

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



**RECIPIENT:** Terabase Energy, Inc.

**STATE:** CA

**PROJECT TITLE :** Field Factory for Cost Reduction and Deployment Acceleration of PV Power Plants

<b>Funding Opportunity Announcement Number</b>	<b>Procurement Instrument Number</b>	<b>NEPA Control Number</b>	<b>CID Number</b>
DE-FOA-0002064	DE-EE0009012	GFO-0009012-002	GO9012

**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.)
- 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.
- B3.11 Outdoor tests and experiments on materials and equipment components** Outdoor tests and experiments for the development, quality assurance, or reliability of materials and equipment (including, but not limited to, weapon system components) under controlled conditions. Covered actions include, but are not limited to, burn tests (such as tests of electric cable fire resistance or the combustion characteristics of fuels), impact tests (such as pneumatic ejector tests using earthen embankments or concrete slabs designated and routinely used for that purpose), or drop, puncture, water-immersion, or thermal tests. Covered actions would not involve source, special nuclear, or byproduct materials, except encapsulated sources manufactured to applicable standards that contain source, special nuclear, or byproduct materials may be used for nondestructive actions such as detector/sensor development and testing and first responder field training.

Rationale for determination:

The U.S. Department of Energy (DOE) is proposing to provide federal funding to Terabase Energy, Inc. to design, develop, and test hardware solutions and methods that reduce the costs and increase the speed and efficiency of solar photovoltaic (PV) power plant construction projects. The proposed hardware solutions and methods are collectively referred to as the Terabase Deployment System (TDS).

The project is divided into two Budget Periods (BP). A previous, conditional NEPA Determination (GFO-0009012-001; CXs A9, B3.6, B3.11; 04/7/2021) reviewed all BP1 activities as well as BP2 Tasks 11 and 13. GFO-0009012-001 restricted BP2 Task 12 pending the submission of additional information on the proposed location and scope of work to DOE for further NEPA review. This final NEPA Determination is to review the location and all activities associated with BP2 Task 12.

Task 12 ("Prepare detailed plan for commercial beta field trial and construct beta") would involve the most advanced field experiment of the project including elements and lessons learned from the earlier "alpha" field trials, which were reviewed in GFO-0009012-001. Associated activities would include the design, development, fabrication, and field testing of an automated solar photovoltaic panel and mounting equipment assembly station as well as an equipment

transport and installation vehicle. The full scope of this task is to assemble and install certain structural and mechanical components on a small portion of a permitted and approved 380MW AC solar photovoltaic power plant construction project that is underway in Brown County, Texas (TX). The authority for Terabase's commercial beta field trial (approximately 100kW) would be afforded by way of a subcontract with the site host, Signal Energy, an engineering, procurement, and construction (EPC) company that has previously cleared all regulatory, safety, and environmental permits with the appropriate authorities having jurisdiction.

The proposed project activities would be located on approximately 2 acres within the existing 2200 acre regional electric utility construction site approximately 15 miles southwest of Brownwood, TX. The site and surrounding area consist of rural west TX farming and wind power development country adjacent to a regional utility high-voltage interconnection point. Terabase would setup and operate a temporary automated solar equipment assembly station to build 3 rows of 10 "tables" each (1 table = 6-8 solar modules) mounted to trackers that are subsequently transported by the site operator to the respective installation point. Terabase would not require any special operating permits beyond standard forklift operating licenses for project personnel.

For Terabase's 100kW solar assembly station and table transport vehicle, project equipment and materials used on-site would include:

- NEXTracker PV mounting equipment and parts for 3 single-axis tracker rows
- Approximately 250 First Solar PV modules
- Polaris Ranger 1000 ATV transport vehicle
- "Terafab" automated PV tracker assembly station
- Forklift for loading NEXTracker and First Solar equipment
- Approximately 5 gallons of gasoline for fueling the Polaris ATV and 10 gallons of diesel for forklift operations while managing Terabase's equipment

The proposed equipment installations would not require any site modifications (e.g., groundwork) or construction of new facilities. The equipment would arrive on site mostly pre-assembled on standard shipping container-sized skids. These skids would be placed on mounting blocks that rest on the surface of the site-host's previously graded and compacted work area adjacent to the ongoing solar plant construction site. A small project administration trailer-office would be located nearby. Material shipments (solar panels, tracker equipment, parts and supplies) would be managed by the site host and stored adjacent to Terabase's solar assembly station. Sanitary, water, electrical facilities would also be provided by the site host. All vehicular travel and the use of Terabase's solar table transport vehicle (a modified ATV) would be on existing roads within and around the overall project site. The solar assembly station under development is designed to be light, modular, and easily transportable; at the conclusion of the proposed project, all assembly station and transport vehicle equipment would be returned to Terabase's research facility in California.

Individuals working on this project could be exposed to typical construction site health and safety hazards due to operating limited heavy equipment in an outdoor setting subject to fluctuating weather conditions. Existing corporate health and safety policies and procedures would be followed, including employee training. Operators would be duly trained, tested, and certified and all work would be confined to a controlled, planned, and tightly managed EPC work environment. The proposed project would not involve the use or handling of hazardous materials. Relatively minor quantities of non-hazardous waste generated by the proposed activities would be managed and disposed of in accordance with all pertinent requirements and obligations under Signal Energy's approved master Environmental Plan. Air emissions resulting from equipment operation would be de minimis.

All project work would be performed within the context of a much larger solar site construction project with a number of ongoing activities in the surrounding area. These unrelated activities include clearing and excavation, pile driving, heavy equipment operations, materials deliveries, and the movement of solar installer personnel throughout the site. No change in the use, mission, or operation of existing facilities would arise out of Terabase project efforts. Task 12 activities would not affect cultural resources, wetlands, floodplains, or prime farmlands, and no permits would be required. A previously conducted environmental review of Signal Energy's larger project identified the presence of the Texas Horned Lizard within and around the proposed project site. The Texas Horned Lizard is listed as a threatened species by the state and mitigation measures are addressed in the site's Environmental Plan. As such, the Terabase team would adhere to all applicable requirements and mitigation measures identified in the site's Environmental Plan. Based on these collective considerations, DOE has determined that no adverse impacts to sensitive resources are to be expected as a result of the proposed Task 12 activities.

## NEPA PROVISION

DOE has made a final NEPA determination.

Notes:

Solar Energy Technologies Office

This NEPA determination does not require a tailored NEPA Provision.

NEPA review completed by Whitney Doss Donoghue, 10/12/2021

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

  
NEPA Compliance Officer

Date: 10/13/2021

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