



Virginia Pollution Prevention Case Study

Dominion Virginia Power and Philip Morris USA Solar Partnership Program

Project Information

Dominion Virginia Power has installed Virginia's largest solar installation to date at the Philip Morris USA (PM USA) Park 500 facility in Chesterfield County. By working together under Dominion's Solar Partnership Program, Dominion and PM USA will be able to provide a co-educational opportunity to the public, demonstrating the environmental sustainability principles of both companies. The solar project at Park 500 is adjacent to PM USA's award-winning on-site water treatment plant that was installed in 2008. Co-locating these facilities will offer a real-world laboratory to showcase how manufacturing operations can reduce their environmental impact and protect natural resources while still staying competitive in their industry.

Environmental Challenges and Opportunities

Dominion is one of the nation's largest producers and transporters of energy and is committed to substantially increasing their solar generation portfolio in Virginia as part of their efforts to produce energy safely, efficiently, and in an environmentally responsible manner. Under the Solar Partnership Program, Dominion has already completed solar installations in six other Virginia locations, bringing their solar generating capacity from these facilities and others under construction to 6.7 megawatts (AC). PM USA shares Dominion's commitment to clean, sustainable energy and understands the effect that nature has on their business.

Solar energy is powered by the renewable energy of the sun and has many advantages over traditional fossil fuel energy. Because solar power systems do not burn fuel and have very few moving parts, they are clean, quiet, and produce no emissions or greenhouse gases. Power is produced at the site and can reduce the need for additional distribution infrastructure improvements. There are some disadvantages to solar energy as well. Solar installations usually have high upfront costs and capacity factors are typically lower than other power generation sources. This means that energy can only be produced when the sun shines with intensity great enough to produce electric power as opposed to conventional forms of generation which can produce electric power at all times of day and night.

Dominion's Solar Partnership Program is a multi-year program in which Dominion leases rooftop or ground space, at commercial, industrial, or public facilities in order to install solar panels. Dominion is authorized to construct up to 30 megawatts of company-owned solar facilities, which would be enough to power up to 7,500 homes. The program expands Dominion's understanding of community-based solar energy by studying the impact and assessing the benefits on the electrical grid. Dominion gains experience operating solar distributed generation and identifies optimal sites to better understand how solar will integrate with their current distribution system. This program also encourages solar energy growth throughout the state and delivers power straight to the grid to benefit the community.

Implementation of the Project

Almost 8,000 ground-mounted solar panels have been installed at the Park 500 facility and are expected to produce 2,000 kW (AC), making it the largest installation in the state, and producing enough electricity under optimum conditions to power 500 homes. A ground-mount was selected as opposed to rooftop mounting because the area had been previously cleared and developed for buildings that were ultimately never built. Standard Solar, Inc. was selected as the engineering, procurement and construction company, with most of the work performed by local subcontractors. The location is a prime spot to study grid impacts for solar, which is one of the primary objectives of the program.

Continual Improvement of the Project

The installation is expected to remain in place for approximately 20 years and will continue to provide Dominion with information that will increase Dominion's understanding of community-based solar energy. PM USA and Dominion have plans to regularly promote the project as a way to support the growth of solar energy in Virginia. Dominion will also provide information on this project, and others in the program, to the Virginia State Corporation Commission through their annual report.