

INFORMAL NOTES of the Montana Renewable Energy Association
Quarterly Meeting, April 8, 2008
NorthWestern Energy Division Office, Black Eagle

Note: Bold text indicates action items that require follow-up.

Present: (4 of 9 board members, 5 required for a quorum - no official business conducted)

Dave Ryan (NCAT, Butte), President and Board Member
Patrick Judge (MEIC, Helena), Secretary and Board Member
Kathi Montgomery (MT DEQ, Helena), Board Member
Tom Bishop (Sunelco, Victor), Board Member
Orion Thornton (Independent Power Systems, Bozeman)
Mark Dickson (Oasis Montana, Stevensville)
Stephen Alexander (Sundance Solar, Red Lodge)
Henry Dykema (Sundance Solar, Red Lodge)
Jenni Bryce (Pine Ridge Products, Great Falls)
Mike Strickland (Dearborn Solar Electric, Cascade)
LuMarie Strickland (Dearborn Solar Electric, Cascade)
John "Rip" Hamilton (Solar Plexus, Missoula)
John Jones (Highmark Media, East Helena)
John Campbell (NorthWestern Energy, Butte)
Megan Kujawa (NorthWestern Energy, Butte)
Jason Isbell (Solar Montana, Helena)
Ken Hammonds (Greenlight Electric Co., Great Falls)
Ben Reed (Winpower West, Billings)
Ross Mickalson (Alternative Energy Systems, Great Falls)

"State of the State" Report: At 12:21, President Dave Ryan convened the informal "State of the State" technology report session. Mike Strickland gave a mini-presentation on the ability of renewable energy projects to defer or avoid transmission upgrades / additional lines. He encouraged people to think of it in terms of a new unit: "miles of equivalent unloaded copper" and said that the renewable energy project developers have a "real equity position in the grid" for which they should be compensated -- "the power companies make out like bandits!"

John Campbell responded that the utilities are indeed aware of both the benefits and costs to the grid of new, distributed renewable energy projects, and that transmission owners like BPA have been taking it into account in their planning processes for years. In Montana, the effect has been negligible to this point. He expressed concern over the peaking problem, whereby the timing of greatest power production does not necessarily correspond with the timing of greatest line usage, and reliability standards require that the line be able to support peak usage, whenever that occurs. Strickland responded that with proper siting, that could be managed. Dave Ryan agreed that the effect in Montana was still "in the noise" but thanked Mike for bringing up a discussion that will become more and more important as we move the industry forward -- modeling the positive and negative impacts to the grid.

Responding to a question from Kathi Montgomery, Jenny Bryce reported on the Eoltec 6 kW grid-tied wind turbine she and Logan have been testing. Apparently, it had some problems, getting out of phase and breaking some internal spokes, but will be up again soon with the problem addressed. The French company is also testing a 25 kW machine in Scotland. The

Bryces are predicting that the ~280 Watt microturbine they invented will be ready for sale by June. In response to a question from Tom Bishop, Jenny responded that their Skystream had been replaced, and that they are working out the software bugs (apparently there were some altitude calibration issues). Now, they are trying to address some problems with the remote monitor. She felt that she would be able to recommend the machine to installers given a few more months of troubleshooting / improvements.

Mike Strickland and Tom Bishop led a discussion about Battery Pulsers, which Tom characterized as more effective for battery maintenance (to extend the life of a battery) than as battery rejuvenators (to restore drained / damaged batteries).

Introductions / Minutes: Dave Ryan led a round of introductions. Patrick Judge indicated that no official business could be conducted because a majority of the organization's board members was not present. **He recommended that the bylaws be altered in the future to allow proxy votes by members of the same organization as board members. The minutes of the January 9th meeting will need to be approved in the future.** Patrick did run through the list of bolded action items, checking in with members on their progress. He estimated that about half of the tasks had been completed. Kathi Montgomery reported that the bankruptcy issue had been settled, but that she never did find an appraiser with good expertise in renewable energy systems. Instead, most appraisers just look for comps -- other houses with similar systems that have been sold. Dave Ryan indicated that the clean energy award could be presented to Marla McCombie the next time we meet in the Missoula area, and **urged us to consider Gordon Brittan for the next clean energy award.** Dr. Brittan is a philosophy professor at Montana State University and Director of the Wheeler Center. He is retiring, and will be honored at a dinner on April 17. He has been the owner of a wind turbine at Mission Creek (east of Livingston) since the mid-1980s. Apparently, he says he is generating more now than ever, but he's pretty sure it still hasn't paid for itself!

Agenda Review: Patrick Judge indicated that the agenda would be fairly loose, as many of the items originally scheduled would not take place (due to absences, etc.).

Treasurer's Report: Mark Dickson delivered the Treasurer's report on behalf of Chris Daum. He reported that MREA had \$7,145.97 in its bank account as of March 31, 2008. Patrick Judge reported that the organization has 44 members who have paid their 2008 dues, with two additional checks received at the meeting (making 46 total).

Website Report: Dave Ryan (again) encouraged the members to keep the website up-to-date. The website is maintained by Cathy Svejksky at NCAT.

Cathy's contact information is:
cathyS@ncat.org, 406/494-4572

Kathi Montgomery promised to review and update the list of dealers.

Free-flowing Conversation: Dave Ryan reported on the QF (qualifying facility) proceeding at the Public Service Commission. He said that the terms have changed from \$22.75 per MWH with a 3 MW limit, to one of three options (the simplest being \$49.90 per MWH) with a 10 MW limit. This is a definite improvement for QF developers. Rip Hamilton thought that another one of the three options was indexed to Mid-Columbia prices, which he said have reached \$100 per

MWH recently. Dave reported that there is still some controversy in the proceeding regarding the price of ancillary services being charged to the QFs.

John Campbell was asked to comment on the recent organized brownouts that have taken place in Billings and elsewhere. He said that the purpose is purely to raise awareness, and that it is not a serious exercise in sustained conservation (load reduction or load shifting).

Megan Kujawa reported that NorthWestern will be conducting an intensive residential efficiency project in Missoula this summer involving 8 blocks of housing selected from different areas of the town to capture vintage construction from the 1940s, 1950s, 1960s, 1970s, and 1980s (2 blocks from each). The specific blocks have not yet been selected. NorthWestern will be providing all of the measures typically included in their residential audit PLUS 100% of the cost of insulation. NorthWestern is working in conjunction with Mayor Engen's climate advisory group, which has expanded the project to include water conservation, waste reduction, recycling, etc. Originally, NorthWestern's preference was for 8 contiguous blocks, which would have made data collection easier (or one feeder line). Energy use will be measured before and after the conservation measures are installed, and results will be available roughly one year from now.

Patrick Judge characterized it as a "Mini Hood River" project (see http://www.bpa.gov/energy/n/reports/Results_Center/ProfileInfo.cfm?ID=12).

The project is "fuel blind" meaning that it will improve houses regardless of the heating source (electricity or gas). John Campbell reported that NorthWestern is moving forward with its natural gas assessment, and will be rolling out Demand Side Management programs on the gas side within a year.

John Campbell also reported that NWE will be pursuing a full-blown smart-metering study (which could cost as much as \$500,000), in accordance with PSC instruction. Initial analysis conducted by Bill Thomas at the company suggests that such a project will NOT be cost-effective in Montana, because of low population densities, expensive infrastructure (for metering, telemetry, billing, etc.), and relatively small differences between on-peak and off-peak power prices (NWE does not currently offer time-differentiated rates, and compared to the national average, NWE's electricity prices are generally rather low). The PSC wants to hear from an independent, third-party. Campbell agreed that it makes sense to study it first, rather than launching an expensive program that may not be economically wise (as happened in Tacoma).

Dave Ryan thought Montana should move into it stepwise, starting with simple dashboard displays to get people familiar with reading meters. Dave mentioned that in some areas of the country (midwest), they actually have NEGATIVE off-peak rates, which can be used to charge electric cars (or batteries, which could store power that could be sold back to the utility in the daytime!). Tom Bishop said, "if hydrogen ever gets full-blown, so to speak, you could also use that to help ease the peaks" as is apparently done in places like Norway and Boulder, Colorado. Next ensued a short discussion about the nature of MREA as an organization. Dave Ryan explained that technically it is an environmental organization, not a trade organization. Patrick Judge took slight issue with this characterization, and subsequently confirmed that we are a publicly supported charitable organization (noting that neither the IRS nor the Secretary of State has a specific designation for "environmental" organization -- while MREA does fall under the same section of the tax code as environmental groups, it is also lumped in with many other types of non-profit charities). Patrick Judge read the qualifications for membership (supporting the mission and being current in dues), and also the mission statement. He suggested that the group think about whether it would like to progress to a staff-based organization. Dave thought that perhaps we could find someone who needs a few extra hours of work. Ben Reed suggested

Michelle Hippler (info@michellehippler.biz, 259-2619), an "energetic marketing type" who organizes the Billings "Green Drinks" group. Ben described the concept behind Green Drinks, and also suggested that we might hold our next meeting in conjunction with that group. He said it's a great a networking organization (albeit, very informal), and that they will soon be publishing a green directory for Billings. Each month, a different sponsor hosts the event and buys the drinks and munchies. Orion Thornton said 40-50 people showed up at the first Green Drinks meeting in Bozeman, which was hosted by Refuge. Independent Power Systems will be hosting in June. Helena also has a Green Drinks group. See: <http://www.biothinking.com/greendrinks/index.php?country=USA&city=Helena>

Safety Training Update: John Jones reported that over 30 people participated in yesterday's OSHA training. They focused on the practical nuts-and-bolts aspects of complying with OSHA safety guidelines, and also discussed the possibility of licensing a new renewable energy specific craft in Montana. They worked to develop PV-specific procedures, including lockout/tagout for the installers (which will help differentiate the "hot side" from the other work) and also for the homeowners. In addition, there were eight solar-thermal installers present yesterday, although there is another group helping with that side of the business.

John also gave an update on the "montanareinstallers.com" web-log. He made some changes that now require people to register before they can access any of the information (due to some unfortunate hacking issues). John had a number of handouts describing the blog and how to use it.

John felt that the OSHA partnership was proceeding quite well. He said that OSHA is very excited about it too, and impressed with the enthusiastic participation of the installers. In addition to making sure that RE installers are protected, the partnership is also making sure that they aren't burdened by unnecessary regulations.

Tom Bishop did an excellent job putting together an initial list of potential hazards associated with PV installations.

One thing that we need to focus on is the first aid training & CPR, which is especially important for remote installations. The group agreed that bringing everyone together for the CPR training (and updates to that training) was probably the best approach.

Calendar Items: Kathi Montgomery announced that the 2009 Harvesting Clean Energy Conference would take place in Billings next January 25-27 at the Holiday Inn. She expects 500 people. There will be both plenary and break-out sessions. She said the vendors booths are pretty affordable, and invited MREA to participate again. There was also talk that the Corporation for the Northern Rockies will be hosting their Sustainability Fair in Billings, around the same time. Kathi also announced that the Kalispell home show would be this weekend, and that she had some tickets if anyone wanted to go.

The Harlowton Festival of the Wind will be held in June again this year, but NCAT will not be hosting their Sustainability FEST. Rip Hamilton reported that the Missoula Federal Credit Union had a successful sustainability event, and that they will probably host it again next year.

Other Announcements:

Kathi Montgomery gave an update on the Governor's "20 x 10" Initiative, which seeks to reduce energy consumption by all executive agencies (not universities) 20% by the year 2010 (and does not allow for green energy purchases to count -- this is pure conservation). DEQ is the lead

agency in helping making this happen. All of the "Capitol Complex" buildings will have studies done on them, along with many other state-owned buildings. DEQ is also starting "Green Teams" of motivated state employees who will help get people to turn off unnecessary appliances, etc. This project will also be looking at transportation, waste, etc. But the "20x10" initiative is specifically targeted at electricity and heating fuels.

John Campbell reported that there is an "excellent new solar thermal guide" dealing with both active & passive systems. He offered to make it available to MREA members.

John also led a discussion about whether it was more desirable to fund one really great energy education facility in the state, or to continue funding projects around the state. Missoula College of Technology has a two-year renewable energy degree. Northern Montana College has a biofuels facility. Helena has expressed interest -- in short, "everyone wants to be the training facility." He also asked what role the internet can play, recognizing that the Missoula program is mostly on-line.

It was noted that the university system (at least the larger campuses) are considered "large industrial customers," which can self-direct their USB dollars and shouldn't need NorthWestern USB support. There was also discussion about how transferable credits are.

Rip Hamilton noted that the Sun-4-Schools program wasn't entirely successful -- some of the systems are no longer operating. He felt that educational projects need to be properly funded -- in addition to the generators & inverters, proper monitoring equipment is essential -- as is a proper curriculum and motivated instructors.

Tom Bishop said he thought that doing technology programs through the web could be problematic, and wondered how valuable two-year degrees are. Orion and Kathi felt that the nation is moving in that direction, and that it does make sense. John Jones said that we should be (and are) doing more work with high school students to prepare them for these programs. Kathi noted that 60% of incoming engineering students at MSU are interested in wind. But it's difficult if instructors move on (Montana Tech wind engineer?). A comment was made (Ben Reed?) that it is much more efficient to fund one really strong central program, so that technology upgrades can be made in a far more cost-effective manner (much like the concept of a library).

Jason Isbell reported that Solar Montana has a new store-front location on Fuller Ave. in Helena. They are doing solar electric, wind, solar thermal, and other projects.

Orion Thornton reported that Tony Boniface was recently recognized for his work on a large residential housing PV project in Colorado "for a super clean system" -- one on every house. He won a trip to see the manufacturing plant in the Philippines.

Sundance Solar recently completed the largest PV project in the state -- 46 kW on a 300 unit senior citizen apartment building. It's generating 6000 kwh per month. The project may be expanded to 60 kW.

Rip Hamilton reported on a "zero energy" home in Missoula, Solar Plexus installed the 4 kW PV system. The home is 2700 square feet, and the February energy bill was \$28. See the story at:

<http://www.missoulian.com/articles/2008/03/16/news/top/news01.txt>

Jason Isbell reported that Solar Montana recently installed a 5 kW PV project in Cut Bank, next to the big penguin sculpture (if that's what it is).

Adjournment: The informal meeting came to a close at 3:06 pm. It was suggested that the next meeting take place on Tuesday, July 8th in Billings in conjunction with the "Green Drinks"

meeting. Every effort should be made to form carpools to minimize fuel consumption / maximize social interaction.

These DRAFT INFORMAL NOTES were prepared by Patrick Judge, Secretary

Addendum: Patrick Judge moved that the board adopt the January 9, 2008 minutes electronically. Kathi Montgomery seconded the motion, and it passed with the support of Patrick, Kathi, Tom Bishop, Dirk Ellis, Conor Darby, Steven Aagenes, and Dave Ryan. On May 16th, Patrick Judge polled the board electronically to see if they were interested in sponsoring a student (Devin Trainor) for this year's Wild Rockies Field Institute (University of Montana - Missoula) energy bike tour. The requested amount was \$500. Tom Bishop seconded the motion. With seven board members voting AYE and none objecting, the motion passed.

We need to get permission to make a long distance phone call, then go with free conference call dot com, works like a dream. The next meeting will be in Billings, if we get a venue lined out I will see if I can organize the teleconference.

David Ryan PE

To avoid my name in bold in the next minutes, here are the hits on the MREA page I said I would get. 6 months, 2391 unique visitors.

David Ryan PE

Energy Engineer

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-----Original Message-----

From: John English [<mailto:johne@ncat.org>]
Sent: Thursday, May 08, 2008 10:12 AM
To: 'Dave Ryan'
Subject: RE: Hits on MREA Web Page

Hi Dave, here are the numbers I was able to come up with for the MREA site. ☺

<http://www.montanagreenpower.com/mrea/>

Time range: 9/1/2007 04:15:18 - 4/1/2008 04:09:45

Number of Unique Visitors:

Sept07 = 208

Oct07 = 209

Nov07 = 254

Dec07 = 235

Jan08 = 324

Feb08 = 417

Mar08 = 365

Apr08 = 379

Total = 2,391

Hope this helps. Please let me know if you need anything else. ☺

John English

Webmaster

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June 11, 2008 -- proposal to sign-on to, and contribute \$100 to the ad thanking Senators Baucus and Tester for their votes on the Climate Protection Act:

ok, we have a motion and a second, and judging from the emails we've received so far, we have affirmative votes from:

Chris Borton -- motion
Kathi Montgomery -- second
Dave Ryan
Patrick Judge
Steven Aagenes
Dirk Ellis also indicated his assent

that's a majority of the board, so that constitutes a decision — thanks everyone. Chris Daum should get in contact with Chuck or Diego, to make sure the check gets made out correctly and sent to the right address.