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9/19/17

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-MTSU Clean Energy Initiative Project Funding Request

1. General Information	
Name of Person Submitting Request Ray Wiley	
Department/Office Campus Recreation	Phone # (Office) 615-898-5701
-MTSU Box # 556	Phone # (Cell) 615-785-7805
- E-mail ray.wiley@mtsu.edu	Submittal Date Effective 9.12.17

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

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 Light Replacement Project For Indoor Arena
3b. Project Cost Estimate \$13,959.08
3c. Source of Estimate Energy Management Solutions
3d. If previous funding from this source was awarded, explain how this request differs? N/A

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

I propose to replace all (28) of the 400w MH lights in the soccer arena at Campus recreation with Cree 24,000 lumen LED 5000k (10-year warranty item). The project will include motion detection lighting, as well as, daytime harvesting capabilities.

4b. Scope: Benefit Statement

The main benefit to replace these dated lights with the new, more energy efficient LED technology lighting is two-fold. First, based on our current lighting consumption, our average monthly savings will be \$619.85. This will result in an annual savings of \$7,438.25 and a ten year savings estimate of \$91,402.82. Additionally this new technology will reduce the need for maintenance work orders that would require frequent bulb replacement. This product comes with a ten-year bulb replacement warranty.

4. Project Description (continued)
4c. Location of Project (Building, etc.) MTSU Campus Recreation Indoor Arena
4d. Participants and Roles MTSU Campus Recreation project manager, Ray Wiley. MTSU Facility services consultant, Gerald Grimes. Energy Management Solutions consultant, Barry McMahan. Energy Management Solutions sales consultants, Troy Pippin.
4e. Student participation and/or student benefit This new lighting project will be a significant upgrade to our existing lighting system. If adopted, this project will allow us to save a significant amount of money annually, and the new LED lights will allow us to keep our 20-year-old facility more modern. We believe this will be a significant improvement by allowing us to have a lighting system that will turn on instantly instead of taking several minutes to warm up. Additionally, it will prevent us from disruptions in student programming due to waiting for the lights to come on.
4f. Future Operating and/or Maintenance Requirements Fortunately, the LED lights are covered under a 10-year warranty umbrella. This will save us additional money with reducing the labor hours charged to our department for ordering and installing new bulbs. Currently, we are replacing approximately 12 bulbs per year in our arena.
4g. Additional Comments or Information Pertinent to the Proposed Project Campus Recreation is committed to providing the best possible environment for our students and patrons. We believe this investment will be significantly valuable as we continue to modernize our facility for the current and future generations of college students and the University community as a whole.

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.)

3,671kwh per month X 12 = 44,052 kwh saved annually.

Plus, with motion detectors (if the lights are off 45% of time) there will be another 1,651.68kwh per month X 12 = another 19,820.16 kwh annually.

(43,667kwh + 19,820.16 = **63,487.16kwh** total with motion annually.)

5b. Annual Energy COST Savings (\$)

\$305.67 per month = motion savings of \$138.76 per month for a total of \$444.42 per month X 12 = \$5,333.07 annually. At a 4.5% annual inflation rate savings = \$65,533.83 over 10 years.

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

On average, we replace 1 bulb per month for a total of 12 per year. Costs to our department are \$13.88 in materials and \$31.31 for labor per bulb. For a total of \$45.19 x 12 bulbs = \$542.28 spent annually. With the new lighting system, we will have 10-year warranty item in place which will reduce our cost significantly and reduce the potential for interruptions in programming due to bulb replacement.

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

N/A