



The MAREC Minute

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The Michigan Alternative & Renewable Energy Center (MAREC) is a program of Grand Valley State University. MAREC is part of the Muskegon Lakeshore SmartZone, a joint venture with the City of Muskegon, Grand Valley State University, and the Michigan Economic Development Corporation.



A Message From The Director

It seems like the summer went by in a nanosecond, with the energy inside the building as hot as the summer days were outside! A number of people have commented recently how full the parking lot is at MAREC these days—perhaps a very non-scientific but noteworthy measure of progress.

A summer highlight and “first” for MAREC was our June open house for “Friends of GVSU on the Lakeshore,” attended by more than 140 guests. A welcoming atmosphere, informative remarks by President Haas, and the directors of both the Annis Water Resources Institute (AWRI) and MAREC were well received. Our guests left with new understandings of the contributions by both of the GVSU units on Muskegon’s lakeshore. We plan to do it again!

This issue of the MAREC Minute showcases other highlights:

- The MAREC *Energy Monitor & Data Integration Project*
- The Energy Users Group for business and industry
- Commercial wind energy development activity
- Lunch & Learn lecture opportunities
- Teaching the teachers about alternative and renewable energy

In addition, we are moving ahead with interviews for our Associate Director of Research and Technology position, planning continues for the Offshore Wind Assessment Project, and we are pleased to welcome a new incubator tenant in September. We are very close to proceeding with the extension of Viridian Drive, which will link MAREC and the Muskegon SmartZone with the Shoreline Inn and the new Lakehouse Waterfront Grill. Wow, what a summer!

Arn Boezaart



Friends of Grand Valley State University on the Lakeshore gathered at MAREC on June 14.



Celebrating completion of the MAREC Energy Monitor data integration project were (back) Andy Barker, Jon Geerlings, Randy Schoenhals, and (front) Arnold (Arn) Boezaart and David (DJ) Potter.

MAREC Energy Monitor Sending out Data

Thanks to a successful joint effort with faculty and students at the GVSU Padnos College of Engineering and Computing, the renewable energy data at MAREC is now available online for anyone, anywhere from university researchers around the world to school children in any Muskegon neighborhood.

The data provided through the new MAREC *Energy Monitor* is significant in several ways. On the web at datamonitoring.marec.gvsu.edu, it represents both real-time and past energy activity at MAREC, a LEED-certified building, from several alternative

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Contact Us

MAREC

200 Viridian Drive
Muskegon, Michigan 49440

Phone: 616.331.6900
Local Phone: 231.722.4371
E-mail : marecinfo@gvsu.edu



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technologies as well as conventional sources. Weather data is also tracked allowing comparisons between conditions and energy generation activity. The *Energy Monitor* is interactive and allows users to download and analyze data for a day, a week, or any period back to August 1, 2010 when the system went online. Data is secure for long-term use, providing options for future research and education.

Computing made this possible through a challenging capstone project. The students—Andy Barker, Jon Geerlings, and Randy Schoenhals—overcame complex technical problems to integrate and archive the live data from energy systems and then designed a compatible website to make the data widely accessible.

“These young engineers have made a huge contribution,” said Arn Boezaart, director of MAREC. “They have given both researchers and educators important access to data, making possible everything from tests of sustainability principles to high school science projects. This information will be used and appreciated by many in West Michigan.”

“Our gratitude goes to the Padnos College of Engineering and Computing,” he added. “We can’t wait to see what their next capstone project at MAREC will be!”

Join Us! Muskegon Solar Tour & MAREC Open House, September 25

Is solar energy a reality in Muskegon? Come see solar installations in action at local residences and businesses at MAREC’s first Muskegon Area Solar Tour and Open House, Saturday, September 25, 2010. All are welcome to attend this free event.

A guided bus tour will leave MAREC every 45 minutes to view nearby sites with an experienced solar installer who will talk and answer questions. Tours will start from MAREC at 10:15 am, with the last tour leaving at 1:00 pm. Sites will include solar thermal air and water systems as well as photovoltaics. MAREC itself will be open for tours of the building’s energy features, video presentations, and refreshments. To register, contact: Kim Walton, Program Coordinator at 616.331.6907 or kim.walton@gvsu.edu.



Lunch & Learn this Fall at MAREC

Join us for a new monthly public lecture series at MAREC offered over the lunch hour. This series is FREE; bring your lunch; drinks and tasty desserts provided. Please see our calendar on page 4, where you’ll also learn how to register.

August 16th kicked off the series with Jim Brown, a business person from Hastings, who discussed starting his recycling business. He explained the equipment used and the pitfalls and opportunities facing the recycling industry today.

Teaching Teachers about Energy



Energy issues will continue to be paramount in our society’s future. How do you teach the next generations about alternative energy?

K-12 educators will get answers to that question along with hands-on experience this fall through a professional development series offered by Kent Intermediated School District and MAREC. More than 20 educators attended our first sessions; see more on page 4 or visit gvsu.edu/pdp.

Monday, October 25, 2010

**MAREC Advisory Board
Annual Meeting**

~ Public welcome ~

3:30 pm to 5:00 pm

MAREC Conference Room
Refreshments following

Please register your attendance
by calling 616.331.6900

or email us at
marecinfo@gvsu.edu

McKenzie Bay joins MAREC Incubator Program



McKenzie Bay International Ltd., has joined the incubator program at GVSU-MAREC. Having relocated its principal

office from Brighton, Michigan to Muskegon as of September, [McKenzie Bay](#) will occupy business development space and receive support as it builds its core business at MAREC.

McKenzie Bay seeks to become a broad-based energy company that will develop new technologies and provide energy-related services. It holds two proprietary technologies, a wireless control system that optimizes lighting in buildings, and a vertical-axis wind turbine for electricity generation. McKenzie Bay plans to further develop its technologies and with help from business services available to MAREC tenants, move toward commercialization for both.

"We believe that customized, integrated energy solutions are the way to address every facility's need," said Kevin Cook, president and CEO. "It's the future of our business."

"As McKenzie Bay and its collaborators succeed, opportunities for job development in West Michigan will follow," notes Arn Boezaart, director of MAREC.

INCUBATOR PROFILE: Smart Vision Lights



Smart Vision Lights has been a MAREC incubator client for more than two years. In "tech talk," they are a leader in the machine vision lighting industry, developing energy-saving, software-driven LEDs that reduce costs and improve results of industrial processes such as quality control on assembly lines.

Machine vision has been vital for automation, but even machines need light to "see," and traditional lighting has drawbacks. Company founder and design engineer Matt Pinter says that MAREC has been "just the environment we needed; we are achieving and exceeding the goals we set for ourselves."

For more, visit www.smartvisionlights.com/

Recently at MAREC

Working with the Wind: Opportunities and Dialogue

"Michigan is becoming a manufacturing powerhouse for the wind energy industry," states the American Wind Energy Association, and MAREC's collaborative efforts in wind remain focused on opportunities and assessment:

- Planning continues for the Offshore Wind Feasibility Assessment Project.
- MAREC co-sponsored a seminar with NRG Bluewater Wind to introduce West Michigan companies to emerging wind industry related opportunities.
- Other summer highlights included a visit and lecture on offshore wind policy and technology by Dr. Jeremy Firestone, Associate Professor of Marine Policy and Legal Studies at the University of Delaware.



Energy User Group Ready to Increase Efficiency and Their Business Bottom Line

Through an extended training program from April to June, professionals from 18 large and small West Michigan companies gained the expertise to conduct effective energy efficiency audits and initiatives for their businesses.

As "Energy Champions," these individuals will help their companies achieve cost savings, lower their environmental impact, and gain a competitive advantage in the environmentally-conscious marketplace. The training was organized through a collaborative effort between MAREC, The Right Place/MMTC and the Sustainable Research Group (SRG). Planning is underway to continue this effort year-round and bring it back to MAREC next summer.

CALENDAR AT A GLANCE



MAREC and MI-SBTDC: Business Services for Muskegon and the Lakeshore

As a component of MAREC's incubator program, we are pleased to collaborate with the Michigan Small Business & Technology Development Center™ (MI-SBTDC™). This agency provides counseling, training, research and advocacy for new business ventures, existing small businesses, and innovative technology firms.

With state headquarters at GVSU and services offered at MAREC in Muskegon, MI-SBTDC™ provides:

- One-to-one business counseling
- Small business education workshops
- Market research
- Biz Resource Center
- Link to small business resources

Upcoming Courses

- **September 28:** Accessing Financing
- **October 26:** Fundamentals of Marketing Your Business
- **November 9:** Advanced Fundamentals of Starting Your Business

Register online at misbtcdc.org/training or call 616. 331.7370.

COMMUNITY MEETINGS AT MAREC

Business Network International

Port City Professionals – every Wednesday, 7 am.
Success Express of Muskegon – every Thursday, 7 am.

Muskegon Inventors Network – every third Tuesday, 6 pm.

Questions? Visit www.gvsu.edu/marec/

FOR TEACHERS: Alternative Energy Professional Development

Presented by Kent ISD, GVSU MAREC and
GVSU Continuing Education

September 30 & October 1

Bio Fuels & Advanced Fossil Fuel Generation (Muskegon)

November 1 & 2

New-Technology Rechargeable Batteries, Smart Grids,
and Renewable Energy Systems (Grand Rapids)

Additional programs are scheduled in March and May, 2011. To register, visit gvsu.edu/pdp and click on "Alternative Energy Program."



Teachers at the August Solar and Wind Renewable Energy Workshop.

LUNCH & LEARN AT MAREC

October 4th

Sustainable, Organic, and Low Input Agriculture
Dale Mutch, Senior District Extension Educator and
Extension Specialist

November 15th

Haworth's Zero Landfill Waste Programs
Bill Gurn, Manager – Facilities at Haworth, Holland

December 13th

West Michigan Regional Kitchen Incubator
Ron Steiner – The Starting Block, Hart, MI

Attendance is free; events begin at noon at MAREC. Please RSVP prior to each event by calling 616.331.6900. Check www.gvsu.edu/marec/ for more details.