

Agenda Report

June 9, 2014

TO: Honorable Mayor and City Council

THROUGH: Municipal Services Committee (May 20, 2014)

SUBJECT: AUTHORIZATION TO ENTER INTO A CONTRACT WITH OPOWER, INC. FOR A TOTAL AMOUNT NOT TO EXCEED \$789,000, FOR SERVICES TO PROVIDE HOME ENERGY USE REPORTS AND CUSTOMER WEB PORTAL

RECOMMENDATION:

It is recommended that the City Council:

1. Find that the proposed action is exempt from the California Environmental Quality Act ("CEQA") pursuant to State CEQA Guidelines Section 15061(b)(3); and
2. Authorize the City Manager to enter into a contract with Opower, Inc. ("OPower") for a total amount not to exceed \$789,000, for services to provide home energy use reports to all eligible Pasadena Water and Power ("PWP") residential customers for two years. Neither competitive bidding nor competitive selection is required pursuant to City Charter Section 1002 (F), and Pasadena Municipal Code Section 4.08.049.

EXECUTIVE SUMMARY:

In August of 2009, the City Council authorized a contract with Positive Energy (now OPower) for a two-year Home Energy Reporting System ("HERS") pilot program designed to achieve residential energy efficiency through behavioral science. In July of 2013, the City Council authorized an extension of the pilot project contract for one additional year through June 2014.

Over the three-year pilot period since 2011, the HERS program has proven to be the single largest and one of the most cost-effective residential energy efficiency programs in PWP's residential energy efficiency portfolio. The HERS program has helped PWP engage approximately 25,000 residential customers and encourage them to become more energy efficient by providing specific and relevant energy usage and efficiency information. As a result, about 8.5 million kWh of energy, enough energy to power 1,300 average Pasadena homes for an entire year, have been saved thus far by customers receiving the HERS reports. In addition, customer surveys have demonstrated increased engagement and satisfaction with PWP by those receiving the reports.

As requested by the Municipal Services Committee when authorizing the third year of the pilot program, PWP has explored a number of alternatives for the future of

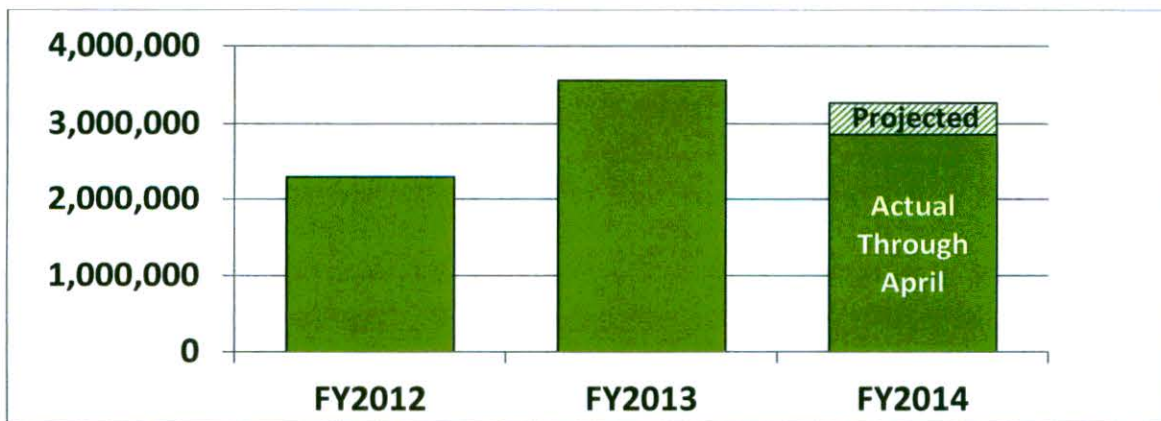
behavioral savings programs over the last year. Options that were considered included: maintaining the current HERS program as is; expanding it to a larger recipient group (while retaining a control group); mailing it to all residential customers; seeking alternative vendors; and, terminating the program.

Given the relatively low projected first year cost of approximately 8.5¢ per kWh saved, and the benefit of being able to communicate relevant energy use and program information four times a year, PWP recommends that the City Council authorize a new contract with OPower to extend the HERS program through June 2016 and expand the program to cover most residential customers. HERS reports will initially be mailed to an estimated 46,000 customers that meet neighbor comparison eligibility requirements (i.e., sufficient usage history) when the contract commences. These customers will continue receiving reports for two years, provided they remain eligible. All of PWP's 53,400 residential customers will have access to the OPower HERS web portal. The program is expected to yield approximately 9,376,000 kWh in energy savings over two years, reducing customers' bills by about \$1,400,000 at cost of \$789,000.

BACKGROUND:

PWP initially engaged the services of OPower through participation in an agreement with the Southern California Public Power Authority ("SCPPA") and other local utilities. This arrangement provided PWP with discount pricing for services and reports offered by OPower. The two-year HERS pilot program commenced in June 2011, when an initial group of 25,000 PWP residential customers began receiving HERS reports in the mail on a bi-monthly basis. In July 2013, the City Council authorized a one-year contract extension to continue the HERS pilot program through June 2013. Thus far, the HERS program has resulted in approximately 8,500,000 kWh savings as shown in Figure 1.

Figure 1: HERS Program Yearly Energy Savings (kWh)



Although the total energy savings are projected to be lower in FY2014 than in FY2013, the actual savings impact has increased on percentage basis from 2.5% in FY2013 to 2.6% for results through April in FY2014. The reduction in energy savings is attributable to program attrition (smaller treatment group) and lower overall sales in FY2014.

How does the HERS program save energy?

Numerous studies have shown that human beings are motivated more by what they see their neighbors doing than noble ideals or even economic incentives. Through robust research and analysis, OPower has developed the HERS product to couple the concept of energy efficiency with motivation through neighbor comparison to deliver “Neighbor Ranking” Home Energy Reports. These colorful and informative reports demonstrate how each resident is doing with their energy usage compared to a like grouping of similar homes. Each report contains historical data in the form of simple graphs, zero-to-two “smiley face” icons depending on how well that customer is doing, and tips to save energy through PWP’s energy efficiency programs.

OPower’s HERS is the dominant behavioral energy efficiency program in the United States, and a number of utility clients have utilized the product for over five years. OPower is working with over 90 utilities worldwide and to date has helped these utilities save over 4,000,000,000 kWh of energy, eliminate over 6,000,000,000 pounds of CO2 emissions, and helped consumers save over \$450,000,000 in energy costs.

How does OPower measure the energy savings?

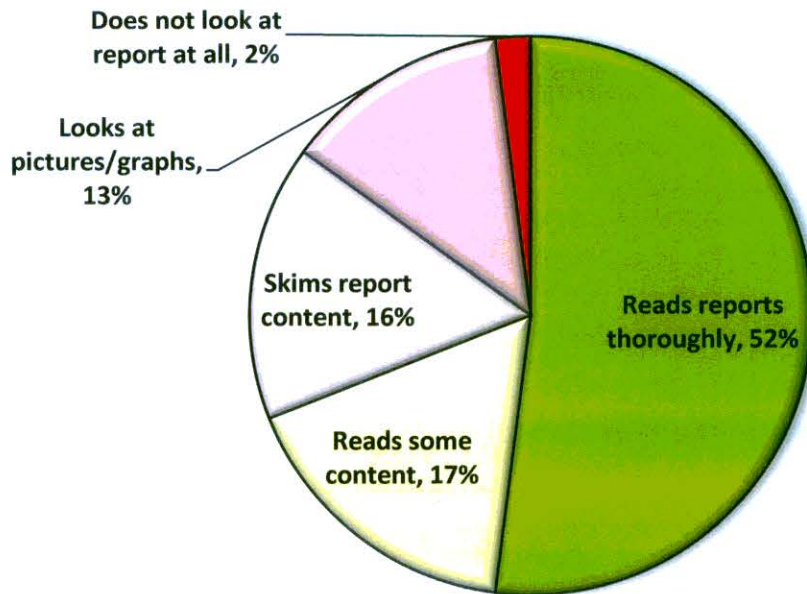
OPower employs rigorous statistical methods to calculate the HERS program’s energy savings for each utility client. Their approach has been independently verified by numerous third parties for various OPower clients, and the resulting energy savings qualify for reporting under California’s rigorous standards.

For PWP’s HERS pilot program, OPower randomly selected an initial “treatment group” of 25,000 PWP residential customers to receive HERS reports in the mail on a bi-monthly basis. The energy consumption for the report recipients was tracked against a “control group” of nearly 15,000 PWP customers that did not receive the reports. By comparing energy use of the treatment group to the control group, and adjusting for customers’ participation in other PWP energy efficiency incentive programs, OPower is able to calculate the behaviorally-induced energy savings from the HERS program and to distinguish those savings from changes caused by other factors.

What are PWP’s customers saying?

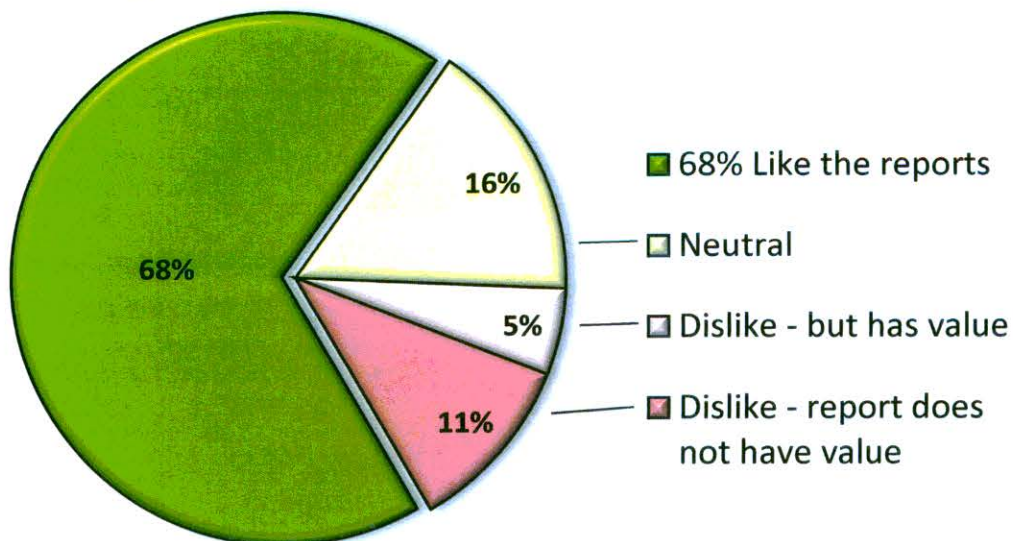
To help gauge overall customer reaction to the HERS program, PWP worked with OPower and a third party to survey 1,000 residential customers by telephone. The results were very favorable for the program and indicated that HERS has generally made a positive impression on residents. Recipients of the Home Energy Reports were more likely to believe that PWP wants to help them reduce their home energy use. Approximately 85% of customers recalled receiving the Home Energy Reports, and, as shown in Figure 2, nearly all of these individuals read the reports in some way. Many customers surveyed indicated they talk to members of their household about how their energy use compares to that of their neighbors.

Figure 2: Recipients That Recall Receiving Home Energy Reports



When asked if they liked the HERS reports, over two-thirds of report recipients indicated liking the Home Energy Reports, a proportion that is in line with survey results at other mature utility deployments. Also, a third of those who “dislike” the reports still indicated they see value in the reports. As seen in Figure 3, only 11% of HERS report recipients both disliked and didn’t see value in the reports. For those that dislike the reports, PWP offers an option to opt out of participating in the program. Since the program’s inception only 163 or 0.6% of participating customers have elected to opt out of the program.

Figure 3: Two-Thirds of Recipients Like the Reports



How does HERS compare to other residential energy efficiency programs?

PWP offers residential customers a variety of energy efficiency programs and services and is constantly seeking innovative ways to enhance customer experiences while meeting yearly energy efficiency targets. As shown in Table I, PWP reported energy savings of 3,560,000 kWh in FY2013 from the HERS program, which represented 77% of the total savings from all of PWP's residential energy efficiency programs in that year. With an average cost for annual energy savings of only \$0.09/kWh, the HERS program is one of the most cost effective programs in PWP's energy efficiency portfolio.

Table I: FY 2013 Residential Energy Efficiency Portfolio

Program Name	Annual kWh Saved	% of kWh Savings	Cost \$	\$/kWh Saved*
Home Energy Reports	3,560,000	77%	308,000	0.09
Refrigerator Exchange Participants	413,424	9%	172,000	0.42
Refrigerator/Freezer Recycle Service	210,986	5%	15,000	0.07
Refrigerator Rebate	70,059	2%	78,000	1.12
LED Distribution	57,513	1%	16,000	0.28
All Other Residential Programs	313,495	7%	205,000	0.65

*Program cost divided by annual kWh savings

Budget

The Home Energy Report program, like all other energy efficiency programs, is funded by the Public Benefits Charge ("PBC"), a volumetric rate charged to all customers based on their energy usage. PBC revenues are maintained in a separate fund that is used only for the following purposes authorized under Public Utilities Code 385(a): (1) Cost-effective energy efficiency and demand reduction programs; (2) Renewable resources, which are currently limited to the Pasadena Solar Initiative program; (3) Research, development and demonstration projects; and, (4) Low income rate assistance and energy efficiency programs.

As seen in Table II, the PWP PBC budget is projected to be \$7,680,000 for Fiscal Year 2015. The budget includes \$2,907,381 to meet the energy efficiency goals adopted by the City Council, and assumes that a \$0.00112/kWh PBC rate increase is implemented to provide sufficient revenues to fully-fund PWP's energy efficiency, solar, and low-income program needs for FY2015.

Table II: Projected Fiscal Year 2015 Budget*

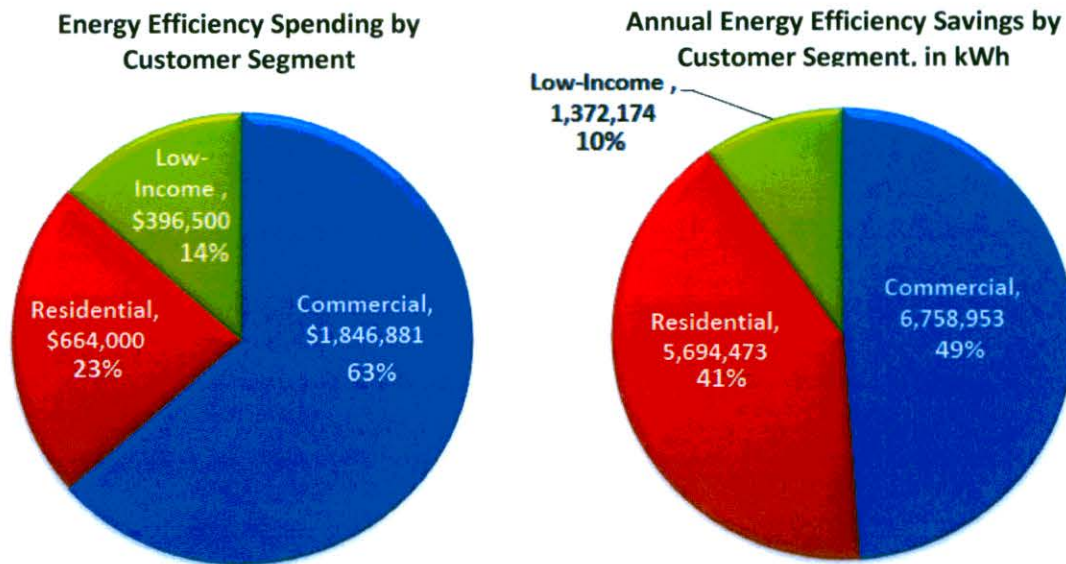
Category	Budget \$	% of Budget
Energy Efficiency	2,907,381	38%
Solar Incentives	2,400,000	31%
Research and Development	28,000	0%
Low-Income Assistance	672,000	9%
Other**	881,274	11%
Administrative	791,345	10%
Total Budget	7,680,000	100%

* Assumes \$0.00112/kWh PBC rate increase to provide sufficient funding.

** This category includes measurement and verification of program savings, marketing, events, educational programs, etc.

PWP strives to offer a large variety of programs to all customer segments using funds available in the energy efficiency section of the PBC budget. Each program contributes towards meeting the City Council adopted energy reduction goal of 12,750,000 kWh saved yearly. As seen in Figure 4, 23% of energy efficiency program funds are spent on residential programs which yield 41% of yearly energy savings. The HERS program provides the vast majority (77%) of these residential energy savings.

Figure 4: Fiscal Year 2015 Program Spending and Savings by Customer Segment



Cost and Options for Fiscal Years 2015 and 2016

The HERS program is a major contributor towards achieving the energy efficiency goals adopted by the City Council. Terminating the program at this time would leave a significant gap that could only be filled by shifting more funding into the commercial program sector in the near term. PWP does not have the capability to prepare such reports in house, and has not identified a proven and cost-effective alternative product.

PWP explored three options to extend the HERS program for two additional years:

1. Continue mailing the report to approximately 25,000 customers;
2. Expand the number of recipients to 32,000, which is about the maximum possible while retaining a control group of 15,000 customers necessary to verify the energy savings using OPower's proven statistical algorithms;
3. Provide Home Energy Reports to all eligible residential customers.

For each option, the reports would be mailed four per year and all PWP residential customers would also have access to the OPower web portal that provides energy use comparison graphs, analysis, conservation tips, and enables customers to set energy budgets and goals. Table III summarizes the number of customers that would receive reports, the annual cost, estimated energy savings, and average cost per kWh saved for each of the options as well as the anticipated FY2014 results for the current HERS program as a comparison.

Table III: Home Energy Report Options for FY 2015 & 2016

Option	Approximate Number of Customers*	Avg Annual Cost (\$/yr)	Avg Annual Savings (kWh/yr)**	Avg Energy Cost (\$/kWh)
FY2014 Program	25,000	308,000	3,244,000	0.095
Option 1	25,000	286,000	2,165,500	0.132
Option 2	32,000	315,000	3,505,500	0.090
Option 3	46,000	394,500**	4,688,000	0.085

* Initial number of recipients. The number of eligible customers typically declines 4-5% annually

** FY2015 costs are slightly higher than FY2016 option due to one-time setup fees

*** Average annual energy savings estimates based on data provided by OPower

Recommended Option

The recommended Option 3 would result in the highest annual energy savings and lowest average cost per kWh saved. Since there would be no control group, energy savings will be estimated and reported based on pilot period results, as is currently being done in the cities of Burbank and Palo Alto. At an average annual cost of \$394,500 per year, the estimated savings would increase to 4,688,000 kWh per year.

Expanding the HERS program to include all residential customers would provide a new and very effective means for PWP to promote its conservation programs and deliver other important information to customers in the context of their own energy usage. Customers may elect to have the reports provided electronically by e-mail, and will still have the ability to opt out of the program. Reports will not be mailed to customers with less than 12 months of usage history or those with a solar PV system installed.

COUNCIL POLICY CONSIDERATION:

The proposed contract is consistent with the ten-year energy efficiency goals adopted by the City Council on January 28, 2013, the City's Urban Environmental Accords Goals, the General Plan Energy Element, the City Council's Strategic Planning Goals,

and the 2012 Integrated Resource Plan. The proposed contract will contribute to greenhouse gas reduction goals by reducing electric energy use in Pasadena.

ENVIRONMENTAL ANALYSIS:

The proposed contract has been determined to be exempt from the California Environmental Quality Act ("CEQA") pursuant to State CEQA Guidelines Section 15061 (b)(3), the general rule that CEQA applies only to projects which have the potential for causing a significant effect on the environment. Where it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment, the activity is not subject to CEQA. Such is the case with the proposed contract authorization for the continuation and expansion of the HERS program. This program consists of providing information to electricity customers and does not propose any physical changes to the environment.

FISCAL IMPACT:

The cost of this action will be \$789,000. Funding for this action will be addressed by the utilization of existing budgeted appropriations in the Public Benefits Fund (8215-410-831700-0914-24444-22) for the HERS program. It is anticipated that \$399,000 will be spent in FY2015. The remainder of the costs will be spent in FY2016. In the event that PBC budget funding increases anticipated for FY2015 and FY2016 are not approved, funding would be reduced for other energy efficiency programs.

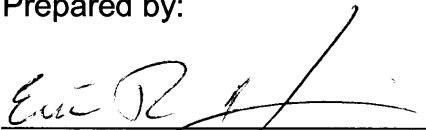
Over time, the costs associated with the proposed contract should be fully offset by reduced energy procurement and transmission costs in the Light and Power Fund, resulting in a no net impact on electric bills.

Respectfully submitted,



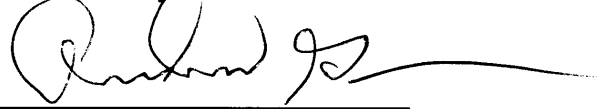
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