

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



**RECIPIENT:** University of North Carolina at Charlotte

**STATE:** NC

**PROJECT TITLE :** Contactless Multi-Curve Tracer for Enhanced Photovoltaic System Installation, Operations, Maintenance and Performance

**Notice of Funding Opportunity Number**  
DE-FOA-0002985

**Procurement Instrument Number**  
DE-EE0011476

**NEPA Control Number**  
GFO-0011476-001

**CID Number**  
GO11476

**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.

**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 the university of North Carolina at Charlotte (UNC Charlotte) to develop, fabricate, and field test a contactless multi-current-voltage (I-V) curve tracer. Project activities would include development, design and fabrication of an electrostatic voltmeter (ESV) sensors and life cycle costing models, software programming, data analysis, and field testing. Project activities would take place over two budget periods.

In addition to design, development, and fabrication of ESV sensors, UNC Charlotte (Charlotte, North Carolina) and at Pordis, LLC (Austin, Texas) would also conduct project data analysis. Arizona State University (Mesa, AZ) would participate in design and development activities and conduct field testing. SOLV Energy (San Diego, CA) would conduct field testing activities. Project work at Portland State University (Portland, OR) includes development of life cycle costing models. And Pordis, LLC would conduct bench testing and software programming.

This project involves only testing of photovoltaic (PV) modules and strings, which are already installed in the field. All project activities would be completed in existing, purpose-built facilities. Specific field-testing locations would be selected from existing SOLV PV installation locations near Phoenix, AZ and/or other locations to be identified. Field testing activities, however, would not require new installations, excavation, or permanent modifications to the existing PV installation or site. No new permits or licenses would be needed to perform award activities.

The project would involve the measurement of high voltage (up to 1500 Vdc) present in the solar PV strings at the utility-scale PV sites that SOLV Energy manages. Appropriate personal protective equipment (PPE), such as hard hats, electrically insulated gloves, and safety goggles, must be worn at all times while conducting tests at these sites. Existing government and corporate health, safety, and environmental policies and procedures would be followed at all facilities, including personnel training, PPE, engineering controls, monitoring, and internal assessments.

DOE has considered the scale, duration, and nature of proposed activities to determine potential impacts on

resources, including those of an ecological, historical, cultural, and socioeconomic nature. DOE does not anticipate impacts on these resources which would be considered significant or require DOE to consult with other agencies or stakeholders.

Any work proposed to be conducted at a federal facility may be subject to additional NEPA review by the cognizant federal official and must meet the applicable health and safety requirements of the facility.

EERE is aware of the November 12, 2024, decision in *Marin Audubon Society v. FAA*, No. 23-1067 (D.C. Cir. Nov. 12, 2024). To the extent that a court may conclude that the Council on Environmental Quality (CEQ) regulations implementing NEPA are not judicially enforceable or binding on this agency action, EERE has nonetheless elected to follow those regulations at 40 C.F.R. Parts 1500-1508, in addition to DOE's procedures/regulations implementing NEPA at 10 C.F.R. Part 1021, to meet the agency's obligations under NEPA, 42 U.S.C. §§ 4321 et seq.

## NEPA PROVISION

DOE has made a final NEPA determination.

Notes:

Solar Energy Technologies Office (SETO)  
NEPA review completed by James Cherry, 01/14/2025.

## 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:



Andrew Montano

NEPA Compliance Officer

Date: 1/15/2025

## 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: