



STUDENT SUSTAINABILITY COMMITTEE

Funding Application – Step 1

Please submit this completed application and any relevant supporting documentation by the deadline listed on the SSC website to Sustainability-Committee@Illinois.edu. The Working Group Chairs will be in contact with you regarding any questions about the application. If you have any questions about the application process, please contact the SSC at Sustainability-Committee@Illinois.edu.

General Information

Project Name: Pavegen Piezoelectric Tiles and LED System

Total Amount Requested from SSC: \$35,000-\$200,000

Project Topic Area(s): * Energy Education Food & Waste
 Land Water Transportation

Contact Information

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Project Team

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Name	Department/Organization	Email Address
Name	Department/Organization	Email Address

Project Information

Please provide a brief background of the project, the goals, and the desired outcomes:

Please address all of the above items including concrete examples of the desired outcomes

This project incorporates current technological advances made in the field of piezoelectrics. This type of technology converts mechanical stresses into usable electrical energy. Currently, a variety of companies claim to have optimized piezoelectrics into tiles that can be used as walkways or pavements. One particular company named Pavegen has risen to the forefront of this technology, having already implemented the tiles in a number of cities around the globe. The closest to the Champaign area includes the project implemented in Washington DC. This \$200,000 investment created a walkway in a very busy area of the city that is able to power LED lighting by harnessing the energy of commuters. It is already known that LEDs are able to last for a much longer duration than other types of lighting, so overall, the electricity generated and lighting fixtures will be an investment that continues to give back. While this price may seem steep, this is the price of older generations of the tiles, Pavegen claims that the newest tiles actually cost significantly less than prior generations. While the cost may still seem very high, this installation is a permanent installation. Pavegen also offers temporary installations which in this case may be a better option in order to show students of the University of Illinois all that renewable energies have to offer.

The goal of using this technology is to harness carbon-free energy sources, and to educate students on the available technologies that make up renewables. Students that are able to physically walk on the tiles and visually see the results can truly understand that alternative energy sources are available. Included in the installation will be a poster or picture-framed mural showing some of the science behind the piezoelectric energy, as well as the parallels to solar and wind energy. Student outreach is extremely important to us in the case of this project. When viewing the installations in D.C. and other countries around the globe, the LED light arrays shown were artistic in nature. People flock towards the technology with eagerness and curiosity to generate more energy. To us, we envision the project becoming a social media hub. Virality is the most important concept of the latest generation, and can be a vital tool in spreading the capabilities of alternative energy.

The eventual outcome of the project is for the students of the university to get more interested in renewable energy. Students that are not part of the typical STEM majors may not be all that aware of the capabilities will now see the possibilities. It is extremely important for all students no matter the career to be aware, because ultimately we all have a say in how to mitigate global climate change. Another possible outcome is that if a temporary installment of the tiles is integrated, the successes may lead to different funding agencies including SSC to invest more capital to have a permanent installation. This would mean that the lighting generated by the piezoelectric tiles will never need to be replaced. This part of the campus will forever be powered as long as students continue to occupy the university.

Please provide a brief summary of how students will be involved in the project:

Any relevant opportunities for student involvement in your project

Student involvement is the utmost important part of this project. We aspire to have students walking on the tiles each and everyday, at all hours of the day. Due to the inherent artistic nature of the LED lights (depending on the eventual type chosen, and colors) students will be able to spread the beauty and technological feat through all social media platforms. The technology will be a hub to attract prospective students as well. Currently, when visiting the university, the first few university monuments that students become accustomed to are the Alma Mater, the Quad, and the various athletic facilities. There is no reason why this technology will not be of the same caliber.

While merely viewing the lights and sharing the artistry is a great way to spread the physical nature of the lights, it is the science and ideas behind it that we hope stick with students. That is why we also will include a description of the technology with the lights. Just as a patron of a museum can view the history of their favorite painting, we will give students the knowledge needed to explain to their peers how and why light is created.

Please provide a brief summary of the project timeline:

A brief summary of total project timeline and key milestones

1. The first objective is to get quoted on both the temporary and permanent installation costs.
2. The second concern is planning to install the tiles during the Summer so that any disruptions in commutes to classes are minimized.
3. The day installation is completed, a ceremony is to be held where the SSC will be able to speak to students about the significance of the project. An important member of the faculty or alumni network can be invited to take the first steps on the tiles.

Additional comments

Any additional comments/relevant information for the project proposal

For the project we chose Pavegen as the company that would install the tiles due to having the most available information. Since this technology was discovered a few years ago, there also exists other companies claiming to develop similar tiles and lighting systems. Due to this, other companies (domestic) would naturally be more inexpensive because shipping costs would be significantly less. However, due to Pavegen being the foremost company, and having seen some of the evidence of their successful installations, it was safer to choose them. I have filled out a form on their website in order to receive a quote; the total amount requested from the SSC is highly contingent on receiving a quote from Pavegen.