

MATCHING DEMAND RESPONSE WITH INCENTIVES THAT WORK. POSSIBLE?

Moderator: Ed Thomas, PLMA

PAPERS (in order of appearance):

The Matchmaker: Methods for Predicting Participation and Finding the Best Demand Response Programs for Customers

Alan Elliott, Opinion Dynamics

Olivia Patterson, Opinion Dynamics

The Price is Right: The Minimum Incentive Level Commercial Customers Need to Participate in Demand Response

Debbie Brannan, Navigant Consulting,

Jesse Feinberg, Consolidated Edison Company of New York

Armen Nishanian, Consolidated Edison Company of New York

Residential Customers Response to Critical Peak Events of Electricity: Green Mountain Power Experience

Suman Gautam, DNV GL

Seth Blumsack, Penn State University

Evaluating a Behavioral Demand Response Trial in Japan: Evidence from the One-Year Experiment

Toshihiro Mukai, Central Research Institute of Electric Power Industry

Ken-ichiro Nishio, Central Research Institute of Electric Power Industry

Hidenori Komatsu, Central Research Institute of Electric Power Industry

Teppei Uchida, Familynet Japan Corporation

Kyoko Ishida, Nomura Real Estate Development Co., Ltd.

SESSION SUMMARY:

Need Demand Response (DR) to help meet supply needs? Do you know which customers to call? What can you expect about persistence in savings? What is the relationship between incentives, program changes and DR-enabling technologies? This session covers residential and small commercial customers.

All four presenters will discuss how their papers identify the best ways to incentivize participation-i.e., program design changes or changing the intervention or technology involved. The first two presentations will explore how a single DR program may not work well for all customers. You will learn how customers with certain characteristics are more likely to be engaged with the programs. You will discover how program design changes will have positive impacts on some customers' likelihood to participate, but the same design change could have no impact (or negative impacts) on other types of customers' likelihood.

Our final two presenters will detail the potential that in-home displays and other "smart" technologies have in terms of increasing participation during events and, importantly, non-event energy usage reduction. This will also consider smart grid and AMI-enabled technologies might impact this potential?

In "The Matchmaker: Methods for Predicting Participation and Finding the Best Demand Response Programs for Customers," the authors present methods that give program administrators a

structured way to analyze their current or prospective participant population. Ultimately, these methods have the potential to lead to program design changes that will enhance event participation as well as ensure that customers are placed in programs that make the most sense for them. This paper will showcase two methods used in a process evaluation of a demand response program in California. The first method provides program administrators with a tool for identifying the types of customers that should be targeted for enrollment in their programs, or potentially deciding which types of programs may be a better fit for current program participants. The second gives program administrators an analytical framework for prioritizing the elimination of barriers faced by existing customers when participating in events.

In “The Price is Right: The Minimum Incentive Level Commercial Customers Need to Participate in Demand Response,” the authors explore how Consolidated Edison Company of New York (Con Edison) implemented changes to its two commercial DR programs in 2014. At the time there was limited information to predict the increase in enrollment that could be achieved as a result of the programmatic changes, so the New York Public Service Commission ordered additional research be conducted alongside the implementation of programmatic changes. In the fall of 2014, Navigant Consulting conducted a survey of Con Edison customers to determine the minimum incentive required to participate in a commercial DR program. The analysis revealed that performance window and notification period are the primary factors influencing willingness to accept, with commercial customers exhibiting a preference for longer notification periods whereas multi-family customers exhibit a preference for shorter events.

In “Residential Customers Response to Critical Peak Events of Electricity: Green Mountain Power Experience,” the authors analyze the impact of Vermont’s Green Mountain Power’s (GMP) emergency Demand Response (DR) programs on residential customers’ electricity consumption during a two-year pilot study program in 2012–2013. Their analysis shows that incentive-based demand response programs have statistically significant impacts on reducing peak load. However, none of the pricing rate and in-home display treatments induced a persistent response across multiple critical events and none of the treatment groups exhibited a consistent response to critical peak events.

In “Evaluating a Behavioral Demand Response Trial in Japan: Evidence from a One-year Experiment,” the authors explore the results of a trial experiment from August 2013 to November 2014 to evaluate the impact of the following four interventions on home electricity consumption. Through a randomized experiment targeting almost 500 participant households of a condominium in Japan’s Chiba Prefecture, they found that the total average treatment effect of the four interventions in the first summer, the first winter, and the second summer from the beginning of treatments was around 10% at peak times. The peak saving effects were likely to be higher than the electricity conservation effects, implying that people were more responsive in peak times.