



Tufts University GREEN FUND

Tufts University Green Fund Initial Idea Submission

Applicant Information:

Name:

Abdulrahman Ahmed Labib Afia

Role at Tufts (e.g. Undergraduate Student, Graduate Student, Faculty, Staff):

Undergraduate Student

Email and Phone # of Lead Submitter:

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Campus:

Medford

Project Title:

The Electric Bump

One Sentence Description (*This is how your project will be described on the Green Fund website*):

Speed breakers to produce green electricity as cars move across

General Application Questions:

1. What project would you like to fund with a grant from the Green Fund?

The electric bump is a project proposal I first started working on back in Egypt: <https://www.docdroid.net/rObsWNI/the-electric-bump-pdf> . It was made by my team and I as some sort of a national solution to the very low grid percentage of green energy. The idea is to translate translational energy from the speed breaker movement into mechanical rotation which is then used by a dynamo in a gear system to produce clean electricity. Full science analysis and project poster can be found here for Mech E department check: <https://docdro.id/xtw6t2F>

- 2. Who would you work with on this project? Who would need to be involved? (For example: are there departments you would need to reach out to for help implementing or facilitating your project? If you are hosting an event, you might need someone to help you set up and help clean up afterwards. Do you need permission from anyone to complete your project? **Include their role (collaborator, advisor, vendor, resource) and whether they have been confirmed their involvement in the specified role. Undergraduate students must have a faculty/staff advisor submit a letter of support for their project which indicates their willingness to mentor the proposed project.****

Name and Title	Role	Status
Mechanical Engineering department		

- 3. What costs would be involved in your proposal? Please provide a rough budget.**

It totally depends on how huge this project is going to be and on how ok Tufts will be to have those (traffic) speed breakers. The fancier and bigger scale we go, the more the money we spend. Workers on this project can be fully students supervised by staff members from the Mech E department. This will potentially decrease costs as we will make it ourselves from scratch. Only outsider intervention will be needed to install the bump eventually.

4. What steps would you take to accomplish this project?

We will need bunch of dynamos (rough prices and brand names I remember are in the pdf in (1)). Steel material base to make the racks in our Mech E labs here in Medford campus. Gears (prices tbd). Installation money for the external service provider is another number to consider too. The speedbreaker itself. So, money range is pretty much open and iterable. (I assume these materials might all come down to a starting 2000, increasable as the project size gets bigger)

5. How would your project help or benefit the Tufts community?

Tufts community will be much better off towards green energy. This project will be like Tufts is literally using everything on campus to go fully clean. It can be used as a branding factor later on in the admission game for kids applying. It will be a source of pride. Made by the hands of our students and tufts labs, for our community. Notice also the normal positive effect of speed breakers of decreasing crash risk, etc.

What can I expect next?

The Green Fund committee will meet in early October and decide which projects will advance to the next round. These projects will be asked clarifying questions about details specified in this application. The committee will meet again and review the responses to its questions and vote to advance proposals based on those answers. Projects that advance past the clarifying questions stage will then be asked to fill out a more complete application (which can be found at go.tufts.edu/GreenFund) including a budget and a Gantt chart with accompanying letters of support from necessary collaborating entities at Tufts.

When finished with this initial idea submission, please save as a PDF and email to GreenFund@tufts.edu. Thank you!