

2014 Stars of Energy Efficiency Super Nova Level Award Application – Nest Labs Inc.
The Nest Learning Thermostat

Nest's Outstanding Contribution: Reinventing the Thermostat; Helping Consumers Save Energy and Money

Nest focuses on delighting customers with simple, beautiful and thoughtful hardware, software and services. Nest's Learning Thermostat and Energy Services offerings are designed to decrease home energy consumption and enable utility-led energy efficiency programs. Nest remembers customers' temperature preferences, creates a custom schedule for the home, and turns itself down when everyone is away. Once it learns the household schedule, Nest can save up to 20% on heating and cooling bills. With Nest, consumers have the only climate control package that combines the ability to learn user needs, automate energy savings and then drive further reductions through behavioral approaches making it best in class for residential and utility-channeled energy efficiency in addition to demand response programs. Nest also offers remote control with its apps for smartphones, tablets and computers. Scaling at a rapid pace through the appeal of its design and features, Nest now has the wind at its back to transform how conveniently (and comfortably) people manage their home energy use in addition to providing services that will help utilities precisely manage loads and become hyper efficient.

Programs Designed for Utilities and Homeowners

The Nest thermostat's unique capabilities are essential to the company's primary program offerings: "Rush Hour Rewards" and "Seasonal Savings". Rush Hour Rewards is Nest's take on traditional demand response programs. It uses the ability to communicate with homeowners to provide uninterrupted comfort during load shedding events and, because of this interaction, has been shown to produce a great deal of customer satisfaction (and related ease of recruitment and retention for program administrators). Seasonal Savings draws on Nest's knowledge of customers' schedules and preferences to fine-tune HVAC settings throughout the year as comfort needs change based on outside conditions. Through its technology and service offerings, Nest is transforming residential energy use and the way utilities relate to their customers.

Savings Achieved via Nest Device and Programs

Nest products and programs have achieved an overall savings of more than 1,500,000,000 kWh over the last three years – an average of 500,000,000 kWh per year. Metered data shows customers in southern California, as an example, save an average of 1.16 kWh per day or 11.3% of AC-related energy from installing a Nest Thermostat and letting it operate. These savings result in an average peak demand reduction of 0.10 kW during 2-6 pm on weekdays. Seasonal Savings customers typically used an average 1.23 kWh / day less than they would have with their pre-Seasonal Savings usage patterns. This change accounts for a savings of 2.3% of their total electricity usage and 4.4% of the disaggregated AC portion of their electricity usage. Lastly, Nest's Rush Hour Rewards program showed reductions of 1.2 kW per home, per event.

Early Success Already Being Replicated

Nest has shown significant uptake in its product and service offerings, which is an indication that replication is already happening. In terms of bringing advanced, learning thermostats to new markets Nest has demonstrated sales to consumers in every US state and many international countries. Nest products have also been used by competitive energy suppliers, like Reliant, to secure new customers and capture additional revenue. The Rush Hour Rewards and Seasonal Savings programs have proven to be highly replicable across the country and useful in lowering peak load and overall demand. Nest has partnered with a variety of utilities ranging from investor-owned organizations like Southern California Edison to municipal providers like Austin Energy to offer its Rush Hour Rewards program. Nest will continue to add utility partners throughout the US, and is also identifying opportunities to provide similar services abroad, meaning the company's impact will continue to grow.