STUDENT SUSTAINABILITY COMMITTEE

Funding Application – Step I

Funding Criteria

A. General Rules

1. Students, faculty, and staff are encouraged to submit requests for funding. Student-led projects require a faculty or staff sponsor in order to have funds awarded.
2. Funding can only go to university-affiliated projects from students, faculty, staff, and departments.
3. All SSC projects must make a substantial impact on students. All SSC funding is 100% from student green fees, so the projects funded by the students must benefit them.

B. Things SSC Can Fund, On A Case-By-Case Basis

1. SSC can fund feasibility studies and design work; however, it must work toward ultimately addressing a sustainability need on campus.
2. SSC can fund staff positions that are related to improving campus sustainability. Strong preference will be given to proposals receiving matching funding from departments and/or plans for maintaining continuity of the position after the end of the initial grant.
3. SSC can fund outreach events with a central theme of sustainability, provided their primary audience is the general campus community.
4. SSC discourages requests for food and prizes but will consider proposals on a case by case basis.
5. SSC can fund repairs and improvements to existing building systems as long as it works toward the goal of improving campus sustainability.
6. SSC can provide departments with loans for projects with a distinct payback. Loans will require a separate memorandum of understanding between SSC and departmental leadership pledging to repay the award in full and detailing the payback plan.

C. Things SSC Will Not Fund:

1. SSC will not fund projects with a primary end goal of generating revenue for non-University entities.
2. SSC will not fund personal lodging, food, beverage, and other travel expenses.
3. SSC will not fund any travel expenses.
4. SSC will not fund tuition or other forms of personal financial assistance.

Instructions

Submit this completed application and one map, graphic, or picture to Sustainability-Committee@Illinois.edu. Please adhere to the session word counts. The committee holds the right to decline applications over the designated word counts. If you have any questions about the application process, please contact the Student Sustainability Committee Coordinator at sustainability-committee@illinois.edu.

Project Name: Demonstration of Enerdrape Thermal Energy Exchange System in Steam Tunnel
Total Amount Requested from SSC: $50,000
Primary Project Leader Name & Email: Aman Mehta; amanm2@illinois.edu

Project Abstract: In less than 100 words, briefly describe your project.

The UIUC campus would be a demonstration site for a new geothermal energy technology that taps waste heat from underground infrastructure to heat adjacent buildings. This modular, scalable and easy-to-install geothermal heat exchange panel technology developed by Enerdrape (https://enerdrape.com) would be evaluated to capture and reuse waste heat from a steam tunnel that would be an additional source of thermal energy.

	Education	Energy	Food & Waste	Land & Water	Transportation
Project Category		X			

Project Team Member List (student projects must include their faculty/staff advisor's information)

Name	RSO/Department	Email Address
Aman Mehta	Dept. of Mechanical Engineering; Co-chair Energy Team	amanm2@illinois.edu
Second student		
Blake Johnson	Dept. of Mechanical Engineering	bejohnso@illinois.edu
Mike Larson	Director of Utilities Production, F&S	mjlarso1@illinois.edu
Andrew Stumpf	Prairie Research Institute	astumpf@illinois.edu

Questions	Yes	No
Is this a student-led project?	X	
If applicable, have you received approval from Facilities & Services and/or site manager?	X	
Do you have a plan for ongoing funding beyond SSC? (SSC cannot guarantee ongoing financial support)		X
Beyond SSC, do you have sources contributing funding or support (ex. staff time, external grants, etc.) to this project?		X
Have you applied for SSC funding previously?		X

Project Timeline

SSC funding agreements remain active for two years. Please list your project's timeline and/or milestones.

Install geothermal exchange panels in steam tunnel adjacent to Abbott Power Plant in the summer of 2023; operate and monitor the system for 1 year; write report summarizing demonstration results; work done by students may be part of ME470 course.

Project Description

In 250 words or less, describe your project. What does your project hope to accomplish? What are your project's deliverables? Bullet points welcome.

- Project objective: to determine the feasibility of capturing waste heat from a steam tunnel adjacent to Abbott Power Plant using a new geothermal technology consisting of heat exchanger panels.
- If the project is successful, more panels could potentially be installed in other parts of campus where waste heat could be harvested.
- Deliverables include semester and final reports on the project results and their analysis in the context of possible strategic initiatives for the university related to the tested technology.
- The developed reports will include an assessment of the performance of the tested technology and its promise for upscaling.
- The developed reports will also include a cost-benefit analysis which can later be presented to the university of to discuss future installations.
- The developed report will further include the quantification of the energy yield that could be achieved by deploying Enerdrape in relevant environments across the university.
- Reports will be generated that are required for the Senior Design project (ME470).
- An article may be written and published in the iSEE's Q Magazine regarding this project to disseminate information and awareness of this innovativegeothermal technology.

Environmental Impact

In 200 words or less, how does your project increase environmental stewardship at UIUC? If applicable, what is the carbon, water, waste, and/or energy savings? Does your project relate to the iCAP? Bullet points welcome.

- Relates to most iCAP energy goals since this panel technology will:
  - Increase energy efficiency (2.2)
  - Improve space utilization (2.21)
  - Reduce building-level energy (2.2.2) by harvesting its own waste energy which will reduce its dependence on the grid
  - Contribute to a clean energy source (2.3 and 2.3.1)
  - Be a source of clean thermal energy (2.3.2)

Student Impact

In 200 words or less, how will this project benefit students? How will students be involved with this project? What educational components are in your project? Bullet points welcome.

- Two students will work on the project, possibly as part of ME470 course
- Through iCAP Energy Team and RSOs, the benefits of using waste heat on campus will be promoted to Facilities & Services, students, and the university community at large.
- Data retrieved from the project could also be published on the iCAP portal
- Students will be co-advised by a researcher at Northwestern University (Dr. Alessandro Rotta Loria) who has existing collaborations with the project team and is the co-founder of the startup company, Enerdrape, which developed the technology.
- Students will expand their knowledge of geothermal energy technologies through real-world experiences and the training of professionals in the field.
- Students will have the opportunity to make presentations about the technology and publish representative yet non-confidential results about its features and performance.