

PMC-ND  
(1.08.09.13)

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



**RECIPIENT:** P4P Energy LLC

**STATE:** CO

**PROJECT TITLE** : Highly Efficient Steel Cable Solar Photovoltaics Mounting System

<b>Funding Opportunity Announcement Number</b>	<b>Procurement Instrument Number</b>	<b>NEPA Control Number</b>	<b>CID Number</b>
DE-FOA-0001640	DE-EE0008136	GFO-008136-002	

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 P4P Energy LLC (P4P) to develop, optimize, and demonstrate a tensile solar parking canopy technology designed to reduce cost while maintaining structural integrity. A previous NEPA Determination (GFO-0008136-001; CX A9; 08/21/2017) reviewed Subtasks 1.1 and 1.2 but restricted all other tasks/subtasks pending identification of a location for the proposed pilot-scale demonstration activity (Subtask 1.3) which would inform subsequent project activities. Since that time, a location has been identified and this final NEPA Determination is for all remaining project activities (Subtask 1.3 and Tasks 2-7).

The proposed project involves the design, engineering, construction, installation, and evaluation of a parking canopy structure outfitted with solar technology. Associated activities would include planning, outreach, permitting, computer modeling, preliminary design and engineering, demonstration at pilot- and pre-commercial scale (the latter requiring modifications of existing facilities and outdoor deployment), and site monitoring. Office-based project management and design/modeling work (Tasks 2-5) would occur at the P4P headquarters in Carbondale, CO.

Subtask 1.3 would consist of prototype assembly and mechanical testing of sub-systems and steel frame components to develop and optimize the construction process. This pilot-scale demonstration activity would occur at P4P's leased headquarters located at: 1629 Dolores Way Carbondale, CO 81623. Work would occur on concrete flooring within an existing light industrial shop space (approximately 30' x 50') currently outfitted with appropriate electrical service. Mechanical loads testing of the steel beam structure (weighing approximately 500 kg) would employ a single cylinder servo-hydraulic test jig with computerized controls. No physical modifications to the facility, outdoor work, ground disturbance, or new permits and/or authorizations would be required to complete this subtask. Materials used would be pre-fabricated, galvanized steel tubing and fasteners, and the equipment would be re-used after this subtask. No waste would be generated at this site.

Tasks 6 and 7 would include an outdoor, pre-commercial scale deployment of the solar parking shade-canopy at an



existing urban site. A 50 kilowatt solar-shade canopy would be installed in a previously constructed, paved parking lot located at: Louise Perez Community Center 3892 41st Ave Sacramento, CA 95824. The canopy would not change the use or mission of the parking lot facility – its purpose would be to provide shade for vehicles while generating power using solar photovoltaic (PV) technology. The canopy would be composed of a PV panel suspension system that utilizes tensioned steel cables mounted to steel columns. Pre-fabricated components would be shipped from commercial manufacturers to the project site for assembly. Assembly would consist of mounting the columns and anchors, installing and tensioning cables, attaching PV panels and cross beams to their support structures, mounting the panel supports and wiring the panels and inverters to the adjacent building. Ground disturbance would be limited to the installation of support columns and cable anchors, which would involve excavating holes to mount the supports/anchors into the ground. The footprint of each column and cable anchor would be approximately 18 inches in diameter. There would be approximately 8 columns installed to a depth of 6 feet, and 4 cable anchors installed to 5 feet. All ground disturbing activities, installations, and site access would take place on previously developed land. The installation effort is expected to take less than one month to complete.

The community center is not located within a historic district or adjacent to any historic properties, nor is it eligible to be listed as a historic property. Because of this, in conjunction with the previously disturbed nature of the site, its urban setting, and the short duration of construction activities, impacts are not expected to any cultural and/or natural resources of concern. The proposed outdoor demonstration would require an administrative Building Permit from the City or County of Sacramento prior to beginning any construction activities. No discretionary permit would be required. Solar projects in parking lots are exempt from environmental review under the California Environmental Quality Act (CEQA) per Section 21080.35 of the California Public Resources Code.

Materials used would include galvanized structural steel beams and wire rope (~5,000 kg), concrete foundations, low voltage electrical wire (~400 feet), photovoltaic panels (165 panels), power-electronic inverters (1 or 2) and interconnection relays and meters. A temporary data acquisition system including sensors and a data logger would also be installed. There would be minimal non-hazardous construction waste generated. The canopy is expected to remain as long as the parking lot exists. If the parking lot is removed, the solar shade canopy would be disassembled and foundations either cut off at ground level or removed. Steel components would be recycled. Solar panels and electrical parts would be salvaged to the extent possible, or disposed of according to local standards. Hazardous materials/waste would not be used or produced in the proposed project. Common light construction hazards to workers from tools and machines would be mitigated by implementing standard safety practices, protective equipment, and restricted access.

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.

Insert the following language in the award:

You are required to:

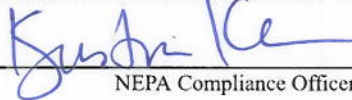
For outdoor demonstration work occurring at the Louise Perez Community Center (Tasks 6-7), the recipient must submit project information to the appropriate City or County of Sacramento agency for review and issuance of an administrative Building Permit prior to initiating construction/installation activities at that site.

Note to Specialist :

Solar Energy Technologies Office  
This NEPA determination requires a tailored NEPA Provision.  
NEPA review completed by Whitney Doss, 08/25/2017

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

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

  
NEPA Compliance Officer

Date: \_\_\_\_\_

8/30/2017

**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: \_\_\_\_\_