



Duke Energy Business Services Notrees Wind Storage Demonstration Project

Project Description

The Notrees Project will analyze and discern how, when integrated with wind power, energy storage can compensate for the inherent intermittency of this renewable power generation resource. Incorporating both existing and new tools, technologies and techniques, this demonstration project will provide valuable information regarding wind energy storage and serve as a model for other entities to adapt and replicate. The energy storage system will be designed and constructed using fast response, advanced lead-acid batteries configured to provide 36 MW output peak power with an energy storage capacity of 24 MWh.

Goals/Objectives

- Store energy during non-peak generation periods and re-issue the power to meet demand
- Quantify the value of wind storage
- Demonstrate the reliability and dispatchability of wind storage
- Use the storage system for system balancing
- Determine if energy storage solutions are commercially viable to support wind generation
- Provide a Fast Frequency Response Service (FFRS) to ERCOT as part of a pilot program for energy storage systems

Key Milestones

- Construction Phase Completed (October 2012)
- Performance Testing Completed (December 2013)
- Commercial Operations Testing Completed (February 2013)
- Initiated ERCOT Fast Frequency Response Service (March 2013)
- Complete gathering 24 months of data (March 2015)
- Complete Final Report (October 2015)

Benefits

- Congestion reduced
- Energy dispatch optimized
- Energy costs reduced
- Energy efficiency and grid reliability improved
- Carbon emissions decreased
- Wind energy knowledge advanced



CONTACTS

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PARTNERS

Electric Power Research Institute

VALUED VENDOR

Xtreme Power

PROJECT DURATION

1/1/2010–10/31/2015

BUDGET

Total Project Value
\$43,612,445

DOE/Non-DOE Share
\$21,806,219/\$21,806,226

EQUIPMENT

Dynamic Power Resources™

DEMONSTRATION STATES

Texas

CID: OE0000195

Managed by the National Energy Technology Laboratory for the Office of Electricity Delivery and Energy Reliability