

PMC-ND

(1.08.09.13)

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



RECIPIENT: Sunfolding, Inc.

STATE: CA

PROJECT TITLE : Sunfolding Mass-Manufactured Trackers for High Performance Photovoltaic Systems

<b>Funding Opportunity Announcement Number</b>	<b>Procurement Instrument Number</b>	<b>NEPA Control Number</b>	<b>CID Number</b>
DE-FOA-0001400	DE-EE0007594	GFO-0007594-003	

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.
- B5.16 Solar photovoltaic systems** The installation, modification, operation, and removal of commercially available solar photovoltaic systems located on a building or other structure (such as rooftop, parking lot or facility, and mounted to signage, lighting, gates, or fences), or if located on land, generally comprising less than 10 acres within a previously disturbed or developed area. Covered actions would be in accordance with applicable requirements (such as local land use and zoning requirements) in the proposed project area and would incorporate appropriate control technologies and best management practices.

Rationale for determination:

The U.S. Department of Energy (DOE) is proposing to provide federal funding to Sunfolding Inc. to optimize the design of their actuation technology (trackers) in order to increase the speed and ease and reduce the cost of manufacturing.

A previous final NEPA Determination (GFO-0007594-001; CX A9, B3.6, B5.16; August 2016) reviewed all project activities including: the design, modeling, fabrication, and in-lab and field testing of components for simplified manufacturing of actuators and polymeric bellows; project management, market research and business development; and field demonstrations of optimized trackers. A second final NEPA Determination (GFO-0007594-002; CX A9, B3.6, B5.16; July 2017) reviewed changes to the Statement of Project Objectives (SOPO) including improvements to the manufacturing process and the testing of improved components by additional project partners at new locations.

Since that time, additional changes have been made to the SOPO that require further NEPA review including: the addition of tasks and deliverables to the Milestone Table to reflect the expanded scope of an existing bellow mold cost reduction program, the removal of some blow molding milestones due to metrics being achieved earlier than anticipated, and clarification of language related to milestone verification.

Associated changes to project tasks as well as two new project locations are as follows:

- 1) The addition of another iteration of bellows design and manufacturing is being driven by opportunities to further reduce cost and improve performance by developing the next generation of bellows tooling with the manufacturer during the project. These activities represent another round of the same types of small-scale fabrication activities that were previously proposed and reviewed under NEPA, involving the operation of industrial machinery already in-house at Custom-Pak's dedicated manufacturing facility (Clinton, IA) to convert polymer pellets into Sunfolding's polymeric bellows. Associated activities would include data collection, computer analysis, and the fabrication and shipment of

commercially-available materials and components.

2) The addition of fabrication activities proposed to be carried out at Twin City Die Castings Co. (1070 33rd Avenue SE, Minneapolis, MN 55414) would include the design and engineering of tooling for both die casting and trimming of cast parts for the Sunfolding Top Plate and Bottom Plate. The project would utilize die casting machinery and inspection equipment already on-site to cast equipment components from both virgin and recycled aluminum, and to verify proper dimensions of manufactured parts. This is an existing, dedicated manufacturing facility at which the proposed project-related activities would support tasks 1 and 3 in the SOPO.

3) Certain project-related desktop and small-scale laboratory activities conducted by the recipient would be relocated to the new Sunfolding headquarters at 1040 Mariposa St, San Francisco, CA 94110. Activities carried out here would be related to tasks 3, 4, 5, 6 and 7 in the SOPO. Task 4 is related to Design, Modeling and Simulation. Activities completed under this task would be carried out using industry-standard modeling software to explore new plate architectures, new flexure configurations and modified bellows shapes. The results of this analysis and modeling would be prototyped by hand and tested for quality and reliability in a small in-office lab before being rolled out to manufacturing facilities as a part of Task 3. Task 5 is related to Business Development. Activities would take place in-office using standard software and office equipment. These activities would include research on potential customers and markets, customer engagement through meetings and presentations, cost modeling, bid development and work to develop patents. Task 6 is related to Product Installation. Sunfolding's activities related to project installation under the scope of this project would be in-office tasks using standard software and office equipment to provide project design and engineering support. Task 7 is related to General Project Management. Activities related to general project management would primarily take place in-office using standard software and office equipment.

All new and/or relocated project activities would occur at established office research buildings or manufacturing facilities that were designed for the type of activities being proposed; therefore, no adverse impacts to sensitive resources are expected as a result of these SOPO modifications. No change in the use, mission or operation of existing facilities would arise out of these efforts. The facilities have all applicable permits in place, and would not need additional permits for the proposed activities.

Based on the review of the proposal, DOE has determined the proposal fits within the class of action(s) and the integral elements of Appendix B to Subpart D of 10 CFR 1021 outlined in the DOE categorical exclusion(s) selected above. DOE has also determined that: (1) there are no extraordinary circumstances (as defined by 10 CFR 1021.410(2)) related to the proposal that may affect the significance of the environmental effects of the proposal; (2) the proposal has not been segmented to meet the definition of a categorical exclusion; and (3) the proposal is not connected to other actions with potentially significant impacts, related to other proposals with cumulatively significant actions, or an improper interim action. This proposal 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 does not require a tailored NEPA Provision.

NEPA review completed by Whitney Doss, 03/27/18

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

NEPA Compliance Officer Signature: \_\_\_\_\_

  
NEPA Compliance Officer

Date: 3/28/2018

#### 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: \_\_\_\_\_