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2/17/15



MTSU Clean Energy Initiative Project Funding Request

There are five (5) sections of the request to complete before submitting. See <http://www.mtsu.edu/sga/cleanenergy.shtml> for funding guidelines. Save completed form and email to cee@mtsu.edu or mail to MTSU Box 57.

1. General Information	
Name of Person Submitting Request Dr. Saeed Foroudastan	
Department/Office CBAS	Phone # (Office) 615-494-8786
MTSU Box # 83	Phone # (Cell) 615-417-2761
E-mail saeed.foroudastan@mtsu.edu	Submittal Date

2. Project Categories (Select One)	
Select the category that best describes the project.	
<input type="checkbox"/>	Energy Conservation/Efficiency
<input type="checkbox"/>	Sustainable Design
<input type="checkbox"/>	Alternative Fuels
<input type="checkbox"/>	Other
<input checked="" type="checkbox"/>	Renewable Energy

3. Project Information
<ul style="list-style-type: none"> a. Please provide a brief descriptive title for the project. b. The project cost estimate is the expected cost of the project to be considered by the committee for approval, which may differ from the total project cost in the case of matching funding opportunities. Any funding request is a 'not-to-exceed' amount. Any proposed expenditure above the requested amount will require a resubmission. c. List the source of project cost estimates. d. Provide a brief explanation in response to question regarding previous funding.
<u>3a. Project Title</u> Solar Golf Cart Project
<u>3b. Project Cost Estimate</u> \$6,680.00
<u>3c. Source of Estimate</u> Cost of 48V Electric Cart, bolt-on 215W Solar Panel, and Supplies.
<u>3d. If previous funding from this source was awarded, explain how this request differs?</u> This is a separate cart being replaced. We phase out one cart at a time.

4. Project Description

(Completed in as much detail as possible.)

- a. The scope of the work to be accomplished is a detailed description of project activities.
- b. The benefit statement describes the advantages of the project as relates to the selected project category.
- c. The location of the project includes the name of the building, department, and/or specific location of where the project will be conducted on campus.
- d. List any departments you anticipate to be involved. Were any departments consulted in preparation of this request? Who? A listing may be attached to this form when submitted.
- e. Provide specific information on anticipated student involvement or benefit.
- f. Provide information for anticipated future operating and/or maintenance requirements occurring as a result of the proposed project.
- g. Provide any additional comments or information that may be pertinent to approval of the project funding request.

4a. Scope: Work to be accomplished

This project aims to replace all gas powered carts with solar-recharging electric carts. All work will be done by the students in the Engineering Technology Department. An electric cart will be purchased, and rather than charge from the grid, it will recharge SOLELY from solar energy.

4b. Scope: Benefit Statement

This project works to conserve energy by converting to a renewable energy – solar - by completely eliminating the use of fossil fuels in the carts used by the various colleges in the CBAS.

4. Project Description (continued)

4c. Location of Project (Building, etc.)

Voohries Engineering Technology Building – room 108

4d. Participants and Roles

Dr. Saeed Foroudastan will act as faculty supervisor for this project, with Jeremy Posey, graduate assistant, acting as project manager and overseeing the mechanical and electrical work done by the ET students.

4e. Student participation and/or student benefit

Students in the department will be doing all of the work on this project. The design and implementation of the solar array and charging circuits will be carried out by undergraduates in the ET department. The students will use their ingenuity and creativity to solve the complex problems associated with completely removing the cart from the grid. During the process of solving these problems the students will gain invaluable experience, and learn critical skills such as teamwork, leadership, and effective team communication.

4f. Future Operating and/or Maintenance Requirements

None – upon completion the carts will require next to no additional maintenance for the entirety of their usable life.

4g. Additional Comments or Information Pertinent to the Proposed Project

5. Project Performance Information

Provide information if applicable.

- a. Provide information on estimated annual energy savings stated in units such as kW, kWh, Btu, gallons, etc.
- b. Provide information on estimated annual energy cost savings in monetary terms.
- c. Provide information on any annual operating or other cost savings in monetary terms. Be specific.
- d. Provide information about any matching or supplementary funding opportunities that are available. Identify all sources and explain.

5a. Estimated Annual Energy Savings (Estimated in kW, kWh, Btu, etc.)

As the cart will never require fuel, the savings over gas carts will be upwards of 200 gallons of fuel per year.

5b. Annual Energy COST Savings (\$)

Direct fuel savings will be approximately \$700

5c. Annual Operating or Other Cost Savings. Specify. (\$)

The largest cost savings outside of the obvious fuel cost as opposed to a gas cart, and the additional saving from using solar energy as a charging source, is the complete lack of maintenance associated with solar carts. There are no oil changes, no tune-ups, and no cords!

5d. Matching or Supplementary Funding (Identify and Explain)

No additional funding sources.