AGEP-T Project Descriptions

Brookhaven National Laboratory
Sustainable Energy Technologies (SET) Department
Renewable Energy Group

Project Title: The development of an innovative new control platform for micro-grids.

This document describes the work on Smart Micro-grid technology solution that is suitable for deployment at facilities that are large integral consumers of electricity in requesting applications from science or engineering post docs for the Stony Brook University – Brookhaven National Laboratory AGEP-T Program.

Project Description

The SET Department, in collaboration with others, is performing research to develop and demonstrate a Smart Micro-grid technology solution that is suitable for deployment at facilities that are large integral consumers of electricity and that would benefit from operation as a controlled micro-grid. The proposed Smart Micro-grid technology will employ an innovative new Smart Grid Sensor developed by one of the outside organizations collaborating on this project. This project will involve the deployment of a matrix of Smart Grid Sensors on the BNL campus to demonstrate and validate their performance. The 5300 acre BNL campus is an ideal test bed for the demonstration of smart micro-grid technologies since it consists of a mixture of specialized facilities ranging from industrial/research installations, conventional office space, warehouses, and manufacturing shops, to childcare facilities and residential cottages, apartments, and dormitories. Upon successful demonstration of the technology, the basic Smart Micro-grid will be scaled up to expand and refine the capability of the Smart Micro-grid system to collect and analyze complete baseline data that will enable improvements in efficiency and reliability. A methodology will be developed for improved micro-grid modeling to support intelligent micro-grid design and implementation using collected baseline data.

Qualifications of Ideal Candidate

Post Doc: PhD in electrical power systems with a strong focus on modeling and analysis of electrical networks, including distribution systems and microgrids. Experience modeling electrical networks with integrated renewable energy sources, including solar, wind and grid-scale storage is required. Applicants must have experience performing load flow and short circuit analyses, control system design and modeling, and power electronics analysis. Experience with Matlab/Simulink and other common power system analytical software such as SimPowerSystems, PSS/E and/or PSLF is also required. Candidates with PSCad experience, ETAP experience, C/C++ experience and statistics background are preferred. Proficiency with MS Office software, including Word, Excel, Outlook and PowerPoint is also required. Candidates must have good written and oral communication skills, be willing to take direction, and be able to work with others as part of a project team.

For More Information contact:

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