

**GREEN HOUSE GAS EMISSIONS REDUCTION FUND  
QUARTERLY PROGRESS REPORT  
LIGHTEC, INC.**

**June 1, 2010 through August 31, 2010**

- 1. Program Title:** Energy, Carbon Savings, and Education for Schools, Municipalities, and Business
  
- 2. Program Type:** Our program includes energy-efficiency project implementation and education. It falls into the following program categories:
  1. Energy Audits.
  
  8. Programs to improve the electric and thermal energy efficiency of new and existing residences and commercial buildings.
  
  10. Education, outreach and information programs that promote energy efficiency, conservation and demand response.
  
- 3. Summary of Work Completed During This Reporting Period:**

Task 1: Perform investment-grade energy audits in three projects, analyzing all major energy-using equipment and systems and provide engineered recommendations to clients.

Percentage Complete: 90%

- Project 1: The Town of Wolfeboro. Activities included:
  - Complete.
  
- Project 2: Holy Cross Hall Condo Association. Activities included:
  - Completed the Energy Audit Report
  - Presented and delivered the Energy Audit Report to the Board of Directors.
  
- Project 3: Town of Merrimack. Activities included:
  - Collected operating and energy usage field data for the Central Fire Station and the DPW Garage.
  - Conducted the mechanical systems and building envelope survey of the Central Fire Station and preliminary walk through of the DPW Garage
  - Completed ASHRAE Level II audit of the Town Hall (East and West buildings) and delivered in email format.
  - Met with the Town Manager and attended Select Board meetings. The Town decided to implement some of our recommendations and the Town Hall is presently under construction.

Task 2: Increase the energy efficiency of 13 educational facilities, 3 municipalities and 2 industrial corporations in New Hampshire.

Percentage Complete: 62%

### **Educational Facilities**

- Continued work on obtaining Service & Installation Agreements from Lancaster Elementary, White Mountain Regional High School, Litchfield Schools, Dublin Christian Academy, Hollis Schools and Brookline Schools.
- Project 3: Newfields Elementary School. Activities included:
  - Obtained the Service & Installation Agreement from client.
  - Completed project engineering for high efficiency lighting and controls.
  - Completed pre-build measurement and verification (M&V).
  - Completed project installation.
  - Completed post installation M&V (report attached).
- Project 4: New England College. Activities included:
  - Obtained the Service & Installation Agreement from client.
  - Completed project engineering for high efficiency lighting and controls.
  - Completed pre-build measurement and verification.
  - Completed project installation.
  - Completed post installation M&V (report attached).
- Project 5: Manchester Community Music School. Activities included:
  - Obtained the Service & Installation Agreement from client.
  - Completed project engineering for high efficiency lighting and controls.
  - Completed pre-build measurement and verification.
  - Completed project installation.
  - Completed post installation M&V (report attached).

### **Municipalities**

- Continued work on obtaining Service & Installation Agreements from the Town of Merrimack.
- Project 2: Town of Moultonborough Activities included:
  - Obtained the Energy Efficiency Design/Build Agreement from client.
  - Completed project engineering for fuel blind efficiency measures.

## Industrial Corporations

- Task Complete; nothing new to report.

Table 1: Energy Efficiency Projects<sup>1</sup>

New Hampshire Client	Program Cost	GHGER Funds Requested	Program Participant Contribution	SBC Utility Rebate	Avg Monthly Demand Reduction (kW)	Annual Energy savings (kWh)	Tons of CO2 Reduced	% of Carbon Reduction Goal
<i>Educational</i>								
New Hampton School	\$33,725	\$13,750	\$19,975	-	14	104,607	51.69	6.3%
Mount Saint Mary Academy	\$49,108	\$11,000	\$27,148	\$10,960	27	56,545	27.94	3.4%
Newfields Elementary School	\$29,524	\$5,154	\$10,815	\$13,555	19	44,807	22.09	2.7%
New England College	\$88,435	\$17,302	\$53,433	\$17,700	27	88,046	43.4	5.3%
Manchester Community Music School	\$42,743	\$5,929	\$2,400	\$19,607	11	33,450	16.49	2.0%
<i>Municipal</i>								
Town of Wolfeboro	\$51,770	\$12,000	\$39,770	-	27	69,756	34.47	4.2%
Town of Wolfeboro Waste Water	\$9,367	\$3,300	\$5,294	-	3	6,926	3.41	0.4%
<i>Industrial</i>								
PCC Solutions Inc.	\$184,028	\$28,711	\$110,227	\$45,090	84	538,953	266.29	32.3%
North Star Direct	\$32,727	\$6,103	\$17,594	\$9,030	23	90,669	44.8	5.4%
Excalibur	\$5,281	\$3,436	\$1,845	-	-	5,772	2.85	0.3%
<b>Grand Total</b>	<b>\$526,708</b>	<b>\$106,685</b>	<b>\$288,501</b>	<b>\$115,942</b>	<b>235</b>	<b>1,039,531</b>	<b>513.43</b>	<b>62.3%</b>

**Task 3:** Provide education and training to students, faculty and maintenance employees regarding the energy-efficiency projects taking place in their buildings. The training will help to empower individuals so they can make similar efficiency improvements in their homes.

### Percentage Complete: 45%

- Project Manager's conducted project reviews with maintenance staff as a result of the commissioning process, in all of the Task 2 projects completed. We included a binder of product specification sheets so that the energy savings can be sustained.
- Developed draft display case informational posters for the lobby shared by Saint Mary's Academy and the Manchester Community Music School. The printing of these posters was delayed to allow results from the Manchester Community Music School efficiency project to be included.
- Contacted several clients by email to determine their interest in educational component. The Town of Wolfeboro indicated that they would like to post the presentation to their website in lieu of an on site workshop. The New Hampton School replied that they are interested in a

<sup>1</sup> Task 2: Energy Efficiency Projects completed to date. The % of Carbon Reduction column reflects our programs full scope and is based on a target of 824.25 tons of carbon.

workshop for the students and to get back in touch with them after the school year begins. The industrial clients did not respond to the email.

#### **4. Activities Anticipated for Next Reporting Period (September 1, 2010 – November 30, 2010):**

Task 1: Perform investment-grade energy audits in three projects, analyzing all major energy-using equipment and systems and provide engineered recommendations to clients.

- Continue auditing the Town of Merrimack, including the Central Fire Station, and DPW buildings and begin writing the fuel blind energy audit report/s.

Task 2: Increase the energy efficiency of 13 educational facilities, 3 municipalities and 2 industrial corporations in New Hampshire.

- Work on obtaining Service & Installation Agreements from Lancaster Elementary, White Mountain Regional High School, Litchfield Schools, Dublin Christian Academy, Hollis Schools, Brookline Schools and Town of Tamworth.
- Once obtained, conduct and/or review audit and engineering specification/s; conduct pre-installation measurement and verification for the following projects:
  - Educational
    - White Mountain Regional High School: We expect this project to move forward once the ARRA process is finalized.
    - Litchfield Schools
  - Municipal
    - Town of Moultonborough: Work with Town in selecting EEMs to implement and begin installation.
    - Town of Tamworth

Task 3: Provide education and training to students, faculty and maintenance employees regarding the energy-efficiency projects taking place in their buildings. The training will help to empower individuals so they can make similar efficiency improvements in their homes.

- Continue attempts to schedule presentations.
- Develop display case informational posters for the Saint Mary's Academy and Manchester Community Music School shared lobby. In addition to developing posters detailing the specifics of the schools energy saving project we will also provide "Cut the CARBON" take home materials developed by the CORE utilities in partnership with the New Hampshire State Library.

#### **5. Total Hours Worked and Jobs Created: 1296 man hours**

- LighTec, Inc. employees: 564 man hours
- Subcontractors: approximately 732 man hours
- LighTec hired a summer intern to help with Task 1.

- LighTec continues to engage Computer Troubleshooters, located in Merrimack, NH, for IT services on an “as needed” basis.

## **6. Obstacles Encountered or Milestones Not Reached:**

- The ARRA grant process continues to dampen our momentum. It has negatively affected many of our clients and interestingly the issues have forced projects into our RGGI program that initially were not.

One recurring factor has been the difference between energy saving, kWh and project cost, used as the basis of the grants and the engineered numbers in the final contracts. The former were close estimates, since in many cases the towns did not have the funding for investment grade audits. This also happens quite frequently, even if there has been an investment grade audit, when the firm that supplies the numbers is not the same as the one building the project and is due to differing assumptions and changing field conditions between the time of audit and implementation.

The OEP administration is having difficulty mapping the field findings and resulting numbers in their final contracts, as they differ from the original estimates. This is either because they were not prepared for this reality or because they must keep track of all discrepancies for transparency's sake. In any event, there has been a lot of time spent identifying and providing written explanations of each factor involved in the differences. Although differences in preliminary and final numbers are almost universal, the individual factors are specific to each project and building.

This is further complicated when a project is relying on more than one funding source, for instance ARRA, utility rebates, Smart Start (Revolving Loan Fund financing), GHGERF and or funding from the towns budget. The Local Energy Committees and the Select boards do not want to hear that a project previously approved for funding, now requires further funding.

Each party along the way is responsible for some non-overlapping aspect, but at the same time a change in any one funding source can affect all of the others stalling a project until a resolution is found.

In the case of the Hollis/Brookline Towns and Schools, changes in project details forced changes in rebate funding. In addition to this, the current years Smart-Start funding ran out prior to completing the TRC contracts. The decreased rebates threatened to send the LEC's back to the School and Select Boards for further funding. To avoid this LighTec, Inc. offered to contribute a small amount of our GHGERF grant to hold the project together. This was the intent of LighTec's grant i.e. rescuing viable projects from failure.

- LighTec was developing an energy-efficiency project within the Town of Merrimack in tandem with conducting the energy audits described in Task One. The Town received one of the ten (No Questions Asked) ARRA grants to upgrade their furnaces' to energy-efficient versions and add lighting controls. We proposed leveraging of GHGERF, ARRA and Utility incentives to provide the Town with a comprehensive, design/build, energy savings project that would address several energy using systems within the building(s) with a positive cash flow. The Town administrator was prepared to move forward with this plan but wanted us to work under his General Contractor (GC). This GC had been hired to do a renovation on one of the two wings of the Town Hall under study by our level II energy audit. This conflicted with the rules of our GHGERF contract, in that we needed a contract from the Town of Merrimack, not an agent for the Town. However, even if it had been approved the project may still have had problems because the GC seems to have viewed the efficiency measures as an unfunded change in Scope of Work . We did try to explain that the GHGERF and utility rebates would

pay for this change in scope. It remains to be seen whether or not the energy efficiency measures recommended in our audit will be implemented.

Even though the accountability process within ARRA has been very painful, our experience to date suggests that it may be having the desired effect, i.e. resulting in more energy efficiency than might occur without that oversight.

## **7. Beyond the Contract:**

1. *Please report other activities, partnerships, funding or other synergies that have occurred as a result of this funding.*
  - Worked on a sub-committee of the Municipal Energy Working Group in an effort to develop standards for municipal energy audits.
  - Participated in the Strategic Communication Planning Session held on September 8, 2010 at PSNH Energy Park.
- 8 *If applicable, please include brochures, workshop announcements, or other materials developed to promote your grant activities. Attachments (and other documentation) are appreciated.*
- 9 *Budget vs. Actual Expenditures: (if you have included this with your invoicing, there is no need to repeat for the quarterly report.) Using the budget you submitted for the final approved grant proposal, please add a column and provide actual expenditures as well as match dollars for this quarter. (Save this worksheet for future reporting as we will want to see your quarterly expenditures as the project continues.)*
  - See previously submitted invoices.

Date: \_\_\_\_\_  
Initials: \_\_\_\_\_