U. S. DEPARTMENT OF ENERGY
OFFICE OF SCIENCE

NATIONAL ENVIRONMENTAL POLICY ACT (NEPA)
ENVIRONMENTAL EVALUATION NOTIFICATION FORM

To be completed by "financial assistance award" organization receiving Federal funding. For assistance (including a point of contact), see "Instructions for Preparing SC F-560, Environmental Evaluation Notification Form".

Solicitation/Award No. (if applicable):

Organization Name: Lawrence Berkeley National Laboratory

Title of Proposed Project/Research: Onsite Solar PV System at Lawrence Berkeley National Laboratory (LBNL), Berkeley, California.

Total DOE Funding/Total Project Funding: No DOE Funding would be provided for installation. Installation costs would be borne by PV system vendor. DOE funding would be for the purchase of the power provided.

I. Project Description (use additional pages as necessary):

A. Proposed Project/Action (delineate Federally funded/Non-Federally funded portions)
Project Description:

The U.S. Department of Energy (DOE) proposes to allow a private vendor to install and operate up to one Megawatt (MW) of onsite solar Photovoltaic (PV) systems on selected building roofs at the Lawrence Berkeley National Laboratory main site. DOE seeks to procure the power generated by these systems through a power purchase agreement (PPA) of up to 25 years based on the use of the Western Area Power Administration's (WAPA) power marketing authority. LBNL currently procures electrical utilities through WAPA.

Solar PV systems on individual building rooftops are expected to range from approximately 4,500 square feet in area to approximately 40,000 square feet. The total area of PV panels would be approximately 90,000 square feet. Buildings under consideration for inclusion in this program include Buildings 6, 50F, 62, 71, 77, and 90.

Panels would be installed on horizontal roof surfaces using a self ballasted system that requires no roof penetrations. The panels would tie in with the existing building electrical infrastructure via conduit pathways that are already serving rooftop utilities or with new conduit pathways, if necessary.

The panels would be black in color and non-reflective. Most of the roofs are surrounded by parapets and/or are shielded from view by surrounding buildings, trees, or terrain. The solar PV panels and equipment would be low-lying – tilted up at 5-to-10 degree angles and approximately 1-foot high -- and not visible from most off-site viewpoints. A single exception would be building 90, where the panels would be placed in existing solar panel racks at an elevation of approximately three or four feet above the rooftop.

Elements of the project could be visible from certain off-site viewpoints uphill from the LBNL site, such as a small number of single-family homes that overlook Buildings 71 and 90. However, from these same

viewpoints, other rooftop equipment and appurtenances such as utility lines, fans, blowers, vents, HVAC systems, and hood stacks are already exposed.

Implementation of this action would not permanently alter or change the exterior of any of these buildings. The self-ballasted system would allow for easy installation and removal of panels and hardware.

Project construction would begin around January 2012 and be completed by approximately July 2012. It is expected that no more than 20 temporary workers would be on site at any one time to install the systems. Approximately 20 (or fewer) truckloads of material would be required throughout the project construction period. Although the panels may be easily removed and reused elsewhere, it is expected that they would be used in place for the 25-year power purchase agreement or until DOE decided that it no longer wanted to support this project.

Purpose and need:

The purpose of the proposed action is to:

1. Meet EPACT (Energy Policy Act) of 2005 and Executive Order 13423 ("Strengthening Federal Environmental, Energy, and Transportation Management") onsite renewable goals, which mandate that at least half of renewable energy used by the Federal Government must come from new renewable sources.

2. Augment research capabilities of several LBNL energy/technology-related groups, including the User Test Bed, Demand Response Research Center, Batteries, Applications Team, and Grid Integration Research groups.

3. Become a key participant in the DOE Advanced Solar PV monitoring research program. LBNL provides a unique opportunity to collect advanced data based on its unique weather patterns.

4. Provide leadership though use of WAPA's long-term authority which will guide other federal agencies seeking to develop on-site projects.

5. Provide power conditioning and grid support.

B. Would the project proceed without Federal funding? DOE funding will be for the purchase of the power provided. Yes ☐ No ☒

If "yes", describe the impact to the scope:
The proposed project needs only DOE permission to proceed; it is already planned to proceed without Federal funding. DOE would agree to buy the marginal amount of power produced by the project, which may be at a higher cost than power under DOE's normal arrangement with WAPA. However, this potential cost increase would be relatively small due to the incremental amount of power purchased.

II. Description of Affected Environment:

All of the proposed work locations (the rooftops of Buildings 6 flat roof portion only, 50F, 62, 71, and 90), are within the developed portions of the 202-acre LBNL main hill site and are contiguous with utilities and other development. All sites are within the area designated as "research and academic" in the LBNL 2006 Long Range Development Plan prepared by the University of California. Buildings 6, 50F, 71, and 90 are within the City of Berkeley; Building 62 is in the City of Oakland; all are within Alameda County.

A. Is the DOE-funded work *entirely* a "paper study"? ☐ ☒

If "Yes", ensure that the description in Section I reflects this and go directly to Section V.

B. Would the work to be performed include work that would take place *outside a*n existing building? ☒ ☐

And:

1.	Threaten a violation of applicable statutory, regulatory, or permit requirements for environment, safety, and health?	☐	☒
2.	Require the siting, construction or major expansion of waste treatment, storage, or disposal facilities?	☐	☒
3.	Disturb hazardous substances, pollutants, or contaminants preexisting in the environment? Lead based paint and asbestos would be encountered during demolition	☐	☒
4.	Adversely affect environmentally-sensitive resources identified in Section IV.A.?	☐	☒
5.	Be connected to another existing/proposed activity that could potentially create a cumulatively significant impact?	☐	☒
6.	Have an inherent *possibility* for high consequence impacts to human health or the environment (e.g., Biosafety Level 3-4 laboratories, activities involving high levels of radiation)?	☐	☒

If "No" to Question III.B. and ALL six subsequent questions, ensure the descriptions in Sections I and II reflect this and go directly to Section V.

IV. Potential Environmental Effects:

Attach/insert an explanation for each "Yes" response.

A. Sensitive Resources: Would the proposed action result in changes and/or disturbances to any of the following resources?

		Yes	No
1.	Threatened/Endangered Species and/or Critical Habitats	☐	☒
2.	Other Protected Species (e.g., Burros, Migratory Birds)	☐	☒
3.	Sensitive Environments (e.g., Tundra/Coral Reefs/Rain Forests)	☐	☒
4.	Archaeological/Historic Resources	☐	☒
5.	Important Farmland	☐	☒
6.	Non-Attainment Areas for Ambient Air Quality Standards LBNL is in Bay Area Air Quality Basin, which is in federal non-attainment for Ozone and state non-attainment for ozone, PM10, and PM2.5. There would be very minimal, very temporary construction-related air emissions primarily related to a small number of truck and automobile trips. Any construction impacts would be sufficiently mitigated by adherence to Bay Area Air Quality Management District construction practices.	☒	☐
7.	Class I Air Quality Control Region	☐	☒
8.	Special Sources of Groundwater (e.g. Sole Source Aquifer)	☐	☒
9.	Navigable Air Space	☐	☒
10.	Coastal Zones	☐	☒
11.	Areas with Special National Designation (e.g. National Forests, Parks, Trails)	☐	☒
12.	Floodplains and Wetlands	☐	☒

B. Regulated Substances/Activities: Would the proposed action involve any of the following regulated items or activities?

		Yes	No
13.	Natural Resource Damage Assessments	☐	☒
14.	Exotic Organisms	☐	☒
15.	Noxious Weeds	☐	☒
16.	Clearing or Excavation (indicate if greater than one acre)	☐	☒
17.	Dredge or Fill (under Clean Water Act, Section 404, indicate if greater than ten acres)	☐	☒
18.	Noise (in excess of regulations)	☐	☒
19.	Asbestos Removal	☐	☒
20.	PCBs	☐	☒
21.	Import, Manufacture, or Processing of Toxic Substances	☐	☒
22.	Chemical Storage/Use	☐	☒
23.	Pesticide Use	☐	☒
24.	Hazardous, Toxic, or Criteria Pollutant Air Emissions Construction and grading activities would result in standard construction-related emissions of criteria pollutants (Particulate matter associated with earth movement, oxides of Nitrogen and reactive organic gasses associated with equipment engines; and diesel exhaust [toxic air contaminant] associated with equipment engines). By following BAAQMD best management practices, these levels are expected to be less than significant.	☐	☒
25.	Liquid Effluents: Quantity and characteristics of effluent would not noticeably change as a result of this action.	☐	☒
26.	Underground Injection	☐	☒
27.	Hazardous Waste	☐	☒
28.	Underground Storage Tanks	☐	☒
29.	Radioactive Mixed Waste	☐	☒
30.	Radioactive Waste	☐	☒
31.	Radiation Exposure	☐	☒
32.	Surface Water Protection	☐	☒
33.	Pollution Prevention Act	☐	☒
34.	Ozone Depleting Substances	☐	☒
35.	Off-Road Vehicles	☐	☒
36.	Biosafety Level 3-4 Laboratory	☐	☒

C. <u>Other Relevant Information: Would the proposed action involve the following?</u>

		Yes	No
	Potential Violation of Environment, Safety, or Health Regulations/Permits	☐	☒
37.	Siting/Construction/Major Modification of Waste Recovery, or Waste Treatment, Storage, or Disposal Facilities	☐	☒
38.	Disturbance of Pre-existing Contamination	☐	☒
39.	New or Modified Federal/State Permits	☐	☒
40.	Public Controversy	☐	☒
41	Environmental Justice	☐	☒
42.	Action/Involvement of Another Federal Agency (e.g. license, funding, approval) This action will require a Power Purchase Agreement from the Western Area Power Administration	☒	☐
43.	Action of a State Agency in a State with NEPA-type law: Appropriate California Environmental Quality Act (CEQA) review would be conducted.	☒	☐
44.	Public Utilities/Services	☐	☒
45.	Depletion of a Non-Renewable Resource	☐	☒
46.	Extraordinary Circumstances	☐	☒
47.	Connected Actions	☐	☒
48.	Exclusively Bench-top Research	☐	☒

V. Financial Assistance Award Organization Concurrence:

A. Organization Official (Name and Title): Jeff Philliber, LBNL Environmental Planner

Signature: /s/ Date: 10-5-11

e-mail: JGPhilliber@lbl.gov

B. Optional Concurrence (Name and Title): _____

Signature: _____ Date: _____

e-mail: _____ Phone: _____

Remainder to be completed by SC

VI. SC Concurrence/Recommendation/Determination:

A. SC Office of Acquisition and Assistance or Office of Safety, Technical & Infrastructure Services:

Name and Title: Hemant Patel, Federal Project Manager

Signature: /s/ Date: 10/4/11

e-mail: Hemant.Patel@bso.science.doe.gov

B. SC NEPA Team Review:

Is the project/activity appropriate for a determination or a recommendation to the Head of the Field Organization by the NEPA Compliance Officer (NCO) under Subpart D of the DOE NEPA Regulations?

Yes ☒ No ☐

Specific class(es) of action from Appendices A-D to Subpart D (10 CFR 1021):

B5.1 "Actions to conserve energy, demonstrate potential energy conservation, and promote energy-efficiency that do not increase the indoor concentrations of potentially harmful substances."

Name and Title: Kim Abbott, NEPA Program Manager

Signature: /s/ Date: 10/4/11

e-mail: kim.abbott@bso.science.doe.gov

C. SC ISC Counsel (if necessary):

Name and Title: _____

Signature: _____ Date: _____

e-mail:

D. SC ISC Field Office NEPA Compliance Officer:

The preceding pages are a record of documentation required under DOE Final NEPA Regulation, 10 CFR 1021.400.

☑ Action may be categorically excluded from further NEPA review. I have determined that the proposed action meets the requirements for Categorical Exclusion referenced above.

☐ Action requires approval by Head of the Field Organization. Recommend preparation of an Environmental Assessment.

☐ Action requires approval by Head of the Field Organization or a Secretarial Officer. Recommend preparation of an Environmental Impact Statement.

Comments/Limitations if necessary:

Print Name Gary S. Hartman

Signature: /s/ **Date:** 10/7/2011

ORO NEPA Compliance Officer