



# Wind Energy in New England: Update

MA Wind Working Group, Sept. 16, 2009

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President, Sustainable Energy Advantage, LLC

**Sustainable  
Energy  
Advantage,  
LLC**



**Building  
Renewable Energy  
Businesses, Markets & Policies**

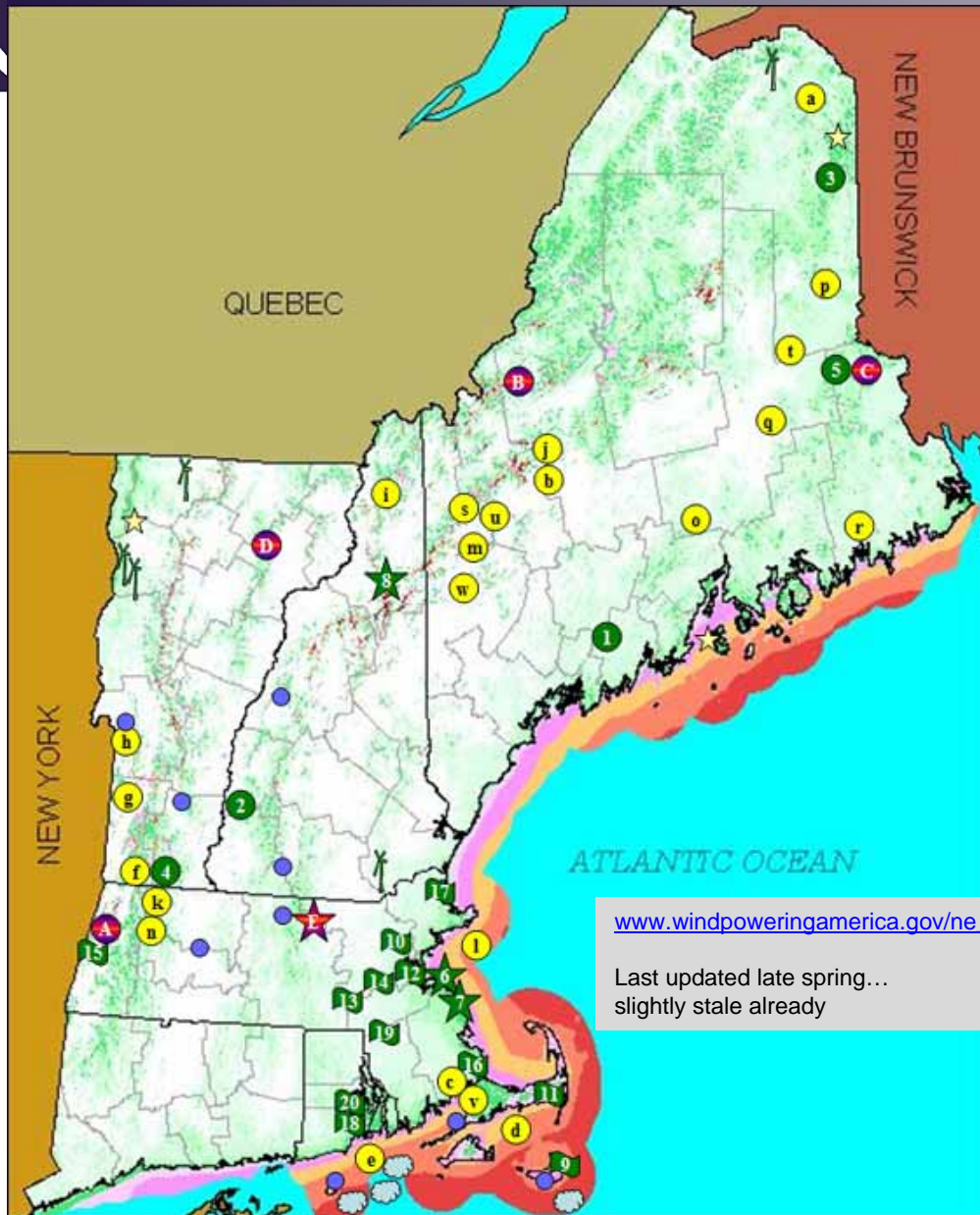
**... Through Analysis,  
Strategy & Implementation**



# Overview

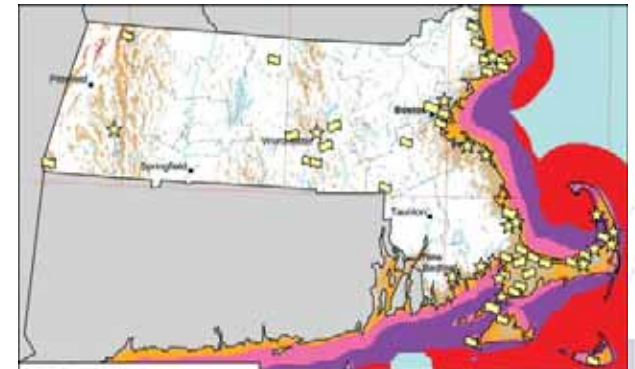
- Wind project development status: New England
  - Focus on MA
- Current barriers to wind energy and recent initiatives designed to address them
  - Focus on transmission
- Offshore Wind Initiatives
- Development of an objective information resource
  - New England Wind Forum
  - New England Wind Energy Education Project





# Currently Posted on New England Wind Forum

**(updated ~ 2x/yr)**



[www.windpoweringamerica.gov/ne\\_projects.asp](http://www.windpoweringamerica.gov/ne_projects.asp)

Last updated late spring...  
slightly stale already





# Massachusetts Project Map

( $\geq 600$  kW only)

Key:

Construction

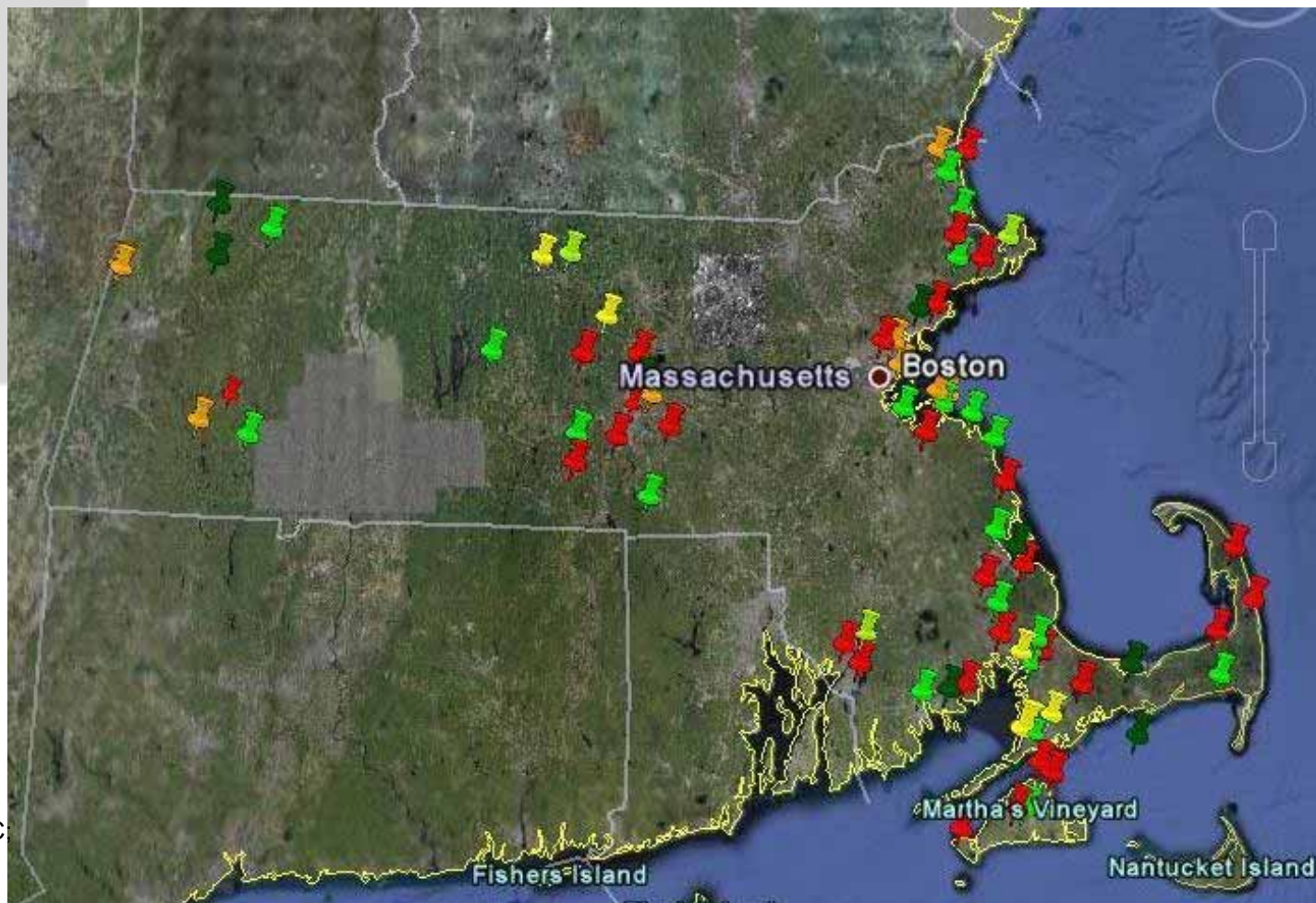
Development

Feasibility

Operating

Permitted

Seeking Permits



Source:

Sustainable Energy Advantage, LLC  
from Sustainable Energy Advantage  
Proprietary Database

## Hull 1

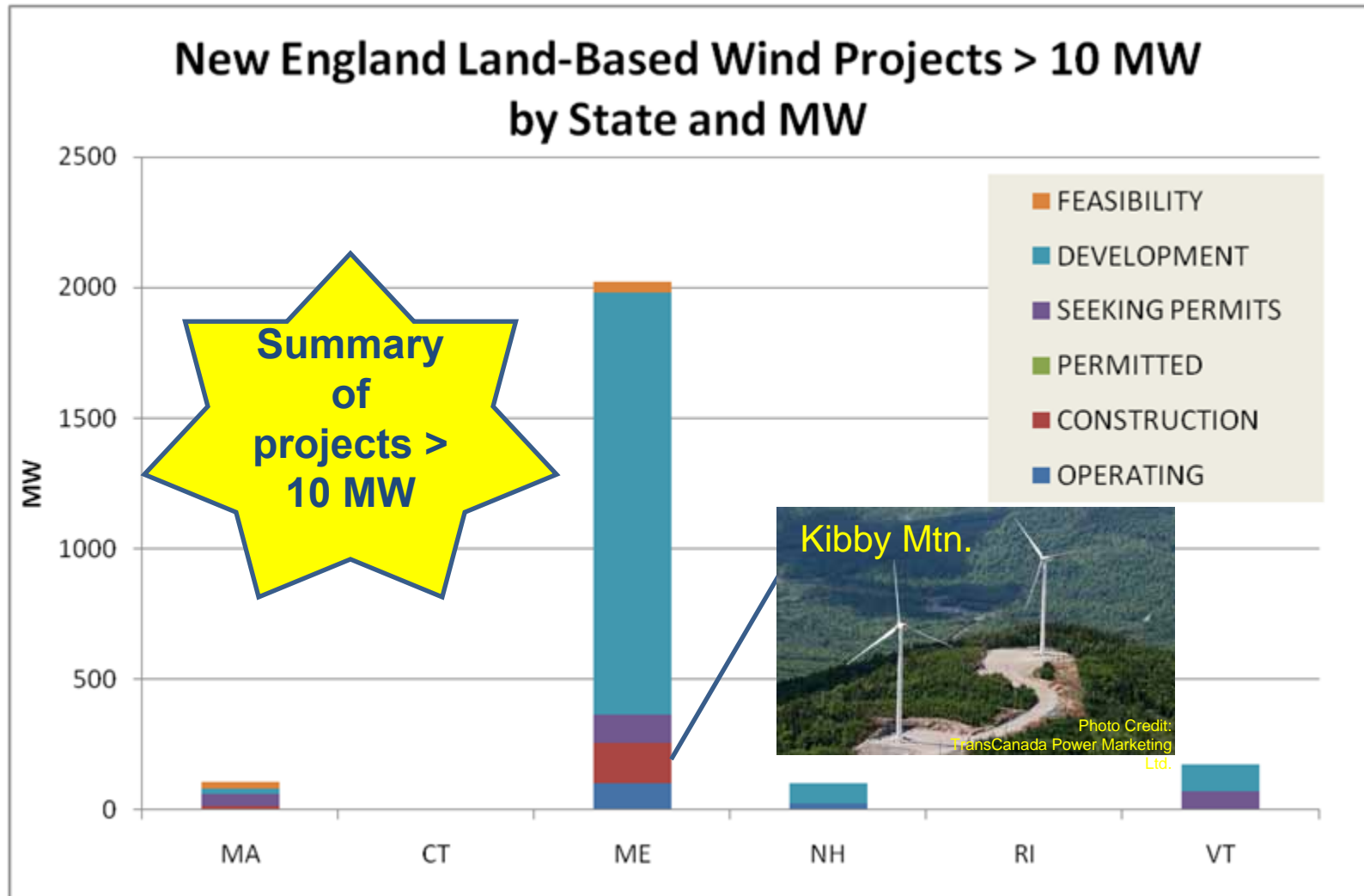
(photo credit: Bob Grace)



# WIND PROJECT DEVELOPMENT STATUS: A SNAPSHOT



# Land-based: MW by state & status type



Source: Sustainable Energy Advantage, LLC proprietary database – 'Public' projects



# Lempster Wind Farm



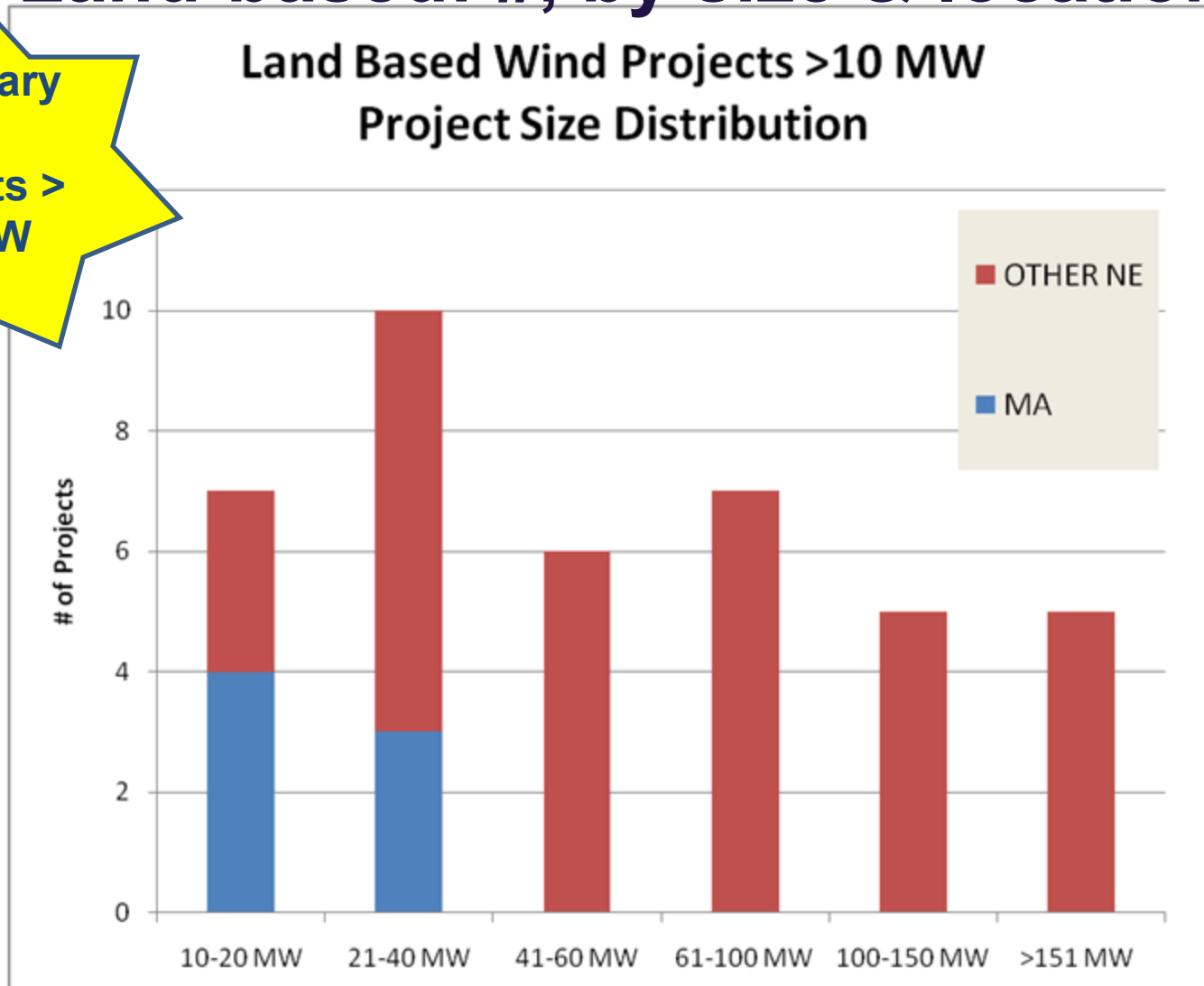
The Lempster Wind Farm, Lempster, NH. (Photo Credit: Iberdrola Renewables)





# Land-based: #, by size & location

Summary  
of  
projects >  
10 MW



Source: Sustainable Energy Advantage, LLC proprietary database – 'Public' projects



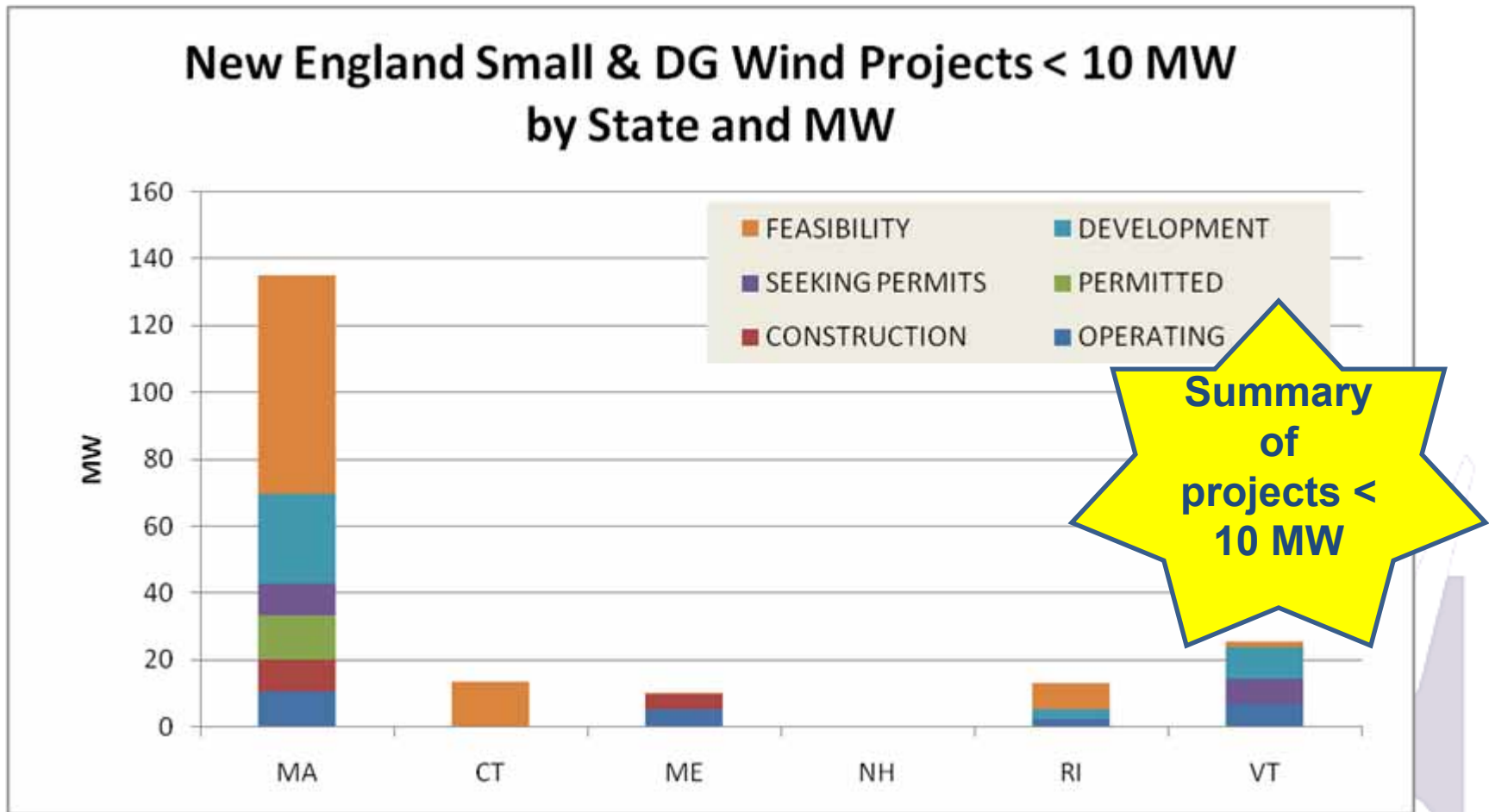
# Stetson Wind Project



On Target Utility Crews running the fiber optic lines at First Wind's Stetson Wind Project  
(photo credit: On Target Utility Services)



# Land-based: MW by state & status type



Source: Sustainable Energy Advantage, LLC proprietary database – 'Public' projects



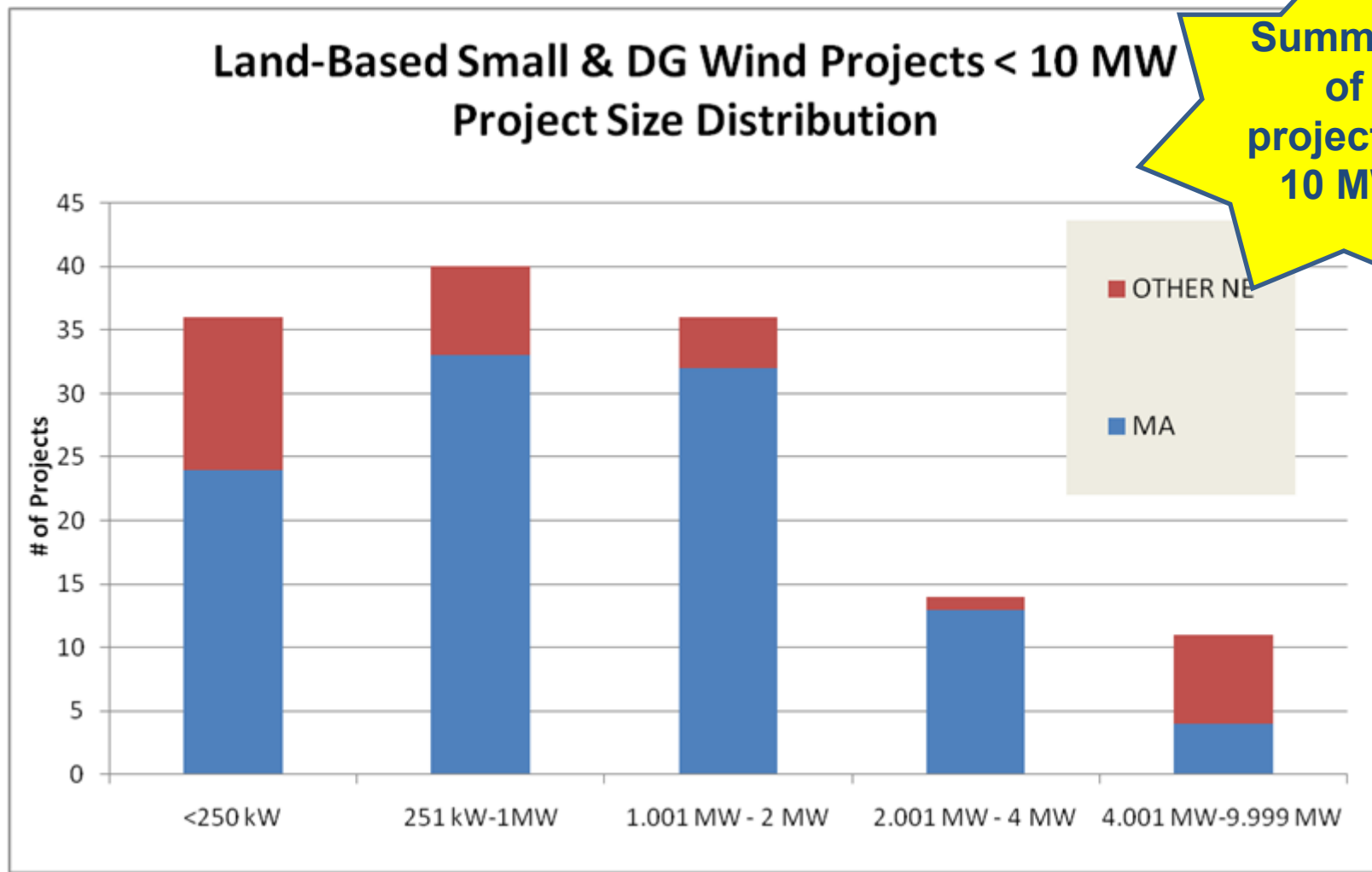
# 100 kW @ McGlynn School in Medford



McGlynn school complex in Medford, MA (Photo provided by the Massachusetts Renewable Energy Trust)



# Land-based: #, by size & location



Source: Sustainable Energy Advantage, LLC proprietary database – 'Public' projects





# Holy Name, Worcester



Holy Name Central Catholic Jr./Sr. High School (Worcester, MA) installed September 2008.  
(Photo provided by the Massachusetts Renewable Energy Trust)



# MWRA @ Deer Island



Two 600-kilowatt wind turbines were installed on Deer Island in August 2009, and are shown here next to the waste water treatment facility's anaerobic digesters. Due to their proximity to Logan Airport, these generators were installed on uncharacteristically short 32-meter towers. *(Photo credit: Kathryn Craddock, Sustainable Energy Advantage, LLC)*



# Homeless no more...

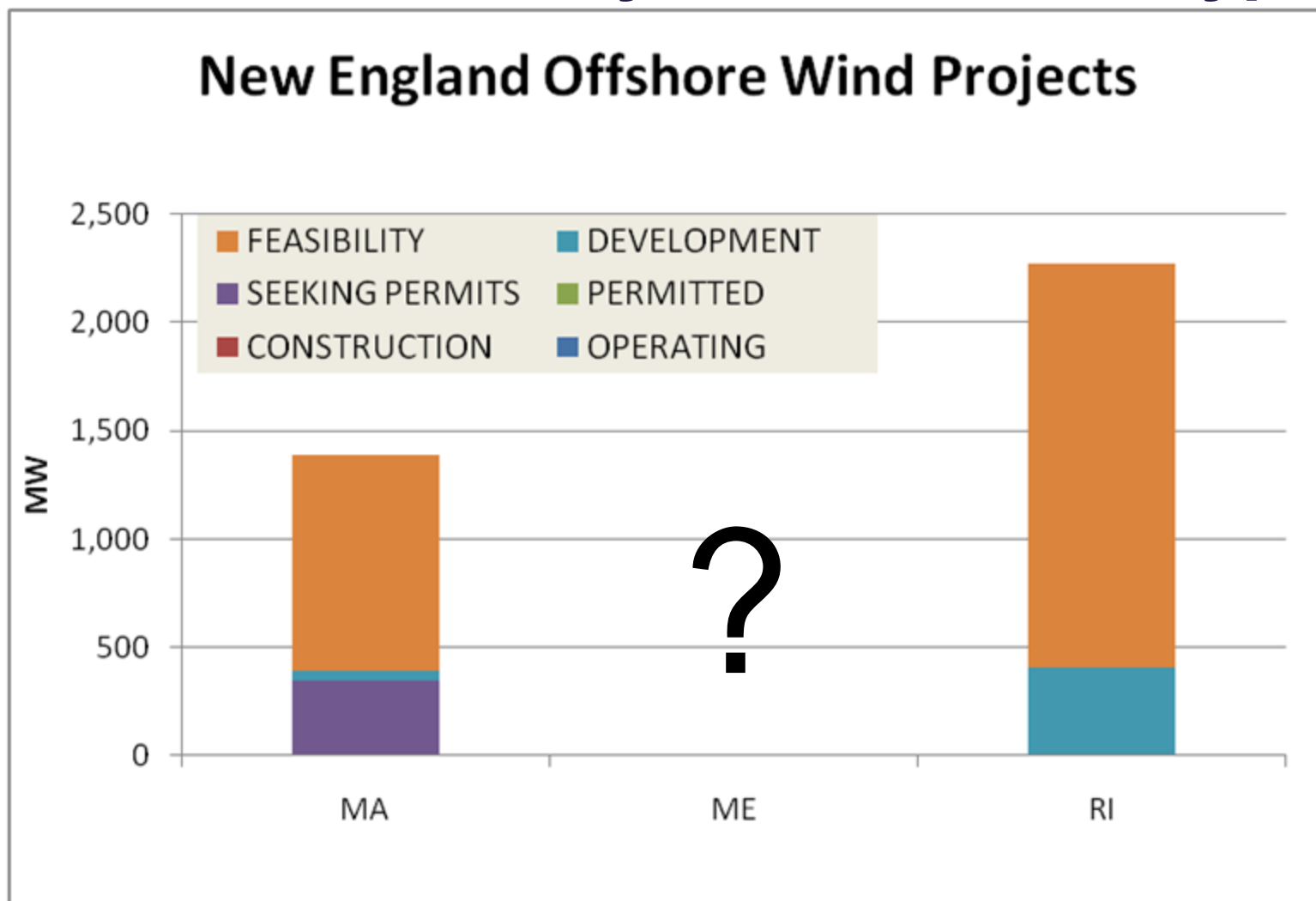
- Pictured here outside Windpower 2008 in Houston, this Vestas blade (and the rest of this infamous turbine) is now en route to the Falmouth WWTF



*Photo credit: Jason Gifford, Sustainable Energy Advantage, LLC*



# Offshore: MW by state & status type



Source: Sustainable Energy Advantage, LLC proprietary database



# Key Barriers & Limiting Factors to Wind in New England: 2009 Update

**RPS Creates Demands, but....**

## Barriers:

- Low Commodity Revenue
- Lack of Revenue Certainty
- Siting/Public Acceptance
- Finance
- Grid Integration
- Transmission

## Policy Responses:

- Long-Term Contract Initiatives
- Feed-in Tariffs
- Aggregate Net Metering
- Siting Initiatives (MA, ME, NH, RI)
- Federal Stimulus (ARRA)
- ISO's New England Wind Integration Study
- Transmission proposals, ISO studies of scenarios





# Competing Visions of Transmission Future; Decisions can Reshape the Renewables Market

- **Within NE**
  - Timing of network enhancements & expansions dictate access to 'renewable energy zones' in NH, ME
  - Ongoing debate: spread costs broadly vs. 1<sup>st</sup> generator in vs. participant funding
  - Many competing or complementary proposals in ME, NH
  - Green Line: 600 – 1200 MW, ME to MA
- **From the North**
  - NU/Nstar/HQES US proposed 1200-1500 MW participant-funded transmission link from Quebec to NE progresses – level of utilization for RE imports unclear
- **Hybrid - NB to ME to MA**
  - e.g. Northeast Energy Link: 1100 MW,
- **From the West**
  - Federal legislation, HV transmission 'superhighway' plans pit midwest vs. coasts
- **Focus on local resources and objectives:**
  - MA, RI, CT
- **ME Transmission Commission formed under summer 2009 energy law**
  - moratorium; study use of state lands
- **ISO-NE:**
  - Scenario analysis, Regional System Plan 2009 draft for review
  - Wind Integration Study underway
  - Preliminary economic study results released.
- **New England Governors' Renewable Energy Blueprint July 2009 status report:**
  - Concludes development of in-region resources appears significantly more efficient than importing equivalent resources from distant regions



# Offshore Wind Policy Initiatives

- Offshore
  - MA – Ocean Plan, Cape Wind, Hull, Others
  - ME – Offshore Energy Task Force
  - RI – SAMP, Selected Developer, Pilot Project, Contracting Legislation





# Woods Hole Research Institute



***Woods Hole Research Institute, 100 kW Northwind Turbine, As seen from Falmouth-Oak Bluffs Ferry (Photo credit: Bob Grace, Sustainable Energy Advantage, LLC)***



# New England Wind Forum....

**It's Back!**

**Restart!**  
Spring/Summer 2009  
**New Content  
Posted, Next  
Newsletter  
Coming Soon**

# Good Information Helps Good Decisions

- New England Wind Forum
  - web site and newsletter - NREL/DOE's Wind Powering America Program
  - [www.windpoweringamerica.gov/newengland](http://www.windpoweringamerica.gov/newengland)



U.S. Department of Energy

**Energy Efficiency and Renewable Energy**

*Bringing you a prosperous future where energy is  
clean, abundant, reliable, and affordable*

## Wind & Hydropower Technologies Program

[About the Program](#) [Program Areas](#) [Information Resources](#) [Financial Opportunities](#) [Technologies](#) [Deployment](#) [Home](#)

### New England Wind Forum *A Wind Powering America Project*

#### About the New England Wind Forum

#### Historic Development

#### State Activities

#### Projects in New England

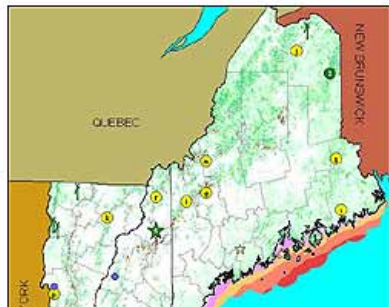
#### Building Wind Energy

Wind Resources  
Technology  
Economics  
Markets  
Siting Considerations  
Policy  
Issues & Public Acceptance  
Small Wind  
Large Wind

The New England Wind Forum (NEWF) was conceived in 2005 as a platform to provide a single, comprehensive and objective source of up-to-date, Web-based information on a broad array of wind-energy-related issues pertaining to New England. NEWF provides information to wind energy stakeholders through Web site features, periodic newsletters, and outreach activities.

#### Wind Energy Topics in New England

In 2008, with additional partners, the NEWF continues to expand its coverage of the most frequently discussed wind energy topics.



#### Economics

Read about the range of factors — including raw materials costs, shifting exchange rates, and high demand — that have led to increasing costs for installing wind turbines and other power generation equipment worldwide.

#### Wind Turbine Sound

Read about how the sound of a wind turbine is considered in selecting project locations.

#### Radar, TV, and Radio Signal Interference

Learn about the types of interference and how wind developers mitigate potential interference.

Search Help [More Search Options](#)

EERE Information Center

#### NEWS

Wind Powering America Update  
March 10, 2008

When Wind Development Does  
Match Up With Potential, Look  
March 4, 2008

Wind Powering America 2007  
Summary  
(PDF 4.3 MB)  
Download Adobe Reader  
February 29, 2008

Community Wind a Big Opportunity  
Rural America  
February 26, 2008

Maine: Report of the Governor  
Force on Wind Power Development  
Finding Common Ground for a  
Common Purpose  
February 14, 2008

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# New England Wind Forum (NEWF)

- Established: 2005 through NREL's Wind Powering America Program
  - Objective: To create a central clearinghouse and provide a single, comprehensive and objective source of up-to-date, Web-based information to all stakeholders on a broad array of wind energy-related issues pertaining to New England.
  - Funding:
    - Historically funded in part by NREL, in part by 4 NE states (MA, ME, CT, NH)
    - Funding interrupted/lost – suspending project in 2008/9
    - NEWF Restart: Summer 2009: Modest amount of new funding has been secured (NREL 3 yrs; MRET 1 yr)
      - Covers only modest effort: newsletter, project and policy updates
    - Funding for 2009 – 2010 and beyond: Minimal NREL funding in place; state or other non-industry co-sponsorship needed to fulfill objectives
- ➔NEWF Needs Your Help:



# Coming Soon....

## New England Wind Energy Education Project (NEWEEP)

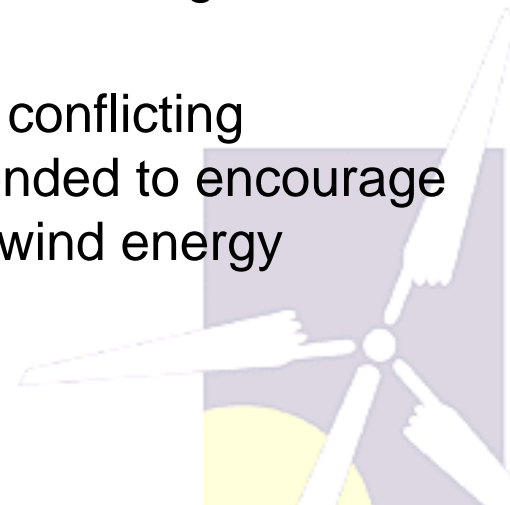
Another Wind Powering America P

**Need a  
better  
name!**



# Introduction to the New England Wind Energy Education Project (NEWEEP)

- Objective: To develop and disseminate accurate, objective information on critical wind energy issues impacting market acceptance of hundreds of land-based projects and off-shore wind developments proposed in the 6-state New England region.
- Goal: Through this educational initiative, NEWEEP intends to accelerate the pace of wind installations towards the region's 20% by 2030 goal of 12,500 MW.
- By cutting through the clutter of competing and conflicting information on critical issues, this project is intended to encourage the market's acceptance of appropriately-sited wind energy generation.





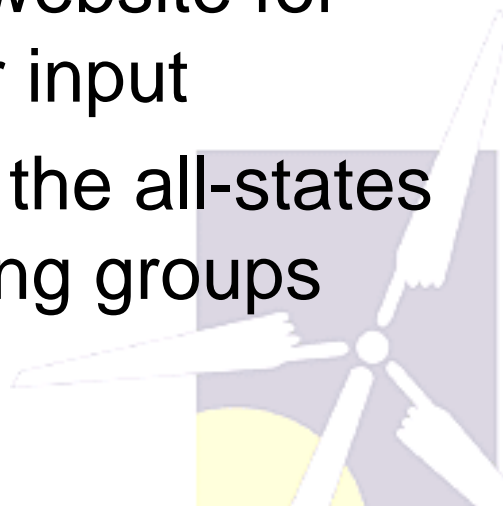
# NEWEEP Status

- Applicants: Sustainable Energy Advantage & NREL
- Selected by DOE for 2 years of funding
  - Contract pending... expected start ~Oct 2009?
- Participants (contributing time & effort, participating in steering committee)
  - the Massachusetts Renewable Energy Trust (MRET, or 'the Trust');
  - the Maine Public Utilities Commission/Efficiency Maine (MPUC/EM);
  - the New Hampshire office of Energy & Planning (NH OEP);
  - the Connecticut Clean Energy Fund (CCEF);
  - ISO New England (ISO-NE);
  - the Utility Wind Interest Group (UWIG);
  - the University of Massachusetts Wind Energy Center<sup>1</sup> (WEC);
  - Renewable Energy New England, a new partnership between the renewable energy industry and environmental public interest groups; and
  - Lawrence Berkeley National Laboratory.<sup>2</sup>



# NEWEEP: Implementation

1. Develop a steering committee to ID topics
2. Conduct a series of topic-specific web-conference briefings
3. Hold a one-day NEWEEP conference (back-to-back w/ a UWIG regional conference)
4. Post all materials on the NEWF website for maximum reach and stakeholder input
5. Collaborate with WPA (including the all-states summit) and regional wind working groups





# Sustainable Energy Advantage, LLC

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