

Rec'd 9/4/15

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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 Brian Holley	
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MTSU Box # CAB 217	Phone # (Cell)
E-mail brian.holley@mtsu.edu	Submittal Date 09/04/2015

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
<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.
3a. Project Title File Server Storage Consolidation/Virtualization
3b. Project Cost Estimate \$25,000
3c. Source of Estimate Quote from Dell, Inc.
3d. If previous funding from this source was awarded, explain how this request differs? This request differs from previous applications since it involves implementation of a new file storage platform. The new platform, which uses

Microsoft Hyper-V, will allow ITD to continue its multi-year server consolidation and virtualization project.

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

ITD manages many file server systems, including old physical servers we must retire, virtual file servers created per requests by various departments over the years, and file servers hosted by our storage area network. The collective file server footprint produces unnecessary energy and administrative overhead costs.

ITD wishes to purchase two Dell PowerEdge R730xd servers each with ~60TB of storage for use in consolidating all file server systems we manage. We will run a virtual file server hosted on one R730xd physical server in our Cope Administration Building data center and replicate the virtual machine and its data to the 2nd R730xd in our Telecommunications Building data center using Hyper-V replication for business continuity purposes.

4b. Scope: Benefit Statement

We estimate the project will reduce the electrical and cooling costs for each physical system by approximately 90%, down from approximately \$4,300/year to \$475/year. In addition, Hyper-V replication will provide the University asynchronous replication functionality not currently available on all the University's existing file server systems.

4. Project Description (continued)**4c. Location of Project (Building, etc.)**

Data centers in the Cope Administration Building and Telecommunications Building

4d. Participants and Roles

Systems Administration, Information Technology Division – implementation and management

4e. Student participation and/or student benefit

This project directly lowers the operating cost of the University thereby providing an opportunity for the University to reduce the utility costs passed on to students.

4f. Future Operating and/or Maintenance Requirements

The equipment has an estimated useful life time of five (5) years. Maintenance costs are included as part of the purchase expense.

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

This application relates to a larger multi-year project to reduce the operating costs within the University's data centers. ITD estimates that it will be able to reduce power and cooling demands by at least 50% by the end of the project.

If the University has additional clean energy funds available, ITD asks that consideration be given for the purchase of additional servers to allow for additional operating savings.

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.)

Power: ~43,000kWh annually
Cooling: ~19,000Btu/hr

5b. Annual Energy COST Savings (\$)

Power: ~\$3,000
Cooling: ~\$800

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

Total: ~\$3,800

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

The total cost of the entire multi-year server consolidation and virtualization project is approximately several hundred thousand dollars. ITD has proposed allocating equipment and other funds to complete the project.
