

PMC-ND
(1.08.09.13)

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



RECIPIENT: NREL

STATE: Mult

PROJECT TITLE: PV Stormwater Management Research and Testing (PV-SMaRT); NREL Tracking No. 20-020

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0002064	DE-AC36-08GO28308	NREL-20-020	GO28308

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:

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| 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. |
| B3.8 Outdoor terrestrial ecological and environmental research | Outdoor terrestrial ecological and environmental research in a small area (generally less than 5 acres), including, but not limited to, siting, construction, and operation of a smallscale laboratory building or renovation of a room in an existing building for associated 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. |
| DOE/EA-1968 (NREL STM) | SITEWIDE ENVIRONMENTAL ASSESSMENT, U.S. DOE NATIONAL RENEWABLE ENERGY LABORATORY, SOUTH TABLE MOUNTAIN CAMPUS, GOLDEN, COLORADO |

Rationale for determination:

The U.S. Department of Energy's (DOE) Solar Energy Technologies Office (SETO) proposes to provide funding to the National Renewable Energy Laboratory (NREL) to partner with the University of Minnesota (UMN) to study stormwater interactions with solar arrays to estimate stormwater runoff at ground-mounted PV facilities, and to develop stormwater management and water quality best practices.

The proposed project would occur at five sites that have existing solar arrays. One site is known at this time and would be at NREL's South Table Mountain campus located in Golden, Colorado. The other four sites have yet to be selected, but one site would be selected in each of the following states: New York, Georgia, Oregon, and Minnesota. The sites that would be selected for the proposed project would have existing solar arrays ranging from 1 to 2 MW in capacity, and would consist of partners in the DOE InSPIRE Program and one or two non-InSPIRE sites. NREL would find willing partners and assist UMN with site selection, and would develop a Water Quality Task Force to provide expertise in developing recommendations once stormwater data is collected and analyzed.

Once the sites have been identified, project team members would characterize each site via soil texture, topography,

vegetative cover density and height, climatic conditions, PV design characteristics, and current stormwater management practices. Two researchers from UMN (the field team) would conduct the field work at each of the five selected sites. UMN would also provide data analysis and modeling after the field work is complete and would develop stormwater runoff coefficients.

Once the sites have been characterized, the field team would obtain and install sensors at sites that do not already have them installed to facilitate data collection. The sensors and measurements would include:

- Soil moisture sensors would be installed to monitor moisture levels below the drip line, beneath the solar panels, and between solar panels at hourly intervals during the frost-free season. The sensors would be installed at depth of approximately 15 and 30 cm and would be installed by either being driven into the ground, or a narrow soil core would be augured out and the probe inserted into the resulting hole. Data loggers would be installed above ground at each site to automatically collect and store soil moisture data.
- A sprinkler infiltrometer would be installed for the field team to manually measure infiltration to estimate field saturated soil hydraulic conductivity.
- A rain gauge and anemometer would be installed above ground. Rainfall, wind speed, and wind direction would be continuously measured during the frost-free season.

No more than 6 sensors of each type would be installed at each site.

Project activities would begin in April 2020 and would take place over a two to four year period. Ground disturbance associated with the proposed project would be minimal, and all equipment would be installed in areas that have been previously disturbed.

Project activities analyzed in this NEPA review would not affect cultural resources, threatened or endangered species, wetlands, floodplains, or prime farmlands and no permits would be required. No change in the use, mission, or operation of existing facilities would result from the proposed project. As such, no direct or indirect impacts resulting from the proposed project would be anticipated.

Individuals could be exposed to physical and electrical hazards during the course of this project. Existing corporate health and safety policies and procedures would be followed, including employee training, proper protective equipment, engineering controls, and monitoring. Additional policies and procedures would be implemented as necessary if new health and safety risks are identified.

NEPA PROVISION

DOE has made a final NEPA determination.

Notes:

NREL
Nicole Serio, 3/3/2020

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 Date: 3/3/2020
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