Offshore Wind Power
An Opportunity for South Carolina

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Historically independent drivers

- Economy
- Environment
- National Security
.. have merged to drive new thinking

Integrated Energy Policy
Opportunities for Economic Development
Innovation
What are the drivers behind the ‘Green Economy’?

- Diversify energy supply
- Energy security
- Reducing imports
- Environmentally responsibility
- Sustainability
- Economic development
  - Innovation / Research
  - Manufacturing
  - Operations
  - Installation
  - Maintenance
State RPS stimulate ‘Green Economy’

Renewables Portfolio Standards

28 states have an RPS; 5 states have an RE goal
DOE outlines a plan for 20% wind power by 2030

- Requires 290 GW of new wind to reach goal
- 50 GW of offshore along NE and SE
- $175Bn in investment
- SC potential identified at 1-5 GW offshore
- Technology and infrastructure improvements
- GHC reductions and water savings
- Economic development
SC Stands to Gain 10-20,000 New Jobs

Total Cumulative Manufacturing Jobs Created by Scenario that Meets 20% of U.S. Electricity Needs From Wind (2007 - 2030)


Major component assumptions: 50% of blades are manufactured in U.S. in 2004 increasing to 80% in 2030; 26% of towers are from the U.S. in 2004 increasing to 50% in 2030 and 20% of turbines are made in the U.S. increasing to 42% by 2030.
Market demand spurs growth

Over 50 U.S. Manufacturing Facilities Opened, Expanded or Announced Since January 2007

Source: AWEA, Sample of Manufacturing Facilities, November 2008
Strengths of South Carolina

- Outstanding port facilities and rail
- Large scale ship rebuilding facilities
- Low cost manufacturing
- Company friendly environment
- Excellent research institutions
- Raw material providers (steel)
- Key industry players
  - GE Energy
  - Fluor
  - Ilgin
  - Timken
- Entrepreneur spirit
28 Coastal States consume over 78% of the electrical demand in the United States.

Only 6 have significant land-based wind resources.

26 of the states have offshore wind resources to meet 20% scenario.

Offshore environment offers higher and more consistent winds with no land constraints.

Markets (demand centers) near the resource
SC Manufacturing Cluster to service markets

US Markets

European Markets

Asian Markets
State Programs

Massachusetts:
• RE Certificate Incentive
• RE Equipment Sales Tax Exemption
• Sustainable Energy Economic Development Initiative

Rhode Island:
• 15% RE
• 10 possible sites
• 1.3 MWhr RFP

New York:
• RE Certificate Incentive
• RE Equipment Sales Tax Exemption
• Sustainable Energy Economic Development Initiative

New Jersey:
• $4M Grant for 345 MW Wind Farm Study
• $19M, 5 Yr. Production Tax Credit

North Carolina:
• RE Corporate Tax Credit
• State / Duke Energy for Pamlico Sound Project

MI / WI:
• Team Up on Lake Michigan

Ohio:
• Lake Erie Wind Farm

Delaware:
• 200 MW PPA

Toronto:
• Lake Ontario Project
Technology continues to evolve
Global economy requires strategy for global competition

- Innovation
  - Transfer
  - Job Training
  - Incubate New Enterprises
  - Competitive Advantage

- Markets
Clemson DTTF - Project

➢ Innovation driven
➢ Industry focused

Existing Facilities

Existing Infrastructure

CHARLESTON NAVAL COMPLEX RDA
CHARLESTON
NORTH CHARLESTON
STATE OF SOUTH CAROLINA
FLUOR
SCE&G
PRIVATE DONORS
SC PORT AUTHORITY
SRNL
CMMCC
SC PUBLIC RAILWAYS
RENK LABECO
Technology is massive

..getting bigger and more complex
Offshore Wind Turbine Manufacturing and Services Cluster

South Carolina serves as the manufacturing hub

- Tower Fabrication
- Cable Laying
- Turbine Assembly
- Component Manufacturing
- Logistics
- Blade Manufacturing
- Construction
- Foundation Fabrication
In Summary

For South Carolina to be successful:

- Compete globally
- Innovative
- Build on existing infrastructure
- Work force development
- Sustainable public policies
In Summary

..the ‘Green Economy’ train is leaving or may have already left the station, the key is whether South Carolina helps to drive that train, is on board for the ride or is left at the station.