

Northern Wisconsin Renewable Energy
Collaboration
Summary Report
Focus on Energy Grant
2002-2003

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During the spring and summer of 2003 the Northern Wisconsin Renewable Energy Collaboration successfully planned and held nine new courses and workshops on Renewable Energy, with a total participation of 147 people. The collaboration exceeded its expectations of offering four to six courses and workshops for 100-150 participants. These workshops and courses were offered primarily to Chequamegon Bay area residents and any other interested Wisconsin residents for undergraduate and graduate credit, CEU's and noncredit through Northland College. The collaborating partners met for three half-day curriculum-planning sessions in September of 2002 to design high quality workshops and courses to meet a diverse audience. Northland College was the coordinating organization of the collaboration between CESA # 12, the Lake Superior Bad River Tribe, WITC-Ashland, the City of Ashland and the Sigurd Olson Environmental Institute.

Included in this summary report are a schedule and a general description of each workshop and course, the number of attendees, pictures, press releases, news articles, and an overall evaluation from the participants for each course and workshop.

NWREC was successful in meeting all the goals set forth in the Focus on Energy grant. The courses and workshops were made possible by the extraordinary efforts and mutual interests of all the partners involved. The grant created a first

time opportunity for all the partners to work cooperatively together on a community-wide energy project. The Focus on Energy grant allowed the partners to communicate more fully their energy needs, share resources and reach the greater community more effectively. The groundwork has been laid for future innovative energy projects.

The NWREC partnership at the time of planning and delivery of the courses and workshops did not encounter any obstacles. Currently the NWREC does see a major obstacle in the State of Wisconsin decision to cut the funding for the City of Ashland's Focus on Energy position. NWREC believes this cut could seriously curtail its ability to attain its long-term goal of establishing a series of renewable energy courses and workshops that can be offered annually and continuously.

Wisconsin is a state that is leading the nation in energy education and renewable energy resources. NWREC has found that the \$20,000 grant from Focus on Energy has tapped into a wellspring of interest in our region for alternative energy information and resources. We look forward to our continued relationship with Focus on Energy to fulfill our vision of becoming a working model for other cities and regions.

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KEEP Curriculum: Experimenting with Energy

January 25 & February 8, 2003

The first of the nine workshops was given by MREA's Executive Director, Tehri Parker on two cold Saturday mornings in January and February to a group of twenty enthusiastic area K-12 teachers. Tehri did an outstanding job of presenting the KEEP curriculum (K-12 Energy Education Program). KEEP provides teachers of every grade level the tools to be able to incorporate energy education into their existing curriculum or develop a whole new program for energy education. These "energized" teachers were able to "brainstorm project ideas" to help prepare their students to take part in the "Invention Convention" held on March 22nd, a regional level competition for K-8 students. The public was invited to view the students' creative inventions at the CESA #12 building in Ashland.

Summary of participant evaluations

Ratings were based on a **1** (poor) to **10** (excellent) scale.

Sixteen participants rated the workshop as 10.

Two participants rated the workshop as an 8.

There were two consistence comments the participants wrote down:

Free graduate credit and the great resource materials with activities they received.

All the participants learned about the course through the partners in the Northern Wisconsin Renewable Energy Collaboration.

One of the major purposes of this course was to train teachers to prepare their students for the invention convention.

The Solar Lifestyle: Introduction to Renewable Energy Workshop March 15, 2003

This was the first of the NWREC workshops open to the public. The workshop was hosted at WITC and conducted by MREA. The instructor Kurt Nelson, SOLutions and a founding member of MREA shared his 15 years of experience installing renewable energy systems. The workshop was designed for anyone who had an interest in alternative energies or living a more sustainable life but did not know how to start. The overall objectives were to expose the audience to how the sun and wind, coupled with energy efficiency, can provide electricity, hot water, and heat for homes, reducing their dependence on utilities and their impact on the environment.

There were 26 participants; the workshop was at its maximum capacity, MREA had to turn people away and put them on a waiting list for the next possible workshop in the area. The participants ranged from future homeowners to current homeowners who were interested in retrofitting their existing homes to builders and contractors, Northland College faculty and students.

Summary of participant evaluations

The rating system was based on a scale from excellent to poor.

Twelve participants rated the workshop as excellent.
Eleven participants rated the workshop as very good.
Three participants rated the workshop as good.

There were three consistency comments the participants wrote down:

The use of “*Energy Bucks*” for workshop fee and grant money.

Possible commercial applications.

Instructor was very informative, would have liked more discussion time and more hands-on.

Solar Water and Space Heating Workshop

April 12, 2003

Summary of participant evaluations

Bob Ramlow of Artha Renewable Energy, and founding member of MREA lead this workshop for 26 participants ranging from future homeowners to current homeowners who were interested in retrofitting their existing homes to builders and contractors, Northland College faculty and students. Bob discussed the history of solar home systems and the advances that have been made over the last twenty years. The improvements include the advancement in technology and the matching of home systems to the temperate zone of the home. Homes in different parts of the country require different systems. Bob discussed at length the “closed loop” system that works best in Northern climates. A comprehensive guide was given to all the participants to take home as a future resource. The daylong discussion included choosing a site and size for a home system, infloor heating and basic installation techniques. Participants left with the understanding that the solar water and space heating systems were initially more expensive to install yet often paid for them in energy saving dollars in just a few years.

The rating system was based on a scale from excellent to poor.

Fourteen participants rated the workshop as excellent
Twelve participants rated the workshop between very good and good.

There were three consistency comments the participants wrote down:

The use of “*Energy Bucks*” for the workshop fee.

Participants were also interested in possible applications for refurbishing older homes with renewable energy systems.

Would like more hands-on and possible tour of systems.

Solar Home Energy Tour

May 17, 2003

There were 15 people who participated in this wonderful daylong event. Half of the participants were community members and the other half was from Northland College's Renewable Energy Course, taught by Scott Grinnell. The tour provided participants with a wide variety of green building designs and renewable energy home systems. The tour included the homes of Michael and Judith Peyton, David Hall, and Chris and Amy LaForge. The Pinehurst Inn in Bayfield gave an example of installing solar hot water panels to a new addition with significant green design elements. As the tour wound its way around the spectacular Chequamegon Bay region back to Northland College participants commented that the homeowner's hospitality and knowledge made for a wonderful learning experience on a magnificent spring day.

Smart Design In Practice

April 2, 2003

The Lake Superior Bad River Tribe headed this daylong workshop with assistance from the NWRE collaborators at The Bad River Convention Center. Funding for the speakers and lunch was provided through a grant being administered by The Bad River Tribe.

Despite a spring snow storm-which nearly caused us to cancel the event- 40 people braved the elements and participated in the presentations and discussions. Participants included tribal employees, tribal elders, students and teachers, Ashland and Bayfield county residents and Northland College students.

Introduction to Renewable Energy

April 28-23

The course was design as an introduction to the science of renewable energy and the economics necessary to achieve a sustainable future. This was offered as a 4 credit undergraduate course under environmental science. The faculty at Northland College went through the formal academic approval process to create this new course developed Professor Scott Grinnell. Topics included an overview of the principles of energy production, traditional methods for generating power, requirements for sustainability, environmental impacts, and an in depth investigation of solar, hydro, wind, geothermal, biomass, tidal, and other forms of renewable energy. Students participated in numerous field trips to power-generating facilities that use renewable energy.

Ten students registered for the course and ten completed with high marks. The students were asked to evaluate the course based on the intellectual content, what aspects contributed most to the learning and how could the course be improved. The overall comments are as follows:

- Organization of materials and demonstrations.
- Would like to see the duration of the class be longer. (Actual class length was 4 weeks.)
- Field trips very valuable to be able to see direct application and connect classroom theory to real world practice.
- Liked the strong grounding in Physics.
- Want more classes like renewable energy, i.e. green building, a possible sustainable minor, would like to see Northland practice sustainability campus-wide.

2003 Invention Convention

During the month of January and February The Sigurd Olson Environmental Institute at Northland College and instructor Teri Parker, Executive Director of MREA offered a graduate one-credit course called Experimenting with Energy using the KEEP curriculum. This course modeled projects that teachers could suggest to their students for the Invention Convention.

There were a total of 124 inventions received by CESA #12, 9 or 7% of the total related to “renewable energy”. The “Special Award” winner in the category of “Renewable Energy Invention” this year went to Nash Rochman, 4th Grade, Ashland School District, for his “Solarcycle Shade”.

Below is a list of 2003 Invention Convention entries with entry title, student name and grade, by school district, which relate to the “renewable energy” field:

Ashland School District submitted a total of 20 inventions

The Solarcycle Shade	N. Rochman	4 th grade
The Rippin’ Recycler	T. Cline	4 th grade

Hayward School District submitted a total of 63 inventions

Magic Lights	N. Draganowski	4 th grade
Our Energy Dream House	J. Warwick, A. Cain	6 th grade
Solar House	S. Skweres, S. Godfrey, M. Williamson	6 th grade
Helpful Energy House	H. Mrotek, B. Melton	6 th grade
Solar Heat Lamp	S. Skweres, S. Godfrey, M. Williamson	6 th grade

Northwood School District submitted a total of 5 inventions

Solar Hot Dog Cooker	D. Scheller	4 th grade
The Cyclone	K. Bagley	5 th grade

Energy Education into the Future

Facilitating the Future

(CESA 11 & 12)

June 16-20, 2003

July 20- Aug 1, 2003

A statewide committee through UW at Stevens Point developed the Energy Education for the Future course using the KEEP curriculum. The coordinators of the NWREC developed a “Learning Community” course with KEEP as the main focus. The course was delivered as part of the Facilitating the Future Conference sponsored by CESA 11 and 12. Two area high school teachers and a Northland College professor joined “Design team” for the class. Each of the five design team members helped present segments of the class.

In addition to work with the KEEP curriculum exciting extras were added including: Solar racing car models and solar powered model boat construction. Tour of a passive solar home in River Falls, an off-grid home and a solar hot water system at the Pinehurst Inn. Tours of Northland College renewable energy systems and food waste composting system. Discussion of and test-drive of an electric race car built by Bayfield High School students. Teachers received a large 3-ring binder filled with numerous hands-on activities that linked to the Wisconsin State Content Standards. The KEEP curriculum is designed around four themes:

- Investigate where and how people utilize energy resources.
- Evaluate the range of energy resources, which can be developed and used.
- Explore the effects of developing energy resources.
- Consider alternatives for monitoring, managing and reducing energy resource consumption.

The overall comments of the teachers were very positive. The first session held in River Falls had 5 teachers participate, the Ashland session had 16 teachers. From both sessions the teachers felt that the greatest benefit was from the hands-on approach and the direct application for the classroom. They also appreciated the enthusiasm of the instructors and their base of knowledge.

The design team in addition to working with the teachers in their learning community group, also made a couple presentations open to all conference participants.

Teachers did make suggestions for improvements that included more time in the community in order to see applications and talk with community members that were invested in alternative energy systems. Teachers would also like to see grants for implementing energy improvement programs in the schools or for equipment needed to teach certain concepts.