

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



RECIPIENT: University of Massachusetts Amherst

STATE: MA

PROJECT TITLE : Informing Wildlife Conservation Strategies and Best Practices for Solar Facilities

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-002605	DE-EE0010382	GFO-0010382-001	

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.)

A11 Technical advice and assistance to organizations

Technical advice and planning assistance to international, national, state, and local organizations.

B3.1 Site characterization and environmental monitoring

Site characterization and environmental monitoring (including, but not limited to, siting, construction, modification, operation, and dismantlement and removal or otherwise proper closure (such as of a well) of characterization and monitoring devices, and siting, construction, and associated operation of a small-scale laboratory building or renovation of a room in an existing building for sample analysis). Such activities would be designed in conformance with applicable requirements and use best management practices to limit the potential effects of any resultant ground disturbance. Covered activities include, but are not limited to, site characterization and environmental monitoring under CERCLA and RCRA. (This class of actions excludes activities in aquatic environments. See B3.16 of this appendix for such activities.) Specific activities include, but are not limited to: (a) Geological, geophysical (such as gravity, magnetic, electrical, seismic, radar, and temperature gradient), geochemical, and engineering surveys and mapping, and the establishment of survey marks. Seismic techniques would not include large-scale reflection or refraction testing; (b) Installation and operation of field instruments (such as stream-gauging stations or flow-measuring devices, telemetry systems, geochemical monitoring tools, and geophysical exploration tools); (c) Drilling of wells for sampling or monitoring of groundwater or the vadose (unsaturated) zone, well logging, and installation of water-level recording devices in wells; (d) Aquifer and underground reservoir response testing; (e) Installation and operation of ambient air monitoring equipment; (f) Sampling and characterization of water, soil, rock, or contaminants (such as drilling using truck- or mobile-scale equipment, and modification, use, and plugging of boreholes); (g) Sampling and characterization of water effluents, air emissions, or solid waste streams; (h) Installation and operation of meteorological towers and associated activities (such as assessment of potential wind energy resources); (i) Sampling of flora or fauna; and (j) Archeological, historic, and cultural resource identification in compliance with 36 CFR part 800 and 43 CFR part 7.

Rationale for determination:

The U.S. Department of Energy (DOE) is proposing to provide federal funding to the University of Massachusetts, Amherst to investigate avian reproductive success and insect activity at existing solar sites in the Northeast. In addition, an Integrated Decision Model (IDM) would be developed to provide site condition assessments, management options, and monitoring decisions related to insect activities and avian reproductive success in order to inform different stakeholders.

The proposed project would consist of two Budget Periods (BPs) with an expected duration of one year each. Each year, ten existing solar sites would be surveyed by sampling insects and vegetation. In addition to surveying, a Stakeholder Advisory Committee (SAC) and a website would be created, outreach activities would be carried out, partnerships with community colleges would be established, and youth engagement would be developed.

The project team would carry out field sampling during both year one and year two. A suite of well-established field sampling techniques would be employed in order to target a wide array of wildlife taxa and which would be amenable

to large-scale deployment across multiple sites simultaneously. Proposed sampling methods include the following:

- Avian nest monitoring:

- o Locate and monitor nests during years one and two of the field season
- o Nests would be located through visual observation
- o Nests would be marked with orange vinyl flagging tied 3-4 meters away with GPS coordinates, a compass bearing, and a site description attached to the flagging
- o Nests would be checked once or twice per week
- o Mini video recorders would be deployed on new nests, consisting of infrared cameras (1.5 x 2.5 inches) connected to mini digital video recorders and a battery
- o Video recorders would be mounted 1-2 meters from nests on wooden stakes driven into the ground
- o Batteries and memory card would be changed during each visit

- Insect monitoring using traditional transect surveys:

- o Two 30-meter transects would be walked for 7.5 minutes each and insects within 45 cm from the transect would be identified and recorded
- o Five sites would be surveyed in both year one and year two

- Bioacoustic insect monitoring:

- o Handheld audio recorders would be used to record insect activity and background noise for year one and year two
- o Audio recorders would be held approximately 5-15 cm away from the insects as they fly between flowering resources
- o Background sound data in solar sites would also be recorded to help train the model

- Background acoustic data (Subtasks 3.5 and 7.4):

- o Weatherproof sound recorders (20.3 x 12.7 x 10.1 cm) would be deployed at each of the ten solar sites to collect standardized acoustic data in year one and year two
- o Recorders would be deployed for the field season, from June to September, at each of the ten surveyed sites
- o Recorders would be placed in the center of the site to minimize edge effects at a height of approximately 50 centimeters
- o Memory cards and batteries would be replaced once a month every month during the field season

- Video data collection (Task 4):

- o Videos would be collected on avian behavior and insect use of a solar facility using an avian-solar interaction monitoring system
- o Cameras would be deployed from May to June, with one camera at each solar facility
- o Cameras would record continuously
- o Locations would be based on nesting observations from Subtask 2.3
- o A minimum of two weeks of recordings would be taken

After sampling, the field team would use software to aid in species identification and to extract data. Data would then be processed and quality controlled. A neural network has been created to identify bees based on sound, and this would be deployed. Bioacoustic models would be developed, and an IDM would be developed to conduct sensitivity analyses and prepare outputs for the SAC.

All sites would be located in the Northeast, namely New York, Connecticut, and Massachusetts. The U.S. Fish and Wildlife Service Endangered Species Program website (IPaC) identifies three federally listed threatened or endangered species, the Northern Long-eared Bat, Indiana Bat, and the Monarch Butterfly, believed to occur in the project area. Bald Eagles in addition to twenty-seven migratory bird species of conservation concern, as identified in IPaC, may be present seasonally within the project areas. However, because equipment installations would be temporary, limited to standard types of noninvasive surveying tools, and result in negligible ground disturbance. DOE has determined that no adverse impacts to species of concern are to be expected as a result of the proposed activities at this location.

The proposed project would not involve the permanent modification of existing/planned facilities or any change in the use, mission, or operation of these facilities. There are no critical habitats, wetlands, or floodplains within the project areas. DOE also conducted a review of potential issues related to other resources of concern and found no effects that would be expected to result from the proposed project activities.

NEPA PROVISION

DOE has made a final NEPA determination.

Include the following condition in the financial assistance agreement:

If during project work cultural or archaeological artifacts are encountered, the recipient shall stop the site-based activities immediately and inform the DOE Project Officer of the finding. A Class III: Intensive Cultural Resources Inventory shall be required prior to re-commencing project work.

Notes:

Solar Energy Technologies Office (SETO)
NEPA review completed by Alex Colling on 3/9/2023.

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:  Andrew Montano Date: 3/16/2023
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