

9/27/19

25

### MTSU Clean Energy Initiative Project Funding Request

There are five (5) sections of the request to complete before submitting.

<b>1. General Information</b>	
Name of Person Submitting Request Jeff McConnell	
Department/Office Facilities Services	Phone # (Office)898.5883
MTSU Box # 0032	Phone # (Cell)
E-mail	Submittal Date 09/27/2019

<b>2. Project Categories (Select One)</b>	
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

<b>3. Project Information</b>	
<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>	
3a. Project Title: Flowmeter BTUmeter for Rutledge	
3b. Project Cost Estimate \$9000	
3c. Source of Estimate	
Quote from Supplier, In house labor estimate	

#### 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 information for anticipated future operating and/or maintenance requirements occurring as a result of the proposed project.
- f. Provide any additional comments or information that may be pertinent to approval of the project funding request.

#### 4a. Scope: Work to be accomplished

##### **Flowmeter and BTU meter for Rutledge**

Installation of a Flowmeter and BTU meter in chilled water line for Rutledge.

#### 4b. Scope: Benefit Statement

Rutledge is the fourth node in the "E" Loop of the campus chilled water system. Addition of this meter will allow facilities to optimize the performance of the plant and control each Chiller for better efficiency.

Benefits of Flow and Energy Metering in CHW Systems:

- Measures building HVAC system performance
  - o Compare performance to design
  - o Find issues before they turn in to problems
  - o Much more useful information than just delta-P or flow
- Provides information valuable in troubleshooting and optimizing CHW system performance via BACnet MS/TP
  - o CHW Energy Rate and Total
  - o CHW Flow Rate and Total
  - o Supply and Return Temperatures
- Identify energy savings opportunities
- Provide baseline energy usage data to justify or evaluate energy savings projects
- Tenant/Department Billing based on Actual Energy Usage

Valuable Information for Energy Dashboards

<b>4. Project Description (continued)</b>
<b>4c. Location of Project (Building, etc.)</b>  Rutledge
<b>4d. Participants and Roles</b>  Facilities Engineer:  Facilities Technician: Labor to install instrument  Outside Plumbing contractor  Supplier: Purchase flowmeter and BTU meter for installation
<b>4e. Future Operating and/or Maintenance Requirements</b>  Facilities Technician: Mechanical adjustments to systems to optimize performance.
<b>4f. Additional Comments or Information Pertinent to the Proposed Project</b>  n/a

<b>5. Project Performance Information</b>
<p>Provide information if applicable.</p> <ol style="list-style-type: none"> <li>Provide information on estimated annual energy savings stated in units such as kW, kWh, Btu, gallons, etc.</li> <li>Provide information on estimated annual energy cost savings in monetary terms.</li> <li>Provide information on any annual operating or other cost savings in monetary terms. Be specific.</li> <li>Provide information about any matching or supplementary funding opportunities that are available. Identify all sources and explain.</li> </ol>
<p>5a. Estimated Annual Energy Savings (Estimated in kW, kWh, Btu, etc.)</p> <p>TBD</p>
<p>5b. Annual Energy COST Savings (\$)</p> <p>TBD</p>
<p>5c. Annual Operating or Other Cost Savings. Specify. (\$)</p> <p>TBD</p>
<p>5d. Matching or Supplementary Funding (Identify and Explain)</p> <p>n/a</p>