

PMC-ND

(1.08.09.13)

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

**RECIPIENT:** 1366 Technologies**STATE:** MA

**PROJECT TITLE** 1366 PROJECT AUTOMATE: ENABLING AUTOMATION FOR <\$0.10/W HIGH-EFFICIENCY  
KERFLESS WAFERS MANUFACTURED IN THE US

<b>Funding Opportunity Announcement Number</b>	<b>Procurement Instrument Number</b>	<b>NEPA Control Number</b>	<b>CID Number</b>
DE-SOL-0001018	DE-EE0006808	GFO-0006808-002	GO6808

**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 federal funding to 1366 Technologies to improve the quality and lower the cost of Direct Wafer™ kerfless photovoltaic (PV) wafer technology through further development of Direct Wafer™ processes.

The proposed project activities would include design, computer modeling, fabrication and in-lab strength testing of thin, framed PV wafers. These proposed activities would occur at 1366's existing research and development (R&D) and pilot manufacturing facilities in Bedford, MA. Assistance with fabrication would be provided by Jabil PV Certification and Test Laboratory in Petersburg, FL. All facilities in which lab work would occur have been purpose-built for the type of activities being proposed. Only minor modifications e.g. adding electrical outlets and re-configuring would need to be made to the 1366 R&D lab in order to add a machine vision system for in-lab testing. No change in the use, mission or operation of existing facilities would arise out of this effort. The facilities have all applicable permits in place, and would not need additional permits for the proposed activities.

The proposed project would involve the use of high temperature furnaces and hazardous chemicals for solar cell processing. Etching of silicon wafers would require the use of hydrofluoric and nitric acid, mixed with water. Acids would be handled according to 1366's Chemical Hygiene Plan by properly trained personnel. Wastewater generated would be processed on-site through a neutralization system and collected or disposed of according to standard procedures approved by the MA Water Resources Authority (MWRA). Non-hazardous waste would consist of scrap silicon wafers and graphite and would be disposed of through normal municipal waste streams. No siting, construction or major expansion of waste storage, disposal, recovery, or treatment actions/facilities would be required.

Based on review of the project information and the above analysis, DOE has determined the proposed project activities would not have a significant individual or cumulative impact to human health and/or environment. DOE has determined the proposed project is consistent with actions contained in DOE categorical exclusions A9 "information gathering, analysis and dissemination," B3.6 "small-scale research and development, laboratory operations and pilot projects and 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 requires a tailored NEPA provision.  
Review completed by Rebecca McCord 05/23/2016.

**SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.**

NEPA Compliance Officer Signature:



Electronically Signed By: Kristin Kerwin

Date: 5/26/2016

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:

Field Office Manager

Date: