

## MEASURING MARKET EFFECTS OF INFORMATION "CONDUITS" TO ENERGY EFFICIENT PRACTICES AND MEASURES

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### Background

The broad-based migration of responsibility for growing energy efficient market share from taxpayer-funded subsidy to free market self-sustainability is still very new. "Market transformation" is the common term for this purposeful migration process, involving the (1) identification of *barriers* to economic self-sustainability, (2) identification of market actor *interventions* that could and/or have addressed these barriers, and (3) formal linking of specific market *effects* – changes in market structure and/or processes – to preceding barriers and interventions in a cause-and-effect manner. Just as the market transformation process is new and still evolving, so too is the process of identifying market barriers, assessing intervention strategies, and evaluating the market effects of market transformation initiatives, particularly their putative *sustainability*. This poster highlights a formalized, best-current-practices strategy for evaluating market transformation processes and effects in a special case – when an intervention strategy serves as an information conduit to other intervention strategies.

### Complication

Ultimately, increased end user energy efficient market share is the acid test of long-term market transformation. However, there are important precursors to energy efficient actions by end users, including: (1) basic awareness of energy efficient options and performance, (2) clear and correct understanding of available energy efficiency information, (3) access to financing, (4) ability to benefit directly from energy efficient investments, (5) and changes in outdated or incorrect perceptions, as well as other barriers and issues. There is evidence that the absence of readily available information about energy efficient options, from a credible source, represents a market barrier that can in effect render "downstream" barriers and interventions moot.

### Solution

PG&E's Business Energy Management Services (BEMS) Program currently focuses on less-than-500 kW C/I end users, and serves as an informational conduit to other energy efficient programs, measures, and practices. Evaluation of its transformative market effects therefore must not only address the dimensions outlined above – the full range of energy efficient awareness, perceptions, intentions, and behaviors among end users. Evaluation of the BEMS program also must assess the ability of BEMS to work in concert with other programs and initiatives, and create synergies among them, to engender energy efficient behavior. Key to attributing market effects to BEMS – as opposed to the downstream programs it "feeds" – is the use of an experimental design that isolates the incremental effects of BEMS. This design extends and integrates existing frameworks for evaluating market transformation effects, and incorporates "quasi-longitudinal" measures, cross-sectional comparisons, control samples, intra-responder statistical linkages, and diffusion-of-innovation theory. The approach used by PG&E and Quantum Consulting both leverages and extends existing market transformation knowledge and theory.

### Why This Is Important

Increasingly, the objective of energy efficiency program design is moving away from resource acquisition towards market transformation. The primary objective of an informational or audit program like BEMS is to demonstrate market effects that can be plausibly attributed to program participation and/or the presence of the program in the broader marketplace. We believe that attendees interested in the progress of the market transformation process in California will gain valuable insights and shortcuts to success by learning more about the results of this study.