

SGIG Consumer Behavior Study Oklahoma Gas & Electric *Smart Study TOGETHER™*

Overview

Oklahoma Gas & Electric (OG&E) is a summer peaking investor-owned electric utility with ~756,000 customers in its ~30,000 square mile service territory that covers large parts of Oklahoma and western Arkansas. OG&E's SGIG project (Smart Study TOGETHER™) includes a consumer behavior study that evaluates customer acceptance and response to different enabling technologies combined with various time-based rates. The utility targeted AMI-enabled residential and small commercial customers in parts of Norman and Oklahoma City, Oklahoma to participate in the study.

Consumer Behavior Study Features

Goals and Objectives—The study centers on evaluating the timing and magnitude of changes in residential and small commercial customers' peak demand and energy usage patterns due to exposure to time-varying rates and enabling technologies. The study tests several combinations of time-of-use (TOU) rate designs with a critical peak price (CPP) overlay and enabling technologies. OG&E is also interested in learning about customer acceptance of both the offered rates and enabling technologies.

Treatments of Interests—The OG&E tested two rate designs: a two-period TOU rate with a variable peak pricing (VPP) component and a TOU with a CPP overlay. The VPP and TOU w/CPP overlay utilized a five-hour peak period (2 – 7 p.m.) during non-holiday weekdays in the summer season (June to September), where the VPP peak period price was set to one of four different pre-determined levels with day-ahead (by 5 p.m.) notice. Both rates included a CPP component applicable year-round for events when OG&E required an unexpected reduction in total system load. OG&E provided customers at least a two hour notice of critical peak events and each event lasted no more than eight hours. Critical peak events were called under conditions of high expected temperature, high expected system load or to avoid system emergencies.

Control and information technology treatments included the deployment of IHDs and PCTs. In addition, all customers participating in Phase 1 of the study received web portal access, customer support and a variety of education materials. All customers received access to the web portal during Phase 2 of the study.

OG&E Rate Levels (¢/kWh)

Period	TOU w/CPP	VPP
Off-Peak	4.2	4.5
Low Peak	23.0	4.5
Standard Peak	23.0	11.3
High Peak	23.0	23.0
Critical Event	46.0	46.0

Oklahoma Gas & Electric (continued)

Experimental Design --The design for the study was a randomized controlled trial (RCT) with denial of treatment for the control group and pre-recruitment assignment. AMI-enabled residential and small commercial customers in the Norman, OK area who met certain eligibility criteria were stratified and then randomly assigned to one of eight treatment groups or to the control group. These customers received an invitation to opt in to a study where participating customers could receive one of several treatments, with the understanding that this treatment was limited in supply, but were not notified of their assignment at that time. Customers who opted in to the study were then screened and surveyed to ensure that they qualified to receive their assigned treatment. If they were ineligible to receive their assigned treatment, they were reassigned to a treatment they were eligible to receive.¹ All participating customers were then notified of their assigned treatment.

OG&E recruited customers into the study in two phases, separated by one year. The majority of participating customers received the correct control/information technology. However, in some cases participating customers had the wrong control/information technology installed on their premises. As such, the implementation of the study differed somewhat from the original experimental design.

Enrollment Incentives and Retention Activities --Participating customers received bill protection that ensured during the first twelve months of participation in any of the rate treatments the customer paid no more than what they would have paid under the existing flat rate. After this twelve month period was over, the bill protection was removed.

Sample Size Requirement--Sample size requirements are shown in the table below.

Sample Size Requirement (Residential only)

Phase I	Control	Web Only	IHD Only	PCT Only	Web & IHD & PCT
Phase I: VPP	480	480	480	480	480
Phase I: TOU w/CPP	480	480	480	480	480
Phase II: VPP	480	480	480	480	480
Phase II: TOU w/CPP	480	480	480	480	480

Key Milestones

Key Milestones	Target Dates
OG&E Smart Study TOGETHER test period begins	June 2010
OG&E provides Interim Evaluation Report	January 2011
OG&E Smart Study TOGETHER test period ends	September 2011
OG&E provides Final Evaluation Report	February 2012

¹ This re-assignment does not technically meet the standards of an RCT.

Oklahoma Gas & Electric *(continued)*

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