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(1.08.09.13)

**U.S. DEPARTMENT OF ENERGY
OFFICE OF ENERGY EFFICIENCY AND RENEWABLE ENERGY
NEPA DETERMINATION**



RECIPIENT: Enki Technology Inc.

STATE: CA

PROJECT TITLE: Improved PV-Glass Field Performance

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-001387	DOE-EE0007547	GFO-0007547-001	

Based on my review of the information concerning the proposed action, as NEPA Compliance Officer (authorized under DOE Order 451.1A), I have made the following determination:

CX, EA, EIS APPENDIX AND NUMBER:

Description:

A9 Information gathering, analysis, and dissemination Information gathering (including, but not limited to, literature surveys, inventories, site visits, and audits), data analysis (including, but not limited to, computer modeling), document preparation (including, but not limited to, conceptual design, feasibility studies, and analytical energy supply and demand studies), and information dissemination (including, but not limited to, document publication and distribution, and classroom training and informational programs), but not including site characterization or environmental monitoring. (See also B3.1 of appendix B to this subpart.)

B5.15 Small-scale renewable energy research and development and pilot projects Small-scale renewable energy research and development projects and small-scale pilot projects, provided that the projects are located within a previously disturbed or developed area. Covered actions would be in accordance with applicable requirements (such as local land use and zoning requirements) in the proposed project area and would incorporate appropriate control technologies and best management practices.

Rationale for determination:

The U.S. Department of Energy (DOE) is proposing to provide federal funding to Enki Technology Inc. to design, deploy, and operate a minimum of six soiling measurement stations at currently operating or prospective solar plants sites in the Southwestern United States, in order to advance technologies for prediction and mitigation of soiling on module performance and durability.

Proposed activities would include: system design, equipment fabrication and procurement, site selection, station assembly and deployment, and data collection. Design work would be conducted at Enki Technology, Inc. in San Jose, CA. Enki would work with contract manufacturers to fabricate and assemble six systems, totaling 30 custom 60-cell crystalline Si modules (five modules per system). Additionally, Enki would work with an approved vendor to produce a basic ground mount structure for a single row of five portrait orientated modules, taking into account wind and snow loads at the "worst case" site identified on their list of potential deployment locations.

Each station would consist of a small mounting structure approximately 2x3 meters in area to which measurement equipment and solar modules would be attached. Some stations may include solar charged batteries for off-grid power supply. The structure would be ballasted by either precast concrete ballast blocks or bricks in metal trays. No major ground disturbance other than leveling the immediate area under the structure is anticipated. In some potential locations, digging a trench would be required to route AC power to the equipment. The dimension of any potential trench would be approximately 15cm wide by 60cm deep. The length of the trench would be dependent on the particular site, but would likely be less than 100 meters or else off-grid solar power would need to be provided to the equipment. At a sub-set of sites, ownership of equipment may be passed to an educational or government entity at completion of the project for ongoing data collection. At all other sites the equipment would be dismantled and removed and the site would be returned to pre-project conditions.

Installation of the soiling stations would involve small-scale construction activities including assembly of a solar ground mount structure, addition of ballast materials such as bricks or concrete, interconnections of electrical wires. All construction work would be performed by qualified personnel using the appropriate tools and personal protective equipment.

Based on current project plans, Enki would install equipment outdoors at a least six locations that would be selected from a list of existing or planned utility-scale solar energy plants. Enki has identified 14 candidate sites, of which 11

are existing solar plants and 3 are prospective sites for utility-scale solar power. During months 7-9 of the proposed project, Enki would identify and survey at least eight candidate sites for deployment, and would down-select to six sites based on: availability of data, infrastructure and field maintenance services; regulatory, commercial or legal impediments to access and construction; ease of access; and identification of a specific location for the soiling station free of shading. There are no known permit requirements at this time. Site-specific restrictions are unknown at this time but may include issues such as prohibition of excavation, issues with access for third party contractors, restrictions on construction activities such as pouring concrete ballasts, insurance, liability and workers comp concerns.

DOE has reviewed the list of candidate sites for deployment found in Table 2b of the Environmental Questionnaire (EQ-1), and due to the previously disturbed and developed nature of the 11 existing solar plant sites and the relatively small footprint of the proposed small-scale field tests, DOE has concluded that no impacts to sensitive cultural and/or natural resources such as historic properties, threatened/endangered species, migratory birds, wetlands, floodplains, or prime farmlands are to be expected. However, until such time as Enki completes their site selection process (Subtask 2.3), there is not enough information available for DOE to conduct a meaningful review of potential outdoor activities at the three prospective solar plant sites which are located in rural, agricultural or oil/gas production areas. Once Enki has determined the subset of sites at which deployment would take place, further NEPA review will be necessary before outdoor activities may be undertaken at any of the three candidate locations categorized as "prospective solar site" in Table 2b. The recipient is therefore restricted from carrying out construction, installation, deployment, and operation of soiling stations at these particular sites without first providing additional location details to the DOE Project Officer and awaiting approval from DOE to move ahead with those activities.

Based on the review of the proposal, DOE has determined the proposal fits within the class of action(s) and the integral elements of 10 CFR 1021 subpart B outlined in the DOE categorical exclusion(s) selected above. DOE has also determined that: (1) there are no extraordinary circumstances (as defined by 10 CFR 1021.410(2)) related to the proposal that may affect the significance of the environmental effects of the proposal; (2) the proposal has not been segmented to meet the definition of a categorical exclusion; and (3) the proposal is not connected to other actions with potentially significant impacts, related to other proposals with cumulatively significant actions, or an improper interim action. With the exception of work at the three "prospective solar sites" identified above, this proposal is categorically excluded from further NEPA review.

NEPA PROVISION

DOE has made a final NEPA determination for this award

Insert the following language in the award:

If the Recipient intends to make changes to the scope or objective of this project, the Recipient is required to contact the Project Officer, identified in Block 15 of the Assistance Agreement before proceeding. The Recipient must receive notification of approval from the DOE Contracting Officer prior to commencing with work beyond that currently approved. If the Recipient moves forward with activities that are not authorized for Federal funding by the DOE Contracting Officer in advance of a final NEPA decision, the Recipient is doing so at risk of not receiving Federal funding and such costs may not be recognized as allowable cost share.

Insert the following language in the award:

You are required to:

The recipient is restricted from carrying out construction, installation, deployment, and operation activities at any of the three candidate sites categorized as "prospective solar sites" without first providing additional location details to the DOE Project Officer and awaiting approval from DOE to move ahead with those activities.

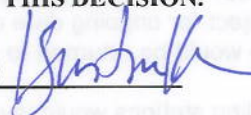
Note to Specialist :

Solar Energy Technologies Office
This determination requires a tailored NEPA provision.
This determination completed by Whitney Doss on July 27, 2016.

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature:

 Electronically Signed By: Kristin Kerwin
NEPA Compliance Officer



Date: 8/1/2016

FIELD OFFICE MANAGER DETERMINATION

Field Office Manager review required

NCO REQUESTS THE FIELD OFFICE MANAGER REVIEW FOR THE FOLLOWING REASON:

- Proposed action fits within a categorical exclusion but involves a high profile or controversial issue that warrants Field Office Manager's attention.
- Proposed action falls within an EA or EIS category and therefore requires Field Office Manager's review and determination.

BASED ON MY REVIEW I CONCUR WITH THE DETERMINATION OF THE NCO :

Field Office Manager's Signature: _____
Field Office Manager

Date: _____