

View results

Respondent

19

Peter Giannetos

07:11

Time to complete

Instructions:

Please adhere to the session word counts. Project leads must attend one SSC working group meeting post step 1 application submission. If you have any questions about the application process, please contact the SSC at Sustainability-Committee@illinois.edu.

1. Have you attended an SSC working group meeting? If not, please attend an SSC Working Group and present your project. Once working group attendance is complete, please return to complete your application.

<https://studentengagement.illinois.edu/student-sustainability/ssc/calendar/>

*

☒ Yes☐ No

2. Please enter the date of the working group meeting you attended. As a reminder, the working group meetings are structured as follows

- Energy + Transportation and Infrastructure working group.
- Food & Waste + Land, Air, and Water working group.
- Education and Justice working group.

*

3. Date of Application *

4. Project Name: *

5. Total Funding Requested From the SSC. *

Please enter a number less than or equal to 10000

6. Project Lead Full Name: *

7. Project Lead University Email Address *

8. Project Abstract: (In less than 100 words, briefly describe the project.) *

This project aims to research and demonstrate the feasibility of making an open source right to repair friendly EcoFlow or Jackery style solar powered battery stations for a fraction of the price. Additionally, we plan to use this system in the field during rocketry launches to support our team of 50 students rather than use a combustion generator, and to teach students about off-grid electrical systems. Furthermore we plan to reuse reclaimed 18650 batteries for our avionics systems rather than buying new 18650's for a 1/5 of the cost, but they need to be slightly restored.

9. Project Category *

- ☐ Education & Justice
- ☒ Energy
- ☐ Food & Waste
- ☐ Land, Air & Water
- ☐ Transportation & Infrastructure

All rolling application require a faculty/staff advisor.

Faculty and Staff Advisor

10. Full Name: *

11. RSO/Department *

12. University Email Address: *

13. Do you have additional members? *

☒ Yes

☐ No

Project Team Member

Additional Member

14. Full Name: *

Navya Meka

15. RSO/Department *

Illinois Space Society

16. University Email Address: *

navyasm2@illinois.edu

17. Do you have additional members? *

☒ Yes

☐ No

Project Team Member

Additional Member

18. Full Name: *

Freya Bansal

19. RSO/Department *

Illinois Space Society

20. University Email Address: *

fbansal2@illinois.edu

UIUC Financial Contact

Financial Contact (Must be full-time UIUC employee)

21. Full Name: *

Laura Gerhold

22. RSO/Department *

Aerospace Engineering Department

23. University Email Address: *

gerhold@illinois.edu

Project Questionnaire:

24. Is this project student led? *

☒ Yes☐ No

25. If applicable, have you received approval from Facilities & Services and/or site manager? *

☐ Yes☐ No☒ N/A

26. If additional funding is required, do you have a plan for ongoing funding beyond SSC? (SSC cannot guarantee ongoing financial support) *

☒ Yes☐ No

27. Beyond SSC, do you have sources contributing funding or support (ex. staff time, external grants, etc.) to this project? *

☐ Yes

☒ No

28. Have you applied for SSC funding previously? *

☐ Yes

☒ No

29. Project Timeline:

(SSC funding agreements remain active for two years. List your project's timeline and major milestones.) *

- Initial prototype started by end of Fall 2023 semester
- Initial prototype finished middle of Spring 2024 semester
- Final prototype done by end of Spring 2024 semester
- Field testing in March at our launch in Kansas
- Field testing in June at our launch in California
- A more detailed timeline can be found in our budget outline.

30. Project Description:

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

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This project aims to create a more cost effective solar powered battery power station comparable to a Jackery or EcoFlow system that can cost around \$4,000. Additionally we plan to refurbish about 200 reclaimed 18650 batteries that are currently in our possession for use in all of our future avionics systems rather than buying new 18650s. This power station will be primarily used to power our field equipment during launches. During downtime it may be used as a solar powered battery backup for our server and potentially other lab equipment. We plan to make our design open source with ample documentation to encourage the DIY community to copy our design and accelerate the adoption of off grid electrical systems.

31. 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?) *

This project will allow our team to pursue renewable solar energy generation for use on campus and when traveling to remote locations. By having this system we will not have to depend on a gas generator to power our field equipment. Additionally since this design will be open source and right to repair friendly it encourages upcycling components and repairing devices rather than replacing them which helps eliminate e-waste commonly found in our consumer centric society.

32. iCAP Objective Correspondence:

(In 200 words or less, does your project aim to advance one or more of the Illinois Climate Action Plan's (iCAP) objectives? If so, how?)

A full list can be found here: <https://icap.sustainability.illinois.edu/objectives>

- Key Objective: 2.3 Clean Energy Sources: Using solar panels for energy generation.
- Key Objective: 9.1 Divest from Fossil Fuels: Our team will no longer need to rely on gas generators for power generation in the field
- Key Objective: 5.2 Reduce Landfill Waste: By refurbishing reclaimed 18650s we can prevent them from becoming e-waste.
- Key Objective: 5.3 Establish a Culture of Reuse: By creating an open source right to repair friendly design we are encouraging users to repair or modify their equipment rather than outright replace it.
- Key Objective: 6.1 Broaden Sustainability Education: This project provides students with the opportunity to learn about off grid living by designing off grid systems.

33. 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?)

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Spaceshot, a technical project within the Illinois Space Society, is a team of about 100 students racing to be the first student collegiate team to build and launch a two-stage rocket to the edge of space. Our Spaceshot Avionics team of roughly 60 students will have the opportunity to receive hands-on learning about making off grid systems by partaking in the system planning, electrical design, manufacturing, software development, and testing of this project. Indirectly, many more students on our team will work with the tools and equipment powered by this project in the field.

34. Please see attached file, please be very descriptive and fill out the budget and timeline Excel sheet, and submit it below.

<https://studentengagement.illinois.edu/student-sustainability/ssc/docs/SSC-Supplemental-Budget-Timeline.xlsx>

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[Power Station-Budget_Peter Giannetos.xlsx](#)