



DTE Energy Advanced Implementation of Energy Storage Technologies

Project Description

DTE Energy will demonstrate the use and benefits of Community Energy Storage (CES) systems to strengthen grid reliability and test the ability to integrate secondary-use electric vehicle (EV) batteries into the CES demonstration effort in their service territory at the Trinity Circuit. The performance data of the CES devices and control systems under in-service operating conditions will be analyzed and used to identify gaps and facilitate how the devices can be standardized for use across the U.S. The project will also integrate the utility-owned 500 kW solar system to the energy storage device; provide proof of concept testing for an integrated, centralized communication system; and test the use of secondary-use Electric Vehicle (EV) batteries as CES devices.

Goals/Objectives

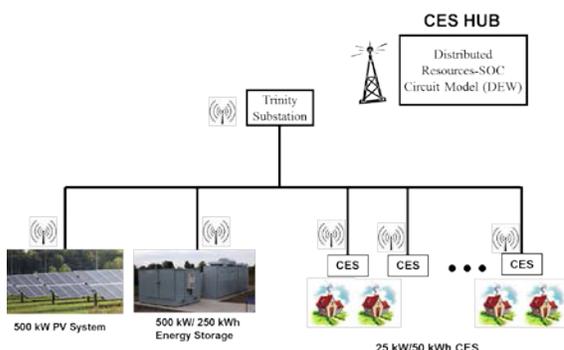
- Demonstrate peak shaving, voltage support, renewable energy shifting, and emergency load relief of the CES devices when integrated to the utility grid
- Explore remote and automatic monitoring and control responses
- Develop and verify advanced modeling and simulation methods for system planning and operations based on existing utility practice and expanded to include photovoltaic systems integration
- Demonstrate intentional islanding of CES devices with a utility distribution circuit and how they can aid in frequency regulation

Key Milestones

- Final design of CES units (new batteries) complete (February 2013)
- First CES systems operational (February 2014)
- Integration of secondary use battery system (December 2014)
- Project Final Report completed (December 2015)

Benefits

- Job creation
- Lithium storage manufacturing established in the U.S.
- Power quality increased
- Security of the emergency response infrastructure strengthened
- Renewable resource integration
- Greenhouse gas emission reduction
- Market penetration of electric vehicles increased



CONTACTS

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PARTNERS

S&C Electric
Chrysler Corporation
DNV GL
Electrical Distribution Design Inc.
NextEnergy
National Grid USA Service Company Inc

PROJECT DURATION

01/01/2010–09/30/2015

BUDGET

Total Project Value
\$10,877,258

DOE/Non-DOE Share
\$4,995,271/\$5,881,987

EQUIPMENT

25kW, 50 kWh CES Devices
500 kW Solar Array
Gridsense Linetrackers

DEMONSTRATION STATES

Michigan

CID: OE0000229

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