Overview

- Energy generation in the US
- Offshore wind farms
- Proposal for Long Island
- Financial Analysis
- Risks and Uncertainties
- Non-financial costs and benefits
- Future

Problems with Current Energy

- Fossil fuels
  - Environment
  - Foreign dependence
- Nuclear
  - Public support
- Need other sources → Renewables
New York State

- Goal: “25% of electricity generated by non-polluting resources by 2013”

Long Island

- “We want to get there as quickly as possible”
- “The Long Island Power Authority wants to lead the state in renewable technologies”

Offshore Wind Farm

- 100 MW capacity, 25-50 turbines
- More consistent wind speeds
- Does not use valuable land

Project Schedule

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<tr>
<th>Year</th>
<th>Siting Studies</th>
<th>Request for Information</th>
<th>Request for Proposals</th>
<th>Environmental Studies &amp; Regulatory Permitting</th>
<th>Engineering Design</th>
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Financial Analysis

- Cost of turbines: $85 million
- Installation cost: $50 million
- Annual O&M: $4 million
- Annual Revenue: $22.5 million
- Operational for 20 years
- NPV of Project: -$11 million
Risks and Uncertainties

- Reliance on technological advances
  - Unproven technology
- State and federal permitting process
- Financial uncertainties
- Construction difficulties
- Natural disasters

Tropical Storm and Hurricane Tracks (1851 – 2000)

Costs and Benefits

- Freedom of energy supply
  - Replaces dependence on foreign oil
- Environmentally sound
  - Prevents emissions of greenhouse gases and other pollutants
- Reduces medical costs
- Visual impact
  - Off the coast of popular beaches (state parks)
- Danger to wildlife
  - Birds
  - Fisheries
  - Endangered species
- Hurts local fishing
- Energy source only feasible due to government assistance

Figure 20. Local, State and National Parks in vicinity of recommended sitting area
Future

- Looks very bright
  - Lack of opposition so far
  - Government commitment
- Wind power offers a valuable alternative to fossil fuels
  - Cuts down air pollution and greenhouse gases
- Limited environmental and economic consequences