

Rec 10/2/14



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	
Department/Office Information Technology	Phone # (Office) +1 615-898-2137
MTSU Box # Cope 217	Phone # (Cell) +1 615-202-0502
E-mail Tom.Wallace@MTSU.edu	Submittal Date October 3, 2014

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 Backup Systems Consolidation
3b. Project Cost Estimate \$26,000
3c. Source of Estimate Quotes from Dell, RoundTower Technologies
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 enterprise backup solution.

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

Over the past 10 years, ITD implemented multiple backup solutions as projects demanded, including EMC Networker for Banner, Microsoft Data Protection Manager for academic and administrative Windows servers, and Symantec Backup Exec for the University email system, all of which reside on multiple physical servers. In the past few years, our backup needs simply outgrew what our current backup systems can provide.

Specifically, we have very limited storage capacity left on Networker, Data Protection Manager, and Backup Exec, many of our most critical backups require more than 24 hours to complete, we currently run an unsupported version of Networker, and we have network bandwidth problems due to the sheer amount of data we must backup over our networks. We must also frequently reduce our backup retention periods due to capacity limitations.

As a result, we concluded we need to consolidate our backup systems into a single solution, EMC Data Domain with Networker providing staging services. This solution provides an appliance based model that can service all the University's server platforms, including Windows, UNIX, Linux, Hyper-V, and VMware. In addition, Data Domain provides source based deduplication (compression), meaning less data must pass across the network thereby decreasing backup times. So we can ultimately collapse our three existing backup systems into one.

We will begin this project by upgrading our EMC Networker server in preparation for Data Domain in order to bring us up to a supported version. This phase of the project requires a new \$7k Dell physical server and \$19k of worth of consulting services from RoundTower Technologies.

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. Moreover, EMC Data Domain simplifies and consolidates backup management, meaning we can eventually collapse a physical server for Networker, a physical server for Data Protection Manager, and a physical server for Backup Exec into one physical server with attached storage.

4. Project Description (continued)

4c. Location of Project (Building, etc.)

Cope Administration Building Data Center

4d. Participants and Roles

Data Center Services, Information Technology Division – implementation and ongoing management

RoundTower Technologies – installation, configuration, consulting, and knowledge transfer

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 backup system consolidation 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 for backups 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 system components, including an EMC Data Domain appliance. Each Data Domain appliance costs \$58,000.

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.)

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)

ITD will supplement funding of the backup systems project as we progress, including funding for additional networking and infrastructure, software licensing, vendor technical support, and administrative staff as needed. This funding will amount to several hundred thousand dollars over the next two to three years.