Presentation to
Northeast Energy and Commerce Association
Renewable Energy Conference

RIWINDS Program Phase I Siting Study

March 1, 2007

Presentation Outline

- Overall Objectives
- Project Team
- Methodology
- Key Findings
- Challenges and Opportunities

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RIWINDS Program Objective

- Provide 15 Percent of Rhode Island's 1000 MW Electric Energy Demand by 2012
  - 1.3 Million MWh/yr or
  - 450 MW at Average 33 % CF

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Study Objective

- Identify and Prioritize the Most Viable Sites for Wind Energy Development in the State, Both On and Offshore

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Acknowledgement

- RI Office of Energy Resources
- RI Economic Development Corp.

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Project Team

- Applied Technology & Management, Inc.
- Birch Tree Capital, LLC
- Loria Emerging Energy Consulting, LLC
- Maguire Group, Inc.
- Sustainable Energy Advantage, LLC
- TRC Companies, Inc.

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Project Approach

1. Define Indicative Projects
2. Develop Screening Methodology
3. Perform Screening Analyses using GIS Database
4. Determine Final Study Areas
5. Estimate Project Performance and Cost
6. Determine if Cost of RI Wind Energy is Competitive with Conventional Energy

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Indicative Projects

Customer-Connected ("Behind-The-Meter" or "Retail")

1. 1.5 MW Industrial/Institutional Project
2. 1.5 MW Community Project

Grid Connected ("Wholesale")

3. 10 MW Onshore Project
4. 30 MW Offshore Project
5. 200 MW Offshore Project

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RIWINDS Study Area

- Onshore
- Offshore, State and Federal waters

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Screening Analysis - Level I

Screen Out Inappropriate and Uneconomical Wind Areas

Criteria

- Minimum Economic Wind Speed
- Inappropriate Land/Water Use
- Minimum Contiguous Area

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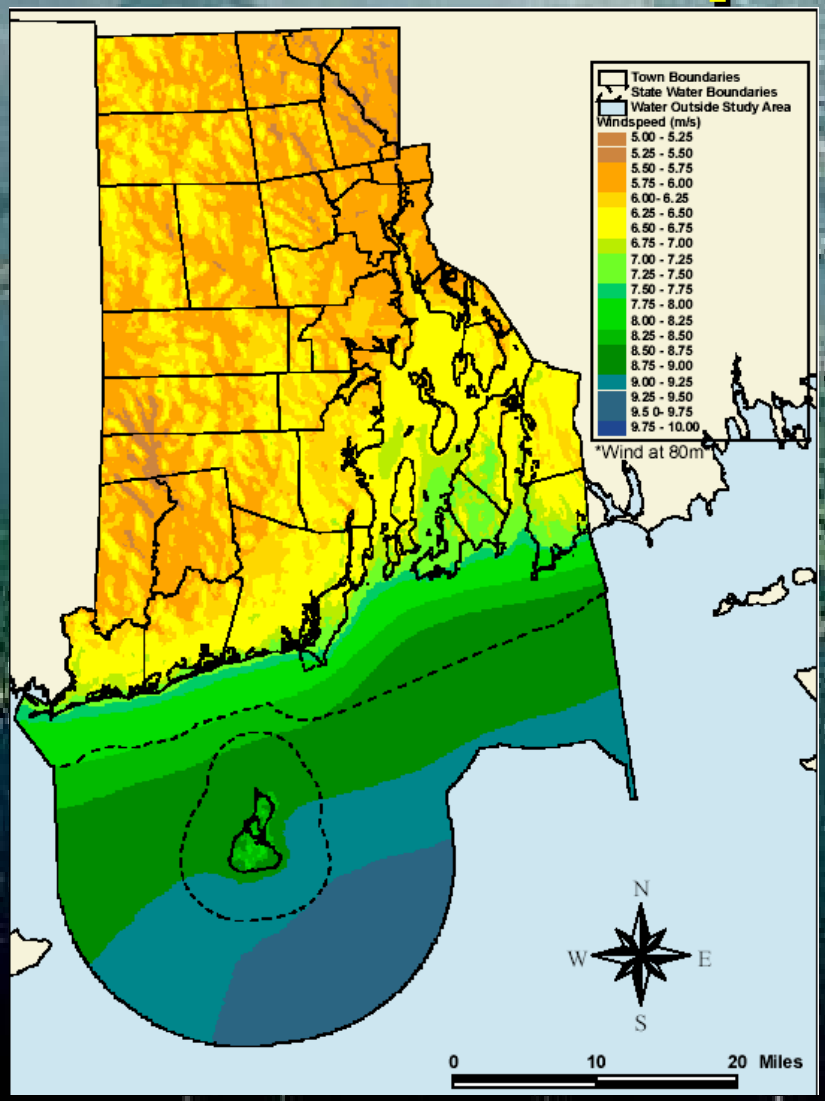
RI Wind Resource Map

- Wind speed at 80 meter hub height in m/s



Source: Derived from AWS Truewinds Data

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Screening Analysis - Level I

Customer-Connected

- Wind Speed over 6 m/s
- Appropriate Land Use Categorizes:
  - Industrial
  - Institutional
  - Waste Disposal
  - Water & Sewage Treatment
- Sufficient Electrical Load

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Screening Analysis - Level I

Onshore Wholesale

- Wind Speed > 7 m/s
- All land use categories suitable except:
  - Airports
  - Cemeteries
  - Developed Recreation
  - Residential
  - Railroads
  - Transitional Areas
  - Transmission Lines

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Screening Analysis - Level I

Offshore

- Wind Speed > 7.5 m/s
- Water Depth < 75 ft
- Exclude Known Navigational Hazards:
  - Shipping Lanes
  - Ferry Routes
  - Recommended Traffic Routes
  - Military Areas

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Screening Analysis - Level II

Identify "Difficult" Development Areas

Criteria

- Environmental Impacts
- Regulatory Requirements
- Public Acceptance

Although viable, these areas were not considered in the financial analysis

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Screening Analysis - Level II

Onshore

Customer-Connected Projects

- Screening Criteria:
  - Airport Risk Zones
  - Rare Species Habitat
  - Surface Water Protection Area
  - Protected Lands
  - Conservation Land
  - Minimum Area of 11 Acres

Grid-Connected Additional Criteria

- Minimum Area of 300 acres for 10 MW Project

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Screening Analysis - Level II

Onshore Customer-Connected

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Screening Analysis - Level II

Offshore

Screening Criteria:

- Airport Risk Zones
- Navigational "Precautionary" Zones
- Inshore Traffic Areas
- Telecommunication Cable Areas
- Eelgrass Areas
- Minimum Area of 1.5 sq.mi. for 30 MW Project
- State vs Federal Waters

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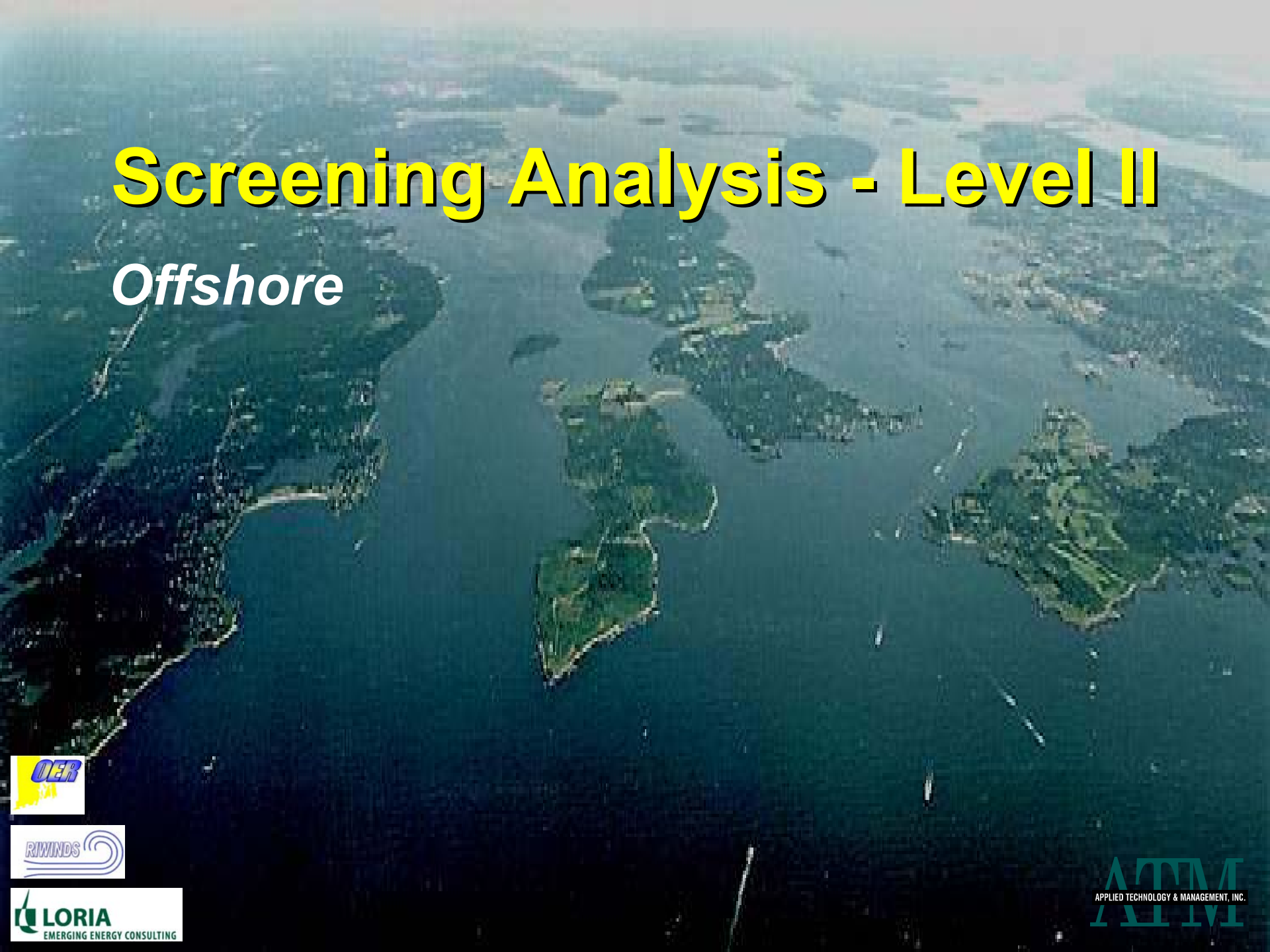

Screening Analysis - Level II

Offshore

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Technical Results

Total Potential Wind Energy Generation

- Over 6 million MWh/yr
- Onshore – Less than 2 %
- Offshore – More than 98 %

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Technical Results

Onshore Potential

Customer-Connected Projects

Industrial/Institutional

- 4 Government Facilities
- 4 Private Industrial/Institutional Facilities

Community Interest

- 8 Communities

Grid Connected Projects – One 10 MW

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Technical Results

Potential Offshore Areas

- 10 Areas Identified
- Total of 98 Square Miles
- Over 6 Million MWh/yr Wind Energy Potential

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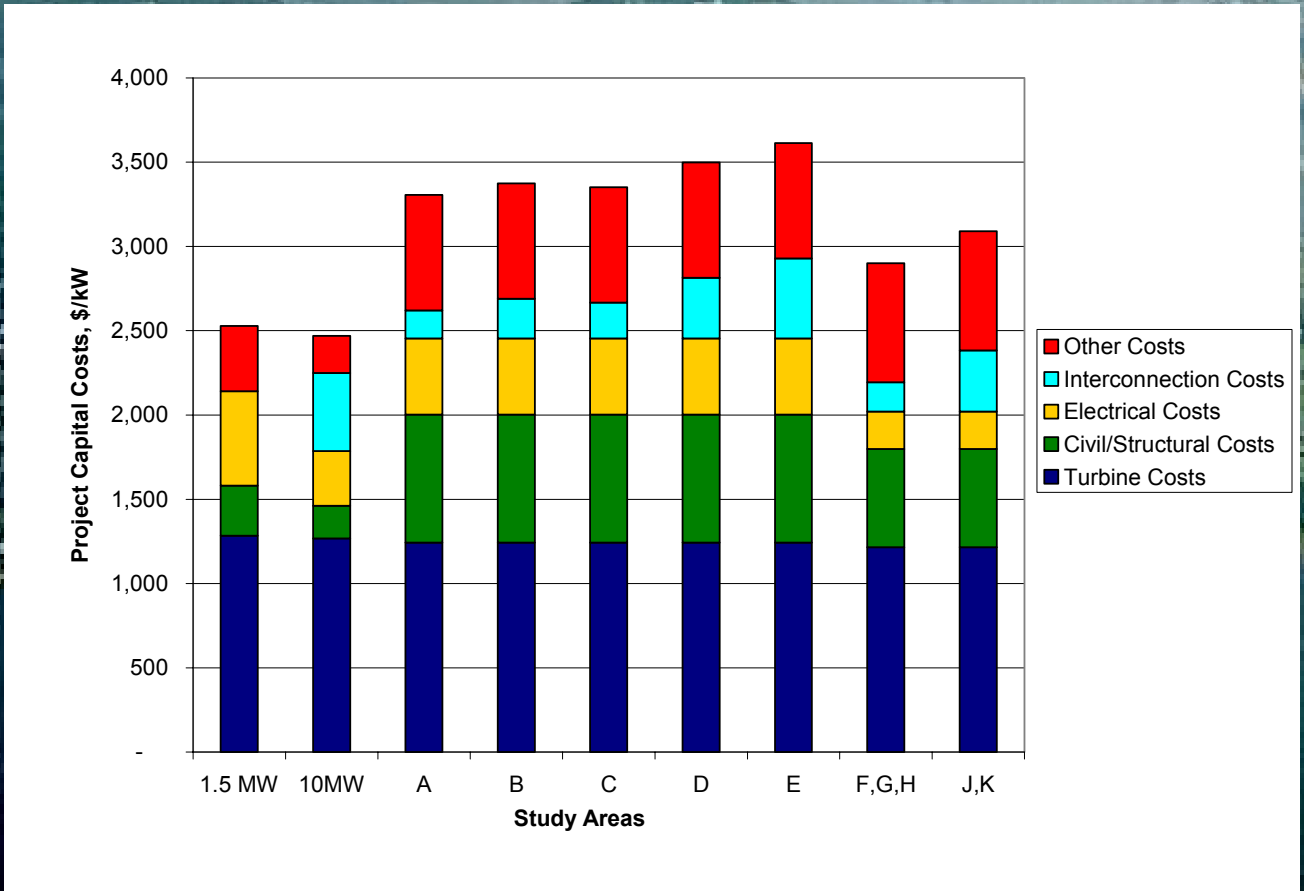
Capital Cost Summary



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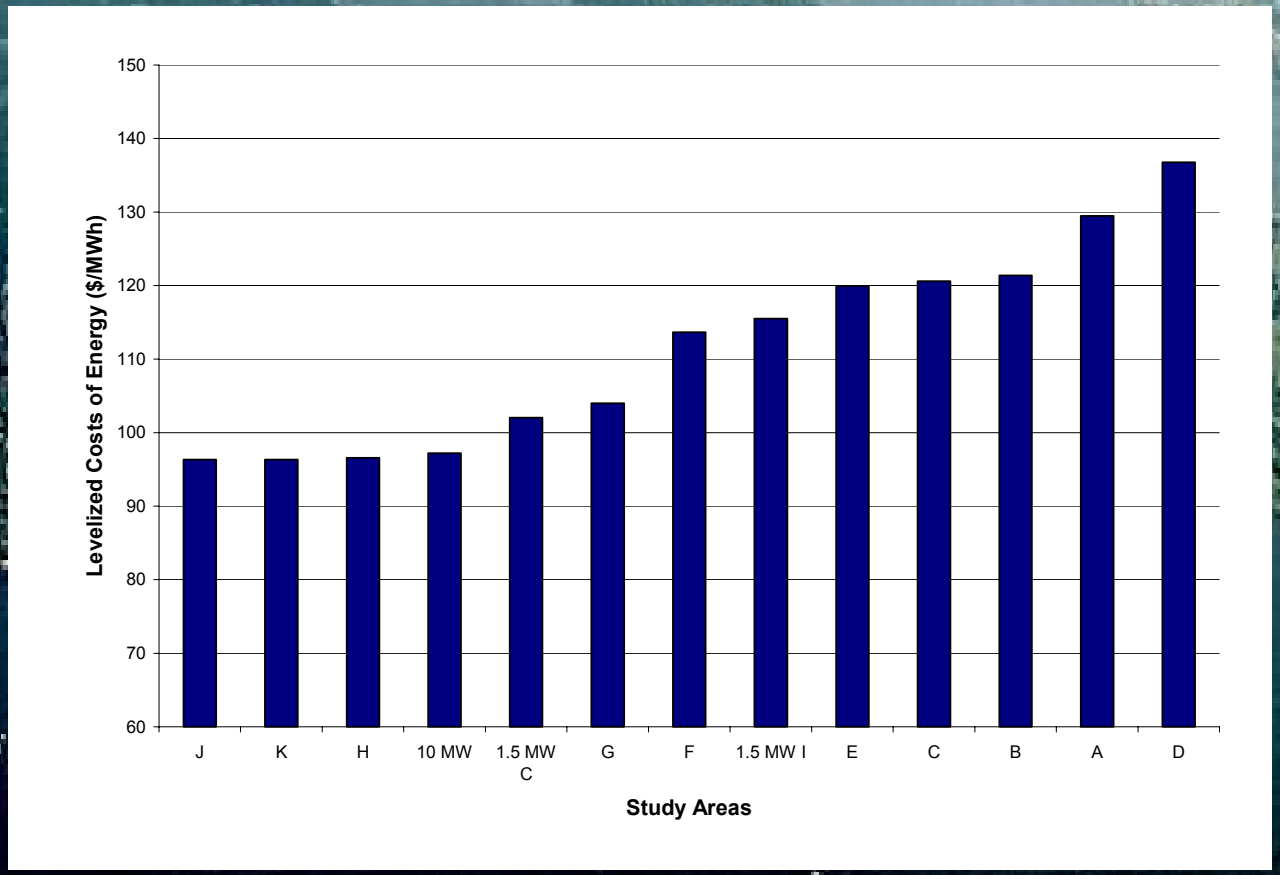
Projected Wind Energy Costs



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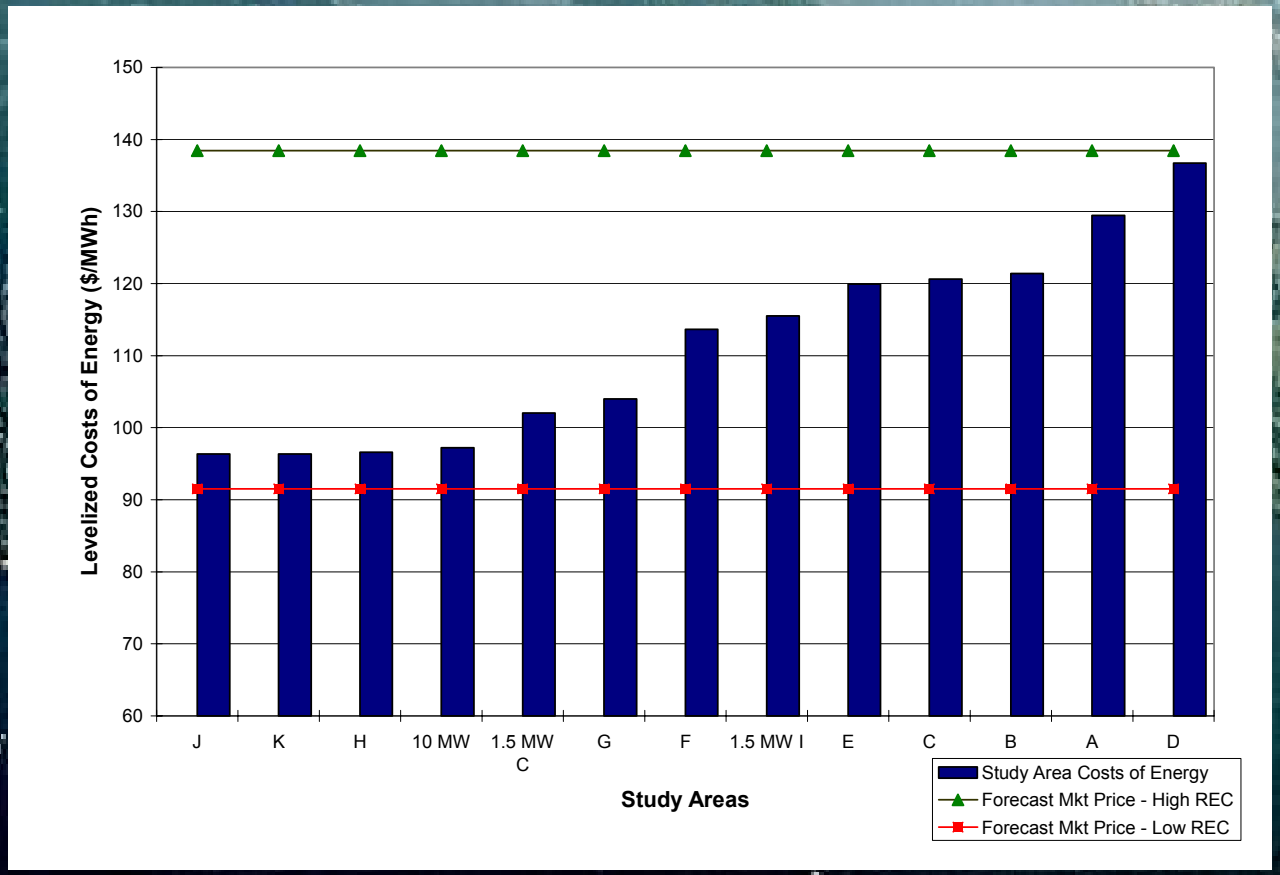
Projected Wind Energy Costs

Comparison to Wholesale Market Price Forecasts



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Key Overall Findings

- RIWINDS Goal of 15 % is Achievable
- 98 % of Wind Opportunity is Offshore
- 78 % of Offshore Wind Opportunity is in State Waters
- Cost of Wind Energy Appears to be Competitive with the Projected Market Value of Electricity

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Challenges

- Immature Status of U.S. Offshore Wind Market
- Insufficient Electric Transmission System Capacity
- Financing in De-regulated New England Electric Market (i.e. Long Term Power Contracts to Finance Projects are Not Available)

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and Opportunities

- Most of the Offshore Areas are in State Waters
- Available State and Federal Financial Incentives (i.e., PTCs, RECs, CREBs)
- Business opportunities for RI e.g. Blade Manufacturing - TPI, Construction and Maintenance Staging Area - Quonset Point
- Strong Grass Roots/Community Support for Wind Energy

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