Next Step for STEP

August 2013

First Steps - Final Report

Recipient Organization:	Confederated Tribes of Siletz Indians
Project Title:	Next Step for STEP (Siletz Tribal Energy Program)
Covering Period:	September 30, 2011- June 30, 2013
Date of Report:	August 2013
Award Number:	DE-EE0005049
Technical Contact:	Claire Wood, CTSI, PO Box 549, Siletz, OR 97380 phone 541-444-8276, fax 541-444-8362, clairew@ctsi.nsn.us (no longer working at CTSI, so use Business Contact)
Business Contact:	Brenda Bremner, CTSI, PO Box 549, Siletz, OR 97380 phone 541-444-2532, fax 541-444-2307, brendab@ctsi.nsn.us
Partners:	None
DOE Project Officer:	Lizana K. Pierce, (720) 356-1749, lizana.pierce@go.doe.gov
GO Project Monitor:	Kris Venema, (720) 356-1352, kris.venema@go.doe.gov

Table of Contents

Executive Summary

The Siletz Tribal Energy Program (STEP), housed in the Planning Department of the Confederated Tribes of Siletz Indians (CTSI) hired a data coordinator to collect, enter, analyze and store all the current and future energy efficiency and renewable energy data pertaining to administrative structures the tribe owns and operates and for homes in which tribal members live.

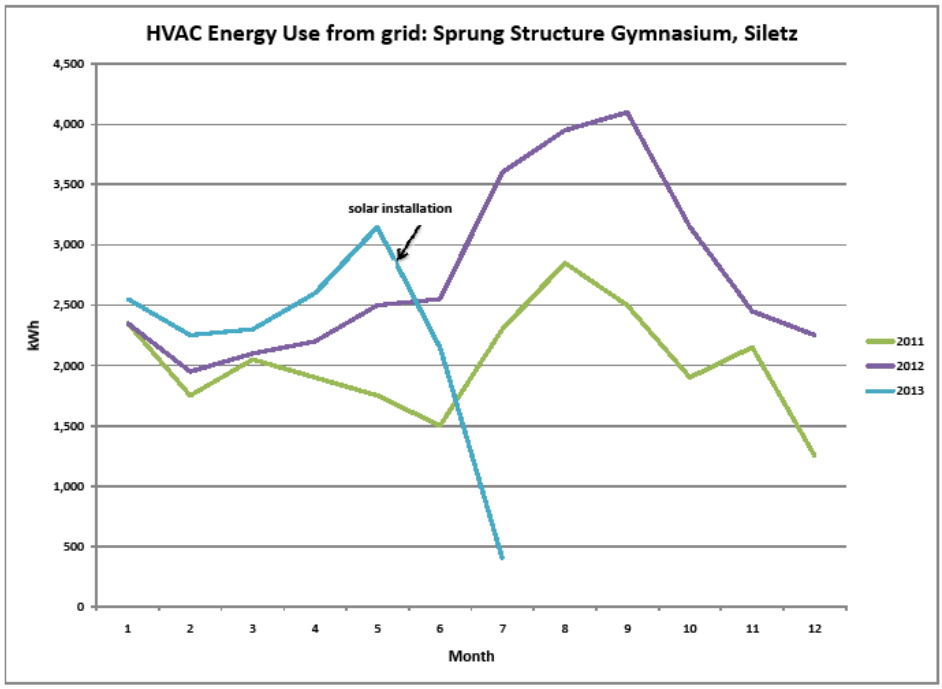
The data coordinator conducted energy options analysis in collaboration with the rest of the Siletz Tribal Energy Program and Planning Department staff. We gained a thorough understanding of tribal energy resources and consumption, if energy efficiency and conservation measures being implemented are having the desired effect, analyzed tribal energy loads (current and future energy consumption), and evaluated local and commercial energy supply options. A formal literature search was not conducted as planned, although we read many reports online and on paper. We also attended the Tribal Energy Program Review and gave reports as required.

In order to educate additional tribal members about renewable energy, we held a solar installation class in Siletz, this was a bit different from our original plan to send four tribal members out of state to be trained to install and maintain solar panels, solar hot water heaters, wind turbines and/or micro-hydro. Training was to be held in 2012, but was actually held in June 2013. In addition, we had many community education activities for individuals interested in renewable energy, but not as a career.

Solar Panels on carport: some were professionally installed, some during class. First Steps grant funded the class and will track savings.

Solar Training June 2013

Example of graph produced by grant funded position



Objectives

Topic Area 2: Energy Options Analysis with Topic Area 4: Human Capacity Building

The objectives of this project were to:

1. Hire a data coordinator to

2. Collect, enter, analyze and store all the current and future energy efficiency and renewable energy data pertaining to administrative structures the tribe owns and operates and for homes in which tribal members live.

3. Conduct an energy options analysis; and

4. Other staff or contractors will educate additional tribal members about renewable energy. We planned to send four tribal members to be trained to install and maintain solar panels, solar hot water heaters, wind turbines and/or micro-hydro.

The planned result: A thorough understanding of tribal energy resources and consumption, if energy efficiency and conservation measures being implemented are having the desired effect, analysis of tribal energy loads (current and future energy consumption), and evaluation of local and commercial energy supply options.

New LED Lights in Gym save power- First Steps allows us to track savings

Project Overview

The Siletz Tribal Energy Program, housed in the Tribe's Planning Department, was formed in 2009 and was funded by the ANA Social and Economic Development Strategy (ANA SEDS) grant to write an energy management plan, provide training for energy analysts and weatherization installers, develop partnerships with other agencies and power companies, and oversee weatherization activities. Training tribal members and employees ensures a labor pool for the Tribe's weatherization efforts and promotes self-sufficiency as tribal members learn a new marketable family wage earning skill. We also received the ARRA funded Energy Efficiency and Conservation Block Grant (EECBG) from the DOE to develop an energy management strategy, audit and retrofit homes and administrative buildings, and provide environmental education. A Low Income Weatherization grant and Low Income Weatherization training and technical assistance grants from Oregon, as a grantee of the DOE, and money from the Bonneville Power Authority (BPA) added additional funding.

The Climate Showcase Communities grant from the EPA was awarded to the Tribe in 2011. With funding from this grant we are installing solar panels on the Tribe's Tillicum Fitness Center to reduce energy costs and showcase renewable energy. We are also performing a study on the practical application of using renewable energy technology to reduce heat islands in the Siletz built environment, provide education, continue energy audits and install a weather station.

All previous grants included a data gathering component in order to establish a baseline to the tribe's energy use and ongoing data gathering from utility bills and usage meters. New data will also be available from the solar panel installation and weather station. This First Steps grant was received in 2011 and was primarily used to fund a data coordinator to perform the following tasks**.**

Siletz Tribal Energy Program permanent full time staff

Original Project Approach

Data will be entered and analyzed by the proposed data coordinator in order to better understand the tribe's progress in terms of energy efficiency and conservation. Data analysis will also help guide the direction the tribe will take should they decide to go forward with a program after grant resources are depleted. Renewable energy may be one direction the tribe wishes to explore in more detail. Data from this project will be analyzed by the Siletz Tribal Energy Program Coordinator and presented to the Siletz Tribal Council should they require information to make decisions about their energy options in the future.

The proposed training of four tribal members in the renewable energy field will fulfill the Human Capacity Building component (Topic Area 4) of the proposed grant. Training of four tribal members in the renewable energy field will be conducted. The tribe recently constructed tribally-owned apartments with solar hot water heaters and had to hire outside contractors to install and maintain them. The proposed training would allow for in-house work on these solar hot water heaters as well as planned installations in the future. Keeping employment in-house retains family wage jobs that ensures the tribal member individuals' self sufficiency and benefits other tribal members as well.

This grant will be used to create a Limited Duration (one year long) Data Coordinator position that will perform the duties listed below:

- Establish a baseline to the tribe's energy use by examining past utility bills, both residential and commercial
- Continue data gathering after energy efficiency measures are taken to determine their effects
- Gather data on energy produced by new solar panels on the Wellness Center
- Gather data from weather station to measure potential to produce energy from renewable sources (wind and solar)
- Analyze data to predict future consumption
- Analyze data to better understand the tribe's progress in terms of energy efficiency and renewable energy and to provide information to guide future tribal energy options.
- Literature search to locate information and data about the local area collected by other sources

The grant will also provide for training on renewable energy technologies which could include:

- Solar Electric
- Solar Hot Water
- Wind
- Micro-hydro

Original Tasks to be Performed

1) Advertise and interview for proposed Data Coordinator, select and hire best candidate.

2) Orient new employee to the Siletz Tribe and tribal policies, provide new or refresher course on energy efficiency and renewable energy, utility bills and data management techniques.

3) Begin collection and entry of utility bills from tribal administration buildings.

4) Begin collection and entry of utility bills from tribal homeowners/renters.

5) Continue entry and update of utility bills. Create database; begin entry and analysis of data from new web based weather station in Siletz.

6) Continue tasks from months 2-4, begin literature search. Begin to document process.

7) Preliminary analysis of data to provide current inventory of local greenhouse gas emissions in Siletz. Continue to document process.

8) Two tribal members attend renewable energy training.

9) After reduction target is established (using Climate Showcase Communities funding), track progress towards target from tribal member homes and tribal administration buildings.

10) Continue data entry, literature search, documentation, and update analysis.

11) Gather data from solar panels, create, enter, and update database for staff to use.

12) Begin data entry manual. Continue literature search.

13) Working with contractors, STEP will develop, test, and install passive/active measures for reducing heat gain on the Tribe's Tillicum Fitness Center: proposed data coordinator will enter and manage the data and do preliminary analysis

14) Two additional tribal members attend renewable energy training.

15) Develop training module for database(s), train current staff in use of database(s).

16) Continue all updates and analysis, document database structures and data entry manual, analyze data for grant requirements, and write report on literature search findings.

Original Reporting Requirements

Progress and financial status will be documented in quarterly reports. A separate Final Report will be submitted that will include the project results, data collected and other documentation as provided in the guidance. Reports and other deliverables will be provided in accordance with the Federal Assistance Reporting Checklist following the instructions included herein.

Further, progress shall also be presented at annual Tribal Energy Program Reviews to be held each November in Denver, Colorado.

Data Coordinator, left, learning about energy audits and data that is gathered

Description of Activities Performed

We did hire a data coordinator in late December 2011, after advertising in November and interviewing in December. The employee was a Siletz Tribal member. He began to tackle the tasks listed below. The employee left for other employment at the end of March 2012. In consultation with the Project Officer we decided not to refill the position, but rather complete the tasks with existing staff and temporary help.

We hired a temporary worker in June 2012. He worked through the summer until September but had a problem with regular attendance so not as much work was completed as we had planned. When he left we decided to continue the work with existing staff from the Siletz Tribal Energy Program who were familiar with the data and programs. We also requested and received a no cost extension as we were behind schedule. The grant was originally funded until December 2012, but we extended the period until June 30, 2013.

The original duties and tasks below were fulfilled except as noted:

Gather, enter and analyze the tribe's energy use by examining and entering past utility bills, both residential and commercial, to establish a baseline. Entry was into EPA's Portfolio Manager and the tribe's MS Access database created by the Project Coordinator.

Continue data gathering, entry and analysis after energy efficiency measures are taken to determine their effects based upon the baseline previously established.

Gather, enter and analyze data on energy produced by new solar panels on the Tribe's Tillicum Fitness Center- panels were not installed until May of 2013, so not much data was available. We did begin to track production and energy savings.

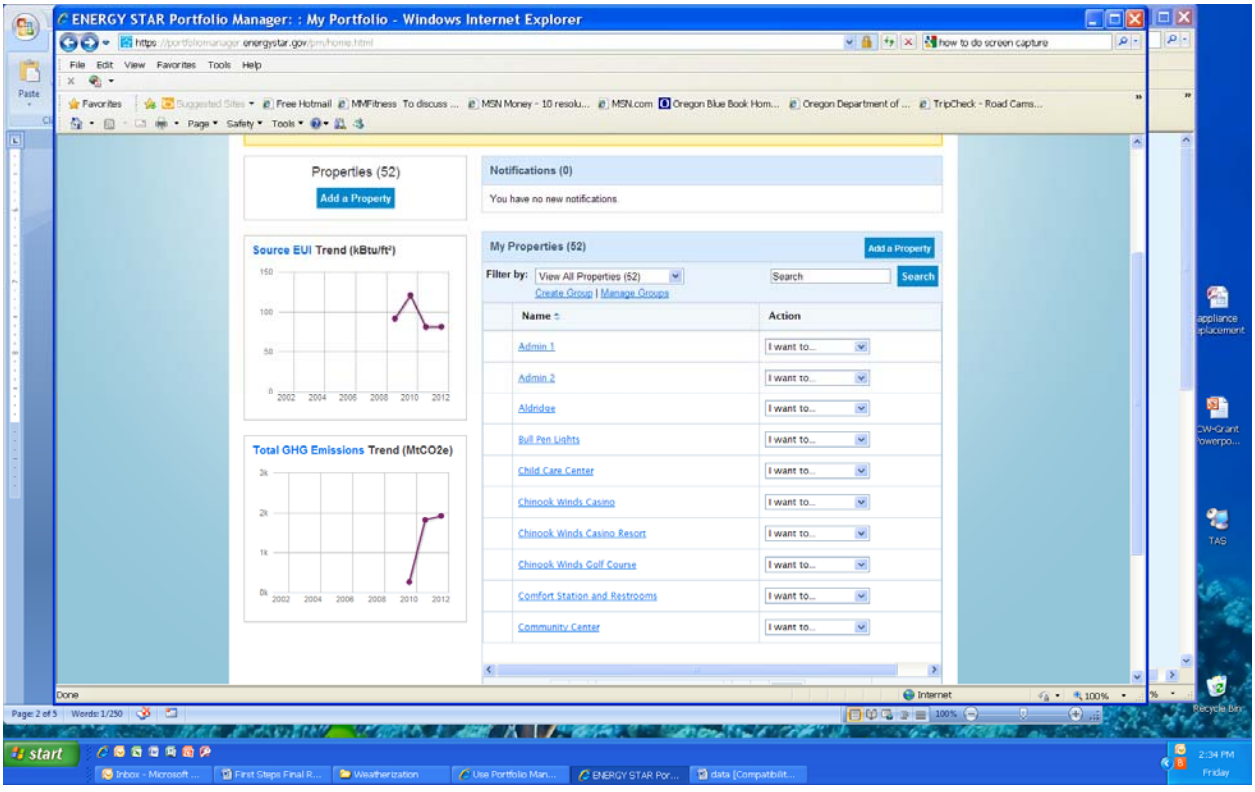
Gather, enter, analyze data from the newly installed weather station to measure potential to produce energy from renewable sources (wind and solar) – weather station not installed yet as of end of grant period.

Ongoing data analysis to predict future consumption and future project planning

Analyze data to better understand the tribe's progress in terms of energy efficiency and renewable energy and to provide information to guide future tribal energy options

Literature search to locate information and data about the local area collected by other sources – no official literature search but many webinars, much reading and attending conferences to learn about energy efficiency, conservation, and tracking data from same.

Portfolio Manager was used to track data



The proposed grant also provided for training on renewable energy technologies which could include:

- Solar Electric
- Solar Hot Water
- Wind
- Micro-hydro

This proved to be a difficult and time consuming task. We had originally planned to send up to four tribal members to training out of state, to be trained by a firm such as Solar Energy International (SEI). We advertised numerous times for this opportunity. We got tribal members interested but they weren't interested in travelling out of state for a week or more, even if we covered the costs as originally approved in the grant.

We then tried to recruit a firm to come to Siletz to train tribal members. Preliminary phone calls indicated that this was possible and affordable. Tribal policy requires that we release an RFP to hire a firm to complete training. We released an RFP and received two responses, neither of which was as inexpensive as we thought it would be.

Finally with time and money in short supply we hired the firm who was installing our solar PV and solar wall with PV, funded by our EPA funded Climate Showcase Communities grant, to provide solar training for a small additional fee. We sponsored the solar training and it was held June 17 and 18, 2013 in Siletz. Eight tribal members and one non tribal employee attended. A few of the tribal members were also employees. Most of the attendees are interested in pursuing more education to go towards a possible new career in the installation of renewable energy. Benton Electric, who did the training, may be open to taking on some apprentices for further education.

Solar Training

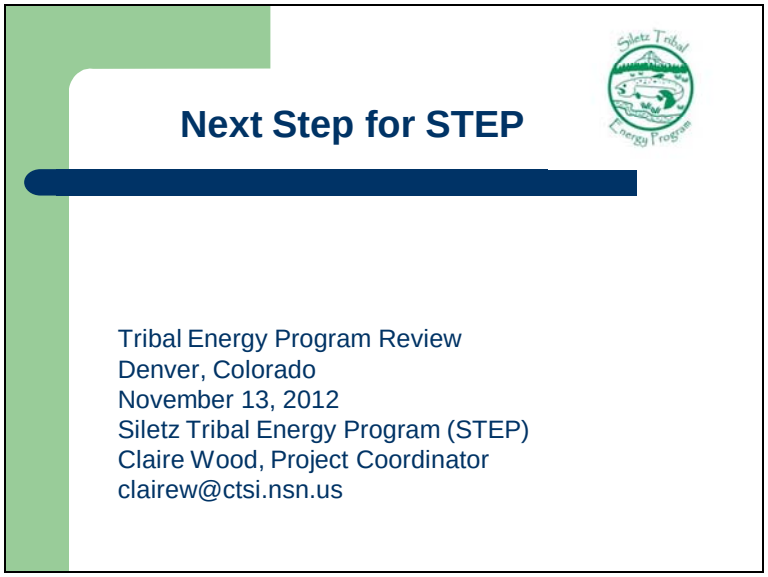
We (STEP) also held numerous community trainings and tabled at events throughout the grant period to educate tribal members and employees about our work. We taught tribal and community members and employees how to save energy and money through energy efficiency and conservation measures, the value of renewable energy, careers in renewable energy as well as ways to incorporate energy efficiency, conservation and renewable energy into everyday life at home and at work. At least three tribal members and one employee took a free online class on renewable energy offered by SEI.

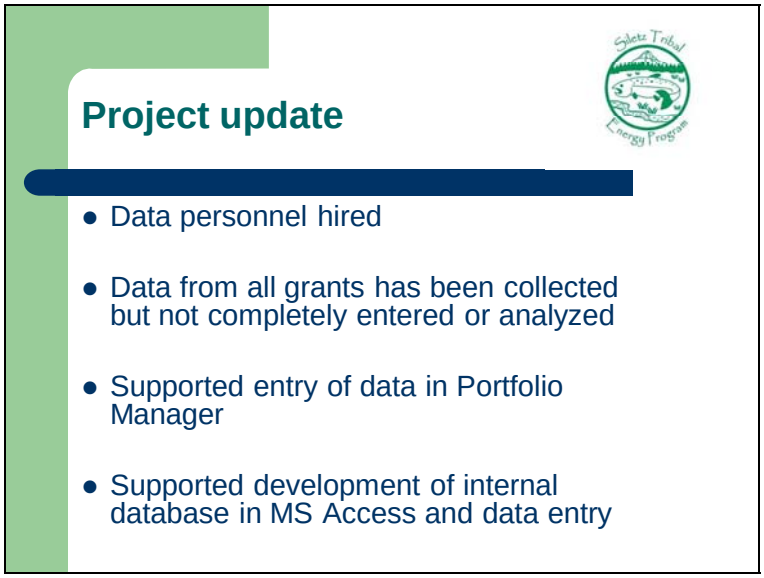
Earth Day 2013: First Steps grant helped us track attendees

Lincoln County Oregon Watt Wagon joined the celebration

Quarterly progress reports and quarterly financial reports were completed and turned in on time. The final report is on time. The Project Coordinator for the Siletz Tribal Energy Program attended the Tribal Energy Program Review in 2011 and 2012 and made a presentation at each meeting about the work funded by the DOE's First Steps grant. As much of the data gathered and presented in the talk arose from work completed with other funding sources, some of the work at CTSI funded by others was also showcased.

Excerpts from Tribal Energy Program Review presentation





Lessons Learned

Hiring skilled tribal employees and retaining them is more difficult than we had hoped. We sought an employee with a bachelor's degree. This skill set proved difficult to locate. When we found an employee, who was a tribal member, he left to accept other employment within three months. Since he was educated and experienced he did perform well, but the time period was too short.

Since we didn't think we would be able to find another comparably educated employee in rural Siletz in a short period of time, we decided (with our Project Officer) to not refill the position. We hired a temporary employee instead. Unfortunately his attendance was not good, and we let him go after a few months when his temporary appointment time was up. He didn't work full time during those months. In retrospect, we should have sought another educated full time employee, even if it took time to find one.

Once these two employees were gone, we decided to complete the work with existing Siletz Tribal Energy Program staff. Staff members already were experienced and familiar with the data, as they had been helping out during the time of irregular attendance by the temporary employee. They were also familiar with energy efficiency and conservation and were learning about renewable energy.

Employee turnover and irregular attendance caused us to fall behind on our work. We sought and received a no cost extension from the DOE.

Lessons learned were: allow more time to find the employee who meets the qualifications you are seeking. Pay them what they are worth in order to retain them for the grant period or beyond. Train other employees to do their work as well if they are even close to being qualified. We were glad to have other employees who could do the work with minimal training, but it did take longer as the data entry and analysis was not their primary task.

Training tribal members who wished to enter the renewable energy field also proved slower than expected. Selecting a contractor proved to be more time consuming than originally planned.

We had originally planned to send people away to an out of state location for solar training. This proved difficult as people weren't willing to commit to the possibility of being out of town for a week or more. We then explored the possibility of bringing the trainers to Siletz. We wrote an RFP and received responses. By the time this happened time to hold training and money to pay for the training were both minimal, and the trainers were asking more than we expected to travel and hold class in Siletz. We changed our plans again (in consultation with the Project Officer) and contracted with the installers to do some training.

Benton Electric was performing solar PV installation here in Siletz under an EPA grant. This new class was much less expensive, but students didn't learn as much and didn't get a certificate allowing them to do solar installs in the future.

The lessons we learned were: plan more in advance, hire people who are specifically trainers, not just people who know how to do the work, you get what you pay for. This was not a bad experience, and at least 8 tribal members and one non tribal employee are more interested than they were before their class, but it could have been better.

Our community education was successful. We learned that it is best to speak to people one to one at events or in their homes. We learned that in order to reach a broad range of people it is best to partner with other programs and attend every community event possible. Holding energy specific events is great, but only reaches a self selecting group of people. In order to reach more people to educate and gather data from, it is a better idea to partner with others whose goals are different from yours. As long as an event was being held, we tried to attend, educate and gather data.

Conclusions and Recommendations

Our attempt to hire a data coordinator to collect, enter, analyze and store all the current and future energy efficiency and renewable energy data pertaining to administrative structures the tribe owns and operates and for homes in which tribal members live was a good idea and partially successful. As mentioned above we had a data coordinator for three months, then a temporary data coordinator who was not as skilled for three months. In the end we paid existing Siletz Tribal Energy Program staff with First Steps funding to complete the work. These employee turnovers were challenging.

However, the data coordinator did conduct energy options analysis in collaboration with the rest of the Siletz Tribal Energy Program and Planning Department staff. We did gain an understanding of tribal energy resources and consumption, if energy efficiency and conservation measures being implemented are having the desired effect, analyzed tribal energy loads (current and future energy consumption), and evaluated local and commercial energy supply options. A formal literature search was not conducted as planned, although we read many reports online and on paper and attended webinars, as well as learning from local firms doing similar work. We also attended the Tribal Energy Program Review in 2011 and 2012 and gave reports as required.

In order to educate additional tribal members about renewable energy, we held a solar installation class in Siletz, this was a bit different from our original plan to send four tribal members out of state to be trained to install and maintain solar panels, solar hot water heaters, wind turbines and/or micro-hydro. Training was to be held in 2012, but was actually held in June 2013. In addition, we had many community education activities for people interested in renewable energy, but not as a career.

In conclusion, it was a good idea to receive extra funding from the DOE to manage the data we were accumulating. Perhaps a data coordinator position was indicated; perhaps funding part of an existing employee's time would have been better. It depends on the tribe and the qualifications of existing employees, as well as how many other tasks they have to complete.

The solar training for individuals wishing to enter the career of renewable energy was a good idea. Attending a specialized training is best, but due to reasons discussed above, a good option was to have less specialized, but more local training. Hopefully tribal members who are truly interested will pursue more education on their own.

Community education and demonstration was probably the most visible to all. CTSI was installing solar PV and a solar wall during the grant period, so it was good to have some progress to showcase. Data was gathered from the attendees at different events and was

gathered from the inverters and the utility companies about the savings being produced and the power generated by the solar PV.

Unfortunately, all funding for the Siletz Tribal Energy Program was from grants. Now that the funding from the DOE and EPA has been expended our program has been disbanded and employees laid off. Minimal funding from the BPA and the DOE through OHCS may be pursued, but work will be minimal. We hope that any data gathered under the First Steps grant will show Tribal Council and Tribal members the value of energy efficiency, conservation and renewable energy. Perhaps the data will be valuable in the future when priorities change.

Acknowledgements

We would like to thank the Siletz Tribal Energy Program staff which included Claire Wood, Fawn Metcalf, Marleen Wynn, Frank Aspria, Harold Warren, Buddy Lane and Lincoln Llewelling during the time of this grant. We would like to thank the rest of the Planning Department staff, especially Tracy Bailey and Pamela Barlow Lind. Benton Electric provided the solar training.

Thanks to our original funders who got the Siletz Tribal Energy Program started so we had data that could be analyzed by the First Steps grant funding: Administration for Native Americans, Oregon Housing and Community Service through the DOE, EECBG grant funded by the DOE, the Environmental Protection Agency, and Bonneville Power Administration.

We also thank the Tribal Council and Tribal members of the Confederated Tribes of Siletz Indians who supported us in our work. Many other community members and organizations deserve thanks as well.

Finally thank you to Lizana Pierce, Kris Venema and the Department of Energy for this opportunity to work with you.