



Executive Director's Recommendation

Commission Meeting: January 5, 2012

PROJECT

New Solar Photovoltaic Panel Arrays

Department of Energy
Germantown Campus
19901 Germantown Road
Germantown, Maryland

NCPC FILE NUMBER

7306

NCPC MAP FILE NUMBER

3116.00(38.00)43452

SUBMITTED BY

United States General Services Administration

APPLICANT'S REQUEST

Preliminary and final approval of site development plans

PROPOSED ACTION

Approve as requested

REVIEW AUTHORITY

Federal Project in the Environs per 40 U.S.C. § 8722(b)(1)

PROJECT SUMMARY

The United States General Services Administration has requested preliminary and final approval for the construction of three solar photovoltaic panel arrays and the installation of ancillary transmission equipment (equipment cabinets and underground transmission lines) on the Department of Energy's Germantown Campus. Two arrays will be located on the ground and a third array will be located on top of a new canopy over part of an existing surface parking lot. The ground-mounted arrays will be situated near the South Campus Lot, along both sides of an internal campus circulation road. One ground array will measure approximately 65 x 260 feet in area and the other ground array will measure approximately 160 x 355 feet in area, with solar panels located from 2.5 to 5.0 feet (low end to the high end) above the ground. The canopy array will measure approximately 40 x 130 feet and will be elevated 10 to 22 feet above the surface of the South Campus Lot, over 12 parking spaces. Two electric vehicle charging stations will be installed under the canopy. The two ground-mounted solar arrays will generate 300,000 watts of electricity and the canopy array will generate 50,000 watts of electricity for campus use.

KEY ISSUES

- The project is consistent with the existing DOE Germantown Campus Long-Range Plan; however, the Commission last reviewed the Plan in 1972 and the campus could benefit if this plan was updated.

RECOMMENDATION

The Commission:

Approves the preliminary and final site development plans for the installation of three solar photovoltaic panel arrays and ancillary transmission equipment on the Department of Energy's Germantown Campus, 19901 Germantown Road, Germantown, Maryland as shown on NCPC Map File No. 3116.00(38.00)43452.

Notes that the Germantown Campus Long-Range Plan was last reviewed by NCPC in 1972, and therefore encourages the applicant to update the plan to assist the Commission in its review of future individual site and building projects.

PROJECT REVIEW TIMELINE

| | |
|--|------|
| Previous actions | None |
| Remaining actions (anticipated) | None |

Prepared by M. Weil on December 29, 2011

I. PROJECT DESCRIPTION

Site

The Department of Energy (DOE) campus is located in Germantown, Maryland at 19901 Germantown Road, approximately 15 miles north of Washington, D.C. The project site is located in the southern part of campus as shown in Figure 1.



Figure 1: Vicinity Map showing DOE Germantown Campus and location of project site

Background

The solar array project is part of a \$5.55 billion American Recovery and Reinvestment Act (ARRA) funding plan submitted to Congress by the United States General Services Administration (GSA) to implement a number of high-performance, green energy projects in the National Capital Region. The proposed project is in response to Executive Order 13423, *Strengthening Federal Environmental, Energy, and Transportation Management* (January 2007), and the Energy Independence and Security Act (EISA), both of which mandate annual energy consumption reduction goals (relative to a FY2003 baseline usage) by all federal agencies.



Figure 2: Aerial and ground perspective photographs of the existing project site

Proposal

GSA has awarded Pepco Energy Services (a private company specializing in implementing energy-saving products) a \$2.3 million contract to design and install three solar panel arrays capable of generating approximately 350,000 watts of electricity annually. Two arrays will be mounted on the ground along the east and west sides of the South Campus Access Road, and a third array will be installed on top of a canopy located over 12 parking spaces in the South Campus Lot as shown in Figures 2 and 3. The two ground-mounted arrays will have the capability of generating 300,000 watts of electricity and the canopy-mounted array will have the capability of generating 50,000 watts of electricity, for use on the DOE campus. Two car-charging stations will be situated under the canopy to provide power for electric vehicles. The project will install several underground transmission lines to relay the electric power generated by the solar arrays to the campus's main building and two car-charging stations as shown in the Figure 4.



Figure 5: Rendering of project looking north into the campus

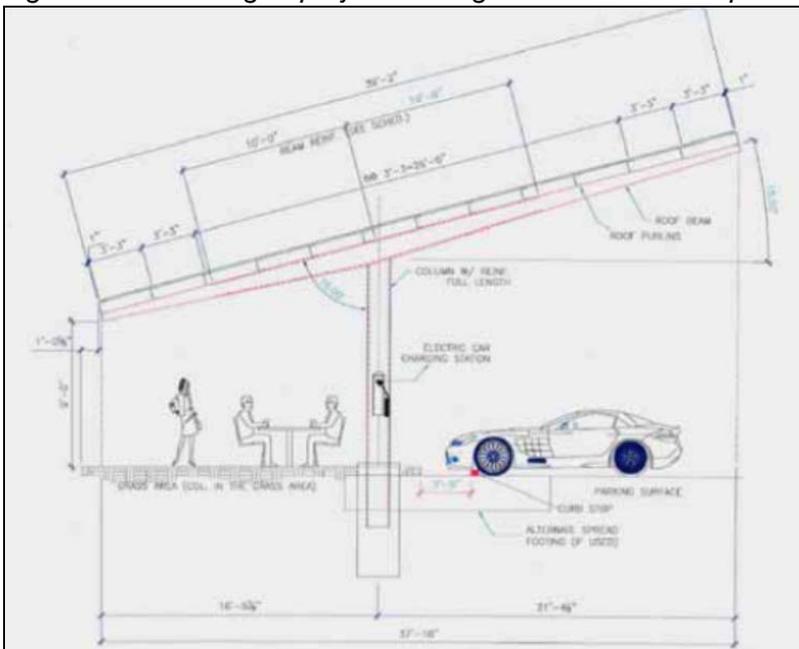


Figure 6: Canopy Solar Array Elevation

will be sheltered from the weather in a protective shed, which will be screened by shrubs as shown in Figure 8. The project will require the complete removal of eight trees, and relocation of eight other trees to other on-campus locations. In addition, the project will plant 20 new 2.5-inch native trees on-campus as mitigation, as shown in Figure 9.

Each solar panel measures 3.0 x 5.0 feet. The eastern ground array (shown as Area B in Figure 4) will consist of approximately 400 panels and will be installed over an area measuring 65 x 260 feet. The western ground array (shown as Area A in Figure 4) will consist of approximately 950 panels and will be installed over an area measuring 160 x 355 feet. The solar panels will all be south-facing; each installed at a 20-degree angle to maximize their sun exposure (Figure 5); and situated between approximately 2.5 (low end) to 5 feet (high end) above the ground.

The canopy array will cover an area measuring 40 x 130 feet, installed between 10 to 22 feet (low to high end) above the ground. The canopy structure will be located over 12 surface parking spaces and a grassy median area (adjacent to the lot's access road) to provide a sheltered area for employees as shown in Figure 6.

The project will install several utility cabinets to house control and monitoring equipment, each measuring approximately 3.0 x 4.0 x 6.0 feet (Figure 7). The cabinets

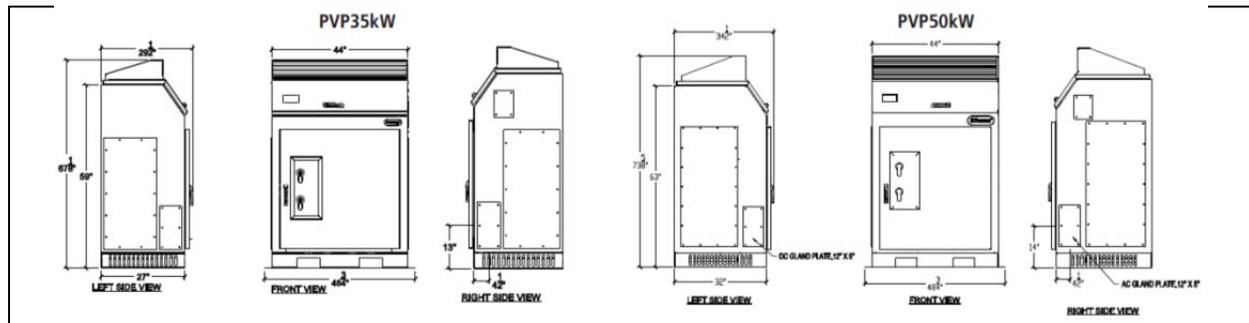


Figure 7: Utility Cabinet Elevations



Figure 8: Utility Shed Rendering



Figure 9: Proposed locations of replanted and new trees

II. PROJECT ANALYSIS/CONFORMANCE

Analysis

The proposal will help DOE meet its energy reduction goals, as mandated by EISA and Executive Order 13423, and install electric vehicle charging capability on campus. The project is consistent with the Germantown Long-Range Campus Plan. However; the campus plan was last reviewed by NCPC in 1972 and is in need of an update. The visual impact of the solar panels will be largely mitigated by their location (ground-mounted) on lower-lying land on-campus (Figure 10), away from the campus's main entrance. The proposed tree removal is relatively minor (eight trees) and will be mitigated at a replacement ratio of 2.5:1.0, resulting in a net gain of 12 trees on campus. Therefore, staff recommends that the Commission **approve the preliminary and final site development plans for the installation of three solar photovoltaic panel arrays and ancillary transmission equipment on the Department of Energy, Germantown Campus.** Furthermore, staff recommends that the Commission **note that the Germantown Campus Long-Range Plan was last reviewed by NCPC in 1972, and therefore encourages the applicant to update the plan to assist the Commission in its review of future individual site and building projects.**

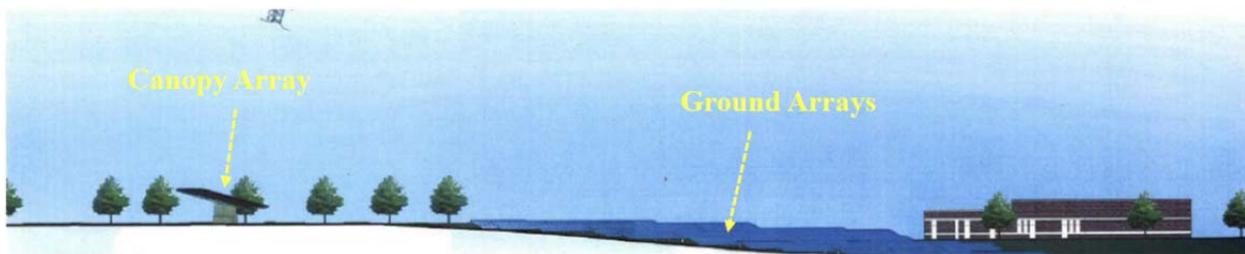


Figure 10: Southern Campus Cross-Section (looking west)

Comprehensive Plan for the National Capital

The project is not inconsistent with the *Comprehensive Plan for the National Capital: Federal Elements*. In particular, the project is consistent with the following policies of the Federal Environment Element:

- Minimize tree cutting and other vegetation removal to reduce soil disturbance and erosion, particularly in the vicinity of waterways. When tree removal is necessary, trees should be replaced to prevent a net tree loss (Water Quality: #3)
- Encouraging further usage of alternative “clean” fuels (Air Quality: #1)
- Minimizing power generation requirements, such as by utilizing best available “green” building systems and technology. (Air Quality: #2)
- Using non-polluting sources of energy (e.g., solar energy). (Air Quality: #2)
- Encouraging the development and use of alternative energy sources to reduce the reliance on fossil fuels. (Air Quality: #2)

National Environmental Policy Act (NEPA)

GSA determined that the project meets the requirements of a categorical exclusion (CATEX) pursuant to CATEX #5.4(b) of its NEPA regulations which applies to "acquisition of space by Federal construction or lease construction, or expansion or improvement of an existing facility, subject to certain conditions." Due to the project's location in the environs, NCPC does not have an independent NEPA responsibility.

National Historic Preservation Act (NHPA)

GSA determined that the project will have "no adverse effect" on historic and archeological resources, and the Maryland Historic Trust (MHT) concurred with GSA's determination on July 27, 2011. Due to the project's location outside the District of Columbia, NCPC does not have independent Section 106 responsibility.

III. CONSULTATION

Coordination with local agencies

The project was referred out to the Maryland State Clearinghouse on October 17, 2011 for review by all appropriate local, county, and State agencies. The State issued a letter (dated December 14, 2011) with the statement that all responding agencies found this project to be generally consistent with their plans, programs, and objectives.