Pilot Program implementation costs include estimated incremental labor, vendor and Paypal fees.

VIR payments include estimated generation payments.

Offsets to the deferral include an estimate of the customer monthly charge, interconnection application fee, forfeited deposits, and the avoided energy

This is a preliminary estimate of the photovoltaic pilot program costs.

*Actual Costs

Solar Photovoltaic Pilot Programs
PGE Solar Payment Option Pilot Program
Estimated Volumetric Incentive Rate Payments by System Size

Assumptions:

Annual Capacity Factor	0.12	
kWh	8760	
Years of Payments	15	
Change in VIR:		
Small and Medium size	0.10	0.20
Large size	0.20	
PGE Capacity	19,215	

Small-Sized System (0-10 kW)

		KW *8760*.12		Auto 10% Drop	Est. Ann kWh * VIR		
Capacity Enrollment Periods	Capacity Enrollment Window	Capacity Allotment in MW DC	Estimated Annual kWh	VIR	Annual Payments	Payment over 15 years	
1	July 1, 2010	0.701	736,891	0.650	\$ 478,979	\$ 7,184,689	
2	October 1, 2010	1.402	1,473,782	0.585	\$ 862,163	\$ 12,932,441	
3	April 1, 2011	1.052	1,105,862	0.468	\$ 517,544	\$ 7,763,154	
4	October 1, 2011	1.052	1,105,862	0.374	\$ 413,593	\$ 6,203,888	
5	April 1, 2012	1.052	1,105,862	0.411	\$ 454,509	\$ 6,817,642	
6	October 1, 2012	1.052	1,105,862	0.411	\$ 454,509	\$ 6,817,642	
7	April 1, 2013	1.052	1,105,862	0.390	\$ 431,286	\$ 6,469,295	
8	October 1, 2013	1.051	1,104,811	0.390	\$ 430,876	\$ 6,463,146	
9	April 1, 2014	1.012	1,063,814	0.390	\$ 414,888	\$ 6,223,314	
		<u>9.426</u>				<u>\$ 66,875,210</u>	

Medium-Sized System (10-100 kW)

		KW *8760*.12		Auto 10% Drop	Est. Ann kWh * VIR		
Capacity Enrollment Periods	Capacity Enrollment Window	Capacity Allotment in MW DC	Estimated Annual kWh	VIR	Annual Payments	Payment over 15 years	
1	July 1, 2010	0.467	490,910	0.550	\$ 270,001	\$ 4,050,011	
2	October 1, 2010	0.935	982,872	0.495	\$ 486,522	\$ 7,297,825	
3	April 1, 2011	0.701	736,891	0.396	\$ 291,809	\$ 4,377,134	
4	October 1, 2011	0.701	736,891	0.317	\$ 233,447	\$ 3,501,707	
5	April 1, 2012	0.701	736,891	0.285	\$ 210,102	\$ 3,151,536	
6	October 1, 2012	0.701	736,891	0.230	\$ 169,485	\$ 2,542,275	
7	April 1, 2013	0.701	736,891	0.230	\$ 169,485	\$ 2,542,275	
8	October 1, 2013	0.702	737,942	0.175	\$ 129,140	\$ 1,937,099	
9	April 1, 2014	0.674	708,509	0.175	\$ 123,989	\$ 1,859,836	
		<u>6.283</u>				<u>\$ 31,259,696</u>	

Large-Sized System >100 kW

		KW *8760*.12		Assumed Rates	Est. Ann kWh * VIR	Payment over 15 years	
Capacity Enrollment Periods	Capacity Enrollment Window	Capacity Allotment in MW DC	Estimated Annual kWh	VIR	Annual Payments -		
					Low Case	Low Case	
1	July 1, 2010	0.877	921,902	0.3970	\$ 365,995	\$ 5,489,929	
2	April 1, 2011	0.877	921,902	0.2250	\$ 207,428	\$ 3,111,421	
3	April 1, 2012	0.876	920,851	0.2098	\$ 193,195	\$ 2,897,919	
4	April 1, 2013	0.876	920,851	0.1787	\$ 164,556	\$ 2,468,342	
		<u>3.506</u>				<u>\$ 13,967,610</u>	

All Systems Total **\$ 112,102,516**

Solar Photovoltaic Pilot Program Rate Impact Estimate
Workpapers

Solar Photovoltaic Pilot Programs
PGE Solar Payment Option Pilot Programs
Estimated Avoided Energy Value Based on Mid-C Index

Energy Value Years	Capacity Enrollment Period						Total
	2010	2011	2012	2013	2014		
2011	\$ 143,027	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 143,027
2012	\$ 141,093	\$ 141,125	\$ -	\$ -	\$ -	\$ -	\$ 282,218
2013	\$ 149,522	\$ 149,556	\$ 149,522	\$ -	\$ -	\$ -	\$ 448,600
2014	\$ 155,808	\$ 155,844	\$ 155,808	\$ 155,808	\$ -	\$ -	\$ 623,268
2015	\$ 107,987	\$ 108,012	\$ 107,987	\$ 107,987	\$ 41,549	\$ -	\$ 473,523
2016	\$ 93,199	\$ 93,221	\$ 93,199	\$ 93,199	\$ 35,859	\$ -	\$ 408,677
2017	\$ 100,570	\$ 100,593	\$ 100,570	\$ 100,570	\$ 38,695	\$ -	\$ 440,998
2018	\$ 140,695	\$ 140,727	\$ 140,695	\$ 140,695	\$ 54,133	\$ -	\$ 616,944
2019	\$ 117,197	\$ 117,224	\$ 117,197	\$ 117,197	\$ 45,092	\$ -	\$ 513,907
2020	\$ 137,475	\$ 137,506	\$ 137,475	\$ 137,475	\$ 52,894	\$ -	\$ 602,825
2021	\$ 202,293	\$ 202,339	\$ 202,293	\$ 202,293	\$ 77,833	\$ -	\$ 887,052
2022	\$ 208,798	\$ 208,846	\$ 208,798	\$ 208,798	\$ 80,336	\$ -	\$ 915,576
2023	\$ 225,597	\$ 225,649	\$ 225,597	\$ 225,597	\$ 86,800	\$ -	\$ 989,240
2024	\$ 162,816	\$ 162,853	\$ 162,816	\$ 162,816	\$ 62,645	\$ -	\$ 713,947
2025	\$ 162,816	\$ 162,853	\$ 162,816	\$ 162,816	\$ 62,645	\$ -	\$ 713,947
2026	\$ -	\$ 172,317	\$ 172,278	\$ 172,278	\$ 66,285	\$ -	\$ 583,158
2027	\$ -	\$ -	\$ 191,201	\$ 191,201	\$ 73,566	\$ -	\$ 455,967
2028	\$ -	\$ -	\$ -	\$ 200,662	\$ 77,206	\$ -	\$ 277,868
2029	\$ -	\$ -	\$ -	\$ -	\$ 80,846	\$ -	\$ 80,846
	\$ 2,248,895	\$ 2,278,665	\$ 2,328,253	\$ 2,379,393	\$ 855,537	\$ -	\$ 10,171,590

The 2011-2018 estimated avoided energy values are based on historical Mid-C Index.

The 2019-2029 estimated avoided energy values are based on Mid-C forward prices as of 11/8/18.