

PMC-ND
(1.08.09.13)

U.S. DEPARTMENT OF ENERGY

OFFICE OF ENERGY EFFICIENCY AND RENEWABLE ENERGY

NEPA DETERMINATION



RECIPIENT: Sinton Consulting, Inc., DBA Sinton Instruments

STATE: CO

PROJECT TITLE: Contactless Production Testing of Silicon Solar Cells

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0002243	DE-EE0009335	GFO-0009335-001	

Based on my review of the information concerning the proposed action, as NEPA Compliance Officer (authorized under DOE Policy 451.1), 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.)
- B3.6 Small-scale research and development, laboratory operations, and pilot projects** Siting, construction, modification, operation, and decommissioning of facilities for smallscale research and development projects; conventional laboratory operations (such as preparation of chemical standards and sample analysis); and small-scale pilot projects (generally less than 2 years) frequently conducted to verify a concept before demonstration actions, provided that construction or modification would be within or contiguous to a previously disturbed or developed area (where active utilities and currently used roads are readily accessible). Not included in this category are demonstration actions, meaning actions that are undertaken at a scale to show whether a technology would be viable on a larger scale and suitable for commercial deployment.

Rationale for determination:

The U.S. Department of Energy (DOE) is proposing to provide funding to Sinton Instruments to develop a new method for evaluating silicon solar cells to characterize them at the end of the production line. A tool would be developed to bin and sort cells (i.e. ensure that those of the same electrical nature are used together in a particular module for optimal performance). The project would be completed over three Budget Periods (BPs) with a Go/No-Go Decision Point between each BP.

This tool would be contactless and more efficient than the conventional method of measuring power output on solar cells that contain small amounts of silver content used for conducting electricity. A prototype electrical circuit would be used to obtain benchmark data employing conventional methods of cell characterization. The proposed contactless technique would be tested on this circuit board and processes would be compared. Results would be used to design, assemble, and test the refined tool. Sample tests would be run on at least 100 cells each of 3 different cell technologies. The tool would be tested for speed and reliability and qualified for industrial application. Included in this tool would be machine learning capabilities to identify and classify defects on solar cells.

Proposed project activities would include computer modeling, software development, and development, fabrication, and testing of electronic test and measurement tools. Sinton Instruments would oversee the project. Subrecipients would be Majestic Metals, Slingshot, Sunsource, IN-X, and EMI test lab. Sinton Instruments would assemble and test the electronic instruments and develop and test software. Majestic Metals would fabricate instrument parts using aluminum and steel stock. Slingshot would fabricate a small number of prototype circuit boards. Sunsource would provide the source of extruded aluminum structural parts and cut them to order. IN-X would machine the aluminum and steel parts based on the design from Sinton Instruments. EMI would perform tests on the electromagnetic emissions and immunity of electronic instruments. Activities would occur in purpose-built labs. There would be no changes in the use, mission, or operation of existing facilities required as part of this project and no additional permits required in order to conduct any of the work activities.

Project activities would involve work with high voltage instruments. Any risks associated with this project would be mitigated through adherence to established health and safety policies and procedures. Protocols would include employee training and the use of personal protective equipment. All waste products would be disposed of by licensed waste management service providers. Sinton Instruments and its project partners would observe all applicable Federal, state, and local health, safety, and environmental regulations.

NEPA PROVISION

DOE has made a final NEPA determination.

Notes:

Solar Energy Technologies Office

This NEPA determination does not require a tailored NEPA provision.

Review completed by Shaina Aguilar on 3/9/21.

FOR CATEGORICAL EXCLUSION DETERMINATIONS

The proposed action (or the part of the proposal defined in the Rationale above) fits within a class of actions that is listed in Appendix A or B to 10 CFR Part 1021, Subpart D. To fit within the classes of actions listed in 10 CFR Part 1021, Subpart D, Appendix B, a proposal must be one that would not: (1) threaten a violation of applicable statutory, regulatory, or permit requirements for environment, safety, and health, or similar requirements of DOE or Executive Orders; (2) require siting and construction or major expansion of waste storage, disposal, recovery, or treatment facilities (including incinerators), but the proposal may include categorically excluded waste storage, disposal, recovery, or treatment actions or facilities; (3) disturb hazardous substances, pollutants, contaminants, or CERCLA-excluded petroleum and natural gas products that preexist in the environment such that there would be uncontrolled or unpermitted releases; (4) have the potential to cause significant impacts on environmentally sensitive resources, including, but not limited to, those listed in paragraph B(4) of 10 CFR Part 1021, Subpart D, Appendix B; (5) involve genetically engineered organisms, synthetic biology, governmentally designated noxious weeds, or invasive species, unless the proposed activity would be contained or confined in a manner designed and operated to prevent unauthorized release into the environment and conducted in accordance with applicable requirements, such as those listed in paragraph B(5) of 10 CFR Part 1021, Subpart D, Appendix B.

There are no extraordinary circumstances related to the proposed action that may affect the significance of the environmental effects of the proposal.

The proposed action has not been segmented to meet the definition of a categorical exclusion. This proposal is not connected to other actions with potentially significant impacts (40 CFR 1508.25(a)(1)), is not related to other actions with individually insignificant but cumulatively significant impacts (40 CFR 1508.27(b)(7)), and is not precluded by 40 CFR 1506.1 or 10 CFR 1021.211 concerning limitations on actions during preparation of an environmental impact statement.

The proposed action is categorically excluded from further NEPA review.

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: _____

 Electronically Signed By: Kristin Kerwin

NEPA Compliance Officer

Date: 3/11/2021

FIELD OFFICE MANAGER DETERMINATION

☒ Field Office Manager review not required

☐ Field Office Manager review required

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

Field Office Manager's Signature: _____

Field Office Manager

Date: _____