Rec 10/9/15

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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 Matthew Wade	
Department/Office ABAS	Phone # (Office) 2431
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E-mail matthew.wade@mtsu.edu	Submittal Date 10-08-15

2. Project Categories (Select One)			
Select the category that best describes the project.			
☐	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 Alternative Fuel (Biodiesel) Production
3b. Project Cost Estimate $23,000
3c. Source of Estimate Springboard Biodiesel, Inc
3d. If previous funding from this source was awarded, explain how this request differs? This request is for a larger scale processor with more advanced technology and efficiency.

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

The scope of the project involves students collecting used vegetable oil from campus cafeterias, and other campus sources, transporting to the on campus production facility and processing it into biodiesel. Students from Chemistry have been involved in quality testing. Dr. Charles Perry's students in the Mechanical Engineering Department have been involved in setting up the production facility. The Department of Agribusiness and Agriscience (ABAS) students use the facility for hands on example for the alternative fuels class. As we increase production through this grant, ABAS students will continue to be instrumental in all aspects of production.

4b. Scope: Benefit Statement

There are several continuing advantages to this project:
1) It continues to serve several campus departments: ABAS, Farm Laboratories, TN Livestock Center, Chemistry and Engineering
2)Student involvement; directly and indirectly
3)Recycling waste vegetable oil into a viable campus fuel
4)Financial benefit to the TN Livestock Center and MTSU Farm Laboratories through reduced fuel cost

4. Project Description (continued)

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

Current location is in the TN Livestock Center. Through funding of this grant, future additional space on the MTSU Farm Laboratories will be utilized.

4d. Participants and Roles

The Director of the MTSU Farm Laboratories is directly involved as well as farm staff members and ABAS Students. Dr. Cliff Ricketts will continue to utilize this fuel for his biodiesel truck in which he recently used fuel from this project in driving from Key West, FL to Oregon. Our fuel's portion of this trip took him across Idaho (540 miles) successfully. ABAS students will use this as a hands on learning module.

4e. Student participation and/or student benefit

Students will continue to be directly involved in every aspect of production. They will pick up waste vegetable, deliver it to the production area and process it into usable fuel. They will learn ASTM quality standards. The learning module experience involved in this project will continue to provide necessary knowledge and hands on experience for every aspect of production from transportation, scheduling, production, quality control, development and oil crop production.

4f. Future Operating and/or Maintenance Requirements

These funds will be used to expand production to incorporate the MTSU Farm Labs equipment fuel needs. Supplies for operation such as methanol, gloves, spill containment, etc., will be provided by the MTSU Farm Labs.

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

Funding this project will provide a safer, more advanced processor for students learning. It will also provide the ability to turn more waste product into usable fuel more efficiently.

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.)

In trials involving the TN Livestock Center, over 1000 gallons of biodiesel were produced which marks around one third of its' annual fuel usage. Our estimation is to cut the MTSU Farm Labs regular diesel usage by one third as well with this larger processor.

5b. Annual Energy COST Savings ($)

The TN Livestock Center was able to save approximately 24% on annual fuel costs through using Biodiesel produced on site. Our estimation, based on this, would see the MTSU Farm Labs savings as much as 33% annually through student involved biodiesel production.

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

The TN Livestock Center was able to directly save about $1000 in fuel costs. Our estimation, based on what we have done with the TN Livestock Center, is that the MTSU Farm Labs could, again save up to 33% in direct fuel costs.

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

N/A