



Pecan Street Inc. Energy Internet Demonstration

Project Description

Pecan Street Inc. is developing and implementing an Energy Internet at the 711-acre Robert Mueller mixed-use development in Austin, Texas. Smart Grid systems that form the foundation of this project include home energy monitoring systems, a smart meter research network, energy management gateways, distributed generation, electric vehicles with Level 2 charge systems and smart thermostats. These technologies will be integrated into a smart grid that links 1,000 residences - including 250 newer, green-built homes, 250 homes at least 10 years old that were not green-built and 140 apartments - 25 small commercial properties and three public schools. Over 200 of the residential participants will acquire rooftop solar photovoltaics (PV) and 75 homes will acquire electric vehicles with level-2 charging systems through this research trial. The project will also integrate 50 residences with smart water and smart gas meters. Through the use of Pecan Street's home energy monitoring systems, customers can view their energy use in real-time at the device level, set and track utility bill budgets, have software manage electricity use of individual appliances and sell energy back to the grid; cars connected to the grid can be powered with solar energy and help level loads; and utilities can store power and deliver it when needed. The project team will also develop and test advanced data acquisition and management structures that will transform big energy data into useful information within a secure environment.

Goals/Objectives

- Move toward an efficient, zero net carbon community while creating green collar jobs, cost effectively expanding the use of clean energy, and providing customers with greater control over their electric usage and environmental impact while saving money
- Create plug-and-play open deployment platforms for new technologies and electricity services
- Promote replicability and scalability
- Lower peak demand, transmission and distribution costs, capital expenditures, power interruption costs and energy costs

Key Milestones

- Deploy Utility Side Systems (March 2012)
- Deploy Customer-Side Smart Grid Systems and Technologies (September 2012)
- Deploy Electric Vehicles in Volunteer Participant Homes (September 2012)
- Open Pike Powers Commercialization Lab (June 2013)

Benefits

- Lower utility bills
- Reduce greenhouse gases
- Improve power quality and reliability
- Increase power supply efficiency



CONTACTS

Donald Geiling

Project Officer
National Energy Technology Laboratory
3610 Collins Ferry Road
Morgantown, WV 26507-0880
304-285-4784
donald.geiling@netl.doe.gov

Brewster McCracken

Principal Investigator
Pecan Street Inc.
3925 W Braker Lane
Austin, TX 78759
512-782-9213
info@pecanstreet.org

PARTNERS

University of Texas at Austin
Austin Technology Incubator
Austin Energy
City of Austin
National Renewable Energy Laboratory
Environmental Defense Fund

PROJECT DURATION

2/11/2010–2/10/2015

BUDGET

Total Project Value

\$24,657,078

DOE/Non-DOE Share

\$10,403,570/\$14,253,508

EQUIPMENT

Energy monitoring systems
Smart thermostats
Smart water meters
Smart meters
Smart appliances
Batteries
Electric vehicles
Level 2 Electric Vehicle Charging Stations
Solar panels

DEMONSTRATION STATES

Texas
CID: OE0000219

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