Illinois Institute of Technology (Chicago, Illinois) – up to $8 million

The Institute will use this funding to install a test turbine, a GE 1.5 MW turbine, at an existing wind project owned by a consortium partner at Marseilles, Illinois. The university consortium's research and development plan includes advanced concepts for rotor control and drive train control, robust sensors for blades, and improved aero elastic models to improve wind turbine performance and reliability. The close proximity of the University's turbine to an existing wind farm provides an ideal opportunity to study turbine to turbine wake interaction, wind farm interaction, and wind energy efficiencies. The Institute will develop and offer wind energy courses addressing the technical, operational, social, and environmental aspects of wind energy in consultation with industry. Fellowships will be offered annually to masters and undergraduate students in wind energy engineering fields of study.

University of Maine (Orono, Maine) - up to $8 million

The University of Maine plans to design and deploy two 10 kW and one 100 kW floating offshore turbine prototypes. Two turbines will be located at the University of Maine's Deepwater Offshore Wind Test Site that will be located in a pre-selected site in state waters and one turbine will be operated at an offshore test site in the Isle of Shoals by the University of New Hampshire. The University consortium's research and development plan includes optimization of designs for floating platforms by evaluating: (1) options for using more durable, lighter, hybrid composite materials, (2) manufacturability, and (3) deployment logistics. Educational initiatives include a model Master of Science Degree in Renewable Energy and the Environment with a focus on deepwater wind energy and a new undergraduate minor in Deepwater Wind Energy. The University will target educational grants at individuals who are participating in Maine-based wind energy education and training in order to enter the job market.

University of Minnesota (Minneapolis, Minnesota) – up to $8 million

The University plans to install a new Siemens 2.3 MW turbine research facility at the University of Minnesota Outreach Research and Education (UMore) Park in Rosemount, Minnesota to study novel mechanical power transmission and electric generator systems. The University consortium's research and development plan includes active and passive flow control strategies to increase energy capture, broaden the operational envelope of the turbine, and reduce structural loads and fatigue. The University of Minnesota's turbine will be in close proximity to an existing wind farm, providing an opportunity to further validate and reinforce research findings regarding turbine wake interaction, wind farm interaction, and wind energy efficiencies. The educational initiatives include new graduate and undergraduate web-based course modules, programs specifically focused on wind power technologies and integration with other renewables, and student internships with industrial partners at consortium field sites.

Source: U.S. Dept. of Energy