

PMC-ND

(1.05.09.13)

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



RECIPIENT: Solexel Inc.

STATE: CA

PROJECT TITLE: Development and Productization of High-Efficiency, Low-Cost Building-Integrated Photovoltaic Shingles Using Monocrystalline Silicon Thin Film Solar Cells

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
	DE-EE0005436	GFO-0005436-003	GO5436

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 Solexel Inc. to develop a residential, building-integrated, photovoltaic roofing shingle.

There have been two previous NEPA determinations under this award: GFO-0005436-001 (A9, B1.7, B3.6, B5.16; 12-8-2011) and GFO-0005436-002 (A9, B3.6; 9/24/12). Those NEPA determinations applied to Budget Period 1 and 2 activities, respectively. This NEPA determination applies to Budget Period 3 activities.

Proposed project activities include conducting research and development activities towards a next-generation, high efficiency, light-weight, smart solar module; design and fabrication of a solar cell and solar module in the form of building-integrated, solar photovoltaic (BIPV) roofing shingles; design and testing of smart electronics for integration into the solar module; and outdoor field-testing of the BIPV roof shingles. All research, fabrication and laboratory testing would be conducted indoors in a laboratory environment at the Solexel facility in Milpitas, California. The facility complies with standard laboratory safety procedures. Labs are inspected by staff and safety personnel as well as by a third-party safety consultant. The facility operates under all applicable permits including building, hazardous material and hazardous waste permits. At this time, locations and system details for the outdoor field-testing activities are unknown. An additional NEPA review of those activities is required prior to beginning any field-testing activities.

Based on a review of the project information and the above analysis, DOE has determined that the proposed project would not have a significant individual or cumulative impact to human health and/or environment. DOE has determined that this project is consistent with actions outlined in DOE categorical exclusion A9 "Information gathering" 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 conditional NEPA determination for this award, and funding for certain tasks under this award is contingent upon the final

NEPA determination.

Insert the following language in the award:

You are restricted from taking any action using federal funds, which would have an adverse affect on the environment or limit the choice of reasonable alternatives prior to DOE/NNSA providing either a NEPA clearance or a final NEPA decision regarding the project.

Prohibited actions include:

As described in SOPO DE-EE0005436.0008:

- BP3, Subtask 9.5 - Deployment and installation of 6 to 10 pilot systems
- BP3, Subtask 11.2 - Installation of (2) 5 kW grid tied systems (Generation 2, REVISION 2 design)
- BP3, Subtask 11.3 - 24 month monitoring period
- BP3, Any other field-testing activities that are not captured under the subtasks listed above.

This restriction does not preclude you from:

As described in SOPO DE-EE0005436.0008:

- BP3, Task 7 - Down select phase
- BP3, Task 8 - Cost Review
- BP3, Subtask 9.1 Manufacturing pilot runs
- BP3, Subtask 9.2 Design review with certification agencies
- BP3, Subtask 9.3 Demonstrate readiness of embedded electronics
- BP3, Subtask 9.3.1 Validate embedded MPPT power optimizer in conjunction with DC to AC inverter and/or DC to DC MPPT optimizer
- BP3, Subtask 9.3.2 Validate embedded Remote Access Module Switch (RAMS) electronics
- BP3, Subtask 9.3.3 Validate PV Array Control & Status (PACS) electronics
- BP3, Subtask 9.4 Certification of Generation 2, REVISION 2 product
- BP3, Subtask 11.1 Document eco-system of target installation sites
- BP3, Task 12 - Formalize roadmap to reach ≤\$2.00/W turnkey cost by 2017

If you move forward with activities that are not authorized for federal funding by the DOE Contracting Officer in advance of the final NEPA decision, you are doing so at risk of not receiving federal funding and such costs may not be recognized as allowable cost share.

Insert the following language in the award:

You are required to:

All field-testing activities require additional NEPA review

Note to Specialist :

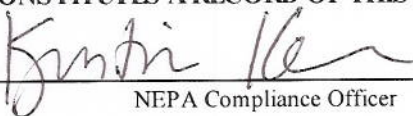
Solar Energy Technologies Office

This NEPA Determination requires a tailored NEPA provision. Please see above

NEPA review completed by Logan Sholar, 5/14/15

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature:



 NEPA Compliance Officer

Date:

5/18/2015

FIELD OFFICE MANAGER DETERMINATION

Field Office Manager review required

NCO REQUESTS THE FIELD OFFICE MANAGER REVIEW FOR THE FOLLOWING REASON: