NY State Public Service Commission
Proceeding on Renewable Portfolio Standard

Overview Forum
April 8, 2003

Wind Energy in New York

by

David Wooley

Young, Sommer...LLC
Albany, NY

American Wind Energy Association

Fenner, New York

- General Electric 1.5 megawatt (MW) turbines
- 30 megawatt wind farm
- Welcomed by community
- Once largest in East
- Soon to be eclipsed by much larger developments

American Wind Energy Association

- General Electric 1.5 megawatt (MW) turbines
- 30 megawatt wind farm
- Welcomed by community
- Once largest in East
- Soon to be eclipsed by much larger developments

New Northeast Wind Farms

Searsburg, VT
Green Mountain Power
and Enron Wind

Weathersfield, NY
Western NY Wind Corp

American Wind Energy Association

Technology Trends

- **Horizontal-axis, upwind, three-blade designs**

- **Models designed for low wind speeds**
  - **Larger rotor to generator ratio**
  - **19% more energy at 14% more cost**

- **Multi-Megawatt scale sizes, mostly for offshore applications**

Photo Courtesy of NREL

American Wind Energy Association

Modern Small Wind Turbines:

High Tech, High Reliability, Low Maintenance

- Aerospace technology
- 3 moving parts—no regular maintenance required
- Inspect every 2 years
- 30-Year design life
- Variable speed & power electronics
- Low costs: $1-3/ Watt
- Proven: 150,000 installed, over a billion operational hours

10 kW Unit (Bergey)

American Wind Energy Association

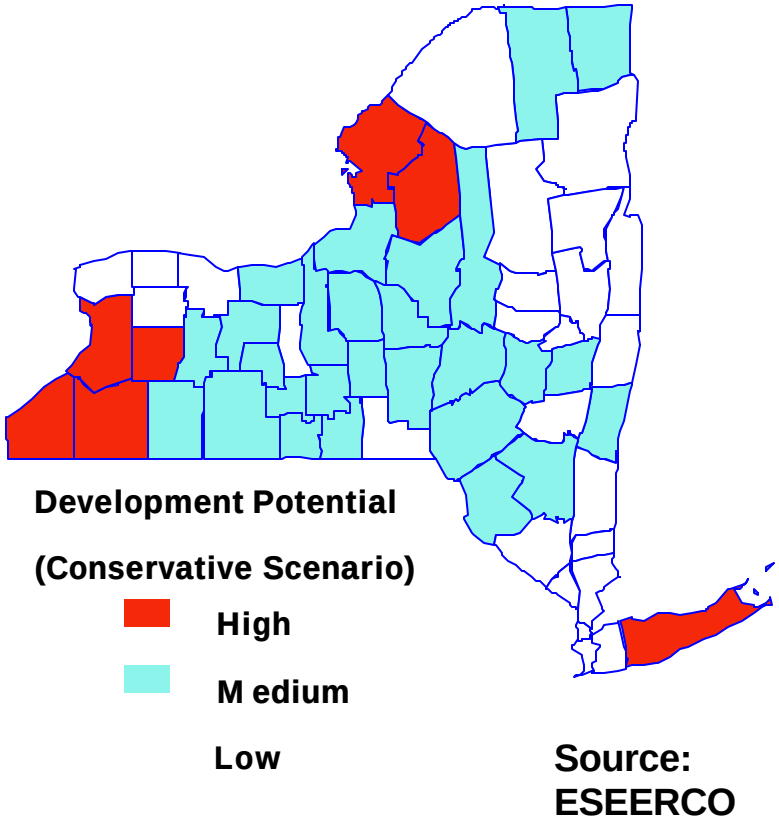
2002: Record Growth for Global Wind Power

- **A record 6,868 megawatts (MW) of new wind power capacity was installed worldwide in 2002, *increasing generating capacity by 28% last year***
- **Wind technology worth $7.3 Billion Installed Last Year**
- **Total world installed capacity = over 31,000 MW, enough to power 7.5 million average American homes**
- **US installed capacity = 4685 megawatts**
- **Utility-Scale wind power costs between 4 and 6 cents/kWh depending on the size and location of the project**

American Wind Energy Association

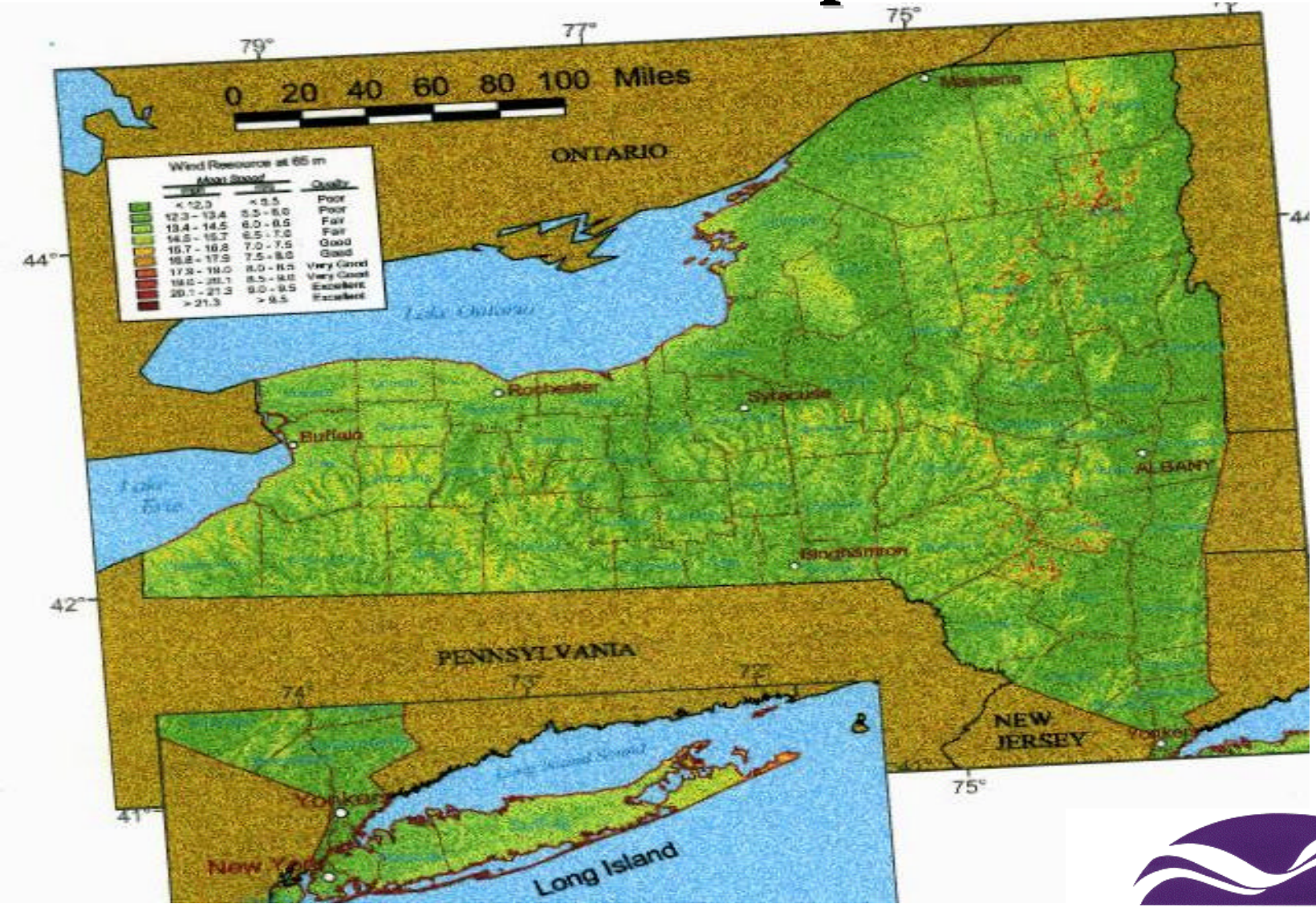
NY's Wind Energy Potential

- Although as little as 1% of the State's land area is attractive for large scale wind development, …
- This area has an installed capacity potential of over 5,000 MW
- New York's wind potential is greater than California's, where over 1,600 MW is in operation



American Wind Energy Association

Wind Resource Map of New York



American Wind Energy Association

Benefits of Wind Development

- Increases local tax base
- Keeps energy dollars local, and creates local contracting jobs
- Risk management
  - fuel supply and price
  - financial
- Green power
- Distributed generation
  - low cost alternative to extending the grid
  - grid reliability
  - grid support

American Wind Energy Association

Large Wind Generators

- Each Megawatt of Large Wind generation creates 4 job-years of employment per MW
- NY has At Least 5000 MW of Large Wind Potential
- NY could see 2000 MW by 2010 with Aggressive RPS and SBF Policies

American Wind Energy Association

Small Wind Generators

- Each Megawatt of Small Wind generation creates 60 job-years of employment
- NY has substantial Small Wind Potential
- NY could see 80 MW by 2010 with an appropriate RPS and SBC

American Wind Energy Association

Cumulative Jobs in New York From Wind by 2010

- Large Wind 8,000 Job-yrs
- Small Wind 4,800 Job-yrs

American Wind Energy Association

Large Wind & Tax Base

Every 100 MW of wind development generates about $1 million in property tax revenue paid by developers & $0.5 million in lease payments to landowners

Annual Tax and Lease Payments by Year 2010	
Large Wind Tax Payments	$20 million
Large Wind Lease Payments	$10 million

American Wind Energy Association

Other Economic Benefits

- **Fuel diversity**
  - What Happens When NY Electricity Sector is 65-70% Dependent on Natural Gas?
  - Price Spikes and Fuel Shortages
- **Avoiding brown-outs & black-outs**
- **Transmission & distribution cost savings**
- **Downward pressure on rates**

American Wind Energy Association