

PMC-ND

(1.08.09.13)

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

**RECIPIENT:** CelLink Corporation**STATE:** CA**PROJECT TITLE**
: Interconnect Circuit Manufacturing Technology

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-EE0001225	DE-EE0007200	GFO-0007200-002	GO7200

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 CelLink Corporation to demonstrate a flexible interconnect circuit for photovoltaic modules at the pilot-manufacturing scale.

Proposed project activities would include the design, fabrication, and testing of custom, roll-to-roll laser patterning equipment, and fabrication of interconnect circuits using the roll-to-roll laser patterning equipment. The proposed project would consist of the following tasks:

Task 1.0: Patterning Capability Development and Demonstration

Subtask 1.1: Select appropriate lasers for patterning conductive foil & adhesive stack

Subtask 1.2: Design basic process zones

Subtask 1.3: Procure hardware for basic process zones

Subtask 1.4 Build basic process zones and test/demonstrate functionality

Task 2.0: Manufacturing Capability Development and Demonstration

Subtask 2.1: Design roll-to-roll patterning tools for conductive foil and adhesive stack

Subtask 2.2: Procure hardware for roll-to-roll patterning tools

Subtask 2.3: Procure materials for testing roll-to-roll patterning tools and Final Assembly and Test certification

Subtask 2.4: Build roll-to-roll patterning tools and test/demonstrate functionality

Task 3.0: Product and Business Development

Subtask 3.1: Initiate UL or TUV Certification

Subtask 3.2: Achieve UL or TUV Certification

Subtask 3.3: Determine IC product specifications and procure backend process tools

Subtask 3.4: Obtain Customer Purchase Order

All of Task 1.0, and Subtasks 2.1 and 2.2, were previously reviewed (GFO-0007008-001; CX A9, CX B5.15; September 2015) and excluded from further NEPA review; however, the location where the manufacturing of the interconnect circuits would occur was unknown at the time and Subtasks 2.3 and 2.4, and all of Task 3.0 were prohibited. This location has been identified and a meaningful review can now be completed for these previously prohibited activities.

CelLink would carry out these remaining tasks from their pilot manufacturing facility in San Carlos, CA. These tasks would involve activities such as laser patterning and lamination of metal foils and polymer films on a pilot manufacturing

tool, soldering, ultrasonic welding, and laser welding. The facility in which lab work would occur is zoned for light industrial activities; therefore, no adverse impacts to sensitive resources are expected as a result of the proposed project. No change in the use, mission or operation of existing facilities would arise out of this effort. The facility has all applicable permits in place and would not need additional permits for the proposed activities.

Aluminum and copper dust and particles would be created during the operation of the manufacturing line. These particles would be collected by a filter, thus preventing their release to the outside environment. Scrap aluminum, copper foil, and scrap plastic film generated during CellLink's manufacturing process would be recycled.

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. This proposal is categorically excluded from further NEPA review.

NEPA PROVISION

DOE has made a final NEPA determination for this award

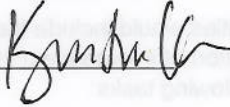
Insert the following language in the award:

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 review does not require a tailored NEPA provision
Review completed by Rebecca McCord, March 28, 2017

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: Electronically Signed By: Kristin Kerwin  Date: 3/28/2017
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