

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



RECIPIENT: 08/2014

STATE: CA

PROJECT TITLE : Low-cost buffer storage for solar industrial steam applications

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0002064	DE-EE0008993	GFO-0008993-004	G08993

Based on my review of the information concerning the proposed action, as NEPA Compliance Officer (authorized under DOE Policy 451.1), 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.)

B5.15 Small-scale renewable energy research and development and pilot projects

Small-scale renewable energy research and development projects and small-scale pilot projects, provided that the projects are located 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) has an active financial assistance agreement with Sunvapor, Inc. to design, develop, and demonstrate a novel steam accumulator for solar industrial steam applications that would enable the cost-effective integration of solar steam with a typical manufacturing process. The project is being conducted over three budget periods (BP) with a go/no-go decision point in between each budget period. DOE reviewed and categorically excluded BP1 and BP2 from further NEPA review (NDs GFO-0008993-001, GFO-0008993-002, and GFO-0008993-003). And, DOE authorized the expenditure of federal funding for BP1 and BP2. DOE is now proposing to authorize the expenditure of federal funds for BP3. Further, the completion of proposed BP2 activities has resulted in the information necessary for DOE to conduct a meaningful review of the potential environmental impacts associated with BP3 activities (installation, commissioning, testing and operation of the solar steam and storage system). This NEPA determination applies to BP3.

BP3 would involve the installation of solar collector modules and associated equipment to concentrate solar radiation and convert it to heat used to generate electricity. The host site for project work would be subrecipient Oberon Fuels' commercial fuel plant in Brawley, Imperial County, California, which produces Dimethyl Ether from natural gas. The proposed project would be located entirely within this active industrial zone, adjacent to and constructively integrated with, the existing infrastructure. Ground surface at the site consists of exposed soil in the area of an existing underground leach field, sparse vegetation, and a gravel layer for the remainder. Project equipment would occupy a parcel of less than half an acre in size. Existing roads would be used to access the project location.

Proposed BP3 activities are divided into three phases: construction, commissioning, and operations and maintenance (O&M) of the energy storage system. The construction phase, expected to last approximately one month or less, would consist of:

- Adding shallow concrete foundations designed in accordance with the geotechnical report prepared in BP2 and reviewed by DOE. These foundations would support the solar collectors, balance of plant equipment, and energy storage vessel.
- Piping to complete a heat transfer fluid circuit in the solar field, and the transport of the fluid to the unfired steam generator (USG). Steam piping from the USG to the thermal energy storage vessel (BSATM), and from the BSATM to the existing plant's reboiler on the distillation tower. Water piping to bring feedwater to the USG and blowdown water from the USG to drain.
- Electrical wiring to carry power to the project's equipment from existing electrical panels. Communication wiring from

field instruments to the new control panel.

Commissioning activities are expected to take approximately one month, consisting of such tasks as verifying the readiness of system components, loop flushing, instrumentation and control system checks, steam blows, and warm up using the collectors. O&M activities are expected to take several months during BP3 and continue beyond the project period of performance. O&M activities involve various daily, weekly, monthly, quarterly, semiannual, and annual inspections, replacements, cleaning, logging, testing, servicing, and calibrating of system components. Project equipment is expected to have a useful life several years beyond the period of performance, after which the system would be decommissioned and removed from the site.

Individuals working on this project could be exposed to physical and electrical hazards, including medium pressure steam, heated thermal oil, steam piping, and concentrated sunlight. Project workers would be properly trained and follow existing health and safety policies and procedures according to the Occupational Safety and Health Administration (OSHA) regulation. Industry standard engineering controls and monitoring would be implemented. Additional policies and procedures would be implemented as necessary if new health and safety risks are identified.

Oberon Fuels received a Conditional Use Permit (CUP) from Imperial County in 2013 for the host facility. The proposed activities fall within the permit conditions, and no further review under the California Environmental Quality Act (CEQA) or additional approvals beyond a local building permit are expected to be required for the project. The Oberon Fuels host site is an existing industrial operation; any ground disturbing activities associated with the proposed installation would occur in a previously disturbed and currently developed setting. There would be no change in the use, mission, or operation of existing fuel facilities. Based on a review of the proposal, DOE does not anticipate adverse impacts to any resources of concern to result from BP3 activities.

NEPA PROVISION

DOE has made a final NEPA determination.

Notes:

Solar Energy Technologies Office (SETO)
Review completed by Whitney Donoghue on 09/15/2022

FOR CATEGORICAL EXCLUSION DETERMINATIONS

The proposed action (or the part of the proposal defined in the Rationale above) fits within a class of actions that is listed in Appendix A or B to 10 CFR Part 1021, Subpart D. To fit within the classes of actions listed in 10 CFR Part 1021, Subpart D, Appendix B, a proposal must be one that would not: (1) threaten a violation of applicable statutory, regulatory, or permit requirements for environment, safety, and health, or similar requirements of DOE or Executive Orders; (2) require siting and construction or major expansion of waste storage, disposal, recovery, or treatment facilities (including incinerators), but the proposal may include categorically excluded waste storage, disposal, recovery, or treatment actions or facilities; (3) disturb hazardous substances, pollutants, contaminants, or CERCLA-excluded petroleum and natural gas products that preexist in the environment such that there would be uncontrolled or unpermitted releases; (4) have the potential to cause significant impacts on environmentally sensitive resources, including, but not limited to, those listed in paragraph B(4) of 10 CFR Part 1021, Subpart D, Appendix B; (5) involve genetically engineered organisms, synthetic biology, governmentally designated noxious weeds, or invasive species, unless the proposed activity would be contained or confined in a manner designed and operated to prevent unauthorized release into the environment and conducted in accordance with applicable requirements, such as those listed in paragraph B(5) of 10 CFR Part 1021, Subpart D, Appendix B.

There are no extraordinary circumstances related to the proposed action that may affect the significance of the environmental effects of the proposal.

The proposed action has not been segmented to meet the definition of a categorical exclusion. This proposal is not connected to other actions with potentially significant impacts (40 CFR 1508.25(a)(1)), is not related to other actions with individually insignificant but cumulatively significant impacts (40 CFR 1508.27(b)(7)), and is not precluded by 40 CFR 1506.1 or 10 CFR 1021.211 concerning limitations on actions during preparation of an environmental impact statement.

The proposed action is categorically excluded from further NEPA review.

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature:

 Electronically
Signed By: Lisa Jorgensen

NEPA Compliance Officer

Date: 9/15/2022

FIELD OFFICE MANAGER DETERMINATION

- Field Office Manager review not required
- Field Office Manager review required

BASED ON MY REVIEW I CONCUR WITH THE DETERMINATION OF THE NCO :

Field Office Manager's Signature: _____
Field Office Manager

Date: _____