

Minutes of the Montana Renewable Energy Association
Quarterly Meeting, July 15, 2009

Butte – National Center for Appropriate Technology

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

Present: (25, 9 out of 9 board members, 5 required for a quorum)

Dave Ryan (NCAT, Butte), President and Board Member
Christopher Borton (Sage Mountain Center, Whitehall), Vice Pres. and Board Member
Chris Daum (Oasis Montana, Stevensville), Treasurer and Board Member
Patrick Judge (NW Energy Coalition, Helena), Secretary and Board Member
Conor Darby (Independent Power Systems, Bozeman), Board Member
Tom Bishop (Sunelco, Victor), Board Member
Rip Hamilton (Solar Plexus, Missoula), Board Member
Jackson Isbell (Solar Montana, Helena), Board Member
Kathi Montgomery (MT DEQ, Helena), Board Member
Ben Brouwer (AERO, Helena)
Kelly Browne (Individual Member, Missoula)
Deb Poteet (Sustainable Building Systems, Missoula)
John Campbell (NorthWestern Energy, Butte)
Ken Hammonds (GreenLight Electric, Black Eagle)
H. Hammonds (GreenLight Electric, Black Eagle)
Tom McHenry (GreenLight Electric, Black Eagle)
Ross Holter (Flathead Electric Cooperative, Kalispell)
John Jones (High Mark Media, East Helena)
Dan Kenworthy (Kenworthy Electric, Sheridan)
Chuck Magraw (Renewable Northwest Project, Helena)
Emily Peters (NCAT, Butte)
Ben Reed (Winpower West, Billings)
Tom Thiel (Individual Member, Butte)
Orion Thornton (Independent Power Systems, Bozeman)
Danie Williams (NorthWestern Energy, Butte)

“State of the State” Technology Report:

Christopher Borton reported that solar module prices are coming down. Ben Reed expanded on his enthusiastic report from last time, about the Evance Iskra 9000 5 kW wind turbine. He says it outperforms the Bergey 10 kW. He had some problems with the electric brake, but the engineer from England fixed it and he is quite pleased (the brake is just a backup – normally, there is no high-speed shutoff). They have a rigorous checkout procedure, which is a good thing. The installed cost was about \$45,000, and the machine is located South of Big Timber, on Park Electric’s system. It operates center pivots for irrigation and is the first one installed in the U.S. It has a Windy Boy inverter, and because it’s the only device they’ll know the production. Park Electric didn’t require any extra insurance (YVEC settled for \$100,000). They also offer an annual true-up net-metering agreement now. Rip Hamilton confirmed that Park has been good to work with lately, demonstrating reasonable flexibility with its net-metering policy.

Kathi Montgomery echoed that there's been a big change in co-op country, with many of the monthly fees being reduced or dropped. Ross Holter said the new meters that preserve all of the relevant information cost about \$100 (as opposed to \$35 or so for a normal meter). Several installers responded to the Smokejumper Center's RFP for a 40 kW system. Trackers were discussed – Zomeworks is popular, and pretty good, but sometimes doesn't synch that well (between multiple pole mounts). The aesthetics of uncoordinated panels is disturbing to some customers. The systems need to have the same azimuth, exact same height, etc.

Call to Order: The official meeting was called to order by President Ryan at 1:02 pm. He led a round of introductions.

Approval of Minutes: Chris Daum moved approval of the Minutes from the May 2009 meeting, as amended / clarified by Kathi Montgomery. Kathi Montgomery seconded the motion, and it passed unanimously.

Treasurer's Report: Chris Daum reported that MREA's balance was \$9866.55. The organization has 58 members who have paid their 2009 dues.

MREA Banner: Dave Ryan unveiled the two, new MREA banners.

USB Report: John Campbell reported that NorthWestern's qualifications standards for installers are now in place and posted at:

http://www.northwesternenergy.com/display.aspx?Page=Photovoltaic_Systems&Item=91

Some installers have already sent in their paperwork.

Campbell said there may be some resistance by some parties before the PSC, so the group agreed that MREA may be able to play a helpful role in that venue.

Homeowners can install systems without having the qualifications, but they can't receive USB grants unless a certified installer does the work.

Campbell discussed other issues, such as "free-ridership" when people install RE systems or pursue conservation measures, and then discover and want to take advantage of incentives after the fact. The point of incentives is to incent those projects that otherwise wouldn't have gone forward. Campbell is in the process of rewriting NorthWestern's "Bright Future" publication to be clear about all of this.

John also reported on the company's recent conservation efforts. NWE is quite pleased with securing 6.6 aMW last year, and at a cost less than 2 cents per kWh. Campbell distributed some factsheets on some of their larger conservation projects.

John gave an update of the USB RE projects that had been selected for funding in the first half of 2009:

- inverter replacement on schools – while some people feel that USB funds shouldn't be used for O&M costs, it's also important to protect the investments previously made (in this case, about \$400,000 worth). The school PV systems, when operating, serve both the educational AND power production goals. If not working, they become an eyesore instead of a showcase. Of the 15 schools, 13 of them also had failing Kyocera panels, which are being replaced as well (under warranty – although 102 watt modules instead of 120). 12 of the inverters were GC 1000 – some had been updated already. Also, the original inverters had no communications capabilities.
- 13 kW PV Missoula fire station project

- 4.6 kW PV East Helena fire station project
- 550 W residential microhydro project in Stevensville
- 3.1 kW PV Habitat for Humanity project in Hamilton
- 10 kW residential wind project in Cascade
- 6.48 kW PV Missoula Food Bank project
- 1.8 kW Skystream residential wind project in Cascade
- partial funding for 3.2 kW PV Stafford Animal Shelter in Livingston
- 3.2 kW PV Missoula Food Bank Network Building
- 7.2 kW PV Rocky Mountain Hummer Connection in Bozeman
- 5 kW? PV Smokejumper Visitor Center in Missoula
- two 1.8 kW Skystream residential wind projects in Great Falls
- 6 kW PV project at Safety & Health Services in Butte
- 4.2 kW PV residential project in Billings that may serve low-income
- 10 kW residential wind project in Chinook
- 2.0 kW PV with battery storage for fire station in Reed Point
- wind project at Poor Clares monastery in Great Falls

The total project cost is about \$450,000, leaving about \$400,000 for the second half of the year. As for RE education funding, Campbell reported that the budget was pretty much tapped: Sage Mountain Center evening presentations, AERO solar tours, and John Jones' work on the safety issues.

Ben Brouwer asked about funding for solar thermal projects. Campbell responded that that would have to be under the gas USB. He also mentioned the company's fuel switching program, which also had to do with trying to protect customers from volatility (although gas is now as volatile as fuel oil, for example).

Campbell would like to see more projects in smaller communities.

Rip Hamilton mentioned how they had taken out ads before in Great Falls, which led to about 18 proposals each time, but none resulting in projects. There was a short discussion on the pros and cons of "free bids". Dan Kenworthy said he charges for site assessments (to cut down on the "tirekickers"), and then the customer can hand the bid to whoever they want. Tom Bishop does quotes for free, but charges if he has to go out (unless they sign on the bottom line, in which case it's gratis).

There was some controversy over the installer requirements for wind projects. Campbell acknowledged that while they may not be perfect, NWE had to get something out there. This was just the first cut – over time they may change. People thought that the AWEA NABCEP wind program may help. So far, there are 5 qualified installers. NorthWestern is trying to do what it can to help people become qualified, but can't make that promise indefinitely into the future.

Campbell also noted that the company installs the net-meters for free. But they don't like to put them on if the RE project is so small compared to the load that the meter never spins backwards. But they DO WANT TO KNOW OF ALL SUCH PROJECTS out there, so Danie can keep track. She has a database of everything out there (including size, location, etc.) – she's picking up where Megan left off, in terms of compiling all of this data. She urged people to fill out the normal interconnection form, but then indicate that no net meter was used. There are currently over 500 net-metering customers on NWE's system. The group expressed interest in seeing that information posted on www.montanagreenpower.com

Campbell expressed some concern about privacy. Judge responded that he thought the public

had a legitimate interest in knowing the names of the grantees, as they are receiving substantial amounts of ratepayer funds. The projects are also meant to have some demonstration value, and grantees are expected to open their homes or businesses for at least one solar tour. But their addresses and phone numbers could be left off. This is how it was done on the now outdated list at:

http://www.montanagreenpower.com/solar/usb_installations.php

Campbell talked more about the company's DSM programs – electric AND gas. There is no specific cap on these funds, but projects do have to meet cost-effectiveness requirements to be part of the company's default supply portfolio.

Ryan reported that NCAT is doing over \$1 million in DSM work this year – they do the analysis at no cost, and are paid per kWh saved. Most of the market is in retrofits.

Rip Hamilton discussed the need for a consensus position on an acceptable “percent net losses on annual production” standard (due to shading, etc.). Solar Plexus has gone to 18% in some cases. He thinks the industry needs to have some consistent, rule of thumb, “best practices” figure for total performance. Dave Ryan said it needs to be defensible. Conor Darby thought 10% might make sense, and noted that Excel (in Colorado) doesn't allow ANY shading. There was also some discussion about the proper measurement methodology – Pathfinder or RETScreen. Output projections should be on every proposal. Dave Ryan proposed having some minimum annual production standard for “kilowatt-hours per kilowatt of installed capacity,” although that's difficult too, as you can't predict the weather. Dan Kenworthy said you're putting yourself at risk by going down this route, and didn't think such a standard could be decided on at this meeting. Tom Bishop thought you could be conservative about it, and just make sure to emphasize “approximately”. Campbell regularly must make projections, and he uses a conservative 15% capacity factor (3.6 equivalent solar hours per day / 24 hours – Ryan uses 4).

Borton said it would be desirable to keep reduction due to shading at 10% or less.

Campbell said he only provides recommendations, and is not going to police it. He doesn't want to be the one to make the call at the residential level. It was agreed that no action would be taken today. Ben Reed pointed out that in Germany, a 10 kW system is needed to produce the same as a 1.5 kW system here (due to the cloudiness).

Safety Issues Report: John Jones announced that there will be a July 27th safety training at NorthWestern's S.O.C. Center in Butte at 9:00 am. This is the basic overview course for new installers / introduction as to how the whole system works.

Jones said that OSHA will be evaluating all of the stimulus projects (and hiring some new people to ride those jobs), and MT Dept. of Labor will be hosting a training in early September that everyone will be required to attend.

Ed Skubicz will be teaching another crane / mobile equipment class. The mobile equipment standard hasn't changed since 1971, but it is in the process of doing so now. Apparently, there will be a three year grace period. For now, the class is largely Bobcat oriented.

There will be a class in early October with Bill Brooks that will serve as continuing education for NABCEP. It will be technical and will cover more than just safety. It will also be somewhat pricey. The first day will be for installers, and the second day will be for electrical inspectors, electrical board members, linemen, meter people, etc. It may possibly count for electrician continuing education.

OSHA also wants people from each crew to be CPR certified. They'll arrange CPR classes (one

in Missoula and one in Bozeman), but installers can also get that training elsewhere. He'll try to give as much notice as possible. For Red Cross, you have to update the certification every year. He thought American Heart Association was every other year.

In general, NWE safety programs are well respected and starting to be used as a model elsewhere.

Report from Ross Holter, Flathead Electric Cooperative: 3 weeks ago, they had their start-up for the first landfill gas project in the state. They financed it with the zero-interest loans available through the sale of CREBs bonds. The project extracts landfill gas (mostly methane) from 41 wells and converts it into 700 kW of electricity production using a Caterpillar engine, with a 97-98% capacity factor. They will ramp up to 1.6 MW as the landfill expands. Even before that, there is a 20 year expected life to the project. In 15 years, they'll probably add more. Question: Why Internal Combustion Engine instead of a turbine?

Answer: SCS Energy specializes in that.

This is FEC's first venture into electrical generation. The county was already collecting and burning the gas for water quality purposes – this will therefore save the county several hundred thousand dollars per year. The county owns the landfill and the trash, but FEC owns the collection system, the engine, etc.

The cost will be 6.5 – 7 cents per kWh.

On another topic, the City of Whitefish hired someone to do a feasibility study for a 250 kW refurbished hydro project. Apparently \$2 million of the \$2.5 million project value is already in place, and there may also be a permit in place as well. If it went forward, FEC would buy the output.

Also, Solar Plexus installed a 6.4 kW PV system, which is FEC's largest, and Stolz lumber is looking at a 20 MW biomass system. However, the latter currently looks to be about 12 cents per kWh, which is too expensive. Hopefully, they'll be able to repackage the project with stimulus dollars and make it work.

All told, FEC currently has 1 wind and 8 PV net-metered systems. Unfortunately, it's not a great wind area. FEC does not offer rebates, but they are generally pro-renewable energy and they do encourage people with their annual true-up policy, etc.

Holter also reported that the "Repowering the Flathead" sustainability group has been meeting.

Ellensburg, Washington Community Solar Discussion: Ben Brouwer described the community solar project at Ellensburg, WA, to see if the group had any thoughts about the feasibility of such a venture in Montana:

<http://www.b-e-f.org/renewables/ellensburg.shtm>

The project is roughly 60 kW, and is very visible from I-90. It's referred to as a "virtual net metering" project, with members of the community contributing to the project, and then receiving a proportionate benefit from the output. This allows for valuable economies of scale, facilitating lower-cost renewable energy than could be achieved with a collection of smaller roof-mounted systems. Montana doesn't have many municipal utilities, and net-metered systems for NorthWestern are currently limited to 50 kW, but there may be some opportunity nonetheless.

In particular, Ben Reed developed a similar proposal that he sent to three co-ops. He too noted the attractive economies of scale associated with "aggregated systems". His proposal involved locating a 1 MW solar facility on a parcel of land near a substation, with trackers to maximize

production. Impressively, the output would be similar to that of a project he did in California. Customers would then purchase the “production rights” which would be transferable if they moved to a different house, for example. The accounting is simple, and the production is “infinitely divisible.” But for IOUs, the law currently doesn’t allow it. Ben wasn’t sure if it would qualify for federal tax credits, but if the government wanted to get the biggest bang for the buck, it certainly should.

The discussion then broadened to address tax credits and financing in general. Apparently, there IS some federal incentive for non-profits (and co-ops). These entities are typically left out by the traditional approach tax credit approach to incentives (like the PTC).

Sunwise, Gro Solar, etc. have new financing products. But you really need to get some value for the RECs in order for this stuff to work. Also, everything is based on avoided costs, “which are in the tank right now.” Orion thinks you need to have megawatt-sized projects to take advantage of these programs.

Rip Hamilton brought up about rate design, and how Ravalli’s base charge covers the first 250 kWh of usage each month. This is a disincentive to both conservation and self-generation. Ross Holter reported that power allocations from BPA are becoming more limited and that prices will be jumping significantly post 2011 (as opposed to this Spring, when the Mid-Columbia Index actually went negative). He also said that FEC put a lot of effort into marketing its environmentally-preferred (green tag based) power product, but only got 430 customers. Judge noted that that was actually pretty decent – that NorthWestern has a comparable number, despite having a MUCH larger customer base and a much older program.

Federal Legislation Report: Chuck Magraw expressed his view that supporting federal energy legislation (with a cap on carbon emissions) is probably the most important thing people can do for renewable energy right now. The legislation needs to be comprehensive, far reaching, and paradigm-changing. Chuck said that Montana’s two Senators are looking to hear from us, and ARE hearing a lot from the other side. He said currently, they’re officially neutral on the bill, but that they would probably be inclined to support it if they have good grassroots support. As for the debate within the environmental community, Chuck said acknowledged that the bill has problems and will continue to have problems. But at the same time, this is incredibly significant legislation and the difficulty of getting it shouldn’t be underestimated. Chuck thinks that the bill is certainly better than nothing, and that if it doesn’t happen this year it may stall for several years. He said the electric utility industry is somewhat split on the bill, and there are some powerful opponents to it: coal, petroleum, chambers of commerce, manufacturers, etc. The biggest substantive problem in his mind is the offset provisions (terrestrial sequestration, etc.). Sure, it’s important to have some cost control, but there are some BIG loopholes in there right now (due to compromises between the House Ag committee and Rep. Waxman’s committee). The Senate bill will be its own thing, and then there will be additional negotiation. Kathi Montgomery proposed a motion for MREA to support the passage of federal climate legislation this year. Conor Darby seconded the motion, and it passed unanimously. **Dave Ryan was asked to write a letter urging Montana’s senators to support federal legislation to regulate carbon dioxide emissions. He agreed, and offered to come up with a first draft. Chuck Magraw volunteered to assist in that effort.**

Other issues: The board discussed the pros and cons of membership in groups like ASES. It

would be good to have a specific policy, but more information is needed.

The group did not respond favorably to the request that the trailer be rented out to other groups, in part because of the liability issues. The group would prefer to simply sell the old trailer, and develop something new. Ben Reed volunteered to be involved.

Loan Program Update: Kathi Montgomery reported that the state reviewed more than \$1 million worth in loan applications last fiscal year, and closed on 63 loans for a combined total of over \$900,000. The additional \$1 million from the stimulus bill is still not in the state, but will allow for some bigger individual loans. One proposal is asking for \$77,000 for a 20 kW turbine (normally, the loan limit is \$40,000), and another loan could be as big as \$100,000. 30-60 additional days will be required for DOE to do its NEPA review, but people are attempting to get categorical exclusions for standard roof-mounted PV systems, for wind turbines under 50 kW, etc.

Montana's stimulus bill also contained \$1 million in grant money for energy storage and other projects (including RE) that are a little out of the norm (but note that stimulus money cannot be used for anything that can be called R&D).

Ben Reed started a short discussion about the definition of "renewable energy". Patrick Judge said there are multiple definitions in state law, and that **he would be happy to circulate them** (some are stronger than others). **It was suggested that MREA develop its own.**

Dan Kenworthy has gotten good feedback on Kathi's financing system.

Sustainability Expo Report: The venue didn't seem to be as well attended, perhaps because it was an indoor venue, or because it was in a more conservative part of the state, or because this was the first year in the new locale, or because they were charging \$5 at the door? While overall numbers were down, the quality was quite high – the event has definitely led to some real jobs.

Next Meeting: The next regularly scheduled quarterly meeting of MREA will take place on October 14th. The Board will determine the exact date, time, and place, and announce it to the "mrea" list.

Adjournment: Dave Ryan adjourned the meeting at 4:46 pm.

Addenda:

FYI, all

David Ryan PE 2910 Floral Blvd Butte, MT. 59701 406 494 0930 h/o 406 490 6233 cell

Date: Tue, 25 Aug 2009 11:34:04 -0700

Subject: Congratulations Montana Renewable Energy Association accepted as Green Directory Members

From: jophiel@greendirectorymontana.com

To: drpe@msn.com

Montana Renewable Energy Association has been accepted with 5 Green

Badges and a Green Score of 105. View your new jump page here.
<http://www.greendirectorymontana.com/dir/butte/alternative_energy/montana_renewable_energy_association/> Please let us know if any changes are necessary. Attached is your certification seal for 2009; feel free to use for marketing purposes. Welcome to Green Directory! Best regards-

Jophiel Silvestrone CEO
Green Directory Montana Inc.
2 Custer Ave
Billings, MT 59101
greendirectorymontana.com <<http://greendirectorymontana.com/>>

(406)208-TREE

Follow us on Twitter: www.twitter.com/GDMTtweet
<<http://www.twitter.com/GDMTtweet>>

Green Directory has been awarded the EcoStar Award for 2008!

Our Philosophy:

One green change alone can't make the world sustainable overnight, but thousands, and eventually millions of ones will. One drop in a bucket hardly makes a splash, but millions of individual drops make an ocean.

On September 3, 2009, Dave Ryan consented to add MREA as a co-signor on the following letter:

NW Energy Coalition Sierra Club Alternative Energy Resources
Organization Earth Ministry Washington Environmental Council
Idaho Conservation League Montana Environmental Information Center
Montana Renewable Energy Association Snake River Alliance
Save Our *Wild* Salmon The Policy Institute

Public-interest community statement on release of the draft 6th Northwest Power and Conservation Plan

For immediate release

Sept. 3, 2009

Today, the Northwest's official electricity planning agency released a draft 20-year power prescription that -- for the first time in the agency's history -- calls for meeting *all growth in demand* with no net increase in carbon emissions and no new fossil-burning power plants. The draft sets an aggressive but very attainable conservation target of 5,800 average

megawatts and calls for another 1,800 aMW of new renewable energy. In ordinary times, approval of this draft would be considered a signal moment in the march to a cleanly powered Pacific Northwest. Five years ago, we hailed adoption of the Northwest Power and Conservation Council's fifth regional plan as the first to endorse meeting *most* of the region's growing demand for electricity with new renewables and energy efficiency. In ordinary times we would have seen the draft 6th Plan as an improvement. These are not ordinary times.

While no net increase in carbon dioxide emissions would be a groundbreaking achievement, we urgently need actual reductions. The scientific consensus is clear: climate change is happening now and human-caused greenhouse gas emissions play a central role. Its documented effects are intensifying and will continue to intensify if we do not start immediately to slash our greenhouse gas emissions. The draft 6th Plan will not make that happen.

Dirty coal plants serve only about 20% of the region's electricity needs but directly cause nearly 90% of the Northwest power system's global warming emissions. The draft 6th Northwest Power and Conservation Plan, if it becomes final, would not lessen Northwest businesses' and families' dependence on those dirty coal plants. In fact, the plan would not reduce current regional carbon emissions *at all* – not one single ton.

Thursday's draft plan fails to capitalize on the economic benefits of developing even more energy efficiency and renewable energy to replace the current dirty coal power.

But with modification, the *final* 6th Plan can protect consumers, spur clean energy investment, encourage job creation, contribute to wildlife recovery and help set us on course to meet the climate goals already in force in three of the four Northwest states.

To do so it must show the path to steadily reducing our carbon emissions, for the sakes of our pocketbooks, our economy and our world.

Preliminary research by council staff shows that dirty coal power could be fairly quickly shed at a surprisingly low cost. They also found minimal rate impact from replacing the power from the four fish-killing lower Snake River dams. And even more energy efficiency than the draft plan targets is available to lower people's bills.

We urge the Council to adopt a plan that reduces our CO₂ pollution in accordance with the targets established by Northwest states and the scientific community. The final 6th Plan must tell the region to seize the ample clean energy opportunities documented most recently in *Bright Future* <http://www.lightintheriver.org/reports.html>:

- More energy efficiency, lowering everyone's bills and putting thousands back to permanent work.
- More clean renewable energy, filling local government coffers and keeping family farms alive.

- More wild salmon, to restore fishing-based business and communities, to meet tribal treaty obligations and to preserve a foundation stone of our Northwest identity.

The eight council members – two governor-appointed representatives each from the states of Idaho, Montana, Oregon and Washington – have at their disposal the building blocks to construct a cleaner energy future. Now they need to put those together ... and we have to help.

For the next two months, we must write, call, email and speak out at the public hearings to be held in all four states, telling the Northwest Power and Conservation Council to adopt a 6th Northwest Power and Conservation Plan that reduces emissions, follows the science, serves the public interest and helps revitalize our economy. A plan for ordinary times simply won't do.

For more information and additional comments, please contact:

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These Minutes were prepared by Patrick Judge, Secretary.