



WHITE PAPER

Rush Hour Rewards

Results from summer 2013

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1. Introduction

Electric grids are sized to accommodate peaks in energy use, which often occur on hot afternoons when everyone turns air conditioning on at the same time. These peaks represent fewer than 100 hours per year (about 1% of the year). As demand increases, energy companies have two options:

1. Build more power plants and distribution infrastructure.
2. Take steps to encourage customers to conserve during the peak periods.

This second option, traditionally called “demand response,” is cost-effective and environmentally friendly, yet just 6% of households with broadband are currently participating in a demand response program, according to Parks Associates. The reason that demand response has yet to reach mass-market adoption is simple: existing “demand response” strategies are one-size-fits-all and prioritize load reduction over user comfort.

Demand response can only be successful if you personalize the experience and balance comfort with energy savings. To further encourage enrollment and appeal, the marketing and positioning of these programs should be consumer-friendly. Finally, customers need to feel comfortable and in control of the temperature at all times, and receive a meaningful incentive in exchange for participation.

Nest has created a unique, personalized solution marketed as Rush Hour Rewards (RHR). RHR is a proprietary Nest service that helps demand response feel welcoming and manageable to customers while meeting the needs of energy providers. The program takes into account when people are home or away, their preferred temperatures, the “profile” of the home (large/small, how quickly it loses cooling), and only deploys to homes that can help reduce A/C use during peak times. And most importantly, Nest RHR customers are always in control of the temperature to ensure their comfort.

In the summer of 2013, Nest conducted Rush Hour Rewards events with three energy partners. Austin Energy (AE) ran 12 RHR events. Reliant ran four RHR events. Southern California Edison (SCE) ran three RHR events. The AE and Reliant events were two hours long, while SCE events were four hours long. In all cases, these events significantly reduced the electrical load while keeping customers comfortable.

Highlights of Nest's summer 2013 Rush Hour Rewards programs include:

- Each event reduced a significant amount of electricity. Load was reduced an average of 55.1% for an average of 1.18 kW per device.
- Results showed that only 14.5% of participants changed the temperature of their thermostat during events. These users still shifted an average of 0.61 kW overall, only reducing the overall load reduction by 8.6%
- Rush Hour Rewards successfully reduced load while preserving customer comfort. When responding to a survey about comfort during an energy rush hour compared to other hot days, 84% of customers reported minimal to no impact on comfort.
- The marketing was appealing to customers and led to rapid enrollment upon launch of the Rush Hour Rewards programs. In the first few weeks after the Rush Hour Rewards programs went live, Nest quickly enrolled the first 1,000 Austin Energy and 1,000 Southern California Edison customers.
- Support costs for Rush Hour Rewards programs are negligible. Across all Austin Energy, Southern California Edison, and Reliant customers participating in Rush Hour Rewards, just 0.7% of the enrolled customers contacted Nest Support about Rush Hour Rewards, and those calls were about how to enroll in the programs.
- When compared to four-hour events, two-hour events had lower temperature increases, fewer temperature change events, and higher-load shift rates.

The full report is available to existing and future Nest partners by contacting Nest at

nest.com/contact/energy-partners