PMC-EF2a

(2.04.02)

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

RECIPIENT: 1366 Technologies, Inc. **STATE:** MA

PROJECT TITLE: 1366 Project Silicon: Reclaiming US Silicon PV Leadership

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0000566	DE-EE0005737	GFO-0005737-001	

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 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.
B1.31 Installation or relocation of machinery and equipment	Installation or relocation and operation of machinery and equipment (including, but not limited to, laboratory equipment, electronic hardware, manufacturing machinery, maintenance equipment, and health and safety equipment), provided that uses of the installed or relocated items are consistent with the general missions of the receiving structure. Covered actions include modifications to an existing building, within or contiguous to a previously disturbed or developed area, that are necessary for equipment installation and relocation. Such modifications would not appreciably increase the footprint or height of the existing building or have the potential to cause significant changes to the type and magnitude of environmental impacts.
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.)
B5.1 Actions to conserve energy or water	(a) Actions to conserve energy or water, demonstrate potential energy or water conservation, and promote energy efficiency that would not have the potential to cause significant changes in the indoor or outdoor concentrations of potentially harmful substances. These actions may involve financial and technical assistance to individuals (such as builders, owners, consultants, manufacturers, and designers), organizations (such as utilities), and governments (such as state, local, and tribal). Covered actions include, but are not limited to weatherization (such as insulation and replacing windows and doors); programmed lowering of thermostat settings; placement of timers on hot water heaters; installation or replacement of energy efficient lighting, low-flow plumbing fixtures (such as faucets, toilets, and showerheads), heating, ventilation, and air conditioning systems, and appliances; installation of drip-irrigation systems; improvements in generator efficiency and appliance efficiency ratings; efficiency improvements for vehicles and transportation (such as fleet changeout); power storage (such as flywheels and batteries, generally less than 10 megawatt equivalent); transportation management systems (such as traffic signal control systems, car navigation, speed cameras, and automatic plate number recognition); development of energy-efficient manufacturing, industrial, or building practices; and small-scale energy efficiency and conservation research and development and small-scale pilot projects. Covered actions include building renovations or new structures, provided that they occur in a previously disturbed or developed area. Covered actions could involve commercial, residential, agricultural, academic, institutional, or industrial sectors. Covered actions do not include rulemakings, standard-settings, or proposed DOE legislation, except for those actions listed in B5.1(b) of this appendix. (b) Covered actions include rulemakings that establish energy conservation standards for consumer products and industrial equipment, provided that the actions would not: (1) have the potential to cause a significant change in manufacturing infrastructure (such as construction of new manufacturing plants with considerable associated ground disturbance); (2) involve significant unresolved conflicts concerning alternative uses of available resources (such as rare or limited raw materials); (3) have the potential to result in a significant increase in the disposal of materials posing significant risks to human health and the environment (such as RCRA hazardous wastes); or (4) have the potential to cause a significant increase in energy consumption in a state or region.

Rational for determination:

The U.S. Department of Energy (DOE) is proposing to provide $6,999,959 in federal funding to 1366 Technologies to perform equipment installation and building retrofits for a solar wafer manufacturing facility.

Previous NEPA determinations for this proposed project include a Record of Categorical Exclusion from the DOE Loan Programs Office for Project Eagle Phase I Direct Wafer/Cell Solar Facility – 1366 Technologies (B1.31, 5-3-2012).

1366 Technologies would utilize an existing facility, located at 6-8 Preston Court, Bedford, Massachusetts, 01730. 1366 would renovate 41,071 interior sq. ft. to construct office, research and development, and support space, laboratories and a 20 MW per year wafer production line. The building was constructed in 1972, and renovated in 2002, therefore is determined to be ineligible for consideration or listing on the National Register of Historic Places.

The project would renovate the interior of the existing building to support solar wafer manufacturing. This would include placement of equipment and building internal walls. The project would also include exterior enhancements: new windows, a concrete pad for process gas tanks, industrial trash compactor, and possibly a back-up generator. Existing electrical transformers may need to increase in capacity to accommodate the production facility.

Hazardous materials would be used and generated during the manufacturing process. The chemicals will be handled in fume hoods and stored in satellite accumulations areas or chemical waste storage room with secondary containment. Nitric, hydrofluoric and acetic acids would be used for texture etching of silicon wafers at a quantity of less than 100 gallons per week. Compressed nitrogen, oxygen and liquid phosphorous oxycholoride would be used for diffusion of wafers during production. Silane and ammonia compressed gases would be used for chemical vapor deposition on the wafer surface. Silver, aluminium and propanol solvent would be used for screen printing of metal onto cells under adequate ventilation.

All chemical and municipal waste will be disposed of by Veolia Environmental Services. Gases will be stored in automated gas cabinets with sensors linked to the building fire alarm if concentration reaches the threshold limit. Personnel will utilize personal protective equipment when performing tasks involving chemicals or other safety hazards. 1366 will follow their chemical hygiene and management plan which covers laboratory safety, how to handle chemicals, emergency procedures and how to conduct weekly safety inspections.

Based on review of the project information and the above analysis, DOE has determined the installation of the proposed equipment would not have a significant impact on human health and/or environment. DOE has determined the proposed project is consistent with the actions contained in A9 "Information gathering, analysis, and dissemination," B1.31 "Installation or relocation of machinery and equipment," B3.6 "Small-scale research and development, laboratory operations, and pilot projects," and B5.1 "Actions to conserve energy or water," 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:

Note to Specialist :

Diana Scott 06.21.2012

DOE Funding = $6,999,959
Cost Share = $20,999,876
Total Project Cost = $27,999,835

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: _____ Date: 6/21/2012
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