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.htm for funding guidelines.

1. General Information

Name of Person Submitting Request Tom Wallace	
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2. Project Categories (Select One)

Select the category that best describes the project.

X	Energy Conservation/Efficiency		Sustainable Design
	Alternative Fuels		Other
	Renewable Energy		

3. Project Information

    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 Server Consolidation/Virtualization
3b. Project Cost Estimate $12,500
3c. Source of Estimate Quotes from Dell, Microsoft

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 virtualization software platform. The new platform, Microsoft Hyper-V, will allow ITD to continue its multi-year server consolidation and virtualization project using industry leading virtualization technology with long term support.

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 physical servers, which can be consolidated and virtualized into a blade environment. We can use one blade server to replace 10-20 physical servers. The software used to manage the blade environment must have long term support and industry relevance.

ITD currently uses Citrix XenServer as its dominant server virtualization platform. However, Citrix recently announced they will end development of XenServer. As a result, ITD will transition its XenServer investment to Microsoft Hyper-V, which we currently do not use, and VMware vSphere, which we already use in production.

Dell and Microsoft representatives communicated a program Microsoft offers for Hyper-V implementation. The project involves a 3 week engagement whereby Dell and Microsoft each pays for 1 week and the customer pays for 1 week. At the end of the engagement, the University will have a functional Hyper-V blade environment, which will assist in our continued effort to consolidate and virtualize physical servers.

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 will provide the University a robust virtualization environment supported in the long term and optimized for Microsoft enterprise applications.

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

Dell, Microsoft – installation, configuration, and consulting

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 blade servers to allow for additional operating savings. Each blade server costs approximately $7,500 + $2,000 software, and servers will be ordered in pairs to provide redundancy.

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)

Dell and Microsoft will each fund 1 week of the Hyper-V implementation project. The University must pay for the final week.

In addition, the total cost of the entire multi-year project is approximately several hundred thousand dollars. ITD has proposed allocating equipment and other funds to complete the project.