



Hawaii Natural Energy Institute Projects

Grid Integration & Renewable Power Generation

Small Scale Wind Turbine Analysis

PROJECT SUMMARY

Funded by ONR, a joint collaboration between the National Park Service, the Golden Gate Nature Conservancy, Project Frog and HNEI participated in sustainability research on the Crissy Field Center, an environmental education facility located in San Francisco.

HNEI was responsible for installing and monitoring the performance of (5) 1kW wind turbines installed at the facility. Electric vehicle charging, solar photovoltaics, water collection technologies, were also deployed and monitored by others. Instrumentation currently monitors wind speed at the site as well as energy delivery from each of the turbines. Daily, weekly, monthly and annual metrics for both energy resource as well as end-use energy loads are available to the public on a web-based dashboard as an educational tool. Separately, HNEI receives performance data downloads in one minute intervals that allows for comparison of performance, evaluation of wind-shadow effects and the identification of operational issues that impact overall productivity.

This year HNEI evaluated the performance of the five turbines with results presented in the final project reports provided by the Sub awardee, the Golden Gate Conservancy.

PROJECT RELATED LINKS

TECHNICAL REPORTS:

1. [Recommendations for Wind Turbine and Data Acquisition Systems](#), November 2012
2. [Final Design and Permitting](#), December 2012
3. [Turbine Installation Site Preparation and Footings](#), March 2013
4. [Turbine Installation Completion](#), April 2013
5. [Wind Turbine Commissioning and Interconnection](#), September 2015
6. [Installation and Commissioning of the Data Acquisition System](#), September 2015
7. [Crissy Field Center Wind Power Study Final Report](#), September 2015