

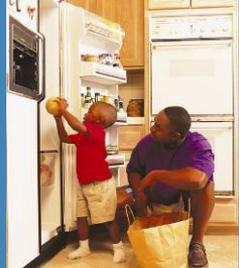


Wind Resource Assessment Monmouth County Green Energy Fair

September 18, 2008

*Larry Barth
Customer Onsite Renewable Energy Program Manager
Market Management Team*





Overview

- NJ Wind Resource
- Site Assessment Tools
- Permitting
- Anemometer Loan Program
- Model Ordinance
- NJOCE Incentives



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New Jersey Board of Public Utilities
Office of Clean Energy



New Jersey 50 m Wind Resource Map

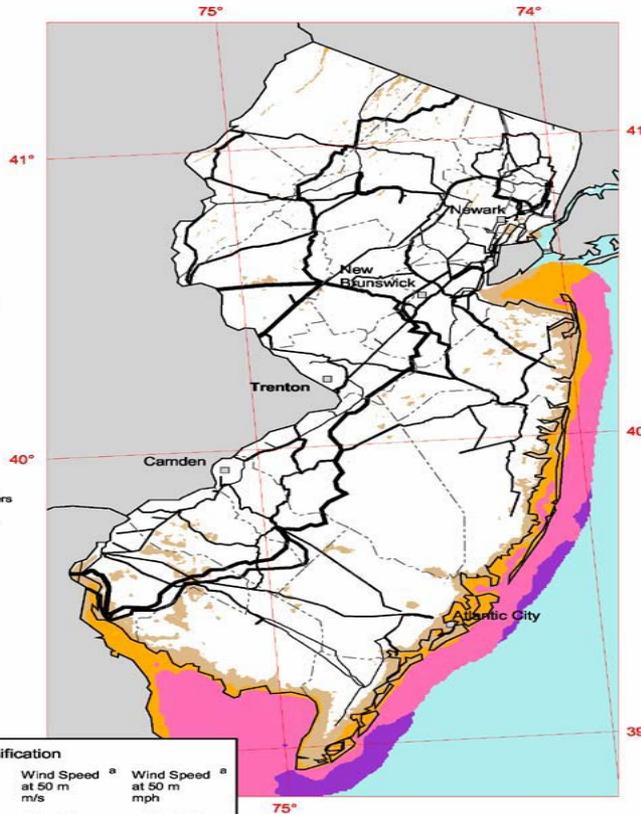
The annual wind power estimates for this map were produced by TrueWind Solutions using their Mesomap system and historical weather data. It has been validated with available surface data by NREL and wind energy meteorological consultants.



**Transmission Line*
Voltage (kV)**

—	115 - 138
—	230
—	345
—	500

* Source: POWERmap, c 2002
Platts, a Division of the McGraw-Hill Companies.



Wind Power Classification

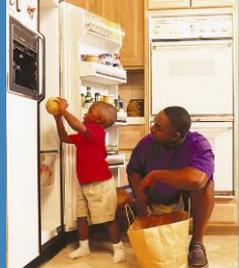
Wind Power Class	Resource Potential	Wind Power Density at 50 m W/m ²	Wind Speed at 50 m m/s	Wind Speed at 50 m mph
1	Poor	0 - 200	0.0 - 5.6	0.0 - 12.5
2	Marginal	200 - 300	5.6 - 6.4	12.5 - 14.3
3	Fair	300 - 400	6.4 - 7.0	14.3 - 15.7
4	Good	400 - 500	7.0 - 7.5	15.7 - 16.8
5	Excellent	500 - 600	7.5 - 8.0	16.8 - 17.9
6	Outstanding	600 - 800	8.0 - 8.8	17.9 - 19.7
7	Superb	> 800	> 8.8	> 19.7

^a Wind speeds are based on a Weibull k value of 2.0

U.S. Department of Energy
National Renewable Energy Laboratory
 12-JAN-2003 1.1.7

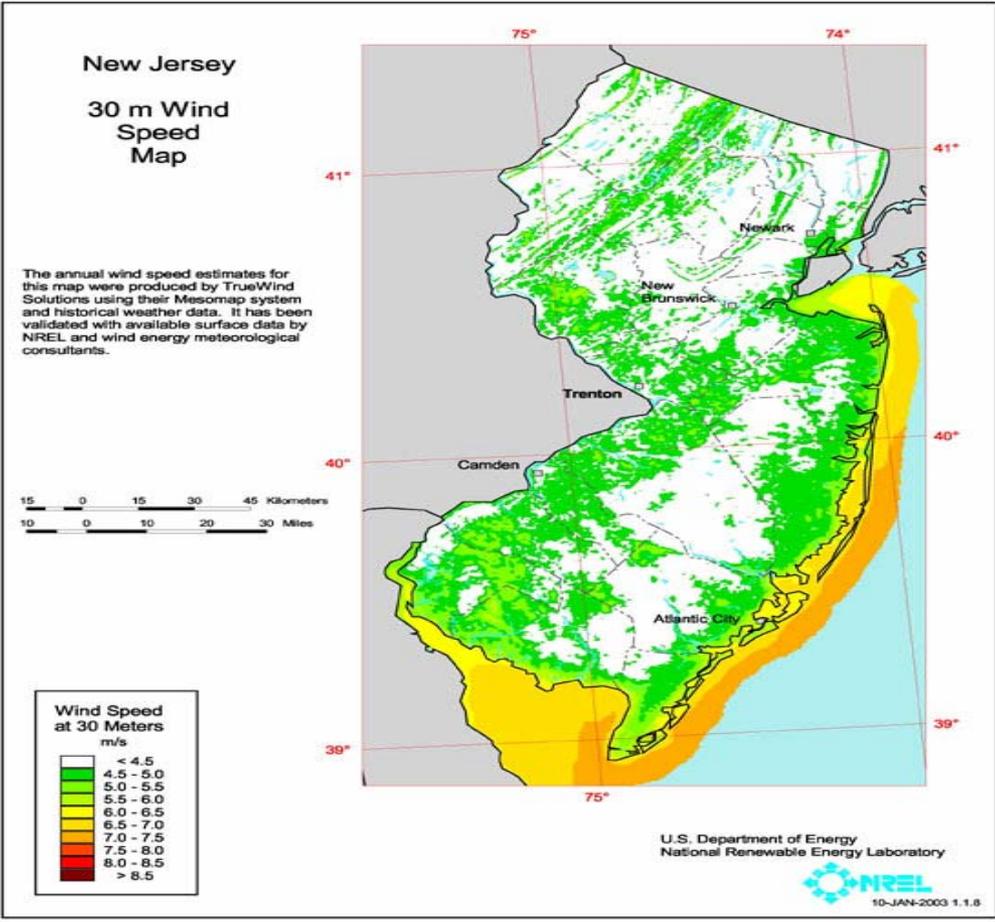


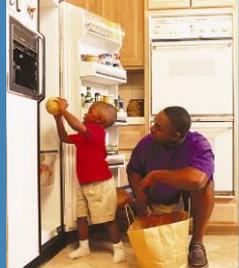
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Renewable Energy

New Jersey Wind Resources

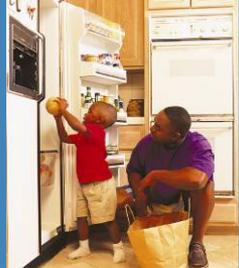




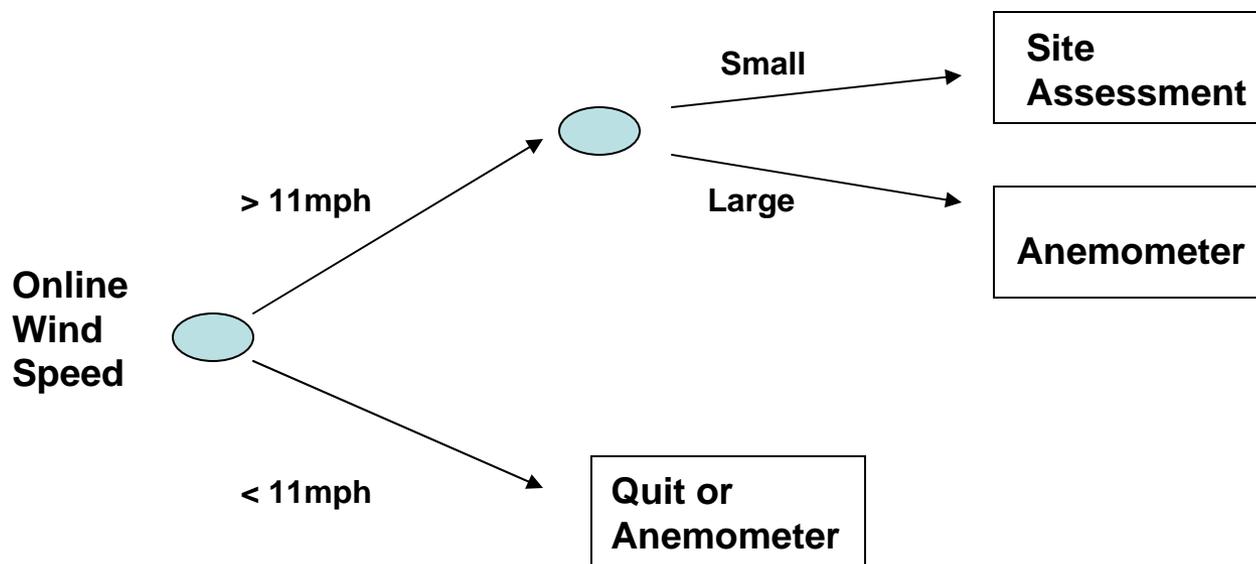
Wind Resource Assessment Tools

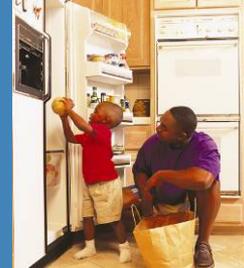


- Online Wind Maps
- On-site Wind Assessment
- Anemometer



Resource Assessment Segmentation





Wind Speed Assessments **4000 Kozlowski Road, Freehold**

(Latitude: 40.250°; Longitude: 74.250°)

NASA: 12.9

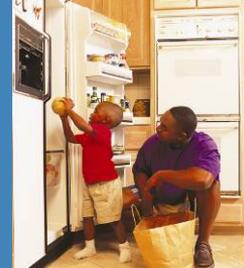
<http://eosweb.larc.nasa.gov/cgi-bin/sse/grid.cgi>

3-Tier: 11.0

<http://firstlook.3tiergroup.com>

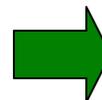
AWS: 12.4

<http://www.windexplorer.com>



NJOCE Anemometer Loan Program

- **Public University affiliation**
- **Free**
- **First-come first serve with priority to:**
 - **larger projects**
 - **best wind resource areas**
 - **leverage existing towers**
- **One year loan, share data with NJOCE**
- **Application procedures vary**



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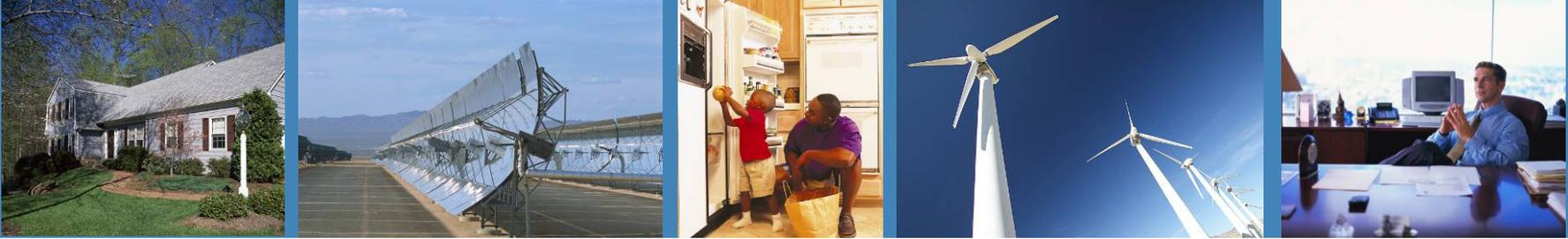
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Wind Project *Potential* Permit Requirements

• Local:

- zoning
- building
- electrical

• State (DEP):

- CAFRA/Waterfront
- Pinelands
- Highlands
- Well Drilling

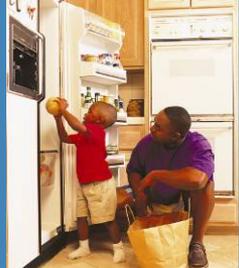
• Federal

- FAA
- Bird and Wildlife
- DOD

• Utilities

- Interconnection (EDC, PJM, FERC)

There May Be Others As Well !!!



Model Wind Ordinance

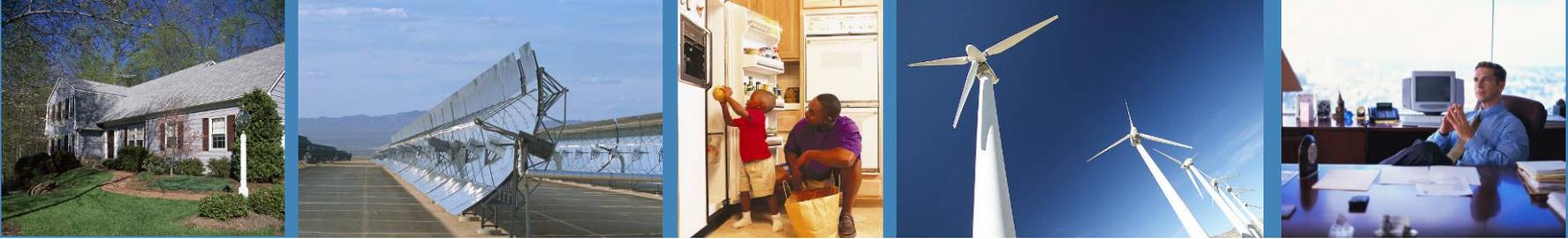
- Defines common terms used in wind projects
- Provides general guidelines for setbacks, access, tower signage
- Defines permit procedure, application and turnaround times
- Provides for penalties and enforcement
- Intended to be customized



Adopters

- Township of Oldmans
- Brick
- Galloway Township
- Hillsboro Twp Ocean Gate
- City of Brigantine
- Deerfield
- Millville
- Pittsgrove Twp



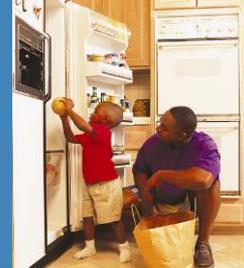


NJOCE Wind Incentives

Annual Estimated Production	Incentive Level
1-16,000 kWh	\$3.20 / Annual kWh
16,000-750,000 kWh	\$0.50 / Annual kWh

- KWh estimate driven by wind speed, power curve, and derate factors
- Maximum size is 2MW
- Funds currently available; more funds likely in 2009
- Projects available for REC's





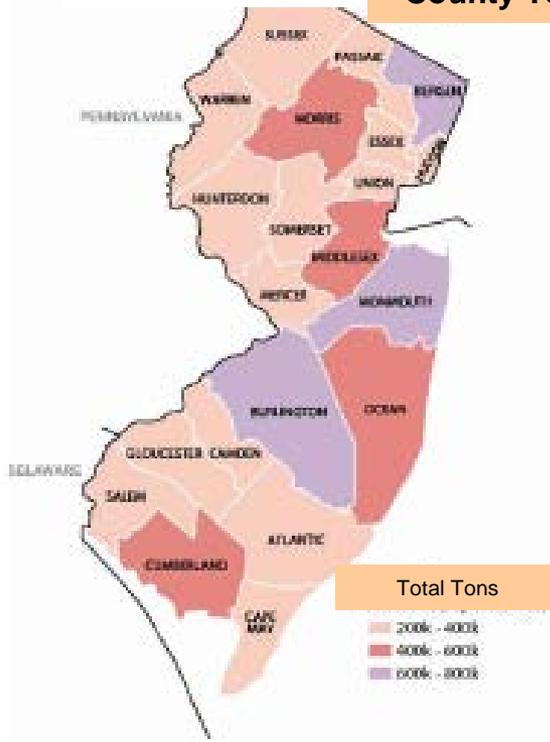
Renewable Energy

New Jersey Biomass Resources

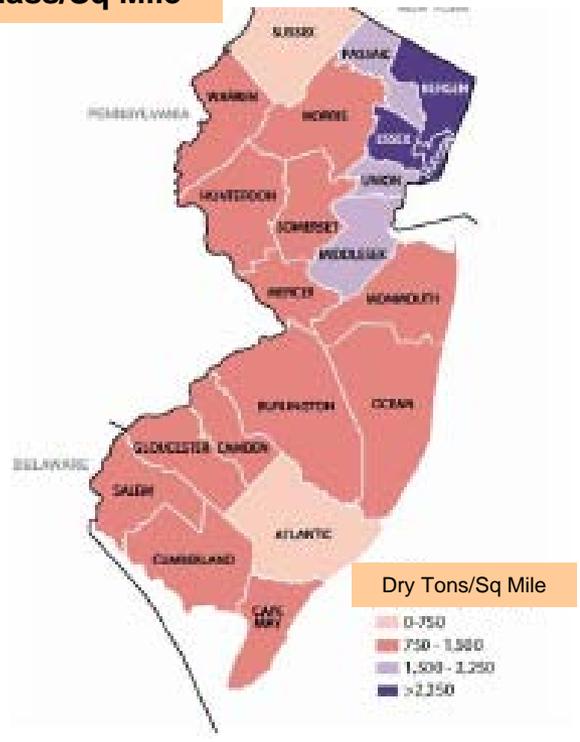
Biomass is Concentrated in the Counties of Central and Northeastern New Jersey.

County Totals

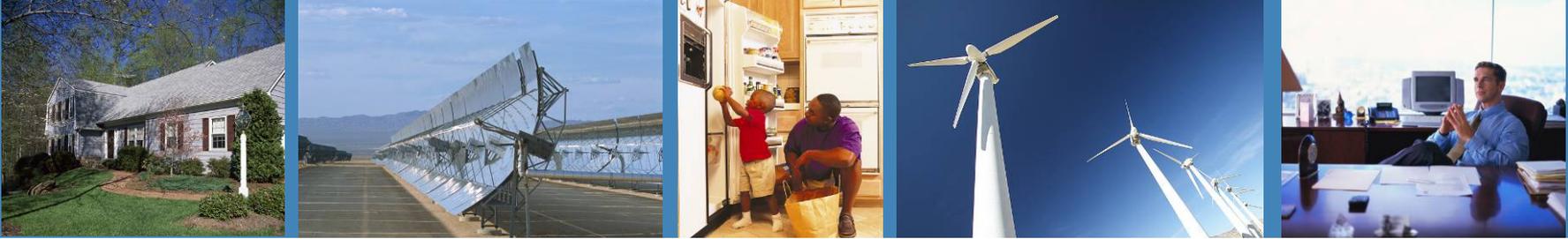
Biomass/Sq Mile



Almost 75% of New Jersey's biomass resources are produced directly by the state's population, much of it in the form of municipal solid waste.



• Courtesy of EcoComplex



If you have any questions about renewable energy or New Jersey's Clean Energy Programs, please feel free to contact:

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