

**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 (LBNL)

Title of Proposed Project/Research: ADVANCED BIOFUELS PROCESS DEVELOPMENT UNIT for LBNL

Total DOE Funding/Total Project Funding: First Year approximately\$18M/ outyears 5 years @ ~\$3M/year

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

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

Lease for a term of up to 60 months, consisting of approximately 16,000 square feet of space located at 5885 Hollis St Emeryville, CA for the Advanced Biofuels Process Development Unit (PDU). The lease includes provisions for two (2) additional terms of five (5) years each. Fourteen employees, guests, and collaborators would need lab spaces for general research and development laboratories, and office space for associated support, office, and administrative functions. The rented space would be improved to accommodate the PDU. Approximately 13,000 square feet of vacant space would be reconfigured into research laboratory, support, utility, and office space. In addition, approximately 2,000 square feet of mechanical room and roof space would be used to support mechanical equipment, which would serve research equipment. Modifications would also be made to the existing mechanical, electrical, plumbing, and HVAC systems to support the use of the facility.

The PDU would be an ARRA funded user facility for entities to scale-up and demonstrate (at a small-scale) newly developed processes and technologies. The facility would be made available to the three Bioenergy Research Centers (BRCs) – the BioEnergy Science Center (BESC), the Joint Bioenergy Institute (JBEI), and the Great Lakes Bioenergy Research Center (GLBRC); as well as, University researchers, non-profit research organizations, and to companies involved in biofuels production. The facility will have capabilities for testing a range of biomass types (grasses, woody biomass), using current and newly emerging pretreatment methods. Facilities for production of lignocellulolytic enzymes will enable deconstruction of biomass at a scale sufficient to obtain data for design of commercial plants. The fermentation capacity will also permit simultaneous saccharification and fermentation and consolidated bioprocessing to be examined, using enzymes produced in the PDU facility. These enzymes can be produced from both pretreated biomass or from monosaccharide substrates. Biofuels generated at the PDU will be transferred to the Combustion Research Facility at Sandia National Lab (SNL) in Livermore, CA. Engine testing will occur at the SNL site, which has all of the permits necessary for safe operation and testing of these fuels.

DOE Office of Energy Efficiency and Renewable Energy has a need to translate technologies created by the DOE BRCs from laboratory scale to commercial operation.

B. Would the project proceed without Federal funding?

Yes No

If "yes", describe the impact to the scope:

II. Description of Affected Environment:

The entire suite is new, in shell-space condition that has been vacant since the building was originally constructed in 2007. The roof area includes a platform where new mechanical equipment will be located with similar equipment for other tenants. An existing storage room below ground level will be used to house utilities support equipment.

III. Preliminary Questions:

- | | | | |
|----|--|--------------------------|-------------------------------------|
| | | Yes | No |
| A. | <u>Is the DOE-funded work <i>entirely</i> a "paper study"?</u> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

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

- | | | | |
|----|--|-------------------------------------|--------------------------|
| | | Yes | No |
| B. | <u>Will the work to be performed take place <i>entirely</i> in existing buildings?</u> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

And :

- | | | | |
|----|--|--------------------------|-------------------------------------|
| | | Yes | No |
| 1. | Threaten a violation of applicable statutory, regulatory, or permit requirements for environment, safety, and health? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 2. | Require the siting, construction or major expansion of waste treatment, storage, or disposal facilities? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 3. | Disturb hazardous substances, pollutants, or contaminants preexisting in the environment? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 4. | Adversely affect environmentally-sensitive resources identified in Section IV.A.? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 5. | Be connected to another existing/proposed activity that could potentially create a cumulatively significant impact? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 6. | Have an inherent <i>possibility</i> for high consequence impacts to human health or the environment (e.g., Biosafety Level 3-4 laboratories, activities involving high levels of radiation)? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

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: Will 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 | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 2. | Other Protected Species (e.g., Burros, Migratory Birds) | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 3. | Sensitive Environments (e.g., Tundra/Coral Reefs/Rain Forests) | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 4. | Archaeological/Historic Resources | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 5. | Important Farmland | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 6. | Non-Attainment Areas for Ambient Air Quality Standards | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 7. | Class I Air Quality Control Region | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 8. | Special Sources of Groundwater (e.g. Sole Source Aquifer) | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 9. | Navigable Air Space | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 10. | Coastal Zones | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

- 11. Areas with Special National Designation (e.g. National Forests, Parks, Trails)
- 12. Floodplains and Wetlands

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

- | | Yes | No |
|--|-------------------------------------|-------------------------------------|
| 13. Natural Resource Damage Assessments | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 14. Exotic Organisms The PDU would use recombinant bacterial and yeast strains. No introduction of any exotic organism into a natural ecosystem would occur because of the design, construction or operation of the PDU. LBNL will implement the controls required by its safety Manual Publication 3000. In addition, the facility will include spill control measures and byproduct discharges from the PDU equipment to the sanitary sewer will be neutralized before release. | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 15. Noxious Weeds | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 16. Clearing or Excavation (indicate if greater than one acre) | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 17. Dredge or Fill (under Clean Water Act, Section 404, indicate if greater than ten acres) | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 18. Noise (in excess of regulations) | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 19. Asbestos Removal | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 20. PCB's | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 21. Import, Manufacture, or Processing of Toxic Substances | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 22. Chemical Storage/Use The PDU would involve the use, storage, and disposal of hazardous chemicals. Each chemical would have unique toxic, fire, carcinogenic and physical characteristics. Toxin materials may include corrosives, irritants, carcinogens, and mutagens. The laboratory space must meet the requirements of "B" Occupancy laboratories, in accordance with the applicable California Building and Fire Codes. The PDU will maintain the amount of those chemicals below the allowable quantities of hazardous materials, compressed gases and flammable and combustible materials in these laboratories by using Control Areas and their location (floor level and arrangement). Hazardous chemical storage cabinets would be located throughout the wet laboratory areas. Tenant-provided hazardous chemical storage cabinets would require dedicated fume exhaust ductwork to the building's main exhaust riser. Fume hoods and biosafety cabinets would be utilized in laboratory areas for applications where personnel protection from hazardous materials is required. | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 23. Pesticide Use | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 24. Hazardous, Toxic, or Criteria Pollutant Air Emissions | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 25. Liquid Effluents Discharge resulting from the staff and research at the PDU would be to publically owned treatment works. The project will install a neutralization system to treat byproduct before the byproduct is discharged to the sanitary sewer | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 26. Underground Injection | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 27. Hazardous Waste Chemical waste would be up to 10,000 liters annually of mixed chemicals | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 28. Underground Storage Tanks | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 29. Radioactive Mixed Waste | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 30. Radioactive Waste | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 31. Radiation Exposure | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 32. Surface Water Protection | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 33. Pollution Prevention Act | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 34. Ozone Depleting Substances | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 35. Off-Road Vehicles | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 36. Biosafety Level 3-4 Laboratory Biological hazard materials would include both Risk Group 1 and Risk Group 2 materials, although the majority would be Risk Group 1 and do not present risks to healthy adults under normal | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

(11/03) Previous editions are obsolete

circumstances. Risk Group 1 materials include DNA, and laboratory strains of certain organisms (e.g., E. coli). Risk Group 2 materials include viral vectors. Risk Group 3 materials would not be used and would not be permitted on the PDU site.

C. Other Relevant Information: Will the proposed action involve the following?

	Yes	No
37. Potential Violation of Environment, Safety, or Health Regulations/Permits	<input type="checkbox"/>	<input checked="" type="checkbox"/>
38. Siting/Construction/Major Modification of Waste Recovery, or Waste Treatment, Storage, or Disposal Facilities	<input type="checkbox"/>	<input checked="" type="checkbox"/>
39. Disturbance of Pre-existing Contamination	<input type="checkbox"/>	<input checked="" type="checkbox"/>
40. New or Modified Federal/State Permits Work Planning controls are in place to determine if the fuels to be combusted at Sandia will require new permits.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
41. Public Controversy	<input type="checkbox"/>	<input checked="" type="checkbox"/>
42. Environmental Justice	<input type="checkbox"/>	<input checked="" type="checkbox"/>
43. Action/Involvement of Another Federal Agency (e.g. license, funding, approval)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
44. Action of a State Agency in a State with NEPA-type law. (Does the State Environmental Quality Review Act apply?) LBNL will conduct a CEQA review. The existing EA DOE/EA-1422; Final Site-Wide Environmental Assessment of the Sandia National Laboratories/California (SNL/CA) covers the activities that will take place at SNL CA	<input checked="" type="checkbox"/>	<input type="checkbox"/>
45. Public Utilities/Services Annual utilities consumption is projected to be 1,000 ft ³ of water, 45,000 therms of natural gas, and 400,000 kwh of electrical energy.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
46. Depletion of a Non-Renewable Resource	<input type="checkbox"/>	<input checked="" type="checkbox"/>
47. Extraordinary Circumstances	<input type="checkbox"/>	<input checked="" type="checkbox"/>
48. Connected Actions	<input type="checkbox"/>	<input checked="" type="checkbox"/>
49. Exclusively Bench-top Research	<input type="checkbox"/>	<input checked="" type="checkbox"/>
50. Only a Laboratory Setting	<input checked="" type="checkbox"/>	<input type="checkbox"/>

V. Financial Assistance Award Organization Concurrence:

A. Organization Official (Name and Title): Jeff Philliber LBNL Environmental Planner
 Signature: /s/ Date: 5-20-10
 e-mail: JGPhilliber@lbl.gov Phone: (510) 486-5257

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:

Federal Project Director Barry Savnik
 Signature: /s/ Date: 5/20/10

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 classes of action from Appendices A-D to Subpart D (10 CFR 1021): A7, B1.3, B1.4, B2.1, B2.2, B2.3, and B3.6,

Name and Title: Kim Abbott, NEPA Document Manager
 Signature: /s/ Date: 5/19/10

C. SC ISC Counsel (if necessary):

