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9/26/19

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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 John Rozell	
Department/Office VET 120 Lab	Phone # (Office) 615-904-8568
MTSU Box # 19	Phone # (Cell) 615-476-3935
E-mail john.rozell@mtsu.edu	Submittal Date 9/26/2019

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

3. Project Information
<p>a. Please provide a brief descriptive title for the project.</p> <p>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.</p> <p>c. List the source of project cost estimates.</p> <p>d. Provide a brief explanation in response to question regarding previous funding.</p>
3a. Project Title LED Lighting Retrofit for VET Lab 120
3b. Project Cost Estimate \$1500
3c. Source of Estimate Previous comparable LED retrofit of lab in DSB
3d. If previous funding from this source was awarded, explain how this request differs? NA

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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

Retrofit of 12 existing fluorescent lighting fixtures in the VET 120 lab area with Phillips LED Evokit fixtures.

4b. Scope: Benefit Statement

LED Fixtures will offer reduced energy consumption, longer operational life reducing maintenance costs: T-8 fluorescent lamp life span is on average 12000 hours/2 years while the Evokit retrofit fixtures are rated for 70000 hours. In addition, this lab contains tools such as a chop saw, table saw, drill press and other fabrication tools. LED fixtures will prove brighter lighting which will improve safety for the students when using these tools.

4. Project Description (continued)
<p>4c. Location of Project (Building, etc.)</p> <p>Room 120, Voorhies Engineering Technology building.</p>
<p>4d. Participants and Roles</p> <p>John Rozell, R&D Lab director, Engineering Technology: Create and submit SP-1 form for retrofit, coordinate with facilities and contractor on scheduling and installation.</p> <p>MTSU Facilities Management: Purchase fixtures and coordinate with contractor on installation.</p>
<p>4e. Student participation and/or student benefit</p> <p>Improved lighting levels in the 120 lab which improves the safety for students using powered tools in this area.</p>
<p>4f. Future Operating and/or Maintenance Requirements</p> <p>Reduced maintenance costs as compared with existing T-8 fixtures. Typical lifespan for EvoKit LED fixtures is 6 years.</p>
<p>4g. Additional Comments or Information Pertinent to the Proposed Project</p> <p>A recent retrofit of the Mechatronics Lab 128 in DSB has resulted in a much brighter look for the lab and greatly improved the work environment for the students.</p>

5. Project Performance Information

Provide information if applicable.

- Provide information on estimated annual energy savings stated in units such as kW, kWh, Btu, gallons, etc.
- Provide information on estimated annual energy cost savings in monetary terms.
- Provide information on any annual operating or other cost savings in monetary terms. Be specific.
- 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.) Present Wattage $122 * 2000$ operating hours = 244,000 watt hours = 244 kWh/year. Retrofit wattage $32 * 2000$ operating hours = 64000 watt hours = 64kWh/year. **Energy savings of 180 kWh/year.**

5b. Annual Energy COST Savings (\$)

For lab area (12 fixtures): Existing annual cost of \$273.29 – LED energy cost of \$71.88 = **annual savings of \$201.41***

Current TVA rate of \$.09/kWh

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

Difficult to accurately estimate maintenance costs but the expected life of 12000 hrs. for T-8 lamps compared with 70,000 hrs. for LED show a significant improvement in bulb life, reducing replacement costs.

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

NA