



Equipment Loan

Cooperative Research and Development Final Report

CRADA Number: CRD-07-250

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In accordance with Requirements set forth in Article XI.A(3) of the CRADA document, this document is the final CRADA report, including a list of Subject Inventions, to be forwarded to the Office of Science and Technical Information as part of the commitment to the public to demonstrate results of federally funded research.

CRADA Number: CRD-07-250

CRADA Title: Equipment Loan

Parties to the Agreement: Abengoa Solar

Joint Work Statement Funding Table showing DOE commitment:

Estimated Costs	NREL Shared Resources
Year 1	\$5,437.00
Year 2	\$ 00.00
Year 3	\$ 00.00
TOTALS	\$5,437.00

Abstract of CRADA work:

Site-specific, long-term, continuous, and high-resolution measurements of solar irradiance are important for developing renewable resource data. These data are used for several research and development activities consistent with the NREL mission:

- Establish a national 30-year climatological database of measured solar irradiances
- Provide high quality ground-truth data for satellite remote sensing validation
- Support development of radiative transfer models for estimating solar irradiance from available meteorological observations
- Provide solar resource information needed for technology deployment and operations.

Summary of Research Results:

Solar radiation resource measurements from a rotating shadowband radiometer system (RSR) have been collected by Abengoa Solar for the period January 2008 through January 2013. RSR measurements of global horizontal and diffuse horizontal irradiance components were used to compute the coincident direct normal irradiance at 1-minute intervals. The direct normal irradiance is the essential solar resource for designing and testing a concentrating solar power conversion system. These data supported the combined needs of Abengoa Solar for site-specific, long-term, continuous measurements of solar irradiance for validating system performance and NREL's needs for ground validation data for solar resource modeling.

Subject Inventions Listing: Not Applicable

Report Date: June 13, 2013 **Responsible Technical Contact at Alliance/NREL:** Tom Stoffel

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