

**New England College  
Final Scientific Report**

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New England College

**1) Title Page;**

Report Title: Envisioning an Ecologically Sustainable Campus at New England College

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### **Scope of Work**

Appropriation funding for our project *Ecologically Sustainable Campus - New England College* (NH), 67.09, supported five environmental initiatives: (1) a wood pellet boiler for our Science Building, (2) solar hot water panels and systems for five campus buildings, (3) campus-wide energy lighting efficiency project, (4) new efficiency boiler system in Colby Residence Hall, and (5) energy efficient lighting system for the new artificial athletic turf field.

1. New England College purchased and installed a new wood pellet boiler in the Science Building. This new boiler serves as the primary heating source for this building. Our boiler was purchased through New England Wood Pellet, LLC, located in Jaffrey, New Hampshire. The boiler selected was a Swebo, P500, 300KW wood pellet boiler.

The primary goals, objectives, and outcomes of this initiative include the installation of a wood pellet boiler system that is environmentally friendly, highly efficient, and represents a sustainable and renewable resource for New England College.

*This project was completed on December 15, 2010.*

2. New England College purchased and installed solar hot water panels and systems for the Science Building, the Simon Center (student center), the H. Raymond Danforth Library, Gilmore Dining Hall, and Bridges Gymnasium (athletic center). The College worked with Granite State Plumbing & Heating, LLC, located in Weare, New Hampshire on this project. The solar panels are manufactured by Heat Transfer; the product is Heat Transfer 30-tube collector panels (Evacuated Tube Type) with stainless steel hardware. The interior equipment includes Super Stor Ultra stainless steel super insulated storage tank, Taco 009 Bronze circulator pump, Solar Relay Control Pack, and a Taco Thermal Expansion Tank.

The primary goals, objectives, and outcomes of this initiative will allow the College to utilize the sun as an energy resource. These solar hot water panels and systems will alleviate our dependency on fossil fuel as our primary fuel resource and provide a reliable energy source that supplies the hot water needs for sanitation, dishwashing at our dining facilities, and shower facilities for our athletes.

*This project initiative was completed on June 30, 2010.*

3. New England College has completed energy efficiency lighting projects throughout campus, which included upgrades and new systems throughout our buildings. This project also installed efficiency controls for the Lee Clement Arena and refrigeration equipment in the Gilmore Dining Hall. The College worked with Atlantic Energy Solutions, located in Foxboro, Massachusetts on our 50/50 energy efficiency lighting



project and campus-wide audit. The actual implementation of the project was completed by D. Poole Electrical Services, located in Center Barnstead, New Hampshire.

Funding from the U. S. Department of Energy provided valuable resources for the College to equipped 11 campus buildings with energy efficiency lighting. Here is a summary of each building and projected energy savings:

<u>Building:</u>	<u># of Fixtures Changed:</u>	<u>Annual KW hours savings:</u>	<u>Electricity savings:</u>
Administration	198	24,470	\$ 3,470
Preston Hall	93	8,716	\$ 1,206
Lewin House	34	3,099	\$ 445
Davis House	32	3,523	\$ 495
Campus Safety	12	250	\$ 33
Fitch House	68	5,880	\$ 833
Union Street Hall	43	4,024	\$ 564
Bridge Street House	23	1,739	\$ 242
Carriage House	119	8,564	\$ 1,217
Tower Hall	64	9,380	\$ 1,319
Hill House	30	2,508	\$ 349
<b>TOTAL:</b>	<b>716</b>	<b>72,153</b>	<b>\$10,173</b>

The primary goals, objectives, and outcomes of this initiative were to install energy efficient lighting systems throughout our campus buildings, which ultimately will provide New England College with a more efficient way to manage and control its energy use.

*This project initiative was completed on February 15, 2010.*

4. New England College purchased and installed a high efficiency and clean burning system for the Colby Residence Hall, which is the primary housing for our freshman. We purchased and installed two Buderus Boilers, model number G515/10 with two Riello Burners, model number RL 38/2. The College worked with Granite State Plumbing & Heating, LLS, located in Weare, New Hampshire on the installation of this high efficiency and clean burning system for the Colby Residence Hall.

The primary goals, objectives, and outcomes for this initiative included the installation of a designed system of two boilers to provide redundancy for backup measures. This new system will provide New England College the flexibility to utilize just one smaller boiler to provide heat and hot water during non-peak periods thus continued reduction in energy use and our carbon footprint.

*This project initiative was completed on September 18, 2009.*

5. New England College purchased and installed energy efficient lighting for our new artificial athletic turf field. The College selected Light-Structure Green lighting systems and worked with Musco Lighting, located in Oskaloosa, Iowa.

The primary goals, objectives, and outcomes of this initiative were to install innovative lighting systems that significantly reduce energy costs and provide a high level of efficiency, resulting in overall utility savings to the College. This lighting technology combines the energy efficient equipment along with a focused lighting objective (field playing surface) to reduce the number of lighting heads needed to illuminate the playing surface to NCAA standards while reducing energy consumption by 50%.

*This project was completed on October 15, 2009.*