

Massachusetts Wind Working Group

www.ceere.org/erl/mwmg.html

413-545-3914

September '05 Meeting Minutes

Location: NGrid offices, Westborough, MA

Date: 28 September 2005

1. Welcome
2. Brief viewing of an anti-wind video
3. Subcommittee activities were reported by the chairs (see individual committee minutes at the end of this document)
 - a. Education and Outreach
*Co-Chairs: Richard Lawrence richardl@reliance.org, 508-457-7679 (east)
& Nancy Nysten, Center for Ecological Technology, 413-458-5688 nancyn@cetonline.org (west)*
 - b. Policy. The state and federal policy groups have been combined. Representatives from both summarized their activities (see separate minutes, attached below).
*Co-Chairs: Jack Wiggin, Urban Harbors Institute, jack.wiggin@umb.edu, 617-287-5570
& Keren Schlomy, kschlomy@green-mail.org, 617-686-6978*
 - c. Community Wind Support: meeting minutes and development steps are included below
Chair: Paul Cleri, R W Beck, PCleri@rwbeck.com, 508-935-1846
 - d. Utility and ISO: Notes from related dockets are included below.
This committee is inactive at this time.
4. Update on wind-related legislation
 - a. Carol Wasserman and Bob Grace summarized proposed change in RPS definition to include some existing biomass, which would likely depress REC prices.
 - i. House 4324
 - ii. House 1671
 - iii. House 1669
(see the text of these proposals at <http://www.mass.gov/legis/hbillsrch.htm>)
 - b. Tom Michelman summarized proposed Net Metering legislation (see also summary at end of this document)
 - i. Applies to the following: (i) solar photovoltaic or solar thermal electric energy; (ii) wind energy; (iii) ocean thermal, wave, or tidal energy; (iv) fuel cells utilizing renewable fuels; (v) landfill gas; (vi) naturally flowing water and hydroelectric; or (vii) low-emission, advanced biomass power conversion technologies.
 - ii. Would increase net metering to 2000 kW (from 60 kW). Generation credits would carry-forward forever (instead of being netted each month). Shall be implemented using a single meter.
 - iii. Bill is sitting (languishing) in committee.

- iv. There may be an omnibus energy bill in the works, which could be the right vehicle for net metering changes.
5. Kristen Burke summarized MTC's wind-related work, including:
 - a. Predevelopment financing
 - b. Mass Green Power partnership
 - c. Community Wind Collaborative
 - d. "Low-Income" Initiative
 - e. Green Building & Infrastructure Program
 - f. Siting, planning & education
 - g. Environmental studies, including Bird & Bat studies
6. Update on projects in (or near) permitting, including:
 - a. IBEW's FL100: operating. on the expressway out of Boston
 - b. Mass Maritime
 - c. CCCC
 - d. Hull 2: Vestas V80 arriving in January
 - e. Orleans
 - f. Princeton
 - g. Berkshire (Brodie Mt.)
 - h. Hoosac
 - i. Cape Wind
7. Announcements
 - a. EOEAs state guidance & by-laws "will be out soon."
8. Next meeting dates
 - a. Whole working group: Wed. 18th Jan. 2006, 3-5pm
Watch www.ceere.org/rerl/mwwg.html for the location
 - b. Subcommittee meetings:
 - i. Policy (state & federal): TBA
 - ii. Education & outreach: TBA
 - iii. Community-scale wind: Tues, Nov 15, at RW Beck in Framingham. Contact [Paul Cleri](#) for directions.

Attendance list

MWWG meeting location: Westborough, 28 September 2005

Glen Berkowitz, Beaufort Power
Anders Bjarngard, GZA GEO
ENVIRONMENTAL INC.
Nils Bolgen, Mass Renewable Energy Trust,
MTC
Kristen Burke, Mass Renewable Energy Trust,
MTC
John Bzura, National Grid (NGRID) USA
Service Company
Marybeth Campbell, Mass Renewable Energy
Trust, MTC
Sam Cleaves, MAPC
Paul Cleri, R W Beck, Energy Asset Consulting
Group
Walton Congdon, Tristate Solar
Rich Costello, Acela Energy Group, Inc.
Lynn DiTullio, The Wintergreen Group, Inc &
Renewable Energy Research Laboratory
Dave Doucetti
Steve Duncan, Dominion Corp
Bob Grace, Sustainable Energy Advantage,
L.L.C.
Jan Gudell, Mass Division of Energy Resources,
DOER
Jeffrey Hardin, Underground Engineering LLC
John Harper, Birch Tree Capital, LLC
David Heimann, Sierra Club, Energy
Committee
Kim Holland
Jody Howard, HealthLink
Dan Jaynes, Renewable Energy Research
Laboratory (RERL), UMass, Amherst
Hans Jensen, WPI
Jennifer Kiehling, Second Wind Inc.
Charles Kleekamp, Cape Clean Air & Clean
Power Now
Eric Krathwohl, Rich, May, Bildeau & Flaherty,
P.C.

Richard Lawrence, Cape and Islands Self
Reliance
Lauren Mattison, Center for Energy Efficiency
& Renewable Energy, UMass, Amherst
Jack McCaffrey, Windera Power Systems
Gail McCormick, HealthLink
Tom Michelman, Boreal Renewable Energy
Development
Nancy Nylen, Center for Ecological
Technology; Berkshire Renewable Energy
Collab.
Nubia Perez, Conservation Services Group
(CSG)
I. Prakash, Reliable Consulting
Susan Reid, Conservation Law Foundation
(CLF)
Rob Rizzo, Mount Wachusett Community
College
Michael Roach, Lexington Energy Partners &
Arlington Energy Committee
Mark Rodgers, CapeWind Associates
Bill Rounseville, Local 201 IUE-CWA AFL-CIO
Keren Schlomy, Attorney at law
Bob Shatten, Boreal Renewable Energy
Development
Alex Steffan, Robinson & Cole LLP
Jim Sweeney, CCI Energy LLC & Sustainable
Resources Group
Ed Terceiro, Mount Wachusett Community
College
Joseph Turnbull, CyberNauTech
Liz Walls, Renewable Energy Research
Laboratory (RERL), UMass, Amherst
Carol Wasserman, ESS Group
Jay Wickersham, Noble & Wickersham
Tony Winiewicz, New Eng & Des
Sally Wright, Renewable Energy Research
Laboratory (RERL), UMass, Amherst
Yuki Yamamoto, Oceanwind Technology

Massachusetts Wind Working Group

Subcommittee on Coordination with State and Federal Agencies

Minutes of June 8, 2005 meeting

Participants:

Keren Schlomy, Esq. (Stand in as Chair for Mark Kalpin)

Patricia Fleischauer, QEP - ENSR

Eric Krathwohl, Esq.- Rich May

Richard Michaud – DOE

Rhonda Serre – Office of Congressman John Oliver

Sally Wright, PE – RERL U. Mass. Amherst

The Subcommittee discussed the following action items and agreed to take the steps noted in italics under each item:

1. Defining and streamlining the requirements for avian and bat studies

Dick noted that AWEA and the DOE have an MOU to study this issue. Sally noted that the electric industry has an agreement with the federal DFW on migratory bird treaties regarding power line deaths and that the Clean Energy States Alliance was looking at applying that MOU to wind turbines. However, there was concern that this issue was too large for the subcommittee and the subcommittee agreed to limit its efforts in this area to small (three or fewer turbines) wind projects. *Pat and Dick agreed to review approved small projects to see if there were any consistent requirements regarding bat and bird studies that might form a basis for our work.*

2. The environmental review process

The subcommittee discussed the fact that for large projects subject to NEPA and/or MEPA the review process (i.e. the order of applying for permits and approvals and the order of obtaining such approvals.) was already well established. Sally provided a copy of the “Wind Power: Permitting in Your Community” brochure published by RERL which lists agencies that may have jurisdiction, but does not provide guidance on process. See www.ceere.org/rerl/about_wind/ It was noted that lawyers and environmental consultants provide these services, and there was no decision on whether the subcommittee could provide added value. There was some discussion as to whether we should propose a wind-specific protocol for project review but again no decision.

3. Interference with radar

It was noted that the FAA was concerned about some wind projects interfering with radar at airports. The subcommittee members did not know what types of radar are subject to such interference, which airports in Massachusetts have radar installations of concern, and how close a wind project needs to be to an airport to be of concern. The subcommittee agreed it would be helpful if there was a document on this. *Rhonda and Dick have strong relationships with the FAA and MAC and agreed to contact those agencies to encourage them to produce such a document.*

4. USDA farm bill funding for wind

It was noted that the farm bill provides funding for wind projects in most rural areas, not just on farms, and that much of western Massachusetts could qualify. However the Princeton project apparently tried to obtain such funding and found and found that the requirements were too onerous as the funding would subject the project to federal regulation. *Keren agreed to meet with the State Department of Agriculture to determine whether this was something in which the state might interested (i.e. to assist farmers looking to self-generate electricity).*

5. Next Meeting

The Subcommittee agreed to meet on Tuesday July 26 at 10 AM in Classroom 107 in the Weiss Conference Center at the MTC office in Westborough. Directions can be found at:

<http://www.masstech.org/AgencyOverview/Directions.htm>

Wind Working Group
Committee on State and Federal Coordination
September 15, 2005 Meeting Minutes

Participating:

Keren Schlomy, Chair

Karen Adams, Kristen Burke, John Harper, Richard Michaud, Rhonda Serre, Joseph Turnbull, Sally Wright

1. Follow-up from previous meeting

A. Bird & Bat Studies

The Committee members had not discovered if there were any consistent requirements regarding bird and bat studies for small projects across the United States, but agreed to check with member Steve Barrett (not present) as to whether he had information about any states that had standardized such requirements (as opposed to doing them on a project-by-project basis). Subsequently Steve provided a November, 2004 summary of bird and bat data collected to date, generated by the National Wind Coordinating Committee, which was circulated to the Committee, and he has contacted Paul Kerlinger for additional information. Sally noted that EOEPA is also working on this issue. Richard subsequently provided the August 2003, Washington State Department of Fish and Wildlife baseline monitoring Studies for wind projects as the best example of what states are doing, which was circulated to the Committee by e-mail following the meeting.

B. Interference with radar

Rhonda had contacted the FAA (Burlington) to see if they had any documentation about what model turbines posed a hazard, to what types of radar, and at what distances (i.e. which airports have radar systems that would be a problem for wind development). The idea is to encourage the FAA to issue that information so project developers can use it, rather than applying to the FAA each time without knowing. She had not heard back from them at the time of the meeting but **was going to send the Committee an e-mail when she found out.**

It was recalled that an Jim Patterson of the FAA had spoken about lighting at AWEA and that he might be a good direct contact. Karen also agreed to provide contact information for Ellen Crumb at the FAA, but that she believed that the FAA was still developing how it was doing it's evaluation. Sally noted that John McGowan is also working on it. John suggested that this might be a good issue for the National Committee of the Wind Working Groups, and **Sally agreed to check with them.**

C. Farms

I discussed my meeting with the MA Department of Agriculture's General Counsel about whether they were interested in assisting farmers looking to self-generate electricity, and maybe generate electricity for sale. Although the Department is cautiously interested, and has started its own committee to look into this issue further, they are concerned about losing farmland to energy generation, and are also concerned about the conflict between Agricultural Preservation Land and wind power.

Dick agreed to look into whether any farmers or rural land owners from MA applied for funding from the US Farm Bill and were denied such funding. Kristen noted that Nubia Perez (sp?) or Jan Gudell of DOER might know. (It was subsequently determined that Nubia is no longer at DOER, and Jan is the appropriate contact.) Rhonda noted that the Farm Bill heavily benefited the midwest. Sally noted that the Farm Bill will be up for reauthorization soon and we might want to determine whether to support it or not based on how it helps MA wind. John noted that the National Corn Growers are in favor of using wind generation to

keep farms profitable. **I agreed to call the MA Department of Agriculture to see if they were interested in learning more about wind, and to contact Jan Gudell.** A Committee member noted that Hylon Farm was interested in . The Committee agreed that it would be helpful to see where agricultural lands and the USDA requirements overlap with usable winds. **Sally and/or Kristen agreed to generate a GIS overlay map with this information.** Sally noted that Princeton had received a federal grant and did not take it because of the three years of avian studies that would have been required for the two turbine project. She noted that the New England Regional Office is pushing three year studies hard while other regions may not be. Dick noted the need to get our regional Congressmen involved to get more funds for New England.

2. New Topics

A. *Bylaws*

The Committee discussed community wind projects and John noted that there may be model bylaws (from AWEA?) for such projects, covering height restrictions and fall zone setbacks. Sally agreed to check on that and circulate any model she found. The Committee discussed the desirability of model bylaws to promote small distributed generation wind, like the IBEW, and the desirability of revising the net metering regulations upwards of 60 kW. Kristen noted that there was legislation to bring it up to one or two mW. Tom Michelman subsequently provided a draft of one of several Net Metering bills, which was circulated to the Committee.

B. *Combining with the Support State Policy Committee*

Kristen discussed what the Support State Policy Committee did on their last meeting and there was some overlap with our committee. They discussed the MA Department of Fish and Wildlife's review and seeking recommendations regarding bird and bat studies (what is known, where there are gaps). That Committee also discussed the EOEAs model bylaws, which are based on the Cape Cod Commission model bylaws (the EOEAs apparently does not want to draft or revise any regulations for wind power), and one committee member reviewed a draft of the bylaws. The State and Federal Coordination Committee agreed to combine with the Support State Policy Committee for future meetings.

Massachusetts Wind Working Group

Community-scale Projects Subcommittee

Meeting Minutes

Location: Offices of R. W. Beck, Inc., Framingham, Mass.

Date: Tuesday, July 26, 2005 3:00 p.m.

Attendees: Kristen Burke, Massachusetts Technology Collaborative; Alex Steffan, Robinson & Cole LLP; Paul Reeves, One World Energy; Michael Burns, R. W. Beck, Inc.; Paul Cleri, R. W. Beck, Inc.

A. Brief Review of Meeting Minutes from June Meeting

Below is a bullet list representing the previous meeting's minutes.

Goals:

- Support and enable cooperative/community-scale wind energy projects.
- Identify project finance options for cooperative/community-scale projects.
- Provide technical support for municipal electric utilities. Action plan:
- Identify project finance lender(s) representatives that can be on subcommittee.
- Identify legal structure(s)/mechanism(s) to develop and implement cooperative/community scale projects.
- Prepare a due-diligence schedule that would identify/establish the minimum criteria to support the logistics, technical, legal, and financial needs of a proposed cooperative/community-scale project.
- Identify the power purchase (PPA) requirements for a proposed cooperative/ community scale project.
- One World Energy to identify a mechanism to support all types of cooperative/community-scale wind energy projects, using its project as a pilot model.

B. Ongoing Discussions

Several project finance lender representatives were identified. Paul Cleri would undertake contacting these individuals to gauge interest.

Alex Steffan identified several key legal structures/mechanisms that could be used to develop and implement both cooperative and community-scale wind energy projects. Quite a bit of discussion revolved around the differences between these mechanisms and how best they would apply to different type projects.

Mike Burns identified type power purchase agreement (PPA) requirements for sale of wind energy from a community-scale wind energy project. Mike Burns also discussed lender requirements for financing as well as discussed the issues surrounding the production tax credit (PTC) and renewable energy credits (RECs) regarding community scale wind energy projects.

There was additional discussion involving the business and economic differences between projects that are privately owned versus projects that are owned by a municipality.

Paul Reeves identified the needs of private project developers in developing and implementing a wind energy project. There was considerable discussion regarding what might constitute the optimal size and

scope of a community scale project. For example, what are the differences between developing a single project that encompass multiple single-turbine sites versus a project with a single site and multiple turbines.

Kristin Burke discussed the MTC model for community wind development and presented several key points as a basis for comparison of the MTC model with that of a private development model.

Paul Cleri discussed the technical and engineering differences between developing a single project that encompass multiple single-turbine sites versus a project with a single site and multiple turbines. There was additional discussion involving the upfront development effort. Paul will prepare a due-diligence schedule that would identify/establish the minimum criteria to support the logistics, technical, legal, and financial needs of a proposed cooperative/community-scale project.

C. Actions Items

Action items at this early stage involve each committee member proceeding further along in expanding upon what that person individually discussed and presented to the group.

D. Next Meeting

The date of the next meeting will be after the WWG meeting scheduled for September 2005.

Massachusetts Wind Working Group
Community-scale Projects Subcommittee
Wind Energy Project Development Outline

Business Plan & Project Development

- Screening study
- Feasibility study & conceptual planning level estimates
- Identify project ownership structure
- Identify project financing structure/mechanism
- Identify/secure power generation market/purchaser(s)
- Identify sources of capital
- Finalize negotiations with site host
- Obtain project site rights
- Negotiate power supply options
- Proceed with project permitting
- Secure wind turbine major equipment
- Secure EPC contractor
- Finalize project design
- Secure interconnection approval
- Secure operations and maintenance (O&M) agreement(s)
- Finalize project economics
- Project financing secured

Procure EPC Contractor

- Identify qualified EPC contractors
- Prepare draft EPC contract/term sheet
- Prepare RFP for contractor
- RFP to street
- Await bids
- Review bid responses
- Finalize EPC contract and execute

Electric Interconnect

- Initiate dialogue with Utility
- Apply for electric interconnect
- Utility system interconnect study
- Post-Study review
- Approval for interconnect

Procure Wind Turbine Generator

- Identify turbine vendors
- Identify turbine performance requirements
- Draft O&M agreement/term sheet
- Prepare procurement RFP (incl. internal review)
- RFP to street
- Await bids
- Review bid responses
- Finalize P.O. and execute
- Execute O&M agreement
- Turbine delivery
- Turbine on-site

Environmental/Regulatory Permitting

- Identify needed permits
- Prepare and submit permit applications
- Agency(ies) review
- Comment period
- Receive regulatory approvals

Construction

- Break ground
- Site preparation
- BOP construction
- Turbine erection
- Start-up
- Initial export
- Performance testing
- Commercial operation

Proposed Net Metering legislation:

An Act to Promote Renewable Electric Generation

Chapter 164 of the General Laws is hereby amended by adding, after section 137, the following section:-

Section 138. Net Metering.

Section 138. (a) In this section, unless context otherwise requires, the following words shall have the following meanings:

“Net metering”, the process of measuring the difference between electricity delivered by an electric distribution company and electricity generated by a renewable-net-metering facility and fed back to the distribution company.

“Renewable-net-metering facility”, a facility for the production of electrical energy that has a generating capacity of not more than two thousand (2,000) kilowatts, is located on or in the vicinity of a customer’s premise, is intended primarily to offset part or all of that customer’s requirements for electricity, and generates electricity using any of the following: (i) solar photovoltaic or solar thermal electric energy; (ii) wind energy; (iii) ocean thermal, wave, or tidal energy; (iv) fuel cells utilizing renewable fuels; (v) landfill gas; (vi) naturally flowing water and hydroelectric; or (vii) low-emission, advanced biomass power conversion technologies.

(b) A distribution company customer that uses electricity generated by a renewable-net-metering-facility may elect net metering.

(i) If the electricity generated by the renewable-net-metering facility during a billing period plus any generation credits carried forward from prior billing periods exceeds the customer’s kilowatt-hour usage during the billing period, the customer shall be billed for zero kilowatt-hour usage and the excess generation shall be credited to the customer’s account for the following billing period.

(ii) If the customer’s kilowatt-hour usage exceeds the electricity generated by the renewable-net-metering facility during the billing period plus any generation credits carried forward from prior billing periods, the customer shall be billed for the net kilowatt-hour usage at the applicable rate.

(c) Net metering shall apply to all charges calculated on a kilowatt-hour basis, including distribution, transmission, generation, and transition charges.

(d) Net metering shall be implemented using a single meter. Where an electro-mechanical meter is employed, the meter shall register the flow of electric power in both directions and shall display the net flow. Where a digital meter is employed, it shall be programmed to register the net flow as implemented in electro-mechanical meters, or shall separately register the inward flow to the customer and the outward flow to the distribution company to enable subsequent calculation of the net flow.

(e) Distribution companies are prohibited from imposing special fees on net metering customers, such as backup charges, or additional controls or liability insurance as long as the renewable-net-metering facility complies with the applicable interconnection, safety, and power quality standards.

MASSACHUSETTS WIND WORKING GROUP
Utilities, DTE & ISO-New England Subcommittee
Notes on related dockets

1. **ISO-NEW ENGLAND**

- 1.1. Scheduling
- 1.2. FERC Docket Nos. RM05-10-000 & AD04-13-000 – Imbalance provisions for intermittent resources
- 1.3. LICAP rating and pricing issues
- 1.4. Ongoing GIS issues to protect market integrity.
- 1.5. Forecasting Issues
- 1.6. California, New York, Texas
- 1.7. FERC docket: “Interconnection for Wind Energy and Other Alternative Technologies”
<http://www.ferc.gov/industries/electric/indus-act/gi/wind.asp>

2. **MASSACHUSETTS - DTE**

- 2.1. C&D Wood – no docket open. Ridgewood filed legislation.
- 2.2. DOER Guidelines on the MA RPS Eligibility of Generation Units that Re-tool with Low Emission, Advanced Biomass Technologies.
- 2.3. D.T.E. Docket 04-115 – Investigation by the Department of Telecommunications and Energy into its own motion into the procurement of default service power supply for residential and small commercial customers.

3. **RHODE ISLAND - RIPUC**

- 3.1. RIPUC Docket No. 3659 - Negotiated Rulemaking to Promulgate Rules and Regulations to Implement a Renewable Energy Standard

4. **CONNECTICUT - DPUC**

- 4.1. Docket # 04-05-13RE01 - Application of Pratt & Whitney for Connecticut Renewable Generator Qualification-Cape Cod Community College Fuel Cell-Review of VAEIS RE01.
- 4.2. 05-03-12 - Application of Boralex for Advisory Ruling on Eligibility for Class I Renewable.
- 4.3. 05-03-11 Application of Boralex for Advisory Ruling on Eligibility for Class I Renewable Status of Boralex Ashland Energy Inc.
- 4.4. 05-01-11 Application of UTC Power for a Declaratory Ruling Re: PureCycle TM 200 System for Class I Renewable Certification.
- 4.5. 04-12-18 Application of Tillotson Rubber Co., Inc for Qualification of Tillotson Rubber Co., Inc Biomass **One** as a Class I Renewable Energy Source.
- 4.6. 04-12-19 Application of Tillotson Rubber Co., Inc for Qualification of Tillotson Rubber Co., Inc Biomass **Two** as a Class I Renewable Energy Source.
- 4.7. 04-10-34 Application of EAD Environmental LLC for Qualification of Brockway Mills, LLC as a Class I Renewable Energy Source.
- 4.8. 04-10-32 Application of Blue Spruce Farm for Qualification as a Renewable Portfolio Standard Class I Renewable Energy Source.
- 4.9. 04-08-31 Application of Burlington Energy, Inc. for Qualification of Burlington Energy I as a Class I Renewable Energy Source.
- 4.10. 04-08-30 Application of Conduit NH Energy, LLC for Qualification of Whitefield Power & Light Company as a Class I Renewable Energy Source
- 4.11. 04-03-23 Application of J&L Electric for Qualification of J&L Electric, Biomass II, as a Class I Renewable Energy Source
- 4.12. 04-01-27 Application of Bio-Energy Partners for Qualification of Rochester Landfill as a Class I Renewable Energy Source.
- 4.13. 04-01-13 DPUC Review of RPS Standards and Trading Programs in New York, Pennsylvania, New Jersey, Maryland, and Delaware.