

LONG ISLAND SOLAR FARM ENVIRONMENTAL REVIEW RECORD

This Environmental Review Record for the Long Island Solar Farm Project, proposed by BP Solar International Inc (“BP Solar”), includes the December 2009 Environmental Assessment (“EA”) prepared by the U.S. Department of Energy pursuant to the National Environmental Policy Act (“NEPA”) and the Environmental Assessment Form (“EAF”) completed by the Long Island Power Authority (“LIPA”) and BP Solar pursuant to the New York State Environmental Quality Review Act (“SEQRA”). The EAF also attaches two archaeological reports that the Department of Energy relied on for its assessment of the proposed action’s impacts on cultural resources¹ as well as a visual impact assessment prepared pursuant to New York State Department of Environmental Conservation (“NYSDEC”) policy for conducting visual assessments under SEQRA.²

Project Description

LIPA released its Request for Proposals for Solar Photovoltaic Generating Projects (the “Solar Photovoltaic RFP”) in April 2008 to facilitate the cost-effective, utility-scale development of solar photovoltaic generating systems on Long Island and to assist LIPA in meeting its goals under New York’s Renewable Portfolio Standard. The purposes of the Solar Photovoltaic RFP include: facilitating the investment in solar photovoltaic (“PV”) systems within the Long Island region, reducing the costs associated with the consumption of fossil fuels, encouraging economic development within New York State, and improving the environmental quality of Long Island. In response to that RFP, on February 26, 2009, the LIPA Board of Trustees selected four ranked proposers, including the proposal by BP Solar to construct and operate a 32 megawatt (“MW”) alternating current (or 37 MW direct current) solar PV facility on approximately 200 acres within the Brookhaven National Laboratory (“BNL”) (a 5,265 acre Department of Energy property), which is located in the hamlet of Upton in the Town of Brookhaven.

With regard to this proposed action, LIPA is proposing to purchase solar-generated electricity from two solar PV arrays constructed by BP Solar at the BNL facility. The proposed two solar arrays would be located on the south central to southeast and east central portions of the BNL property.³ Fencing would enclose each array.

Within the BNL site, the proposed project would be located entirely within the Central Pine Barrens Compatible Growth Area. Individual 220 watt modules, each 5.5 feet by 3.3 feet, would be arranged in 24 module sub-arrays set on steel posts and arranged in rows. Sub-arrays would connect to 32 equipment pads. Each 100 square foot concrete equipment pad would include two 500 kilowatt inverters, a 1 megavolt amp transformer which would step-up the power from 200 volts to 13.8 kilovolts (“kV”), and associated switchgear. The equipment pads would be connected to a single transformer, located on a fenced concrete pad along with associated circuit

¹ The Institute for Long Island Archaeology, Stony Brook University, *Archaeological and Architectural Data Recovery for the Privy Site at Brookhaven National Laboratory*, August 2009; The Institute for Long Island Archaeology, Stony Brook University, *A Stage 1 Archaeological Survey for the Proposed Solar Array Brookhaven National Laboratory*, August 2009.

² NYSDEC, *Assessing and Mitigating Visual Impacts*, Dept. ID: DEP-00-2, July 31, 2000.

³ The EA prepared by the Department of Energy also includes an analysis of an additional 1 to 2 MW Laboratory-dedicated array and an associated support building. LIPA will not be purchasing power from this additional array.

breakers, disconnect switches, and a 12 foot by 24 foot control enclosure. The transformer would step-up the power from 13.8 kV to 69 kV for transmission via underground conduit to the LIPA substation located across the Long Island Railroad tracks adjacent to the BNL site. As described below, no expansion or other material modification is proposed for that substation.

The action also involves the establishment of a Natural Resources Benefit program. With regard to the BNL site, BNL would commit to protect the 51-acre eastern tiger salamander area by modifying the BNL Site Master Plan to identify this area as protected. LIPA proposes to establish a Natural Resources Benefit fund, which proceeds would be used towards the acquisition of land, outside of the BNL site, to be added to the Central Pine Barrens. Finally, BP Solar proposes to partner with governmental or non-profit groups to improve or restore Central Pine Barrens habitat, including efforts such as conservation planning, ecological restoration, and habitat protection.

Solar PV Arrays and Transformer Impacts

As described in the attached EA and EAF, the construction and operation of the proposed solar PV arrays and transformer within the BNL property would not result in any significant adverse impacts to the environment. The EA and EAF analyzed potential environmental impacts of the project related to ecology, water resources, land use, demography, environmental justice, socioeconomic factors, transportation, cultural resources, air quality, climate, visual quality, noise, industrial safety and occupational health, radiological characteristics, natural hazards, intentional destructive acts, utilities, electric and magnetic fields, waste management and pollution prevention, commitment of resources, decommissioning and restoration, and cumulative impacts and found that no significant adverse impacts would result from the proposed project in any such areas.

Moreover, the proposed Long Island Solar Farm Project would be the largest PV project in the northeast, demonstrating the feasibility of large scale solar projects within the region. The project supports energy independence, a national priority, and produces electricity without releasing air pollutants or greenhouse gases, such as carbon dioxide. The emissions displaced by producing the 32 MWac (37 MWdc) of electricity for a year with solar PV rather than by burning fossil fuels would include: 33 metric tons of nitrogen oxides; 76 metric tons of sulfur dioxide; and the atmosphere warming equivalent of 30,950 metric tons of carbon dioxide. In addition, pollutants that lead to the formation of ground level ozone would also be displaced.

Substation/Transmission Cable Impacts

LIPA Substation 8ER would require very minor modifications to connect the solar energy source to the energy distribution grid. The substation modifications include the addition of two 69 kV disconnect switches, a 69 kV gas circuit breaker, three 69 kV metering Potential Transformers and three metering Current Transformers, a 69 kV manual ground switch, and a 69 kV riser termination structure. Metering cables would be installed between the new equipment and the existing control house, and relaying and control panels would be installed within the control house to provide the control and protective functions for the new equipment. All modifications would occur entirely within the substation footprint.

The new transmission cable to be installed from the solar arrays located on the BNL site to the LIPA substation will be approximately 900 feet between the BNL property line and the LIPA Substation 8ER point of connection. The portion of this cable beneath the Long Island Railroad Easement will be constructed below ground using horizontal directional drilling. In this way, the construction of the transmission line from the BNL property line to the LIPA Substation 8ER will not require the removal of any vegetation and will result in no impacts to surface conditions. The short route also does not cross any wetlands or any special habitat areas for threatened or endangered species.

The modifications to the substation and the work to construct the transmission line will involve approximately 20 vehicle trips per day (or less) over a one-month period. Accordingly, the construction of the transmission cable between the BNL property line to the LIPA Substation 8ER and the minor modifications to the LIPA substation would not result in any significant adverse impacts to the environment.

Impacts from Establishment of Natural Resources Benefit Program

BNL's commitment to preserve existing eastern tiger salamander habitat would result in no change to the environment as BNL is simply committing to preserving existing habitat. With regard to the portion of the Natural Resources Benefit program occurring outside of BNL's property, LIPA's establishment of a new fund to provide monies that can be used toward the purchase of conservation easements to be dedicated to the Central Pines Barren would result in no environmental impacts because the funds would simply be used to ensure that certain land would remain in perpetuity in its existing environmental condition (i.e., as forested or other vegetative land). Similarly, BP Solar's efforts toward conservation planning, ecological restoration, and habitat protection would benefit the environment. Thus the Natural Resources Benefit program also does not result in any significant adverse impacts to the environment.

Cumulative Impacts

LIPA also examined whether the potential impacts from this proposed Long Island Solar Farm Project when considered cumulatively with potential impacts from other solar proposals LIPA selected in response to the Solar Photovoltaic RFP have the potential for causing significant adverse environmental impacts. In addition to the Long Island Solar Farm Project proposed for construction on BNL property, LIPA is reviewing a solar proposal by enXco to construct solar PV carports at up to seven parking lot sites owned by Suffolk County. Alternatively, it is possible that LIPA could move forward on reviewing an additional rooftop proposal and an array proposal on two or three landfill sites by two other private developers. No cumulative adverse impacts are anticipated from these possible solar projects proposed by the other private developers, which are entirely independent of this proposed action, because of the geographic separation of the sites, the independent utility of each site, and the localized extent of any impacts due to construction and operation of each solar PV project. Moreover, the air pollution emissions avoided by generating electricity with solar PV rather than fossil fuels would have a positive cumulative impact on regional air quality.

Finally, the Natural Resources Benefit program would not involve construction activities and thus would not result in any adverse cumulative impacts with the construction of the solar PVs.

Agency Approvals

The following agency actions, permits and approvals may be required:

Brookhaven National Laboratory

- Easement to BP Solar for the location of the solar arrays, transformer and transmission line within BNL property

LIPA

- Power Purchase Agreement
- Interconnection Agreement
- Memorandum of Agreement to establish Natural Resources Benefit fund

New York State Department of Environmental Conservation

- Wetland Permit for construction within 100 feet of a New York wetland boundary
- Wild, Scenic and Recreational Rivers Permit
- State Pollutant Discharge Elimination System Construction Stormwater General Permit or Construction Stormwater Individual Permit

Long Island Railroad

- Easement for transmission line crossing railroad

New York Independent System Operator

- Interconnection Agreement

New York State Energy Research & Development Authority

- Possible State Energy Program funding under American Recovery and Reinvestment Act for the interconnection to be completed by LIPA

Suffolk County Department of Health

- Possible Article 12 compliance if temporary fuel storage required for construction

Conclusion

Based on the attached EA and EAF, the proposed Long Island Solar Farm Project, which involves the construction and operation of up to 32 MWac of solar PV arrays on the BNL site, the accessory minor modifications to Substation 8ER and construction of a short transmission line, and the establishment of a Natural Resources Benefit program would not result in any significant adverse individual or cumulative impacts to the environment.