



Wind Energy Program Technology Portfolio

Low Wind Speed Technology Phase II: Developing Techniques to Evaluate the Designs and Operating Environments of Offshore Wind Turbines in the Mid-Atlantic and Lower Great Lakes Regions

AWS Truewind, LLC

Project Description: Coastal and offshore locales are favored regions for wind power use because of their generally high wind resource and low surface roughness. Offshore sites in the United States have recently attracted considerable attention; however, few representative observations have been made.

The objective of this study is to characterize the offshore wind and wave environments of the Atlantic and lower Great Lakes regions by estimating the available wind power resource in the offshore environment and performing physically consistent modeling of the dynamics within and above the air-sea interface. The results will help the offshore wind industry more precisely quantify the design load conditions at specific sites, which will enable projects to be engineered and operated more cost effectively and with lower risk. The study will combine:

- An assimilation of monitoring and observation network data
- A six-month intensive field measurement campaign at an offshore platform
- A modeling analysis and verification study of the coastal wave and meteorological regimes
- Initial steps toward the development of a buoy-adapted atmospheric profiling system

Project Type: Conceptual Design Study
Total Project Budget: \$600,000
Industry Cost Share: \$400,000 (\$200,000 LIPA, \$200,000 NYSERDA)
DOE Cost Share: \$200,000
Planned Project Duration: September 2004–December 2005

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Current Status: Project Underway



Meteorologic equipment on Ambrose light station collects the wind and wave data used for the reference database.

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