

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



RECIPIENT: [Columbia University](#)

STATE: [NY](#)

PROJECT TITLE : [Back contact alternatives for increasing life expectancy of CdTe PV modules](#)

| Funding Opportunity Announcement Number | Procurement Instrument Number | NEPA Control Number             | CID Number |
|---|-------------------------------|---------------------------------|------------|
| <a href="#">DE-FOA-0002378</a>          | <a href="#">DE-EE0009830</a>  | <a href="#">GFO-0009830-001</a> |            |

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:

|   |  |
|---|--|
| <a href="#">A9<br/>Information gathering, analysis, and dissemination</a> | <a href="#">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.)</a> |
|---|--|

Rationale for determination:

[The U.S. Department of Energy \(DOE\) is proposing to provide funding to Columbia University \(CU\) to conduct sustainability evaluations of back-contact doping and encapsulant/sealant alternatives for cadmium telluride \(CdTe\) photovoltaic \(PV\) modules. The specific alternatives that would be evaluated are currently being considered by First Solar, Inc. \(FS\) for their PV modules.](#)

[CU would identify and characterize alternatives, evaluate potential effects on recyclability of modules, evaluate relevant FS material and energy data, conduct comparative life-cycle assessments \(LCAs\), and evaluate cost, performance, resource depletion, and risks of implementing alternatives. All award activities would be of an academic, intellectual, and analytical nature. Activities would include information gathering, computer modeling, analysis, and document preparation.](#)

**NEPA PROVISION**

[DOE has made a final NEPA determination.](#)

Notes:

[Solar Energy Technologies Office \(SETO\)  
This NEPA determination does not require a tailored NEPA Provision.  
NEPA review completed by Dan Cahill, 12/7/2021.](#)

**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: 12/7/2021

**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: \_\_\_\_\_