

PMC-ND

(1.08.09.13)

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

**RECIPIENT:**Amtech Systems, Inc.**STATE:** AZ

**PROJECT TITLE**Efficiency enhancement in c-Si solar cells by introducing fixed-charge into SiNx passivation film using a novel low-cost plasma charging method

<b>Funding Opportunity Announcement Number</b>	<b>Procurement Instrument Number</b>	<b>NEPA Control Number</b>	<b>CID Number</b>
DE-FOA-0001225	DE-EE0007189	GFO-0007189-001	GO7189

**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:

- |   |  |
|---|--|
| <b>A9 Information gathering, analysis, and dissemination</b>                                | 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.)   |
| <b>B3.6 Small-scale research and development, laboratory operations, and pilot projects</b> | 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 Amtech Systems, Inc. to improve the performance of advanced solar cell architectures using a novel, low-cost plasma charging method which introduces charges onto a dielectric passivation film.

Proposed project activities would include the installation of plasma charging equipment, completing charging runs, taking charge measurements, and fabrication of test wafers and solar cells. All charging experiments would occur at the Amtech facility in Billerica, MA. All fabrication activities would occur at the Georgia Institute of Technology (GIT) in Atlanta, GA. Both locations have existing solar cell fabrication facilities at which the proposed activities would occur. Mini-module reliability tests would also be conducted at NREL in Golden, CO.

All facilities are purpose-built for the type of activities being proposed; therefore, no adverse impacts to sensitive resources are expected as a result of the proposed project. All activities would occur indoors. No ground disturbance or change in the use, mission or operation of existing facilities would arise out of this effort. No modifications or new permits, additional licenses and/or authorizations would be necessary, no major construction would occur, nor would the mission or operation of the facility be altered. Existing corporate health and safety policies and procedures would be followed including employee training, proper protective equipment, engineering controls, monitoring, and internal assessments.

For all work conducted at DOE laboratories, project activities may be subject to additional NEPA review by the cognizant NEPA Compliance Officer for the lab and would be required to meet the labs health and safety requirements.

Based on review of the project information and the above analysis, DOE has determined the proposed project would not have a significant individual or cumulative impact to human health and/or environment. DOE has determined that the proposed project is consistent with actions outlined in DOE categorical exclusions A9 "Information gathering, analysis, and dissemination", and B3.6 "Small-scale research and development, laboratory operations and pilot projects" and is therefore 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 you intend to make changes to the scope or objective of your project you are required to contact the Project Officer identified in Block 11 of the Notice of Financial Assistance Award before proceeding. You must receive notification of approval from the DOE Contracting Officer prior to commencing with work beyond that currently approved.

Insert the following language in the award:

You are required to:

For all work conducted at DOE laboratories, project activities may be subject to additional NEPA review by the cognizant NEPA Compliance Officer prior to initiating work and would be required to meet the labs health and safety requirements.

Note to Specialist :

Solar Energy Technologies Office

This NEPA determination does not require a tailored NEPA provision.

Review completed by Logan Sholar, 9/10/2015

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

NEPA Compliance Officer Signature:  Date: 9/10/2015  
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