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EXECUTIVE SUMMARY

ACEEE Field Guide to Utility-Run Behavior Programs

This report joins the ongoing conversation about how best to construct cost-effective behavior programs that deliver appreciable energy savings. As the first comparative analysis of utility-run behavior programs, it lays the groundwork for further program development by developing a classification scheme, or taxonomy, that sorts programs into discrete categories. Practitioners, evaluators, and regulators will be able to use this taxonomy as they implement and assess strategies and develop policies for utility-run behavior programs.

The majority of utility-based energy efficiency programs focus on physical energy efficiency improvements. But all demand-side and energy efficiency programs involve human activity and decision making. Programs can achieve greater impact and deeper savings by incorporating insights from social and behavioral sciences. Many utilities have undertaken behavior-based programs to help meet savings targets set by regulators and their own business needs. This study counted 281 such programs, many with multiple iterations, offered by 104 energy providers and third parties between 2008 and 2013.

Several challenges currently face managers who seek to run a successful behavior-change program. Many of them are hindered by their unfamiliarity with social science and by confusing labels and vague definitions as they try to choose among prospective offerings. The term "behavior" itself has multiple definitions. Human decision making and technology are often inextricably intertwined in energy efficiency programs. This entanglement makes it difficult to assign causality with respect to energy savings and to track and justify behavioral strategies.

Regulators need to see results that justify program costs. Since many behavior initiatives are still in the pilot phase, regulators do not have sufficient evidence to justify treating such programs as energy efficiency resources. In many states, regulatory language either fails to recognize the programs or defines them too narrowly. In states where behavior programs may be counted toward an energy efficiency resource standards (EERS) plan, utilities may miss this opportunity by labeling their programs as marketing initiatives rather than as energy savings mechanisms.

The current study aims to focus and clarify terminology about behavior programs for both regulators and developers. By putting each program into a single category and providing common metrics for disparate program types, we can compare the success of various strategies in changing behavior, as well their cost effectiveness and how much energy they save. The categories we have developed are concrete and practical. Each of them is grounded in the behavioral and cognitive sciences and represents a unique way of affecting consumer behavior.

This study builds on previous work on behavior program classification. Prior researchers have focused on constructing typologies of the underlying mechanisms (called drivers) that power behavior change programs. Examples of drivers include feedback, reward, and social norms. Typologies are primarily

conceptual structures; rather than starting with actual programs and their observed characteristics, they derive their categories or types from an abstract social science model.

Our shift from a typology to a taxonomy enables a comparative analysis of real programs as opposed to ideal constructs. It also eliminates the confusion caused by the fact that typological categories tend to overlap and many real-world programs fall into more than one of them. Our new taxonomy fills the need for an organizational scheme in which every program fits into just one category, each of them defined by the unique features of its members.

To construct such an empirically based taxonomy, we collected data from several sources on nearly 300 programs run by over 100 utilities and similar entities between 2008 and 2013. We eliminated duplicates, technology initiatives, market transformation efforts, and so on until we arrived at our final sample of 238 behavior-based programs. After sorting them by distinguishing features such as delivery channel and incentive type, we arrived at 20 major program categories grouped in 3 large families:

- *Cognition* programs focus on delivering information to consumers. Categories include general and targeted communication efforts, social media, classroom education, and training.
- *Calculus* programs rely on consumers making economically rational decisions. Categories include feedback, games, incentives, home energy audits, and installation.
- *Social interaction* programs rely on interaction among people for their effectiveness. Categories include social marketing, person-to person efforts, eco-teams, peer champions, online forums, and gifts.

Multi-modal programs combine several program categories in a single initiative. Going a step further, what we call stacked programs combine a minimum of one program strategy from each of the three families. We suggest that program managers make a deliberate design decision to stack program types in order to simultaneously engage multiple drivers of decision making and action. Holistic programs that appeal to consumers through information, economic incentives, and social interaction are likely to achieve the greatest impact.

Due to the paucity of data, we were able to draw only limited conclusions about the cost-effectiveness of utility-run behavior programs. Only ten electricity programs reported both program cost and actual energy savings. Their average cost of saved energy (CSE) was 1.61 cents per kWh saved.

We conclude with a number of further recommendations besides the suggestion that managers stack behavioral strategies for maximum impact. Much work needs to be done in tracking, collecting, and analyzing behavior program data in order to document benefits and drive broader adoption. Metrics should be standardized across programs so that researchers, evaluators, and regulators can compare their cost effectiveness. Data on savings, participation rates, and persistence of savings should also be tracked and analyzed. We also recommend that program results be compiled and made available via a central public platform.

Finally, we recommend that utilities coordinate their behavior programs with others in their region. Electric, gas, and water suppliers can build synergies among their efforts, as can neighboring suppliers, especially smaller and larger entities. To avoid oversaturation, we recommend the development of a geographic information system to map program distribution.