



The Catholic University of America
Washington, D.C.
Energy – 294-kilowatt solar system

SCHOOL

The Catholic University of America (CUA) is a private nonprofit institution of higher education located in Washington, D.C. CUA consists of 12 schools offering undergraduate, graduate and/or professional degrees. Located in the northeast quadrant of Washington, D.C., the 193-acre campus encompasses 56 buildings, comprising more than 2.6 million square feet, dating back to every decade over the past century. CUA serves more than 3,400 undergraduate and 3,300 graduate students with a faculty and staff of 1,300.

ABSTRACT

In early 2010, Catholic University installed 30,233 square feet of panels on the rooftops of the Raymond A. DuFour Center and Aquinas, Flather and Gibbons halls to comprise a 294-kilowatt system, the largest solar-energy system in the metro Washington, D.C., area in terms of electricity produced.

GOALS AND OUTCOMES

Goals

Catholic University is seeking to generate electricity from non-traditional power sources that do not create greenhouse gas emissions. Solar power is an attractive energy producing alternative because CUA has the land available and sufficient solar radiation to generate power. CUA was seeking to produce 1 percent of its annual electrical requirements from solar energy.

Accomplishments and Outcomes

On January 15, 2010, CUA completed the installation of 1,088 solar panels on four campus buildings: two residence halls, an athletic center and a classroom/office building. Through early August 2010, these panels have produced approximately 220,000 kilowatt hours of clean power. The installation has experienced no malfunctions and is on target to achieve the goal of generating 1 percent of CUA's electrical requirements.

All solar energy is consumed within the four buildings on which the panels are installed and no power is exported to the utility grid. The maximum output of all panels is 294 kilowatts.

Challenges and Resources

The primary challenge was how to pay for the installation. The cost of the solar installation was financed by a third party, who owns and operates the system on CUA's campus. CUA has agreed to purchase the output of the installation over a 20-year period at a fixed price. If the installation does not work, CUA has no obligation to pay.

Campus Climate Action

The generation of solar power on campus, since operation began, has eliminated more than 300,000 pounds of carbon dioxide that would have adversely impacted the environment. On an annual basis, CUA's solar installation will displace approximately 490,000 pounds of carbon dioxide.

Commentary and Reflection

Implementing strategies to protect the environment is a mission not only of Catholic University but the Catholic Church as well. Generating solar energy is just an initial step in a plan to continually reduce CUA's carbon footprint. Conservation, recycling and designing new buildings to LEED specifications are but a few of the initiatives CUA is implementing to make its students good environmental citizens.

ENGAGEMENT AND SUPPORT

Leaders and Support

The solar installation was engineered by Standard Solar of Gaithersburg, Md., and installed by Kelly Electric and Magno Roofing. The project was financed by Washington Gas Energy Services of Herndon, Virginia.

Funding and Resources

The project cost was \$1.8 million and was financed by Washington Gas Energy Services through a 20-year purchase power agreement with Catholic University.

Education and Community Outreach

The solar installation has received significant attention from the community as well as students. In fact, many students participated in a solar design competition sponsored by Washington Gas Energy Services and Standard Solar to provide them with hands-on experience in designing solar power equipment. The winning design, a stand-alone solar picnic table, received a cash prize and will be installed on the campus.

CONTACT INFORMATION

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MORE ABOUT YOUR SCHOOL

Campus Sustainability History

The Catholic University of America has a strong commitment to being energy efficient and minimizing its impact on the environment.

In 2009 CUA opened the first LEED-compliant college residence hall in the District of Columbia. The seven-story, 127,500-square-foot structure houses 402 students, or 15 percent of student housing.

Its unique environmentally friendly design reduces carbon dioxide emissions by 125 tons per year and saves \$40,000 per year in energy costs over more traditional construction. Incorporating sustainable features in construction is now a way of life at CUA.

The university has a vibrant recycling program that ranks 66th in the nation out of 300 universities. Moreover, it purchases 35 percent of its electricity from green sources to assist in improving the region's

air quality and it was the first university in the region to purchase wind power. Its active conservation program encourages students, faculty and staff to reduce energy consumption and lessen water usage.

CUA incorporates an environmentally friendly pest management system and only uses eco-friendly cleaners on campus. CUA, in conjunction with Casey Trees, is working to improve the tree canopy on campus and has planted 100 new large trees. CUA's goal is to increase the tree canopy by 10 percent in the next five years.