

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



**RECIPIENT:** Noria Energy Holdings LLC

**STATE:** CA

**PROJECT TITLE:** Tracking and Positioning System for Floating Solar

<b>Funding Opportunity Announcement Number</b>	<b>Procurement Instrument Number</b>	<b>NEPA Control Number</b>	<b>CID Number</b>
	DE-EE0011411	GFO-0011411-001	GO11411

**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.)
  
- B3.16 Research activities in aquatic environments** Small-scale, temporary surveying, site characterization, and research activities in aquatic environments, limited to: (a) Acquisition of rights-of-way, easements, and temporary use permits; (b) Installation, operation, and removal of passive scientific measurement devices, including, but not limited to, antennae, tide gauges, flow testing equipment for existing wells, weighted hydrophones, salinity measurement devices, and water quality measurement devices; (c) Natural resource inventories, data and sample collection, environmental monitoring, and basic and applied research, excluding (1) large-scale vibratory coring techniques and (2) seismic activities other than passive techniques; and (d) Surveying and mapping. These activities would be conducted in accordance with, where applicable, an approved spill prevention, control, and response plan and would incorporate appropriate control technologies and best management practices. None of the activities listed above would occur within the boundary of an established marine sanctuary or wildlife refuge, a governmentally proposed marine sanctuary or wildlife refuge, or a governmentally recognized area of high biological sensitivity, unless authorized by the agency responsible for such refuge, sanctuary, or area (or after consultation with the responsible agency, if no authorization is required). If the proposed activities would occur outside such refuge, sanctuary, or area and if the activities would have the potential to cause impacts within such refuge, sanctuary, or area, then the responsible agency shall be consulted in order to determine whether authorization is required and whether such activities would have the potential to cause significant impacts on such refuge, sanctuary, or area. Areas of high biological sensitivity include, but are not limited to, areas of known ecological importance, whale and marine mammal mating and calving/pupping areas, and fish and invertebrate spawning and nursery areas recognized as being limited or unique and vulnerable to perturbation; these areas can occur in bays, estuaries, near shore, and far offshore, and may vary seasonally. No permanent facilities or devices would be constructed or installed. Covered actions do not include drilling of resource exploration or extraction wells.
  
- 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) is proposing to provide federal funding to Noria Energy Holdings LLC (Noria) to design, develop, and test a floating solar photovoltaics (FPV) tracking and position system that increases annual energy production of FPV, lowers levelized cost of energy for FPV, and leverages U.S. contract supply chain and manufacturing.

The anticipated outcome of the proposed project would be a tracker product that has undergone extensive research and development (R&D) and field testing at multiple scales (10 kilowatts [kW], 50 kW, and 100 kW) and is certified for commercial sales. This would be accomplished over two award budget periods (BP) comprised of multiple tasks and subtasks. At this time, the locations for 50 kW pilot testing and 100 kW commercial pilot testing have not been

identified and would be submitted to DOE for further NEPA review during the course of BP1. This NEPA determination applies only to a limited range of BP1 activities involving design, development, and 10 kW testing to demonstrate initial controls architecture and other sub-components of the tracker prototype.

Design and development would occur at the Noria Energy office facility in Sausalito, CA, and at the Pacific Northwest National Laboratory-Sequim campus in Sequim, WA. Additional desktop-based project support would be conducted by the National Renewable Energy Laboratory in Golden, CO, and DNV Energy Systems in Oakland, CA. The proposed 10 kW test site is a man-made, storm water collection pond located at Blue Marble Acres, a privately owned farm in Petaluma, CA. The FPV system would be utilized for short-term R&D and would not power any local facilities. Because the installation would be temporary and off-grid, no interconnection permits or agreements would be necessary, and no Marin County building permits or other local authorizations are anticipated to be required.

On the pond surface, the proposed 10 kW FPV system would consist of an “island” of the following equipment attached to floating solar pontoons:

- PV panels
- Direct current (DC) collection cables and a DC combiner box
- Monitoring equipment including global positioning systems, current and voltage sensors, and irradiance and module temperature sensors
- AquaPhi tracker hardware (an autonomous positioning system that enables rotational tracking of the sun), including underwater thrusters, power supplies for the thrusters, and autopilot controllers.

Alternating current (AC) cabling routed on floats would bring the energy to shore. Only the pontoons, thrusters, and cabling would touch the water. Submerged concrete block dead-weights would hold the system in place. Once set, the anchors are designed not to move or disturb the pond floor and would have no impact on the shoreline.

On land north of the pond, temporarily installed onshore equipment would include DC collection and monitoring equipment, an off-grid inverter and dummy load (e.g., air blower) on the AC output, and a weather station. The equipment would be mounted to ballasted racking that sits on the land surface and does not penetrate the ground. No vegetation clearing or excavation would be performed, and site maintenance would be limited to grass cutting around the equipment.

The proposed test site would only be accessed by qualified personnel. All aspects of the FPV system would be installed and operated in compliance with the National Electric Code. Construction and testing activities involving live electrical equipment on and adjacent to an aquatic environment could pose potential health and safety hazards to project workers. Noria specializes in this type of work and has established standard operating procedures in place that comply with the Occupational Safety and Health Administration and North American Board of Certified Energy Practitioners standards.

The project action area is defined as the 4.64 acre excavated freshwater pond itself and an approximately 125 feet (ft) x 20 ft. section of land where the earthen embankment was constructed. This area was previously cleared of native vegetation and can be accessed directly via existing dirt roadways/trails. The U.S. Fish and Wildlife Service (FWS) National Wetlands Inventory classifies the pond habitat as a Palustrine System. Project work would not occur within a regulated floodway or floodplain as defined by the Federal Emergency Management Agency.

The FWS Information Planning and Consultation tool (IPaC) was used to identify sensitive biological resources that may be present within or near the project area. Seven federally listed threatened or endangered (T&E) species, one proposed threatened species, and one candidate species have an expected range that includes this portion of Marin County. There are no designated or proposed critical habitats in the vicinity of the proposed project. Based on a review of the species list in conjunction with the aforementioned site characteristics, DOE has determined that some of the listed species would not be expected to occur in the project area based on known habitat type, and for other species the project area lacks suitable natural habitat due to agricultural land-use. No effect to T&E species is anticipated to result from the proposed project activities.

IPaC also identifies several migratory bird species with an estimated range overlapping this region. A migratory bird nesting survey shall be conducted no more than seven days prior to ground-disturbing activities occurring between April and July. If active nests or eggs are found, an appropriate spatial buffer would be applied per FWS or California Department of Fish and Wildlife guidelines.

DOE has considered the scale, duration, and nature of the proposed activities to determine potential impacts on other sensitive resources, including those of an ecological, cultural, and socioeconomic nature. DOE does not anticipate impacts on these resources which would be considered significant or require DOE to consult with other agencies or stakeholders.

Any work proposed to be conducted at a federal facility may be subject to additional NEPA review by the cognizant federal official and must meet the applicable health and safety requirements of the facility.

## NEPA PROVISION

DOE has made a conditional NEPA determination.

The NEPA Determination applies to the following Topic Areas, Budget Periods, and/or tasks:

Task 0: Project Planning  
Task 1: Product Definition  
Task 2: Control System and Autopilot Development  
Task 3: Thruster and thruster mount design and testing  
Task 4: Stabilizer design and testing  
Task 5: 10 kWdc pilot  
Subtask 6.1: Identify and secure 50 kWdc pilot site  
Subtask 7.1: Commercial site identification (100-200 kWdc)  
Subtask 7.2: Confirmation of commercial site location (100-200 kWdc)  
Subtask 8.2: Suitability study of US FPV community solar programs  
Task 9: User portal development

The NEPA Determination does not apply to the following Topic Area, Budget Periods, and/or tasks:

Subtask 6.2: 50 kWdc pilot study equipment purchase  
Subtask 6.3: 50 kWdc pilot test plan  
Subtask 7.3: Customer discovery for commercial pilot test plan  
Subtask 8.1: Engage community organizations at commercial pilot site location  
Budget Period 2 (All Tasks and Subtasks)

Include the following condition in the financial assistance agreement:

A migratory bird nesting survey shall be conducted no more than seven (7) days prior to ground-disturbing activities occurring between April and July. If active nests or eggs are found, an appropriate spatial buffer would be applied per U.S. Fish and Wildlife Service or California Department of Fish and Wildlife guidelines.

Notes:

Solar Energy Technologies Office (SETO)  
This NEPA determination requires legal review of the tailored NEPA provision.  
Review completed by Whitney Donoghue on 8/7/2024.

## 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.

A portion of the proposed action is categorically excluded from further NEPA review. The NEPA Provision identifies Topic Areas, Budget Periods, tasks, and/or subtasks that are subject to additional NEPA review.

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

NEPA Compliance Officer Signature:  \_\_\_\_\_ Date: 8/8/2024  
NEPA Compliance Officer

**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: \_\_\_\_\_ Date: \_\_\_\_\_  
Field Office Manager