PMC-EF2a

(2.04.02)

U.S. DEPARTMENT OF ENERGY
EERE PROJECT MANAGEMENT CENTER
NEPA DETERMINATION

RECIPIENT: Semprius **STATE:** NC

PROJECT TITLE : SAI Incubator - Semprius - Massively Parallel Microcell-based Module Array; NREL Tracking No. 09-036a

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
		NREL-09-036a	GO10337

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:

B3.6 Siting, construction (or modification), operation, and decommissioning of facilities for indoor bench-scale research projects and conventional laboratory operations (for example, preparation of chemical standards and sample analysis); small-scale research and development projects; and small-scale pilot projects (generally less than two years) conducted to verify a concept before demonstration actions. Construction (or modification) will be within or contiguous to an already developed area (where active utilities and currently used roads are readily accessible).

Rational for determination:

DOE funding would be used by NREL to support the Solar American Initiative (SAI) PV Technology Incubator. The program is structured to allow innovative approaches targeted at research and development of PV cells and module prototypes. The primary objective of this SAI PV Technology Incubator project is to shorten the timeline for companies to transition prototype and pre-commercial PV technologies into pilot and full-scale manufacture. The specific objective of this work is the demonstration of the solar cell performance. The back surface passivation would be integrated into a process flow for solar cell production.

The subcontractor (Semprius, Durham, NC) would scale up micro-cell based module and receiver manufacture to pilot plant scale, while simultaneously improving micro-cell and module performance. Prototype modules and receivers have been demonstrated, and baseline manufacturing processes have been established. The manufacturing process consists of four main areas: epitaxial growth, COI wafer fabrication including transfer printing, receiver fabrication and module assembly.
These activities would concur in an existing fab facility and with existing equipment, and would be completed utilizing industry standard methods and protocols, and in accordance with applicable federal, state, and local regulations. Semprius would utilize foundries for epitaxial growth and water fabrication from an outside vendor. There are no emissions associated with the transfer printing or other phases of this project. The proposed project would involve limited quantities of chemicals/hazardous materials as well as the generation of hazardous waste. All chemical storage, use, and handing procedures are documented in the Semprius Safety Manual. Semprius is classified as a Conditionally Exempt Small Quantity Generator (CESQG) of hazardous waste, meaning that they generate less than 220 lbs of non-acute hazardous waste monthly with an aggregate accumulation of less than 2200 lbs. They have been issued the following 12-digit EPA identification number NCR000147223 and have not yet generated sufficient quantities of hazardous waste for offsite treatment or disposal. They do have a contract with Veolia Environmental Services of Creedmoor, NC for proper waste transportation and offsite management. No modification to existing permits or acquisition of new permits for point-source air permitting, hazardous materials permitting, hazardous waste permitting or wastewater permitting is required.
An EF2A Final NEPA Determination for Semprius' 12-month pre-Incubator project was signed on 09/15/2009 (NREL-09-036) and is very similar in scope and impacts as this proposed action. Based upon this prior NEPA determination and the information above, this project's impacts to the human and natural environment can be deemed less than significant. Therefore is proposed project comprises of a bench-scale research project and a small-scale pilot project with no extraordinary circumstances and DOE has categorized this project as meeting Categorical Exclusion B3.6.

NEPA PROVISION

DOE has made a final NEPA determination for this award

Insert the following language in the award:

Note to Specialist :

None Given.

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: Lori Plummer Lori Plummer Date: 4/8/2010

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