QUARTERLY REPORT FOR THE 2ND QUARTER 2000

DOE Field Verification Program for Small Wind Turbines

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NY/NJ DISTRIBUTED WIND POWER FIELD VERIFICATION PROJECT

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**PREPARED FOR THE UNITED STATES
DEPARTMENT OF ENERGY**

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Summary

During the 2nd Quarter, AWS successfully executed an *Agreement for Professional and Technical Services* with Liberty Science Center, the host for the Jersey City, NJ installation. The Agreement officially commits host organization cost sharing for the project and describes the specific responsibilities of each party. Also by the end of June, AWS had reached verbal agreement on contract language with the Town of Babylon, L.I., NY's attorney, but the agreement was still unsigned as of the end of the reporting period.

Work continues with all of the host organizations to prepare for the host site installations. Several project meetings were held during the quarter, including site visits to the Town of Babylon on April 11 and June 19, and a site visit to Quail Hill Farm on May 10. A presentation on the project was made on April 11 to Town of Babylon officials (including the Town's Department of Environmental Conservation, Environmental Conservation Committee and Attorney's Office), as well as representatives of the Long Island Power Authority and New York State Energy Research and Development Authority, to provide the various parties with an overview of the project and to assign responsibility for individual tasks. Current plans call for installation of the foundation at the Webster site in mid-July, with foundation installation at Liberty Science Center to follow immediately upon approval from the NJ Department of Environmental Protection (DEP) to proceed with the project.

Wind turbines and towers for the Webster and Liberty projects were ordered in May, and delivery to the host sites is expected in early August. Duration testing at the National Wind Technology Center (NWTC) continues to be delayed.

On June 22, AWS submitted a Site Plan to Liberty Science Center for the installation of the turbine. The Site Plan consisted of:

1. Bergey Windpower Turbine Installation Manual – This manual describes the turbine installation procedure, as well as turbine commissioning, inspections and routine maintenance procedures, trouble-shooting and repair,
2. Tower Installation Procedure – This section describes the installation procedure for the 120-foot self-supporting tower to be installed at Liberty Science Center,
3. Safety Plan – This section of the manual describes AWS' Safety Plan for Turbine Assembly, Installation, and Testing,
4. Professional and Technical Services Agreement – This Agreement describes the division of responsibilities between AWS and Liberty Science Center,
5. Turbine, Inverter, and Tower (10N58W) Specifications,
6. Site Maps, and
7. A letter describing the proposed soil removal and remediation plan.

Technical Issues

AWS authorized waveform testing of the GridTek inverter in May in order to attain certification that the inverter meets New York State Standard Interconnection Requirements (SIR). Failure to meet the SIR would have resulted in over \$10,000 in equipment costs plus additional labor expenses to meet individual utility interconnection requirements in the State. Certification is expected in August.

The NJ DEP advised AWS on June 13 that the soil displaced by the installation of the foundation for the turbine at the Liberty site could not remain on site, and would have to be removed by a licensed hazardous waste contractor due to suspected heavy metals in the soil. As a result, AWS authorized a New Jersey firm to take a soil sample for testing (scheduled for July 3), in order to determine the precise nature and composition of the soil in the area of the proposed installation at a depth of 3 ½ feet. The results of the test may justify a revised decision from the DEP concerning removal of the soil from the site, but at a minimum will provide a firm estimate concerning the cost of disposal which can vary significantly depending on the results of the tests.

The site visit to Quail Hill Farm on May 10 raised several questions concerning the technical viability of the site for the Small Wind Turbine Field Verification Program. Proposed locations for the turbine were characterized by either low electricity consumption or limited water pumping requirements. The Peconic Land Trust that owns Quail Hill Farm is in the process of exploring other possible locations for the turbine on property held by the Trust.

Management Issues

The cost of the waveform testing for the GridTek inverter to meet New York State SIR is \$5,000. This cost is not included in the original budget proposal to DOE, but will save over \$10,000 in equipment and labor costs that would have to be incurred to meet individual utility interconnection requirements. The cost of soil removal and disposal at the Liberty Science Center site may be well in excess of the original budget for foundation installation.

The continued delay in the start of the duration testing at the NWTC will have an impact on the project budget and installation plan. The turbine installed at the NWTC was to be installed at the Webster site at the completion of the duration testing, and therefore is configured with the stiff blade option and black blades for better performance under icing conditions. As a result of the delay in the start of the duration test, the NWTC turbine will now be sent to the Peconic Land Trust site on Long Island. For this site, the turbine and tower will need enhanced corrosion protection and the blades will not have to be painted black. The cost of these modifications, and shipping charges to the Bergey facility in Oklahoma (if necessary), are currently not in the project budget.

Action Items and Remarks

AWS will continue to work with the Peconic Land Trust to put a professional and technical services agreement in place and to address the technical issues associated with the Quail Hill Farm site. AWS will also continue to make all necessary preparations for the other host site installations. Installation of the foundation at Webster is expected to take place in July, with turbine installation in August. Installation of the foundation at Liberty is expected to take place in August, with turbine installation in September. Installation of the foundation and turbine at the Town of Babylon site is expected in September and/or October.