

EMERGING TECHNOLOGIES DEMONSTRATION PROJECTS

Commercial Project Brief: Large-Scale Demonstration of CATALYST Controller

Background

Packaged rooftop units (RTUs) heat and cool tens of thousands of commercial buildings across New York State, and can often account for up to 40% of building energy use. More than 90% of RTUs use constant speed supply fans. Therefore, for the majority of the year, these fans use significantly more energy than is required to maintain occupant comfort and comply with local building codes.

Transformative Wave's CATALYST retrofit kit cuts down on energy use by installing a variable frequency drive, sophisticated controls, and a network of sensors. The eIQ Web-based platform is used to monitor energy use, diagnose problems, and control operations. This suite of services enables customers to save energy, improve operations, enhance maintenance, and facilitate customer participation in demand response.

The CATALYST technology has been evaluated extensively as part of a multi-year study by Pacific Northwest National Laboratory (www.pnl.gov/main/publications/external/technical_reports/PNNL-22656.pdf). E Source also named it as one of five "Game Changing Technologies from 2013" (www.esource.com/email/ENEWS/2014/Top5-Tech).

Project Description

The goals of this pilot project are to demonstrate the viability of this technology at scale, reduce adoption barriers for prospective customers, and provide validated project data.

Transformative Wave is partnering with Energy Solutions, an engineering, program design and implementation consulting firm, to implement a large-scale deployment in New York State across a wide variety of building types, including restaurants, retail, and commercial offices.

The pilot project will double the number of certified CATALYST Affiliate contractors in New York State. It will validate project energy savings and demonstrate energy and non-energy benefits of the CATALYST technology via case studies, webinars, and an interactive online dashboard. In addition, the pilot will also identify best practices for integrating energy efficiency and demand response into a uniform value proposition. To accelerate in the adoption of this technology, the pilot will offer technology incentives to customers and financing to capital-constrained customers.

Benefits

For building owners and tenants, the long-term benefits of this large-scale demonstration are to improve the availability of project performance data and increase the number of certified contractors trained to install the CATALYST. Once complete, the pilot project performance results will provide prospective customers with validated energy savings claims across numerous building types and RTU sizes. Prospective customers will be able to identify verified savings for buildings that are similar to their own.

For utilities, the long-term benefits of this large-scale demonstration will provide sufficient data to streamline the integration of the CATALYST and RTU controllers into their existing demand side management programs. A large-scale validation of project performance across a wide variety of building types and RTU sizes in multiple sectors will the need for each individual utility's need to create their own small-scale pilot for performance validation.

In addition, the pilot will also identify best practices for integrating energy efficiency and demand response into a uniform value proposition.

Emerging Technologies Demonstration Projects support multi-site demonstrations, provide in-depth performance validation, and share results through dedicated outreach.

Lead Participant

Transformative Wave
Kent, WA
transformativewave.com

Pilot Implementer

Energy Solutions
Oakland, CA
energy-solution.com

Investment

NYSERDA	\$1,171,735
Participant Team	\$ 212,500
Total	\$1,384,235

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