



# Community Partners Initiative Eco Complex - Bordentown NJ Good Things are Blowing in the Wind

January 29, 2010

New Jersey's Clean Energy Program

Mark Loeser – Technical Director



# Current installations vs. the RPS



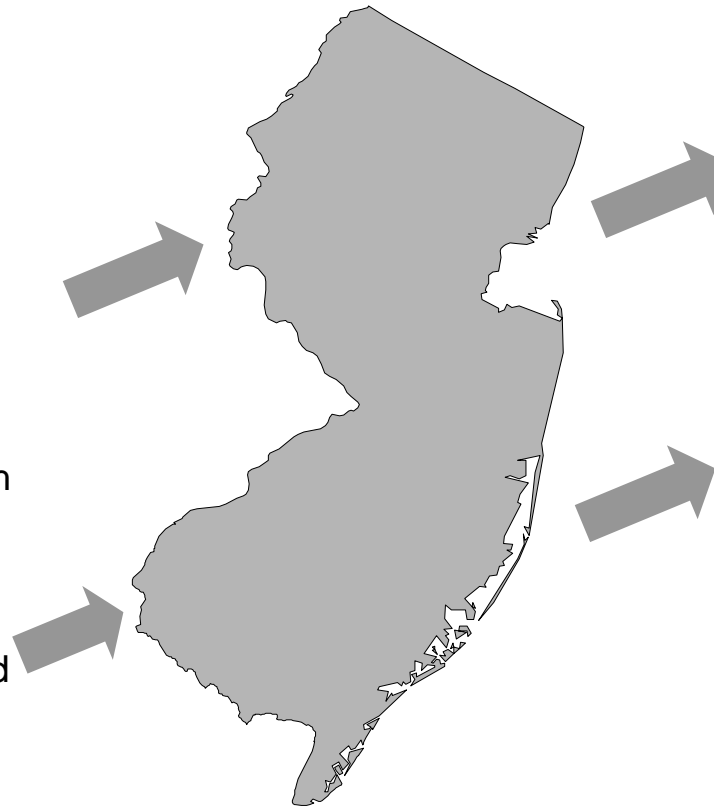
## New Jersey Profile

### Government Activism

Energy Master Plan  
NJ RPS  
BPU commitment

### Renewable Resources

- Wind:
  - Shore, highlands
  - Sustained winds of 11 mph
- Solar:
  - Output ~1200 kWh AC
- Biomass
  - Includes LFG, WWT, wood residue, food waste and aggregation of resources



### Today

- 108 MW PV solar
  - 4900 installs
- 4.2 MW Biomass
- 7.6 MW Wind
- 1.1 MW Fuel Cells

### Tomorrow

- 1,600 MW Solar
- 3,000 MW Offshore Wind
- 200 MW Onshore Wind
- 900 MW Biomass



# REIP Overview



## New Jersey Wind Market

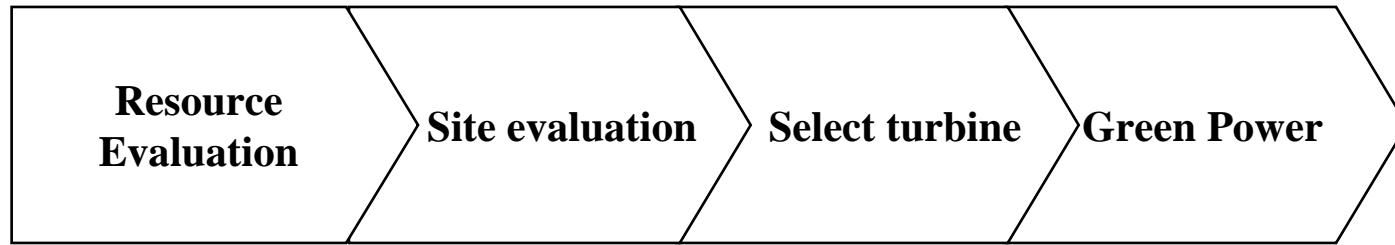
- The required wind resource (>11mph) is along the shore and highlands.
- Best example of installed project is at ACUA, similar interest building among at other coastal municipalities
- Small wind projects have run into home rule issues; first model ordinance adopted by Ocean Gate.
- 2010 REIP has dedicated \$9.5M to small wind projects.
- The installation timeline is now 18 months
- There is feasibility study support up to \$50,000 or 50%, whichever is smaller.
- REIP supports Behind the Meter (BTM) projects
- Rule changes required to support Group Net Metering and Community Wind
- Offshore wind evaluation is underway (summary on NJCEP and NJDEP websites)



# Initial evaluation for a wind system



## Components of a Wind Generation System Evaluation



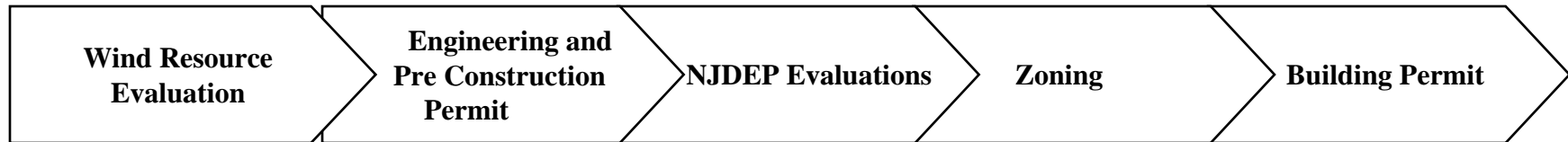
- Determination of average annual wind speed
- Location of turbine
- Verification of obstructions
- Site assessment or engineering evaluation
- Verify on-site electric consumption
- Select from approved turbines
- Submit request to evaluate new turbine type
- Off set onsite consumption
- Generate Renewable Energy Credits (REC)



# The Big Hurt



## Wind Generating Facility: Pre Construction and Permitting Process



- Determine Wind Resource and direction
- Site specific evaluation (project owner)

- Engineering- design and seals required
- Equipment Selection
  - Turbine
  - Tower
  - Inverter
- Pre-Construction Permit (owner)
  - Site Evaluation
  - Facility
  - Equipment
- Turbines
  - Some turbines have up to a two year lead time

- Facility Pre-Construction Permit process (NJDEP CAFRA review if applicable)
- NJDEP is working to streamline the permitting process

- Engineering drawings
- Site Map
- Ownership
- NJDEP certifications
- Local Land Use Permit
  - Seals & Stamps
- Restrictions and variances

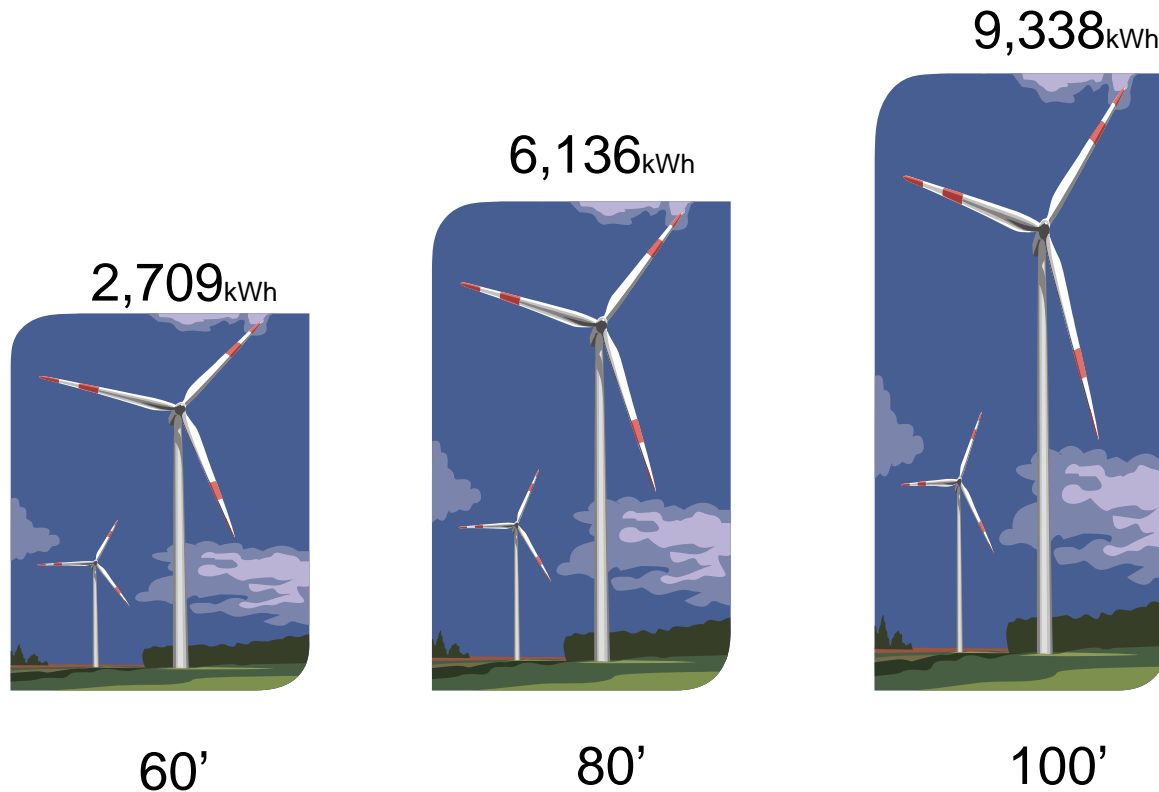
- Building Permit
- Electrical



# EPBB Overview



## Output as a Function of Tower Height

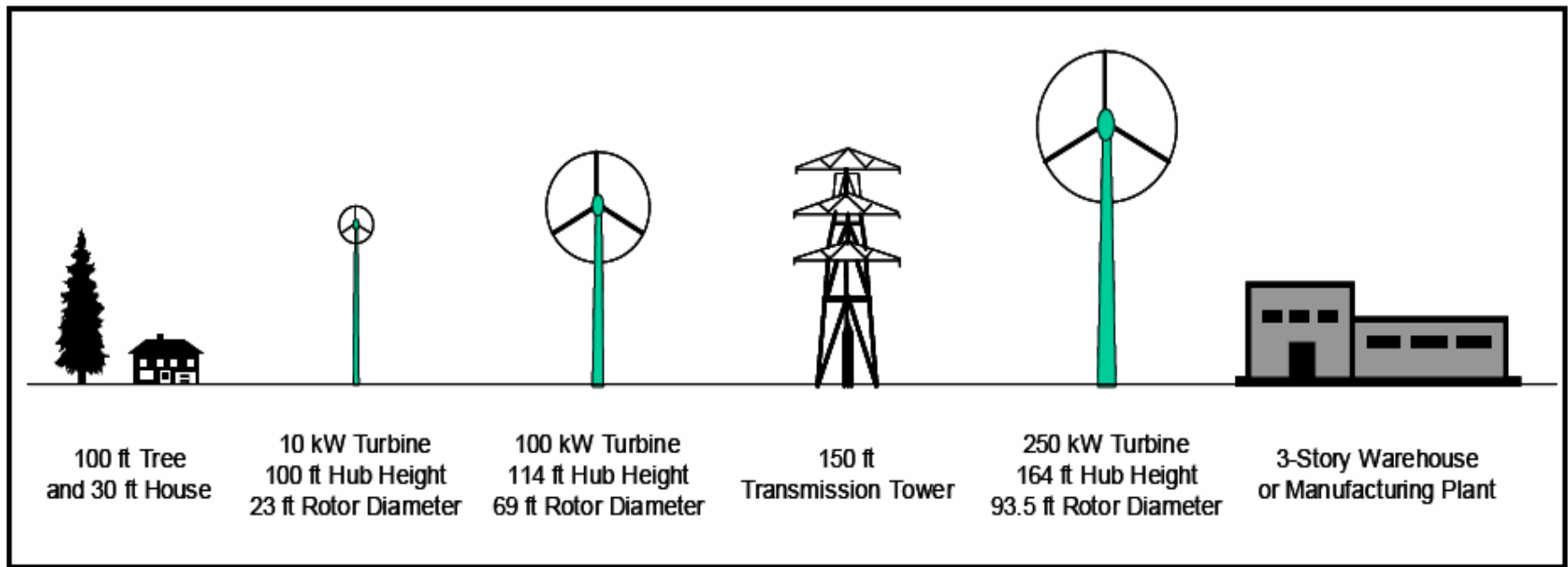


(a) 10kw system; source Mick Sagrillo; "Incremental Tower Costs vs Incremental Energy"





## Small Wind Turbine Height Comparison





## **Model Ordinance**

- The Model ordinance passed by Ocean Gate was designed to allow the development of wind projects in their community.
- It acknowledges the NJ BPU Renewable Portfolio Standard
- Their current zoning regulations to not inhibit the installation of wind projects there were unintentional barriers to developing wind projects
- The Model Ordinance standardizes and streamlines the requirements for permitting wind turbine projects
- The ordinance is designed to preserve and protect public health and safety without significantly increasing the cost or decreasing the efficiency of a wind project.
- The ordinance addresses the following issues:
  - Standards
    - Setbacks
    - Access
  - Permit requirements
  - Abandonment
  - Administration and enforcement





## Small Scale Wind Myth Busters

- Wind turbines kill birds, bats and butterflies
- Wind turbines are noisy
- The towers are prone to falling over
- Turbines interfere with TV and Radio reception
- Wind turbines hurt property values
- Turbines may throw blades or ice from the blades
- Wind power is expensive and inefficient
- Wind turbines only operate a small percentage of the time





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

**Mark Loeser at**  
[mark.loeser@csggrp.com](mailto:mark.loeser@csggrp.com)  
Phone 866-NJSMART

