

**Positive Energy Written Testimony- Docket No. M-00061884**

**Submitted to: Commonwealth of Pennsylvania Public Utility Commission**

**Presented by: Mr. Jeremy Kirsch**

Good morning. My name is Jeremy Kirsch, and I am the Vice President of Client Solutions for Positive Energy, Inc. I thank the Commission for the opportunity to present today, in regards to Docket No. M-00061984. My hope is to inform interested parties that existing information and normative analyses are becoming key assets in the Energy Efficiency Portfolios of leading utilities across the United States.

Energy Efficiency portfolios deployed by utilities are becoming increasingly more robust due to the aggressive efficiency goals being put in place in states across the United States. By giving customers information about their energy consumption, and how this consumption compares with people and households like themselves, utilities are finally able to help customers understand how efficient their lifestyle is, and what they specifically can do to become more efficient. As a result of these analyses, recommendations for behavioral and more structural changes can be targeted to customers in a very effective way. The resource being leveraged by the utility to drive energy efficiency, in this case, is the information itself. Both today, and into an AMI-enabled future, this information is an extremely valuable energy efficiency asset. In the next few minutes, I will discuss the theory, the program implementation, and a brief case study where these information, normative analyses, and targeted recommendations are being leveraged to drive thousands of MWH in energy savings each year, and why these types of approaches are becoming key parts of utility energy efficiency portfolio designs and deployments.

**The Theory**

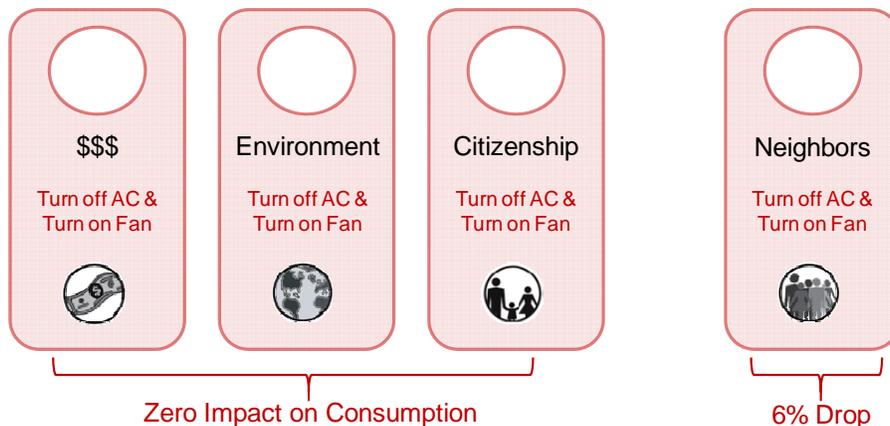
It has been proven through several studies over the past 15 years that there is an information gap regarding how efficient customers are with their energy usage. In these studies, approximately 90% of consumers say that energy efficiency is important, and 98% of consumers say that they try to conserve energy. There is a very strong social norm to conserve and not be wasteful, no matter where in the country the studies are done. However, very few people can answer the following basic questions:

- Are you energy efficient?
- How does your energy use compare to your neighbors?
- What can you do about it?

**It turns out that according to these studies, telling people the answers to these questions reliably reduces energy consumption.**

As an example, Figure 1 below shows a study done in San Marcos, California in 2003, led by well-known behavioral scientist Dr. Robert Cialdini and his team. In this study, meters for a few hundred homes were read for six weeks, and then households were given one of four messages in the form of a door-hanger. Door hanger #1 focused on an economic message, stating “Did you know you could save over \$40 each month by turning off your air conditioner and turning on your fan(s) during the peak evening hours?” Door Hanger #2 focused on the environment with a message to the effect of “Help continue to save the environment, turn off your air conditioner and turn on your fan(s) during the peak evening hours”. Door Hanger #3 focused on citizenship with a message to the effect of “Be a good citizen, help your fellow Californians, please turn off your air conditioner and turn on your fan(s) during the peak evening hours”.

Home energy consumption was then measured again for another 6 weeks after the door hangers were deployed, and from above messages 1 -3, there was no measureable change in consumption. It was as if the door hangers had not even been placed on the homeowners’ doors. On the contrary, Door Hanger #4 focused on the norm with a message to the effect of “Did you know that when surveyed, 75% of your neighbors turn off their air conditioners and turn on their fan(s) during the peak evening hours”. The results of the post-experiment measurements on these homes were an average aggregate reduction in consumption of 6%, measured for a period of 6 weeks. These types of results have been measured in study after study over the years, and the power of normative messages is well-documented.



Date of study: 2003

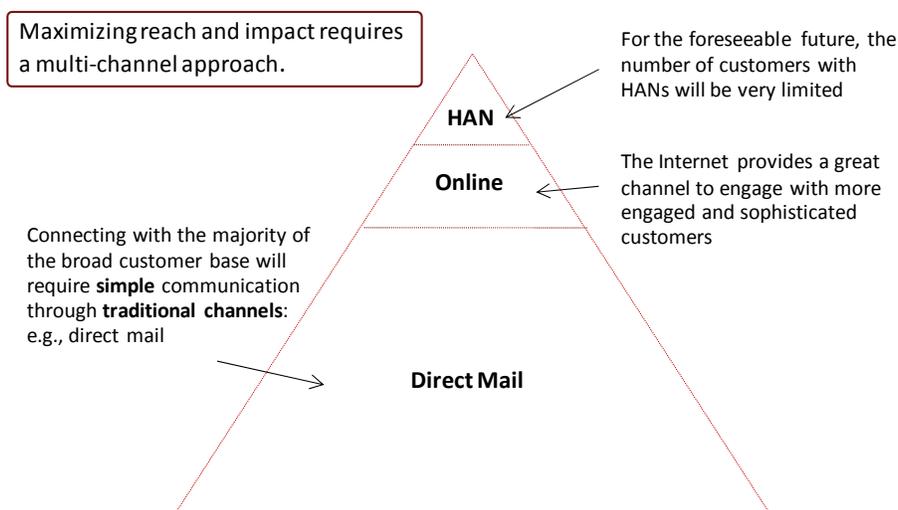
**Figure 1: Study conducted in San Marcos, CA sponsored by the Hewlett Foundation (led by Professor Robert Cialdini, Arizona State University)**

Now there are more than academic studies to point to, as utilities are using these types of analyses and messages with the associated actionable information, and getting their customers to engage and take action, resulting in thousands of MWhs in savings. The focus on this is the realization that for utilities to hit their efficiency goals, they cannot only rely on command-and-control approaches, but will need to leverage the actions of their millions of residential customers.

## Communicating with Customers

So, how do we engage millions of residential customers? Utilities have many methods with which to communicate with residential customers, and make them aware of energy efficiency measures. Marketing is expensive, and if not done correctly, messages get lost in the “noise” of all of the messages we hear day in and day out.

In spite of advances in technology such as online tools and AMI-enabled devices, the primary way utilities communicate with their residential customers, and the way that will continue to anchor those communications, is through traditional outlets such as direct mail. This is substantiated in that most residential customers still pay their utility bills through the mail. Figure 2 shows that new channels such as the web and home area networks displaying data from AMI-enabled homes, will be important in the coming years. However, utilities will continue to be best-served by a communication strategy that leverages these new methods, but still optimizes how 90% of their customers will continue to communicate with them: the tried and true methods of the mail and the call center.



**Figure 2: A multi-channel communications approach**

As such, a multi-channel communications approach is critical to any successful energy efficiency portfolio initiative.

## Home Energy Reporting System Program Description

As an example of one such multi-channel program, Positive Energy’s Home Energy Reporting System is a communications platform for utilities, helping utilities better use their customer data to engage residential customers. This platform can be used for electricity, gas, or handle “dual-fuel” (electric and gas) analysis. The core of the platform is a software analytics engine that takes in a vast array of data

streams and analyzes them to derive insights about customer segments and individual customers. That data is used to power a number of consumer-facing applications.

The purpose of the system is to:

- Reliably and measurably reduce consumption
- Deliver targeted and individualized communications
- Strengthen customer relationships

Deployment of this type of program and system for a utility involves 5 main steps:

- 1) Utility clients securely transfer energy consumption data to the Positive Energy's software system (programs usually target 50,000 or more homes in the initial year)
- 2) Demographic data elements are combined with this consumption data (e.g. home size, pool, income of homeowners, lat/long, # of people in the home, etc...)
- 3) Energy profiles are created for each household, using rigorous segmentation and analysis
- 4) Reports are generated detailing how each residential customer is doing relative to similar households ("neighbor benchmarking") with respect to energy consumption, and specific recommendations on how to continue to reduce consumption are packaged with this benchmarking to residential customers both in the mail, online, and through a CSR tool
- 5) Savings are measured using rigorous M & V

These initial results are delivered without any customer inputs, and the system is able to "learn" over time as actions are measured, residential customers start to engage in recommended actions, and customers communicate these actions to their Utility.

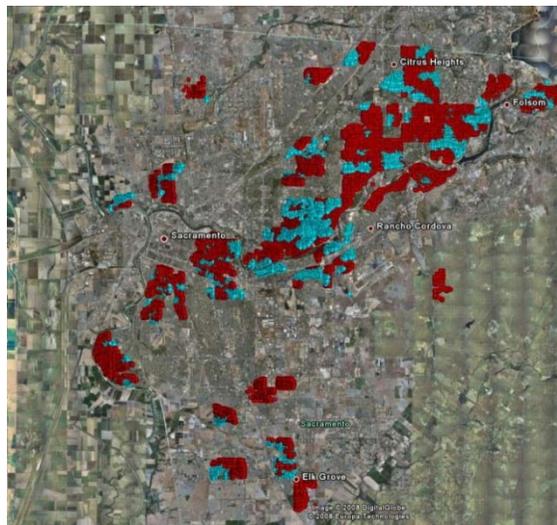
Product descriptions are not the focus of this hearing, but just to put this in context, these products exist today. They are now being deployed to hundreds of thousands of homes in service territories across the United States. The reports are the results of over 15 years of behavioral-science research, 2 years of product design, and are produced by a sophisticated software system which analyzes consumption and demographic data sets on now hundreds of thousands of residential customers.

### **So, where this is working today**

There are seven utilities around the country deploying these types of programs, with many more contracting to do so starting in 2009. One utility which has been doing so since late 2007 is the Sacramento Municipal Utility District ("SMUD").

SMUD is the sixth largest municipal utility in the United States, providing electricity to more than 500,000 residential customers in a service area covering more than 900 square miles. In response to California regulation AB2021 and with a desire become one of the leading utilities in California in terms of energy efficiency, SMUD's Board of Directors set a goal to reduce total energy consumption by 15% over the next 10 years. As a result, SMUD staff endeavored to better engage their residential customers as a key stakeholder in achieving these goals.

SMUD is partnering with Positive Energy to deliver the Positive Energy Home Energy Reporting System to 35,000 SMUD residential customers, using information as the tool to help reduce electricity consumption. SMUD's worked with Positive Energy to randomly select a test group of 35,000 residential customers and a control group of 50,000 residential customers to participate in the pilot program. The two groups were analyzed for historical consumption patterns, and found to be statistically similar, in the aggregate, during the previous two years. Figure 3 shows the test and control home methodology.



**Figure 3: Test and Control homes in the Sacramento-area, California**

Then, using Positive Energy's Insight Engine, the 35,000 customers scheduled to receive the reports were compared against similar homes, in order to give each household a true "benchmark" about how they were doing in terms of relative consumption. Those customers were also analyzed based on other demographic datasets, and as a result SMUD has been able to not only let households know how their usage compares with their "neighbors", but also target specific tips, recommendations, and the SMUD and 3<sup>rd</sup>-party programs most relevant to each customer. Over the past year, this information and analysis has proven effective at encouraging additional energy efficiency behaviors and measures to be put in place by thousands of residential customers.

Initial measurements for this type of program show that households receiving the reports are reducing consumption by approximately 2%.

## **Summary**

Programs like this are being run not only in California, but in several other states such as Washington State and Minnesota (and soon, New York, amongst others). Commissions across the country have been introduced to this program, and they are encouraged by the innovative thinking and initial success. The opportunity exists to leverage this success and expertise here in Pennsylvania, and engage the citizens of the Commonwealth to work in concert with their utilities to save energy in the coming years through their actions, making structural changes within their homes, and bi-lateral engagement. However, people will not take action, and real progress will not be made, until the first step is taken—that is, letting people know how they are doing, and the specific actions they need to and should take to improve.

I thank you for this opportunity to speak with the Commission today, and look forward to answering any questions regarding this testimony.