



**DEEPWATERWIND®**

CLEAN ENERGY IS JUST OVER THE HORIZON



# Focus on Offshore Wind

Stony Brook SBDC Solar and Wind Conference  
May 11, 2011

## Capital

### DE Shaw & Co

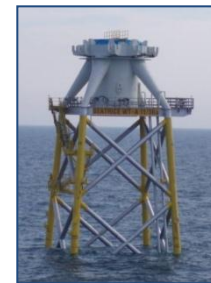
- \$19B of investment and committed capital
- Specialized expertise within the energy sector



- 5,500+ MW portfolio
- 700+ MW operating

## Technical

- Focused on projects located 15+ miles from shore, where visual and environmental impacts are minimized
- Designing projects using steel piled jacket foundations suitable for up to 170' for water - now the standard for deep water wind farms in Europe



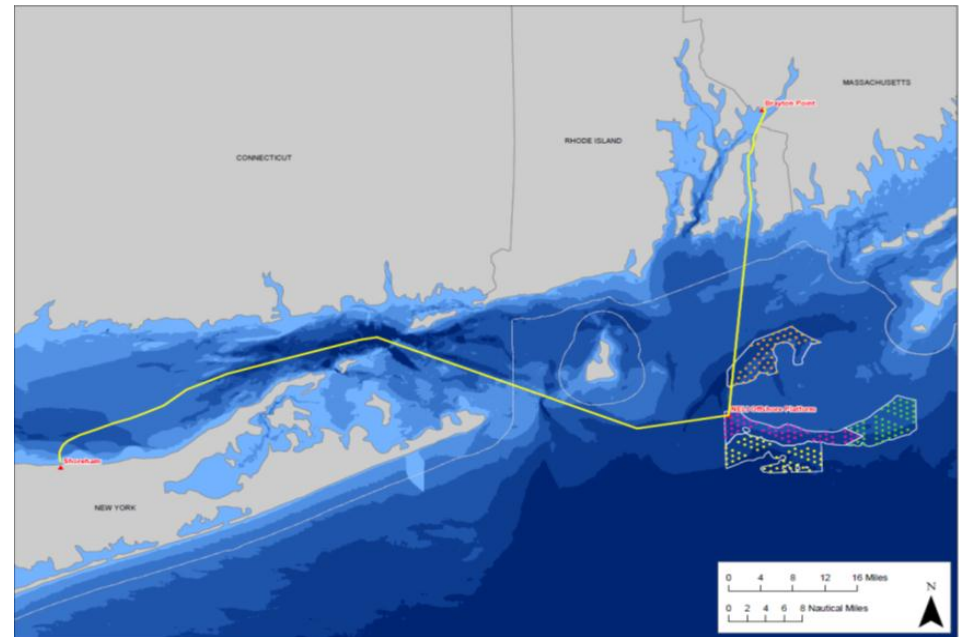
## Two Separate 1,000 MW Offshore Wind Projects:

- Deepwater Wind Energy Center:

- Located far from shore, 30 miles from Long Island

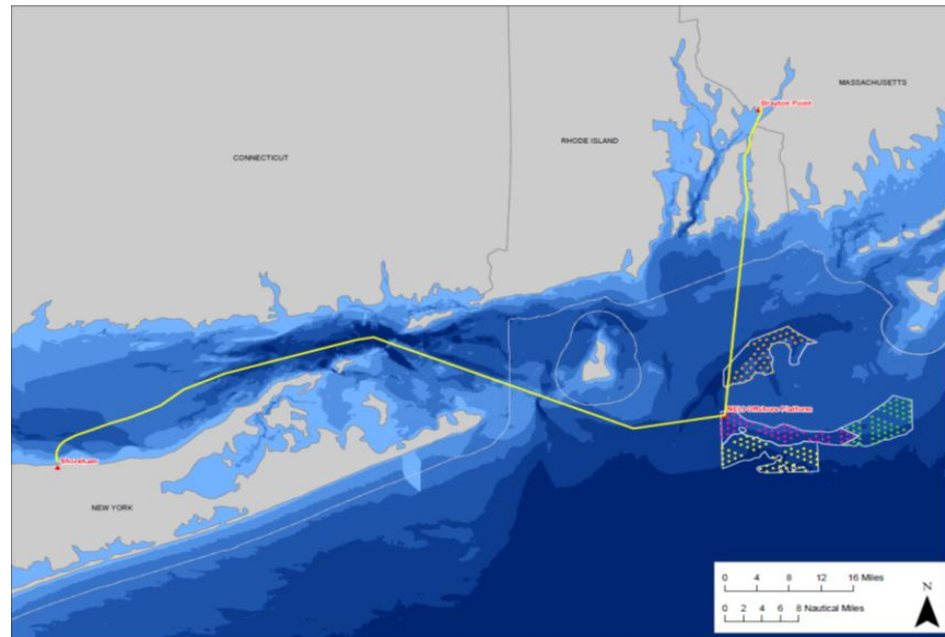
- Hudson Canyon

Wind Farm: 30 miles  
south of western  
Long Island



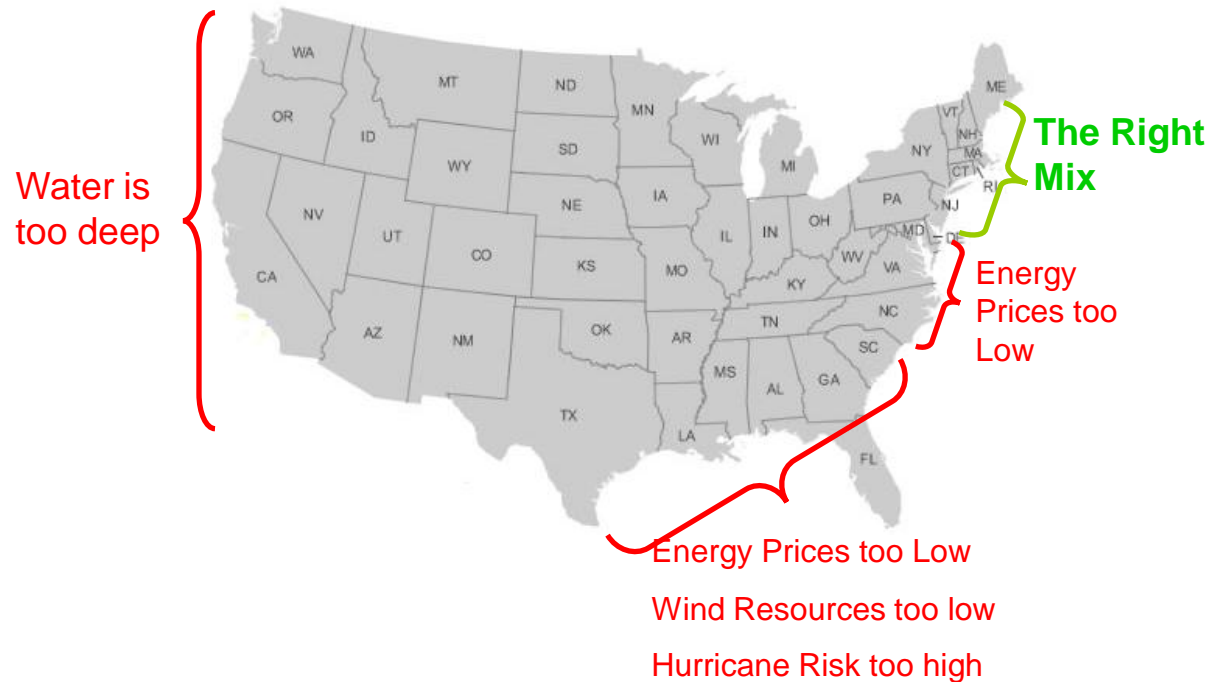
## Transmission Systems:

- Each provides LIPA with 600 MW's of firm power. Half from the windfarm and half from the interconnection.
- Each can satisfy LIPA's entire renewable energy and carbon emission offset reduction goals
- Cost-competitive with new combined-cycle plants, net of benefits

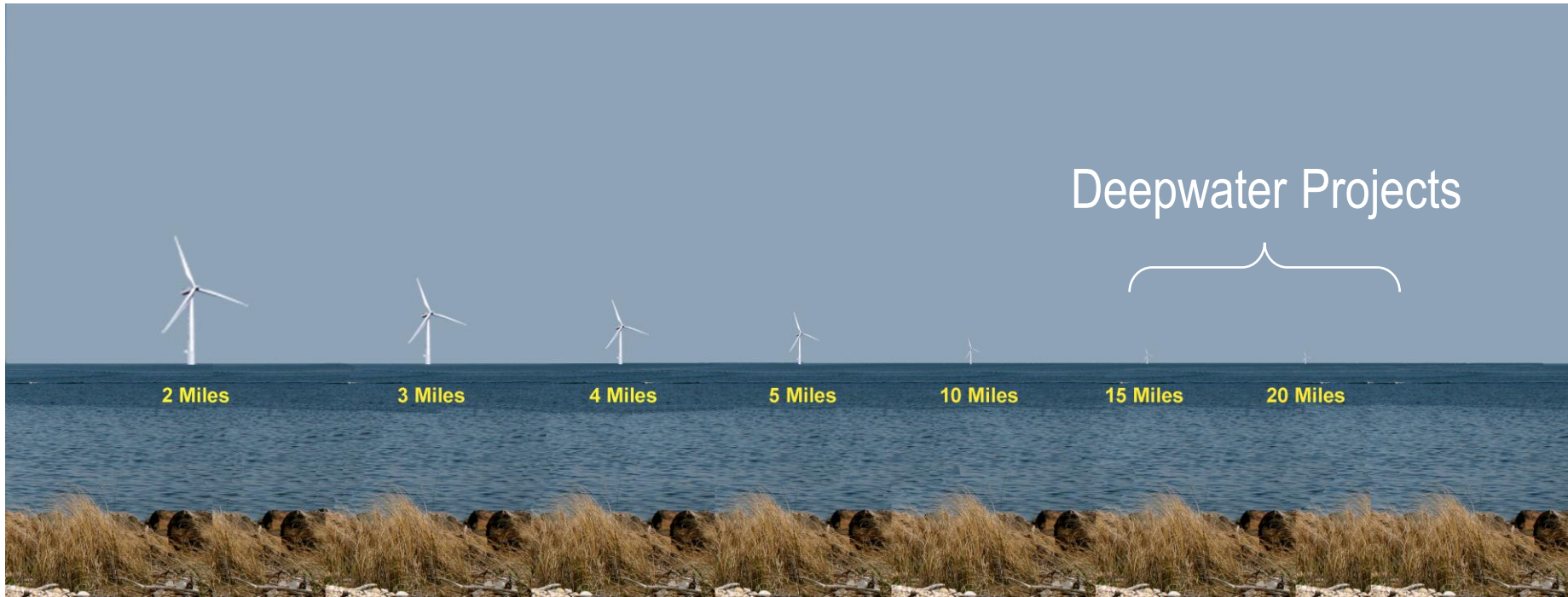


# Offshore Wind Isn't for all Coastal States

- Wind Resource
- Energy Price
- REC Price
- Water Depth
- Coastal Power Requirements
- Extreme Weather



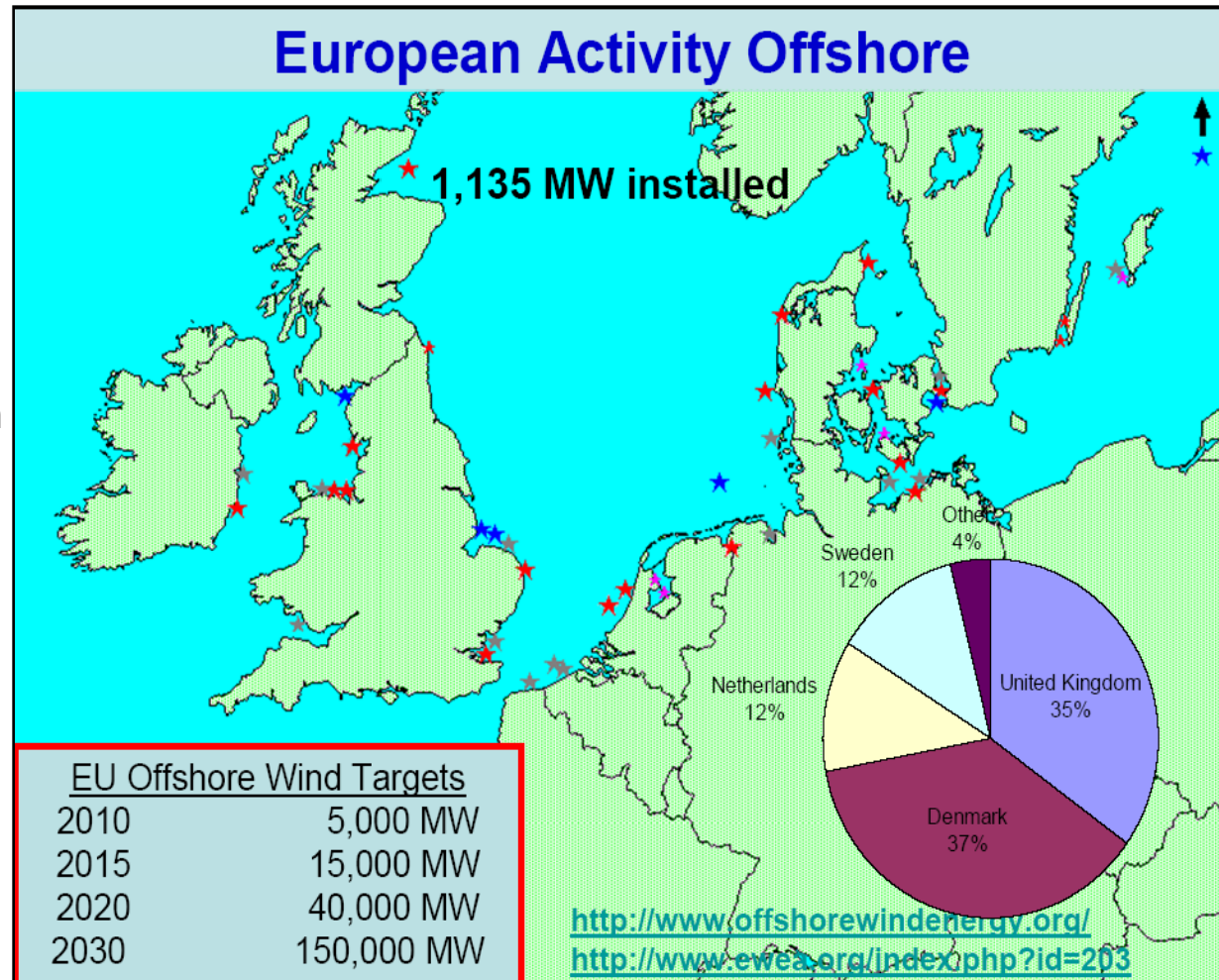
# Visual Impact



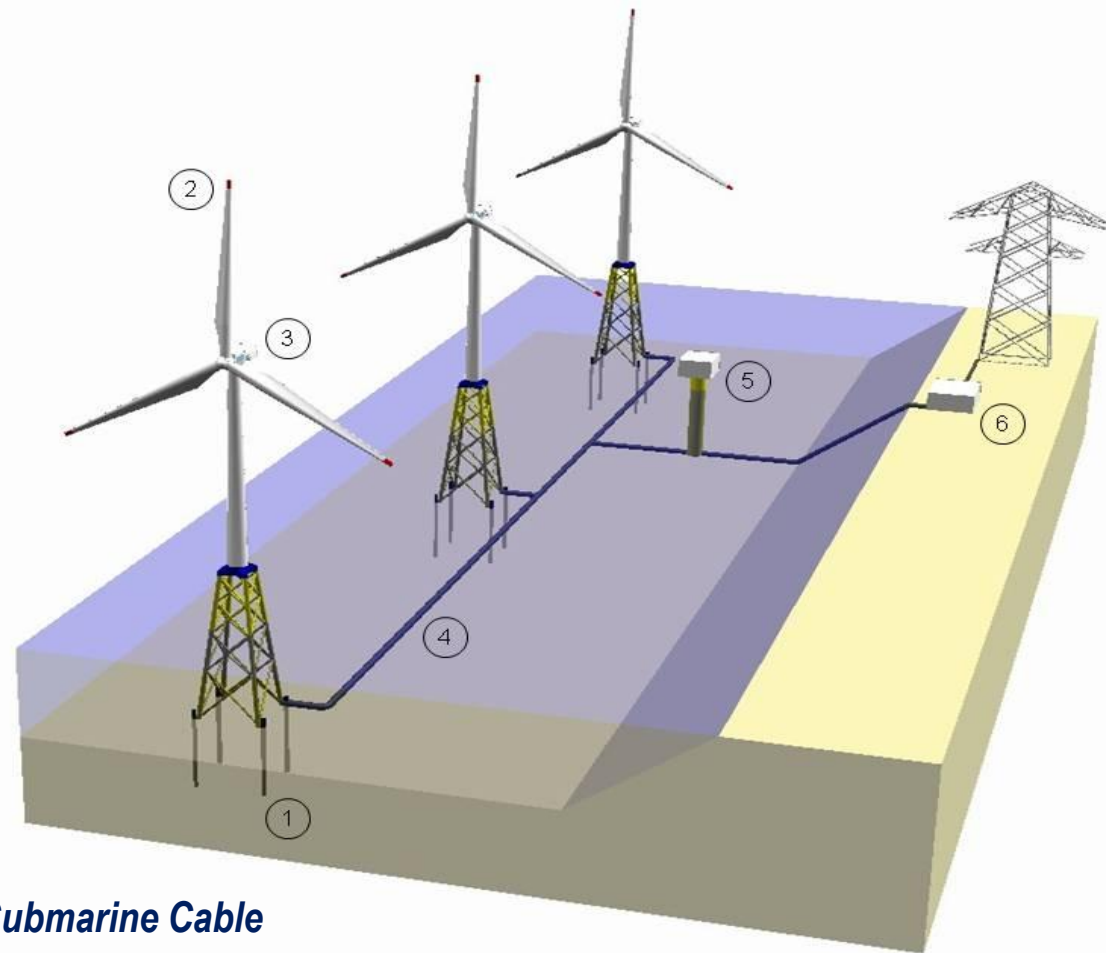
- Public support clearly grows with distance from shore
- Mitigating the visual impact will allow this industry to achieve scale

# Evolution of Turbine Technologies & European Market

- Europe has installed 1,136 offshore turbines, totaling 2,946 MW in 45 projects across nine countries.
- 5 MW turbines are now widely deployed and manufacturers are developing **6-8 MW** prototypes.
- Over \$2.3 billion of offshore wind farms were financed in Q4 of 2010 alone
- These projects used turbines of 5 MW or more, signaling that financing institutions are willing to invest in the large turbines



# Offshore Wind Farm basics



- 1. Foundation**
- 2. Wind Turbine Generator (WTG)**
- 3. Nacelle**
- 4. Inter-Turbine Submarine Cables**
- 5. Offshore Sub-Station & Export Submarine Cable**
- 6. On-Shore Grid Connection**



# Deep Water Platform Technology

## Monopile:

- Limited to Shallow Water (+/-70')
- Forces Most Projects Near Shore



## Jacket:

- Up to 200' Depths
- Allows Projects To Be 15-20 Miles Off Shore
- Jackets need to be made close to wind farm



Jackets have been the standard for the offshore oil and gas industry for more than 50 years

- What does it take to really get the industry going?

Three things:

- 1) Federal Permitting
- 2) State Permitting
- 3) Power Purchase Agreements

# Contracting and Permitting Activities in Other States

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## Revenue

•Five states have created legislative mandates for long-term contracts:

- Virginia
- Delaware
- New Jersey
- Rhode Island
- Massachusetts

•Three states have approved long-term contracts for offshore wind projects:

- Delaware
- Rhode Island
- Massachusetts

## Permitting / Site Control

•U.S. Department of Interior (DOI) has identified six states as priority areas for permitting and has begun the leasing process in four such states:

- Maryland
- Delaware
- Rhode Island
- Massachusetts



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