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Penn State powers up with solar

The University and Lightsource bp partner to boost the sustainable benefits of solar energy

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The Nittany 1 solar array, one of three solar farms that make up the 70-megawatt solar array in Franklin County that will provide Penn State with 25% of its purchased electricity, across all campuses, over 25 years.

Image: Lightsource bp

October 15, 2020

UNIVERSITY PARK, Pa. — This month Penn State began purchasing renewable electricity generated from three Lightsource bp solar farms that have completed construction in Franklin County. The projects were initiated in early 2019 upon the

signing of a 70-megawatt Power Purchase Agreement (PPA) under which Penn State would purchase 100% of the electricity generated by the projects constructed and operated by Lightsource bp.

A brighter future for Penn State and Pennsylvanians

In total, the solar farms will produce over 100 million kilowatt-hours of electricity in year one, supplying 25% of the University's state-wide electricity needs and lowering Penn State's greenhouse gas emissions by 57,000 mtCO₂e per year, or the equivalent of removing 12,100 fuel-burning cars from the road. It will provide Penn State with estimated cost savings in year one of \$272,000 and more than \$14 million over the 25-year contract term.

"At a time when we are facing so many great challenges, the beginning of this 25-year power purchase agreement offers a bright moment and a true reflection of the University's ability and commitment to not just grow, but to succeed in a way that enhances the health and sustainability of the planet and future generations," said David Gray, senior vice president for finance and business and treasurer for Penn State.

Beyond the carbon reduction and cost-savings benefits of the solar farms, Penn State and Lightsource bp have a wider mission to maximize the sustainability impacts of solar farming in the U.S. with a comprehensive approach that bolsters resilience in rural communities, fosters biodiversity, improves soil health and pollinator habitat, and provides a long-term living laboratory for students to learn and innovate for a sustainable future.

"This project is a great example of how, with proper planning and committed partners, utility-scale solar projects can bring a large range of benefits to communities – from providing clean and cost-effective electricity to boosting biodiversity and diversifying farm income," said Kevin Smith, CEO of the Americas for Lightsource bp.

The project contributes significantly to the achievement of Penn State's goal of reducing its greenhouse gas emissions by 35% from 2005 levels by 2020, and to the realization of Pennsylvania's goal to reduce its emissions by 80% from 2005 levels by 2050.

“I challenged our team to make this solar project happen in Pennsylvania, and it’s been great to be a part of the teamwork that has transformed that vision into a reality,” said Bill Sitzabee, vice president for facilities management, Penn State. “After converting the University from coal to natural gas, the investment in solar made perfect sense as a next step as we work systemically to address both the demand side and supply side of the energy equation to thoughtfully and incrementally reduce GHGs 80% by 2050.”

Energizing student success with real-world experiences

More than 50 Penn State students with a variety of majors, including business, engineering and marketing, have experienced, and will continue to have access to a variety of learning, research and internship opportunities related to the solar project.

“From planning to implementation and beyond, our students were granted firsthand, once-in-a-lifetime access to innovative learning and research opportunities related to the expanding renewable energy industry,” said Penn State President Eric J. Barron. “These living lab experiences prepare students for new career possibilities, and a brighter future for all of us.”

One group of senior engineering students worked with Lightsource bp through the University’s Bernard J. Gordon Learning Factory to design an interactive Microsoft Excel guide for wind and solar developers learning how to navigate the grid-interconnection process and related requirements and fees on the local, state and federal level. Another class of students within Penn State’s Smeal College of Business had the opportunity to work on a semester-long, real-world project and then pitch business marketing strategies to executives at Lightsource bp as part of their class with Karen Winterich, professor and Frank and Mary Smeal Research Fellow at the college. And during Fall 2019 semester, graduate researchers from multiple disciplines across the University toured the solar site as part of the LandscapeU program which studies the food-energy-water system in the Chesapeake Bay watershed and elsewhere.

“Having Penn State students involved in the project as well as contribute to our business strategy has been an added benefit,” added Smith. “We’ve been impressed with their critical thinking and caliber of work.”

Enhancing the resilience of landowners and their communities

The three solar farms are situated on 500 acres of land leased by Lightsource bp from landowners in Franklin County. In partnership with Penn State, farmers, and ecology and grazing experts, Lightsource bp created a plan to enhance biodiversity as well as continue agricultural use through rotational sheep-grazing to maintain the land and provide a supplemental source of income to local farmers.

“From the beginning of our partnership with Penn State, the focus has been on affordability and benefits to the community and environment,” said Emilie Wangerman, vice president of business development, Lightsource bp. “Penn State’s robust request-for-proposal process could serve as a blueprint for other universities on how to maximize the positive impacts of an investment in renewable energy.”

Each of the three solar farms – called Nittany 1, 2 and 3 – were seeded with a specially formulated seed mix aptly named “Fuzz” and “Buzz.” Developed by the American Solar Grazing Association in partnership with Ernst Conservation Seeds and Pollinator Service, Fuzz and Buzz was specifically designed for solar sites to support grazing, and biodiverse enough to support a range of pollinators. In Pennsylvania as well as around the world, habitat loss, disease and environmental contaminants have caused pollinator populations to decline, which has detrimental effects on food crops that rely on pollinators.

The Nittany 1 site will be the first to support grazing activities, to begin in Spring 2021. Sheep-grazing will keep the farmland in farm production and employ Pennsylvania farmers. It can also improve soil health by increasing the cycling of nutrients, carbon and water.

“With 23 campuses and connections to so many communities across the state, Penn State is well-positioned to contribute to Pennsylvania becoming a sustainability success story over the next decade,” said Paul Shrivastava, chief sustainability officer and director of the Sustainability Institute at Penn State. “I look forward to more projects like this one where we not only achieve our goals as a university but also improve the resilience of local communities and contribute to a more equitable future for everyone.”

An invitation to attend a virtual ribbon-cutting celebration

As part of an internship with Lightsource bp, Penn State business marketing students helped create a “virtual ribbon-cutting” experience where visitors can learn more

about the solar project and take a virtual tour, view digital dashboards of the three solar arrays to see the amounts of energy they are producing and carbon they are reducing, and hear from individuals who were involved with the project. Everyone is invited to view the virtual ribbon-cutting anytime, from anywhere, via this link.



One of three solar farms that make up the 70-megawatt solar array in Franklin County that will provide Penn State with 25% of its purchased electricity, across all campuses, over 25 years. **IMAGE: MARK CHAMBERS/LIGHTSOURCE BP**

Last Updated October 22, 2020