

VERMONT STATE CONSERVATION INNOVATION GRANTS
Quarterly Progress Report

Project Title: Fuel from the Field to the Flue: Grass pellet heating equipment combustion optimization project.
Grantee Name: Meach Cove Real Estate Trust
Project Director: Christopher W. Davis
Progress report author (if different than Director):
Period Covered by Report: 1/1/2013 to 3/31/2013
This Report Date: 4/26/13 Project End Date: 6/30/14

Work performed during this period:

1. The Project Director spent a minimal number of hours with E-mail and telephone contact with Michael Newtown at SUNY, Canton, NY campus School of Engineering. We discussed the grass combustion research work that has been completed or is in progress by the SUNY Canton team. Mr. Newtown explained that the results of some of this combustion and emission data would be presented at the Northeast Ag-Biomass Heating conference to be held in Saratoga, NY on April 3, 2013. We also discussed the possibility of having Meach Cove continue the grass combustion evaluation on boilers that would complement the work being done by Mr. Newtown's group. We also discussed the specific boilers that might be best suited to grass pellet combustion based on the SUNY, Canton testing. Michael Newtown thought that based on the SUNY data that two boilers that might be suitable for follow-up evaluation would be the Harmon P-105 and the LEI Bio-Burner 300,000 BTU/Hr. model. He explained that the Harmon model would require modification to prevent grass fuel from forming clinkers in the combustion feed area, and some method to facilitate automatic ash removal would need to be added to the boiler. LEI has made extensive modifications to Bio-Burner "300" model that include a larger burn chamber, combustion air passages in the ash sweeper arm, and they have added an automatic ash removal auger and exterior mounted ash container. I expect to follow up with Michael Newtown and the LEI people at the Northeast Ag-Biomass Heating conference.
2. I have also had follow up e-mail correspondence and telephone conversations with Jim Trussler, a member of LST Energy, LLC of Nova Scotia, and Mark Carlisle in Massachusetts who are both independently developing boilers designed to burn grass pellets and effectively deal with the associated combustion, emission and ash handling issues. Mark Carlisle reports that he has redesigned the boiler vessel and the burner. As of March 28, 2013, he reported that he had received both the new boiler shell and the burner from the fabrication shop and he was working to assemble and test them.

Jim Trussler reported that while two prototype boilers in the 500,000 BTU/hr. capacity size were constructed in late 2011-12 and the units have been running with grass pellets at an agricultural co-operative in the eastern part of Nova Scotia, he is concentrating his time and resources on developing an ag-biomass association similar to the wood pellet institute that might advocate for grass fuel specifications, facilitate (via funding and advice) several US and Canadian rural community grass biomass energy projects, and serve as a lobbying group for grass biomass energy. This organization would also focus the effort for developing cost effective grass densification equipment, and identify several grass capable and efficient boilers in sizes for small commercial or larger farm operations.

I will be following up with all of these individuals before and at the Northeast Ag-Biomass Heating conference on April 3.

EQIP and CIG provisions:

1. The primary EQIP-eligible producer for this project is:

Meach Cove Real Estate Trust
P.O. Box 309
Shelburne, VT 05482

2. There are no (\$00.00) direct or indirect payments for structural, vegetative or management practices under this project.
3. The Project Director, Christopher W. Davis, certifies that there will not be any direct or indirect payments made to an individual or entity for any structural, vegetative or management practices through this grant. The AIG and HEL/WC provisions do not apply to this project.

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