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SRU makes progress toward carbon neutrality with WPPSEF grant



Slippery Rock University has partnered with Ever-Green Energy to reduce the University's greenhouse gas emissions and achieve carbon neutrality by 2037, as part of a program supported by a grant from the West Penn Power Sustainable Energy Fund.

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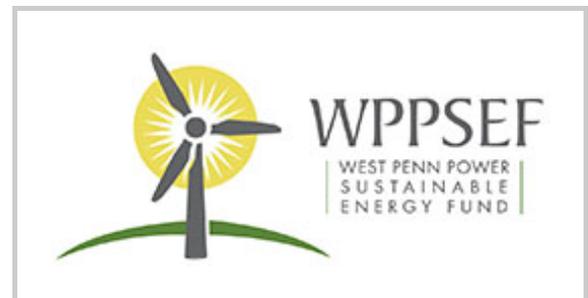
SLIPPERY ROCK, Pa. — Slippery Rock University has made significant progress on a master energy infrastructure feasibility study and other components of its "Roadmap to Carbon Neutrality" program in partnership with Ever-Green Energy. The program to reduce SRU's greenhouse gas emissions and achieve carbon neutrality by 2037 is being supported by a grant from the West Penn Power Sustainable Energy Fund.

In October 2020, SRU was one of two institutions selected to **receive free energy planning services from Ever-Green**, a district energy operator and sustainable energy adviser headquartered in St. Paul, Minnesota. As SRU completes certain benchmarks of the program, the University receives increments of a grant totaling \$25,000 from the WPPSEF, a nonprofit organization that invests in the deployment of sustainable energy technologies that benefit West Penn Power ratepayers in Pennsylvania.

"This program is focused on helping SRU eliminate its fossil fuel emissions from both our central heating plant and from using conventional electricity that is produced from polluting sources," said Paul Scanlon, SRU's director of sustainability. "Making changes to the central heating plant and underground steam system will be a long-term project, so it is crucial that we plan now for the next 10 years and beyond. This program and grant are helping us make progress and save money, and we're grateful for the financial support and the work of our interns who are also benefitting by gaining valuable experience."

Part of the WPPSEF grant goes toward paying three SRU student interns to complete tasks that will inform and support the work of pro bono consultants from Ever-Green. The three interns, who have been working remotely approximately eight hours per week since March 2021, are Jessica Crandell, a junior geology major from Boyce, Virginia; Alex Diven, a junior civil engineering major from Pittsburgh; and Elizabeth Mendez, a junior environmental geoscience major from Linden.

The interns are compiling data to facilitate engineering and economic evaluations of various ways that SRU can eliminate fossil fuel use in the University's central heating plant. This includes information about campus buildings, such as operating hours, heating and cooling sources, square footage and other details related to functionality and energy use. Additionally, the students are developing an ArcGIS map, which is created from multiple computer software systems and helps illustrate the more than six miles of underground distribution lines and areas on campus available for drilling vertical geothermal wells.



"This internship has been a great experience to gain hands-on experience that has helped my understanding of what I'm learning in my classes," said Crandell, who took an Advanced GIS course in the spring. "But career-wise, it has also been beneficial to work with the consultants and other experts in the engineering field to get their perspectives. Having that experience of working with other people, making changes and preparing information so other people can see it more clearly, are skills that I will use in my career."

The interns are also using AutoCAD, a computer-aided design software used by engineers and architects, and existing drawings to integrate with the ArcGIS maps and to estimate costs of underground piping. Later this year, Ever-Green engineers will use the information to complete engineering load calculations, annual energy use estimates, pipe sizes required for various thermal distribution options and cost estimates for various central plant and distribution system options.

"Ever-Green believes that our Roadmap to Carbon Neutrality program can help higher education partners like SRU continue their work to address climate change," said Ken Smith, president and CEO of Ever-Green Energy. "This program recognizes the continued urgency of decarbonizing campuses and creating targeted and tangible plans to advance energy infrastructure."

The SRU students will complete their internships later this summer. Options the Ever-Green program will provide SRU can include keeping the existing boiler plant, which has been distributing uninterrupted steam to the entire campus since 1951, and replacing coal or natural gas with hydrogen, or investing in a geothermal heat pump system.

"Ever-Green will provide the University with options to eliminate carbon emissions and provide more economical operations over the long term," Scanlon said. "Our current boiler plant and underground steam distribution system is quite old and the maintenance and repair costs will continue to escalate at an increasing rate, making it unsustainable going forward. There are many options to replacing the existing system, including a variety of all-electric geothermal systems, but it's important to make decisions soon in order to phase construction of such a large-scale project that could take 10 to 15 years to complete."

Scanlon added that if the preferred solution involves an all-electric system, SRU could begin purchasing renewable electricity through a power purchase agreement to also dramatically reduce the University's emissions currently caused by purchasing electricity from polluting sources, known as "brown" power. Brown energy currently accounts for 44% of SRU's greenhouse gas emissions and burning fossil fuels in the heating plant accounts for 34% of its emissions.

More information about sustainability at SRU is **available on the University website**. For more information about the WPPSEF, visit www.wppsef.org.

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