

## Reliant Energy Retail Services, LLC

### Smart Grid Enabled Consumer Participation

#### Scope of Work

Reliant Energy Retail Services' (Reliant's) Smart Grid Enabled Consumer Participation project deployed new home energy management equipment, services, and market offerings for retail customers in the Electric Reliability Council of Texas (ERCOT) region. The project deployed in-home energy displays (IHDs), smart appliances, and new time-based rate programs for customers, along with individualized weekly usage emails that helped customers understand their energy consumption patterns. Thanks to its position as a licensed retail energy provider within ERCOT, Reliant has access to the Smart Meter Texas data exchange, which the company used to obtain interval meter data and communicate usage, trending, and home energy management information to customers.

#### Objectives

The project enabled Reliant to help customers lower their electricity-related costs by providing them with new tools and personalized information. Customer efforts to reduce their own energy usage also lower overall demand on the system. In addition, the project allowed Reliant to demonstrate the benefits of smart grid-enabled products and services for Texas customers.

#### Deployed Smart Grid Technologies

- **Advanced electricity service options:** Reliant deployed IHDs and smart appliances and delivered energy usage information to customers through web portals, weekly usage emails, and other means to allow customers to better manage their energy usage. IHDs provide real-time usage information and digital messages, including customized alerts from Reliant about electricity consumption, cost, and billing. These devices communicate directly through the home area network with the smart meter, capturing current consumption and enabling communications through the smart grid network. A pilot deployment of smart appliances enabled customers to better manage their electricity use and, when coupled with a time-of-use rate, to reduce their electricity bills through automated appliance control. Furthermore, Reliant summarized customers' energy usage information based on data provided by smart meters—including interval usage and costs, costs to date, and projected bill amounts—for delivery to customers through both the interactive web portal and the weekly email reports.
- **Time-based rate programs:** Reliant introduced rate structures based on peak and off-peak demand schedules, such as time-of-use rates. In conjunction with other new pricing options such as a pay-as-you-go plan, the project allowed customers to manage their utility bills while shifting energy use to off-peak times and reducing overall energy demand on the system.

#### At-A-Glance

**Recipient:** Reliant Energy Retail Services, LLC

**State:** Texas

**NERC Region:** Electric Reliability Council of Texas

**Total Project Cost:** \$41,573,967

**Total Federal Share:** \$19,839,689

**Project Type:** Customer Systems

#### Equipment

- Customer Web Portal
- In-Home Displays
- Smart Appliances

#### Time-Based Rate Programs

- Time-of-Use Pricing

#### Key Benefits

- Improved Customer Services
- Optimized Generator Operation
- Demand Response Solutions

**Reliant Energy Retail Services, LLC** *(continued)***Benefits Realized**

- **High customer engagement:** Over 750,000 of Reliant’s residential customers are enrolled for at least one of the available smart energy products or services.
- **Improved customer services:** Reliant’s IHDs and smart appliances provide customers with energy usage information so that they have better energy management capabilities. The information provided through the new technologies has been valuable in helping customers understand their consumption and peak usage, as well as reduce their electricity bills through automated appliance control.
- **Increased consumer choice and demand response options:** Reliant provides customers with several rate plan options, allowing each customer to find one that best fits his or her lifestyle. Examples include time-of-use plans such as “Keep Your Cash Nights & Weekends,” which offers bill credits for usage during evening and weekend hours; “Free Weekends”; and “SmartStart,” Reliant’s pre-pay product. Reliant’s “Degree of Difference” pilot campaign has enrolled customers in a demand response program that allows customers to lower their usage during high demand periods and provides them with credits based on the amount of decreased consumption they achieve.
- **Optimized generator operation:** Time-based rate programs and pilot-scale demand response programs offered by Reliant encourage customers to shift usage to off-peak hours. These shifts contribute to more efficient electricity generation by reducing peak load.

**Lessons Learned**

- Customers are interested in simple, easy-to-understand insights into their energy usage. The most popular service to come from this project is the Weekly Summary Email. This weekly reminder conveys the prior week’s usage, cost, projected final bill, and energy insights and savings tips. This option has a very high open rate, with more than half of Reliant customers subscribed.
- Only a minority of customers want to examine their usage in great detail. Reliant’s online account management portal allows customers to dig into their hourly usage patterns, providing years of data from their homes. While the portal is very popular—approximately one out of three customers logs in at least once a month—only a small percentage of customers look further than the sort of high-level data provided in the Weekly Summary Email.
- Some customers are willing to make small changes to their usage habits if provided with an incentive to do so, particularly if it is packaged in an appealing way. The primary example is Reliant’s time-of-use plans. The first plan was not very popular with customers. A standard “peak, off-peak, and summer peak” tiered plan, it struggled to gain mass traction. Reliant simplified the idea of shifting usage for a financial benefit by giving it a fun, low-risk feel (“Keep Your Cash Nights & Weekends” and “Free Weekends”). These plans were very successful.
- It is not necessary to place expensive equipment in homes to provide insights or effect change. For example, Reliant deployed 10,000 IHDs, but data showed high initial customer use that would taper off quickly, indicating the devices were largely a curiosity. Few customers incorporated IHDs into daily routines beyond the first month of usage. On the other hand, Reliant has been quite successful at enrolling customers in a demand response program (“Degrees of Difference”) that does not require any equipment in the home. This program asks customers to volunteer to reduce their usage when called upon during high-demand events. In return, Reliant pays those customers a set fee per kilowatt-hour reduced (compared to their normal usage) during the event window. This program has had good customer response and is helping Reliant achieve usage reduction objectives.

**Reliant Energy Retail Services, LLC** *(continued)***Future Plans**

Reliant plans to continue developing its smart grid systems and will invest resources to implement projects that enhance customer service, improve grid reliability, and provide a reasonable return on investment. As ERCOT transmission and distribution service providers' smart meter deployments increase and more advanced meter data become available, Reliant's systems will be able to scale up to provide advanced electricity service options to additional customers.

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