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**BEFORE THE ARIZONA CORPORATION COMMISSION**

In the matter of the Commission's Inquiry §  
into Potential Impacts to the Current Utility §  
Model Resulting from Innovation and §  
Technological Developments in §  
Generation and Delivery of Energy. §

Docket No. E-00000J-13-0375  
(Filed November 4, 2013)

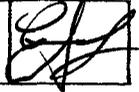
**ORIGINAL**

**COMMENTS OF OPOWER, INC.**

Arizona Corporation Commission

**DOCKETED**

JAN 17 2014

DOCKETED BY 

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**COMMENTS OF OPOWER, INC.**

Opower, Inc. (“Opower”) appreciates the opportunity to provide comments to Commissioner Bob Burns’ request to review major innovations and technological areas that appear to have the greatest potential to impact the existing energy utility model.

On December 5, 2013, Commissioner Burns issued a letter requesting stakeholder comments on the proposed scope and approach of a proceeding to address the technological innovations with the greatest potential to impact the utility business model, as well as substantive comments on six categories. Commissioner Burns intends to place this matter on a Commission/Staff Open Meeting to discuss the scope and approach outlined with his fellow Commissioners. He tentatively plans to hold workshops on the topics identified in his letter.

Our comments focus on innovations to help increase customer participation as the energy utility model moves towards dynamic rates and increased penetration of distributed generation (“DG”). More specifically, we address innovations in category two: *Customer Load Management Technology, Energy Efficiency, Major New Loads and Related Services: includes customer energy information systems, demand controllers, real-time pricing controls, plug-in electric vehicles, demand response, and alternative service arrangements for customer energy management, etc.*

**A. Introduction and Summary**

Opower delivers behavioral energy efficiency (“EE”), demand response (“DR”), and customer engagement services to over eighty electric and gas utilities across thirty states and eight countries, including Arizona. To date, these programs have saved over three terawatt-hours

of energy.<sup>1</sup> This year Opower will deliver personalized energy usage insight to more than 22 million residential customers through paper mail, email, websites, smart phones, and text messages.

Behavior programs provide residential customers with better energy information through personalized mailed reports and emails as well as an integrated web portal. This information empowers them to make more informed energy usage decisions and save money on their bills. Cost effective energy savings have consistently been achieved. Such savings result in 1.5-3% for average electric savings and 1.0-1.5% gas savings, as has been demonstrated through 30 independent evaluations of programs across millions of households.<sup>2</sup>

Opower supports the Commission's effort to understand the latest technological innovations and their potential impact on the energy utility model, particularly as more utilities shift to dynamic rate pricing and alternative energy generation sources.

Our comments elaborate on the following:

- **Behavioral DR:** Opt-out DR programs with timely behavioral change interventions lead to large-scale customer participation and peak demand reduction with or without price signals or incentives.
- **Smart Thermostats:** deliver customer choice, measurable savings and create additional demand reduction opportunities.
- **Behavioral EE for Small/Medium Commercial Customer Segment:** This customer segment is difficult to reach and consumes five times more energy than the residential customers. Engaging this group is important for utilities seeking to meet greater energy savings and DR goals.

## **B. Innovations in Behavioral EE and DR**

### ***Behavioral DR***

As the utility model shifts to Time of Use and Critical Peak Pricing rates, the use of feedback and social norms to encourage behavior change is critical for residential customer

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<sup>1</sup> Three terawatt hours is equivalent to removing the city of Las Vegas, Nevada off of the grid for one year.

<sup>2</sup> To access independent evaluations of Opower programs go to: <http://opower.com/company/library/verification-reports>.

participation in this new rate structure. Engaging customers in programs that shave peak demand is a challenge—only 5% of U.S. homes currently participate in any kind of DR program.

Opower believes that DR programs that incorporate behavior change interventions can promote customer participation in such programs. Notably, behavioral DR programs do not require price signals or incentives, but can be implemented with these signals as well. Savings results for are measured at the household (baselines) and aggregate (Randomized Control Trials) level.

Opower is partnering with utilities to achieve their most aggressive DR goals. For example, Opower has partnered with Baltimore Gas and Electric (“BGE”) to implement communications and customer engagement for one of the largest scale peak-time rebate (“PTR”) programs in the United States. In the summer of 2013, BGE used behavioral DR to send over millions of personalized multi-channel messages to over 300,000 customers before and after four peak events. Approximately 75-93% of customers received a rebate during an event. Average customer rebates ranged from \$8.00 to \$11.00 per event. Three quarters of customers reported a positive experience with the program. BGE intends to scale their pilot program to a territory-wide deployment that will reach 1.1 million customers by 2015.

The opt-out behavioral residential DR program uses multichannel communications (email, phone, text, and mailed report) to increase awareness of peak events. The use of personalized big data insights and behavioral science drives customer interest and motivation to contribute to peak load reduction. One benefit of behavioral DR is that no new hardware or a specific rate structure is required. Key features of behavioral DR programs include introductory materials about the program, followed by pre-peak event alerts to raise awareness, motivate, and give actionable recommendations. Post-event communications would then provide the residential customer with performance feedback to help motivate them for future events. Behavioral DR is a low-cost and scalable approach to reduce residential energy consumption during peak hours.

Providing customer-facing tools that allow users to learn more about various rate plans, compare how those plans might affect them, and see how changes in consumption behavior would impact their bills is essential for dynamic pricing. It is important for customers to see how their usage impacts their bill and gain the insight and incentive necessary to either decrease their

usage or shift it to other parts of the day. Providing ongoing insights to customers enable them to derive the most benefits from their rate plan.

### ***Measurable EE and DR Through a Smarter Thermostat Solution***

As connected thermostats become more prevalent, the utility industry is seeking to identify EE and DR potential. Honeywell and Opower's energy management platform combines engaging software, mobile access, and behavioral science with an internet-connected thermostat to provide an innovative and measurable approach to DR and EE. The Opower-designed mobile and web applications control Honeywell's thermostat, and provide real-time energy-saving tips to customers to reduce heating and cooling costs by improving their thermostat settings without sacrificing comfort. Also, the thermostat is programmed for energy savings (via the Opower solution) before installation, which sets customers on the right path to efficiency from the onset. Ex-post measurement using propensity score matching is used to verify savings.

Utility benefits include: 1) increased customer participation; 2) significant and sustainable energy efficiency; and 3) verifiable DR. By providing customized messaging and usage information in convenient mobile and web formats, utilities offer consumers greater control over their energy usage in ways that work with their lifestyle. With respect to EE, customers are encouraged to program their thermostats. In combination with deeper setbacks, targeted messaging, and other behavioral science-based techniques, significant and sustainable program results are measured through two-way validation. Lastly, DR capabilities provide reduction of peak usage.

Customer benefits include: 1) incremental EE savings, which is estimated to reduce HVAC usage by up to 20% during the cooling season and 10% during the heating season; 2) the ability to create custom schedules easily and quickly; 3) anywhere access to viewing and adjusting temperature setting through a user-friendly web and mobile applications; and 4) increased awareness to encourage efficient settings, vacation schedules and equipment maintenance.

### ***Behavioral EE for Small-and-Medium-Sized Commercial Customers***

Small- and medium-sized commercial customers represent a significant portion of a utility's customer base and use five times more energy than their residential counterparts on

average. Yet, utilities have been challenged to reach this customer segment. Small- and medium-sized commercial customers can be reached through behavioral science and personalized, outbound communications with a new methodology for addressing long-standing-specific engagement challenges for this sector. One approach is to: 1) get reliable data about customers with our comprehensive data acquisition and validation strategy; 2) reach the decision maker through intensive program pre-communications, which then turns a fragmented market into an opportunity for individualized engagement with highly personalized, industry-specific communications; 3) empower the on-premise champion to rally the troops with efficiency collateral; and 4) deepen engagement through user-friendly email and web communications.

When small-and-medium-sized commercial customers receive better energy information through personalized mailed reports and emails as well as an integrated web portal, this segment is also empowered to make more informed energy usage decisions and save money on their bills.

**C. Conclusion**

Changes in the energy utility model towards more dynamic pricing and greater DG will require increased participation in EE and DR initiatives by residential and small-and-medium-sized commercial customers. Increased customer participation could be addressed by bringing technology to bear on the design and implementation of dynamic pricing and home control programs. For example, the use of data analytics to provide tailored insights, along with multi-channel communication tools, broadens and deepens customer engagement and participation in the EE and DR context.

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Opower appreciates the Commission's consideration of our comments. Should workshops be held, the following Opower representatives would value an opportunity to participate:

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Respectfully submitted,

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