

National Renewable Energy Laboratory

Cooperative Research and Development Agreement

Appendix A—Joint Work Statement

CRADA # CRD-09-XXX
Project Letter Agreement No. X

Title: Solar Technology Validation Project

Abstract of CRADA work:

Under this Agreement, NREL will work with Participant to improve concentrating solar power system performance characterizations. This work includes, but is not limited to, research and development of methods for acquiring renewable resource characterization information using site-specific measurements of solar radiation and meteorological conditions; collecting system performance data; and developing tools for improving the design, installation, operation and maintenance of solar energy conversion systems. This work will be conducted at NREL and Participant facilities.

Participant Name and Address:

Participant Type

Foreign	[]
University	[]
Small Business	[]
Large Business	[]
State & Local	[]
Government	[]
Not-for-Profit	[]
Municipal Utility	[]

Purpose

The purpose and intent of this Agreement is to provide a framework for Participant to research and acquire high quality and validated measurement data in support of deploying concentrating solar power systems. This work includes, but is not limited to, methods for acquiring renewable resource characterization information using site-specific measurements of solar radiation and meteorological conditions; collecting system performance data; and developing resource data and analysis tools for improving the design, installation, operation and maintenance of solar energy conversion systems. This work will be conducted at NREL and Participant facilities.

Schedule

The period of performance is 3 years, subject to the availability of Government funding. The CRADA may be extended by the mutual written agreement of the Parties to be extended for subsequent periods until the work is complete.

Statement of Work

This work includes, but is not limited to, research and development of methods for acquiring renewable resource characterization information using site-specific measurements of solar radiation and meteorological conditions; collecting system performance data; and developing tools for improving the design, installation, operation and maintenance of solar energy conversion systems. This work will be conducted at NREL and Participant facilities.

Any reports developed under this CRADA must be reviewed by both NREL and Participant and approved by each company prior to publication of results or documents.

Task Descriptions and Estimated Completion Dates

Task 1: Solar Resource and Meteorological Measurements

Project Name: Solar Resource and Meteorological Assessment Project (SOLRMAP)

PI: Steve Wilcox

Under this task, NREL will work with Participant to install, operate, and maintain _____ [NUMBER OF STATIONS] solar radiation and meteorological measurement station at a site or sites to be determined mutually by Participant and NREL.

As part of this task, the following items will be addressed for each measurement station:

- Participant shall purchase or lease equipment meeting NREL specifications
- Participant shall provide station infrastructure (e.g. electrical power, communications links, equipment mechanical support structure, site security, etc.).
- Participant shall provide qualified staff for assisting with station setup and station operations training at mutually acceptable date (approximately one to two days)
- Participant shall commit staff and resources for on-going station maintenance according to NREL specifications (perpetual during duration of agreement).
- Participant shall assist NREL with instrument calibrations as required to maintain traceability to calibration standards (e.g., instrument swaps, shipping, site visits)
- NREL shall specify instrument type and how instruments are installed and maintained.
- NREL shall fund supervision for on-location station setup (to include NREL labor and travel for instrument setup, but to exclude participant labor, travel, equipment, and infrastructure-related costs).
- NREL shall provide on-site training of participant staff as part of site visit for station setup.
- At the request of the Participant, NREL shall provide an opportunity for additional one-day training of participant staff at the Solar Radiation Research Laboratory (SRRL) in Golden, Colorado at a date to be determined.
- NREL shall provide on-going data quality assessment, data distribution, and archiving.
- NREL shall provide data summaries on an annual (or otherwise stipulated) schedule to include reports on resource magnitude and variability and data uncertainty. Summaries and reports will not provide analysis of the suitability of the solar resource for any application or technology deployment. NREL makes no representations as to the suitability of any location for a renewable energy technology facility nor the economic performance of such facility.
- NREL shall fund regular instrument calibrations (excluding participant labor and shipping costs).
- NREL shall enter into a non-disclosure agreement, if requested and justified by participants, to maintain data confidentiality and restrict access.

- NREL shall have explicit access to all data for research, including restricted data (such that confidentiality is maintained)

Deliverables include: Project plan (within 30 days after project start), measurement system operation (within 90 days after project start), and measurement system maintenance (continuous as described in Appendix A).

Funding Table (per measurement station)

Estimated Costs	NREL Shared Resources	Participant Shared Resources	Participant Funds In	Totals
Year 1	\$ 00.00	\$ 00.00	\$ 00.00	\$ 00.00
Year 2	\$ 00.00	\$ 00.00	\$ 00.00	\$ 00.00
Year 3	\$ 00.00	\$ 00.00	\$ 00.00	\$ 00.00
TOTALS	\$ 00.00	\$ 00.00	\$ 00.00	\$ 00.00
Fed Admin Charge on Funds-in	---	---	\$ 00.00	\$ 00.00

DOE Mission Area to benefit from this CRADA:

- Energy [X]
- Environmental Quality [X]
- Science []
- Other, name: []

CRADA benefit to DOE, Participant, and US Taxpayer:

The Agreement provides several opportunities to evaluate solar technology performance and reliability at actual fielded systems. This will lead to information that can help improve the performance and reliability of solar technologies, including reduced uncertainty of resource data and forecasting of the solar resource.

DOE Program Manager:

Frank (Tex) Wilkins
202-586-8064

CRADA format is Modular CRADA. If other, such as multilab or USIC, identify: _____.

Special Considerations

Background Intellectual Property:

No [X] Yes [] If yes, list:

Is Participant interested in licensing BIP at this time:

No Yes

If yes, identify any known special issues with a potential license (i.e., BIP still in ROI stage, already exclusively licensed, has broader applications than scope of CRADA, in contention right now with another partner)

Are human or animal subjects to be used as part of this CRADA?

No Yes

Have all necessary ES&H and quality (NEPA) reviews been completed?

Yes No (if not, explain)

Are there any organizational or personal conflicts of interest associated with this CRADA?

No Yes (explain)

NREL maintains on file signed COI certificates for each employee with a substantial role in this CRADA.

Will export controlled information be produced?

No Yes (if yes, identify)

Fairness of Opportunity requirements have been satisfied by:

Participant approached laboratory

Participant responded to FedBizOpps announcement

Participant was contacted by laboratory after or during broad public announcement or solicitation

Did the Participant require any substantive changes to the Modular CRADA or any changes to double-underlined language?

No Yes If yes, attach copies of the proposed modified articles. If substantively altered, attach Participant's US Competitiveness justification.

Additional Special Considerations:

See Appendix A for *Solar and Meteorological Station Options: Configurations and Specifications*