

Tribal Renewable Energy - Final Report

Recipient Organization: Little River Band of Ottawa Indians (LRBOI)

Project Title: Tribal First Steps Human Capacity Building

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Executive Summary

For many years, the staff, elected officials, and tribal citizens of the LRBOI have discussed renewable energy. They talked of the potential of wind energy and solar power and pondered what they could do to reduce energy use, reduce costs, and "go green." The tribe has always had the desire to do something but never the expertise to develop a plan to move the desires forward. In the past, several proposals were presented by companies that wanted to work with the tribe and asking for large amounts of money to get large wind projects under way. All proposals were declined. In 2005 a Green Team was formed by Executive Order, and the collective group of staff began to research ideas and projects that the tribe might pursue with the resources at hand. A grant was obtained to fund a Renewable Energy Planning and Assessment Study that was officially adopted by Tribal Council in 2008. In 2011, a Tribal First Steps Human Capacity Building grant was awarded to LRBOI from the Department of Energy's Tribal Energy Program. The main purpose of the grant was to increase human capacity of the LRBOI, to understand the components of renewable energy and the importance of energy efficiency.

Project Overview / Objective

Provide introduction to renewable energy systems and energy efficiency training for relevant staff, elected officials, and tribal citizens, introducing the LRBOI Renewable Energy Planning and Assessment Study. Provide energy auditor training for relevant staff and tribal citizens to become certified to perform energy audits. Purchase the necessary equipment for the energy auditors to perform the audits. Conduct Renewable Energy and Energy Efficiency Workshops "train the trainer" style so that staff and tribal citizens can offer workshops at the tribe. Develop renewable energy and energy efficiency informational materials specific to the tribal community and the nontribal community.

Description of Activities Performed

1.0 Introduction to Renewable Energy Systems and Energy Efficiency for relevant staff, elected officials and Tribal Citizens

This 2 days course consisted of the fundamentals of Renewable Energy Systems and Energy Efficiency. The first day of the course included an overview of Renewable Energy Technologies including Biomass, Geothermal, Hydrogen, Hydropower, Ocean, Solar Energy and wind. Topics included an overview of technologies, how technologies are used in communities, renewable projects in Michigan, rebates and incentives and how to use renewable energy with energy efficiency. An overview of energy efficiency for residential and commercial buildings included treating the house as a system, standards in residential and commercial applications, diagnostic testing and how it is used to measure energy efficiency. The second day of the course provided examples of how energy efficiency and renewable energy can be used to maximize energy savings and reduce emissions and our carbon footprint. In the second day of the course, an energy expert reviewed the Renewable Energy Plan for the LRBOI and provided an active forum for discussion on next steps, improvements and how to get the community involved in energy programs. The course was conducted May 20 and 21, 2013, with fifteen (15) relevant staff, elected officials and Tribal Citizens in attendance.

2.0 Energy Auditor Training: BPI Building Analyst (5 day) course plus written and field exams.

The Building Analyst class prepared the students for BPI certification as a BPI Building Analyst. Instruction covered basic building science concepts, combustion safety, and the "house as a system approach" to energy auditing and home performance contracting. Students learned to diagnose and correct problems associated with health, safety, comfort, energy efficiency and durability. The class outline included health and safety issues, communicating with the client, heat transfer, moisture issues, how to locate thermal and pressure boundaries, shell inspection and air sealing, mechanical ventilation requirements, pressure

diagnostics, duct leakage testing and combustion safety. The course was conducted June 24-28, 2013, with field exams July 1-3, 2013. Eight (8) were signed up for the course with seven (7) having taken the previous introductory component.

3.0 Energy Auditor Equipment Purchase

The LRBOI purchased with grant funds \$15,000.00 worth of equipment to be used in energy auditing and used by those trained as an Energy Auditor/BPI Building Analyst. Equipment purchased included: 2 Retrotec Q46 Blower Door System with software; 2 Pressure Pan with extension pole; 2 Bacharach Gas Leakator; 2 Monoxor Carbon Monoxide Analyzer III; 2 Personal Combustion Analyzer; 1 Flir E50BX Infrared Camera; 2 Liquid Leak Detector; 2 Measuring Wheel; 2 Air Current Tester (smoke sticks); 2 Laser Tape Measure.

4.0 Workshops – Renewable Energy Systems and Energy Efficiency Workshops

Building Science Academy (BSA) of Sparta, Michigan, provided train the trainer workshops to Tribal staff and Tribal Citizens. Once individuals were trained, they will provide workshops at membership meetings, to local government, school systems and other interested parties. The materials from the above Introduction to Renewable Energy Systems and Energy Efficiency has been modified for presenting to communities and school systems for a 1 hour to 4 hour presentation. A power point presentation has been provided where each student for the train the trainer course can make their own individual notes. As part of the workshop, the trainer can provide a community or school presentation. All students must attend the presentation and will take notes on questions, concerns, etc. The students are then asked to do the presentation for the class. This is a hands-on learning experience where the students will learn both the fundamentals of renewable energy and energy efficiency and learn how to effectively present the material to the community. Each student is required to present to the classroom prior to completing the class.

5.0 Brochures Designed and Printed

BSA is developing RE and EE information materials as needed specific to the Tribal Community and also the non-tribal community. These materials will be made available at workshops and meetings as well as mailed to heads of household. BSA is working with the tribal planner for appropriate content for both brochures. A mail able tri-fold brochure will be created and approved prior to printing. 500 copies of each brochure will be included as well as the electronic format for future printing.

Conclusions and Recommendations

The main purpose of the DOE Human Capacity Building Grant was to increase human capacity of the Little River Band of Ottawa Indians (LRBOI), to understand the components of renewable energy and the importance of energy efficiency. We

believe that purpose/mission has been successfully achieved. Since the LRBOI Renewable Energy Report was completed by Seventh Generation Energy Systems, Inc. in January 2008, additional assessments related to renewable energy and energy generation have been completed. The invaluable training offered by BSA, the equipment purchase and training materials have helped LRBOI achieve many of its' RE and EE goals therefore meeting the capacity building outcome desired.

Lessons Learned

The LRBOI community now has a resource that can focus on Energy Efficiency, Renewable Energy, and Residential Energy Audits. Newly certified Building Analysts now have the opportunity to gain field experience and continue the momentum of the training. This may develop into an additional component of LRBOI's contractor services that the Housing Department now offers. Proposals for work can be generated to the homeowners at completion of the energy audits. The power point presentation can be used by the trainers to educate tribe and community members and, perhaps, to sell residential energy audits. BSA has offered to critique energy audits providing the newly trained energy auditors/BPI Analysts with input and feedback on their reports/proposals.

Respectfully Prepared and Submitted,

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