

PMC-ND
(1.08.09.13)

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



RECIPIENT: Technic Inc

STATE: RI

PROJECT TITLE : Silver-free Metallization Technology for Producing High Efficiency, Industrial Silicon Solar Cells

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
	DE-EE0006814	GFO-0006814-002	GO6814

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.)
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 Technic Inc. to develop a commercially viable Silver (Ag)-free metallization technology by replacing the standard silver (Ag) paste front grid metallization process currently used in manufacturing with an Alternative Seed Layer (ASL) process in which nickel and copper are plated directly on silicon.

This award previously received a conditional NEPA Determination (GFO-0006814-001 CX A9, B3.6, 10/29/2014). The conditional NEPA Determination placed a restriction on tasks related to the building, installation, and testing of the pilot tool identified in the recipient's SOPO as Subtasks 6.3, 6.4, and 6.5. Technic Inc. identified the location for testing of the Phase 2 demo equipment as the Technic Inc. facility in Cranston, RI. Technic Inc. also has removed Massachusetts Institute of Technology as a site for testing.

Technic would develop manufacturing equipment and processes for plating nickel/copper on silicon-utilizing ASL technology. Data would be gathered throughout the project to determine if the plated metal contacts are adherent and reliable. The chemistry development would occur at Technic's research and development location in Cranston, RI. The equipment would be fabricated in Technic facilities located in Pawtucket, RI and Clearwater, FL. Testing of the chemistry would be performed at Arizona State University (ASU) in Tempe, AZ. Testing of the Phase 2 demo equipment would be performed at Technic in Cranston, RI. This is a standalone project and is not connected to a larger project. The facilities in which the lab work would occur are purpose-built for the activities being proposed. No new or modified permits, construction of new facilities, or physical modifications to existing facilities would occur as a result of the proposed project.

The project would involve the use and handling of hazardous materials, including metals and industrial solvents. All such handling would occur in-lab. Technic and ASU have dedicated hazardous material handling and disposal practices. All hazardous materials would be managed in accordance with federal, state, and local environmental regulations. Hazardous waste generated by the proposed project would be handled through normal protocol by a licensed hazardous waste hauler and brought to a permitted disposal facility.

Based on the review of the proposal, DOE has determined the proposal fits within the class of action(s) and the integral elements of Appendix B to Subpart D of 10 CFR 1021 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. 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.

Note to Specialist :

Solar Energy Technologies Office
This NEPA determination does not require a tailored NEPA provision.
Review completed by Chris Rowe, 8/15/2016

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: _____  Date: 8/16/2016
Electronically Signed By: Lori Gray
NEPA Compliance Officer

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: _____ Date: _____
Field Office Manager