

# Why North Carolina and the Southeast?

Offshore Wind Energy

BOEM Public Hearing

Jan 7, 2013 (Kitty Hawk)

Jan 9, 2013 (Wilmington)

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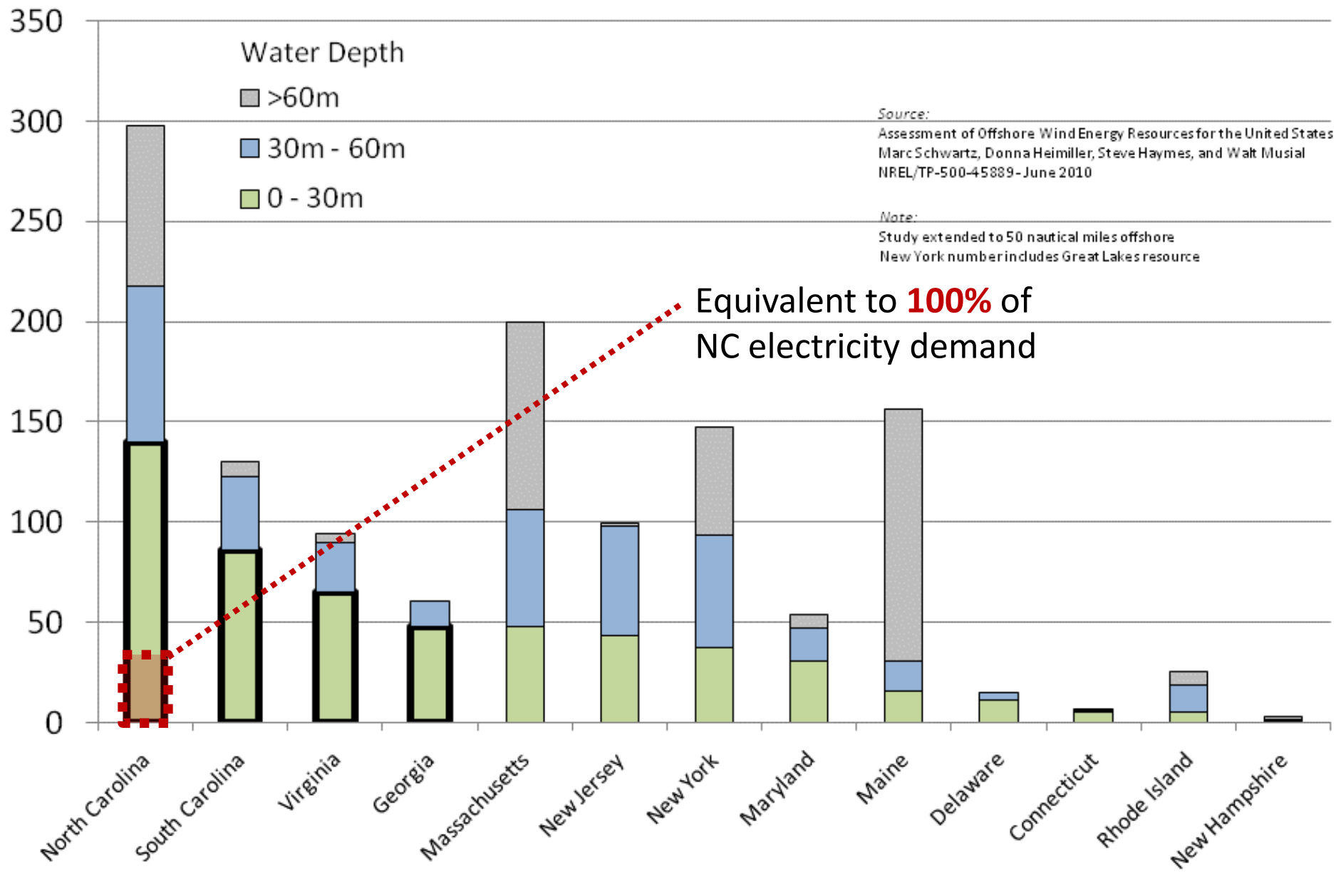
# NC and the Southeast Have:

- ✓ Great wind resource
- ✓ Big electricity markets
- ✓ Low costs

# Great Wind Resource

There is a lot of offshore wind potential in the Southeast, especially in shallow water.

# Offshore Wind Resource Potential in Gigawatts



# Offshore Wind Resource Potential Gigawatts in <30m of Water

339  
63% of Total

123

75

Southeast

Mid Atlantic

Northeast

Source:  
Assessment of Offshore Wind Energy Resources for the United States  
Marc Schwartz, Donna Heimiller, Steve Haymes, and Walt Musial  
NREL/TP-500-45889 - June 2010

Note:  
Study extended to 50 nautical miles offshore  
New York number includes Great Lakes resource

**WE DON'T WANT TO SEE...**



# Offshore Wind Resource Potential

## Gigawatts in <30m of Water and >12nm Offshore

158

82% of Total

23

11

Southeast

Mid Atlantic

Northeast

Source:

Assessment of Offshore Wind Energy Resources for the United States  
Marc Schwartz, Donna Heimiller, Steve Haymes, and Walt Musial  
NREL/TP-500-45889-June 2010

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# **Big Electricity Markets**

We use a lot of electricity in the  
Southeast



# 2010 Electricity Sales

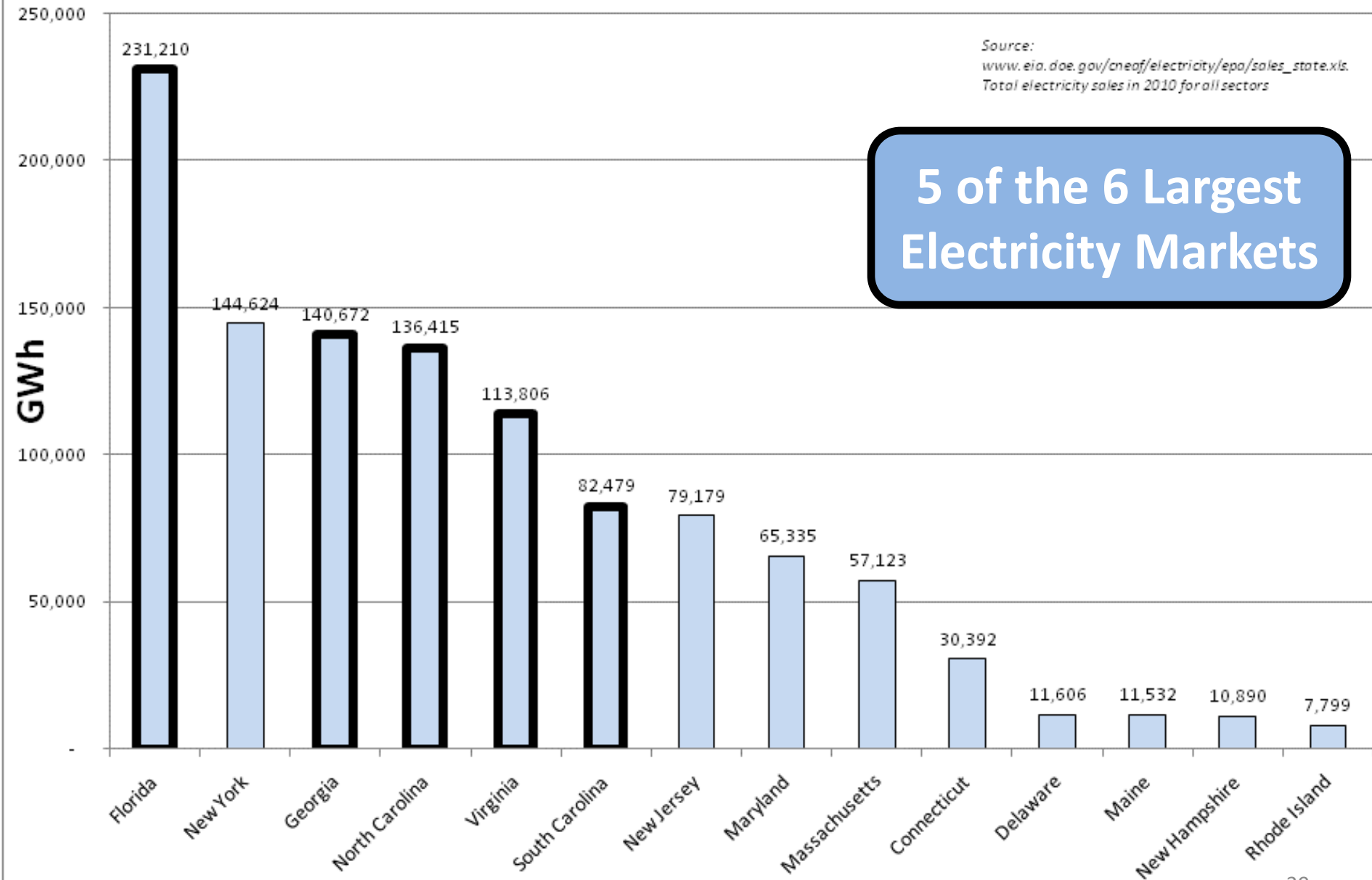
## East Coast States

Source:

[www.eia.doe.gov/cneaf/electricity/epa/sales\\_state.xls](http://www.eia.doe.gov/cneaf/electricity/epa/sales_state.xls)

Total electricity sales in 2010 for all sectors

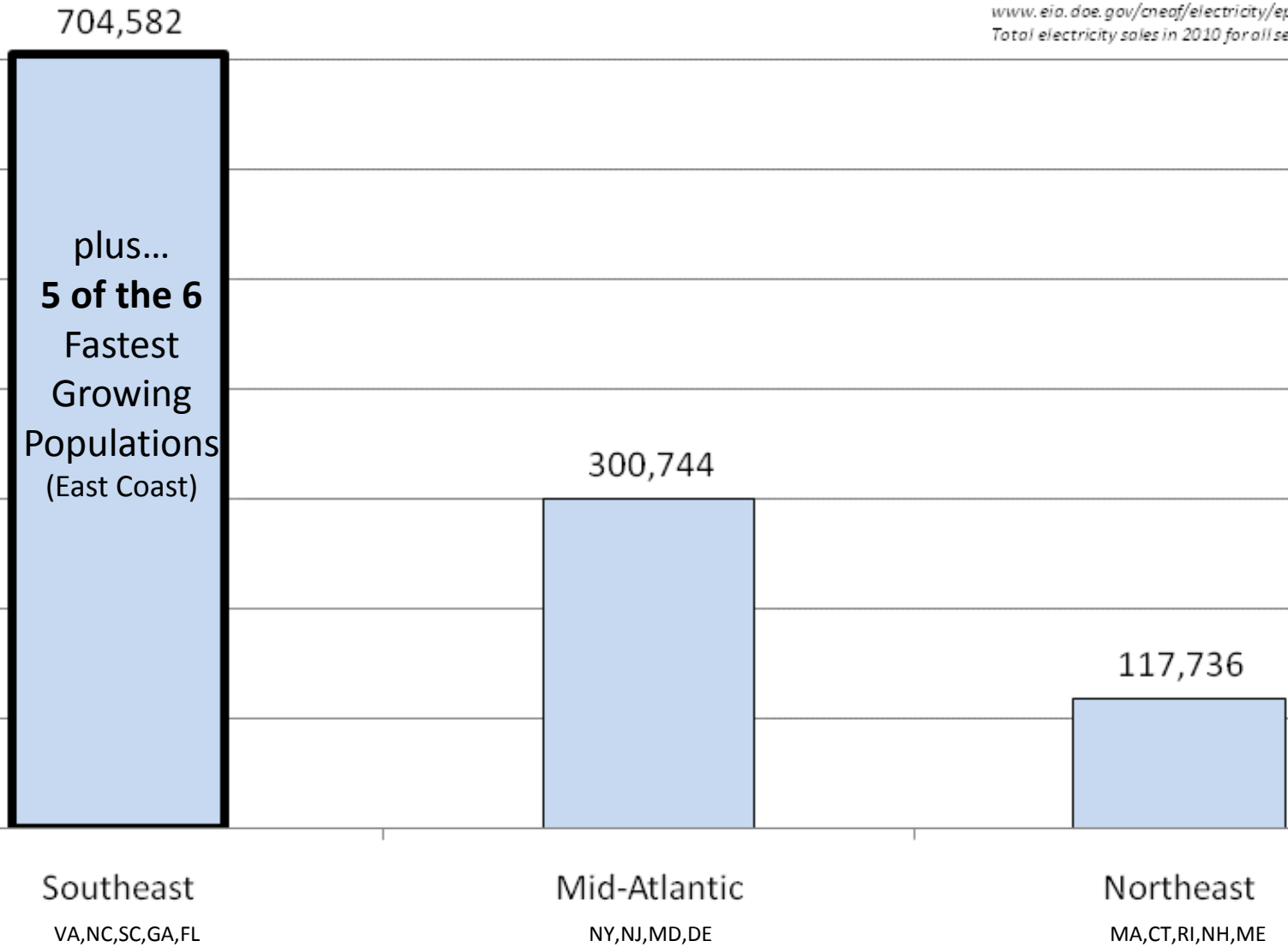
5 of the 6 Largest  
Electricity Markets



# 2010 Electricity Sales (GWh)

## East Coast States

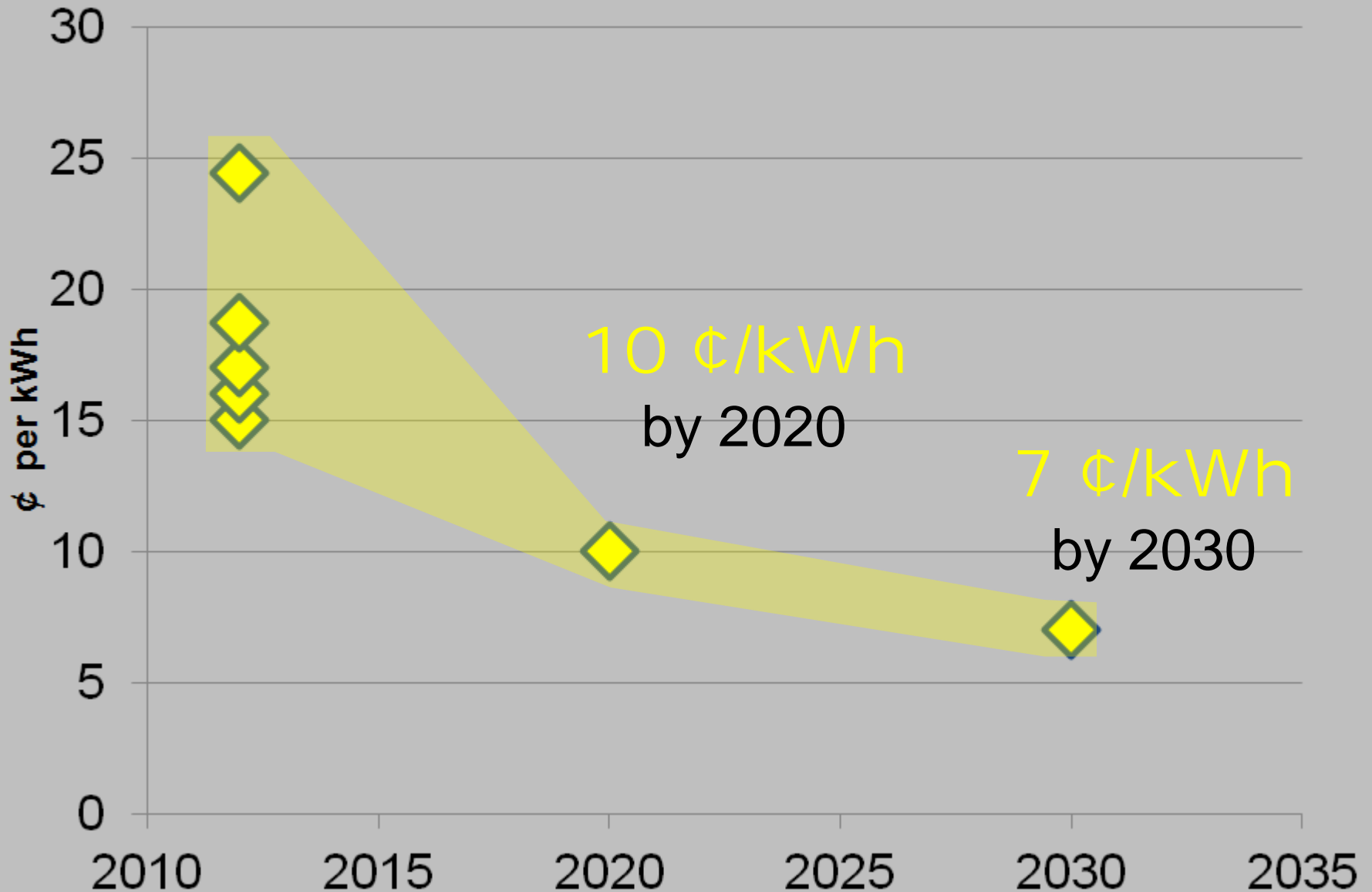
Source:  
[www.eia.doe.gov/cneaf/electricity/epa/sales\\_state.xls](http://www.eia.doe.gov/cneaf/electricity/epa/sales_state.xls)  
Total electricity sales in 2010 for all sectors



# Low Cost

It is cheaper to build things in the  
Southeast.

# U.S. Dept. of Energy Cost Targets



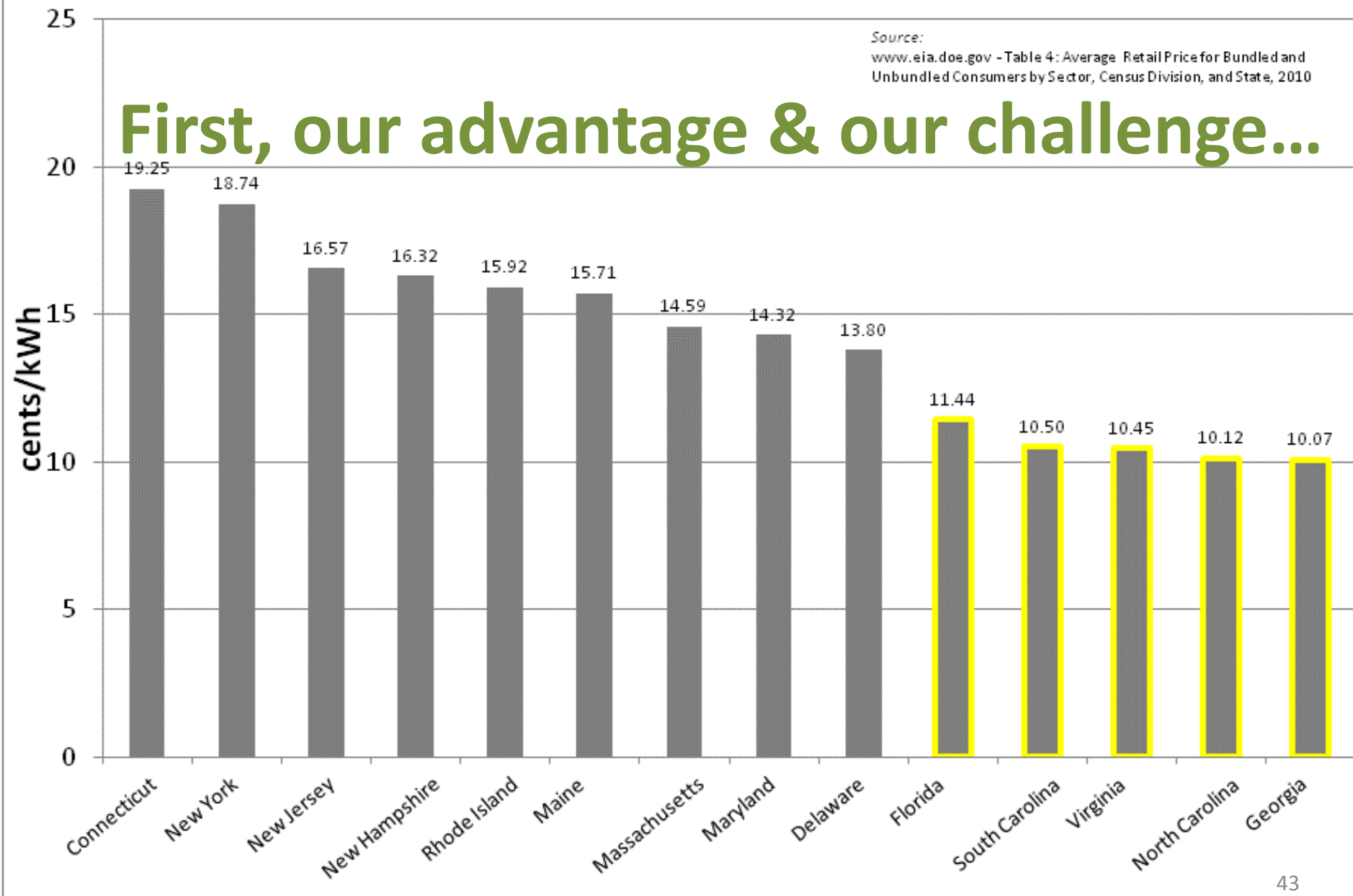
# Average Residential Electricity Cost

East Coast States - 2010

Source:

[www.eia.doe.gov](http://www.eia.doe.gov) - Table 4: Average Retail Price for Bundled and Unbundled Consumers by Sector, Census Division, and State, 2010

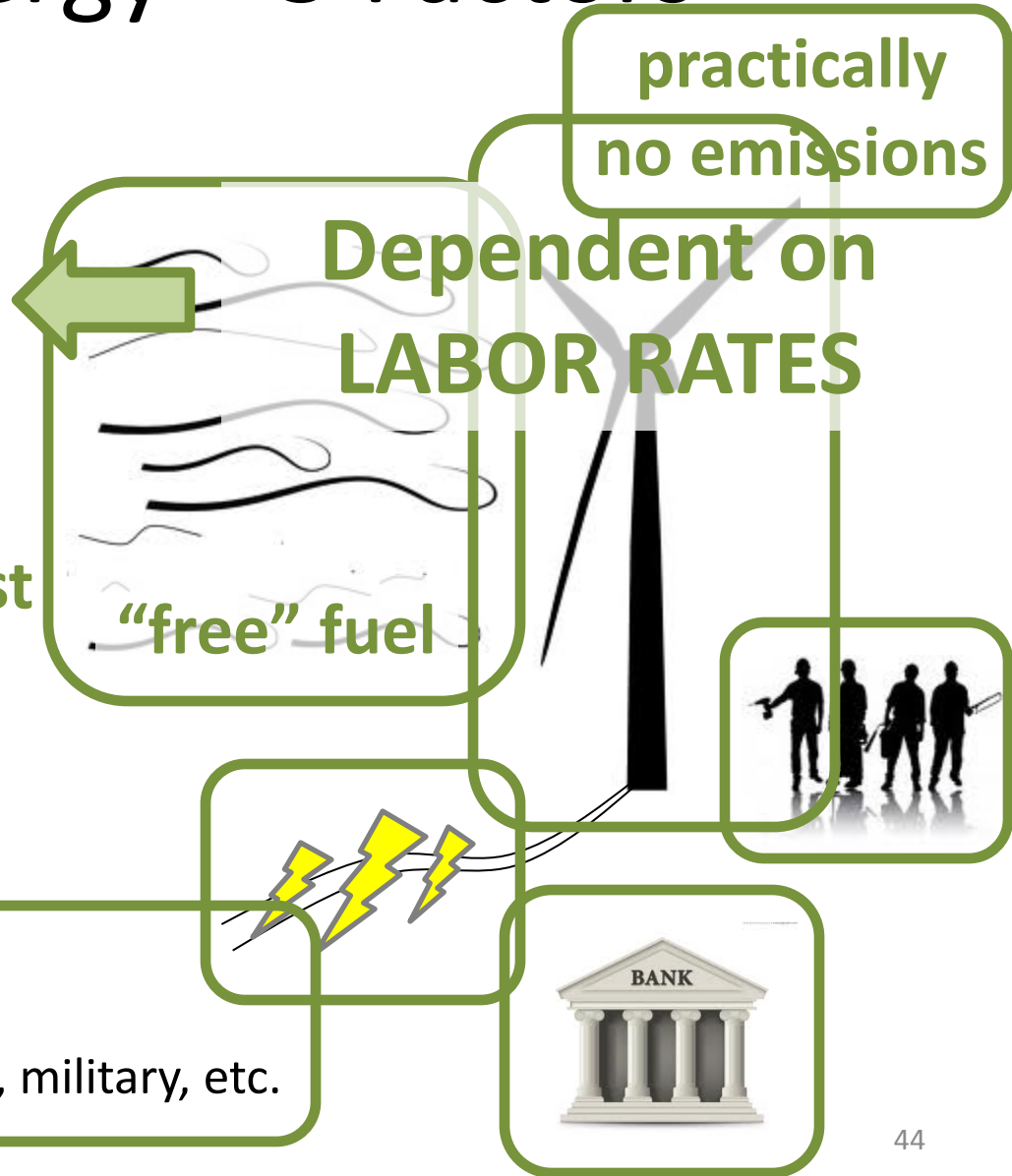
## First, our advantage & our challenge...



# Cost of Energy – 5 Factors

1. Construction
2. Oper. & Maint.
3. Finance
- ~~4. Fuel~~ **zero fuel cost**
5. Capacity Factor

6. External Costs  
environment, public health, military, etc.

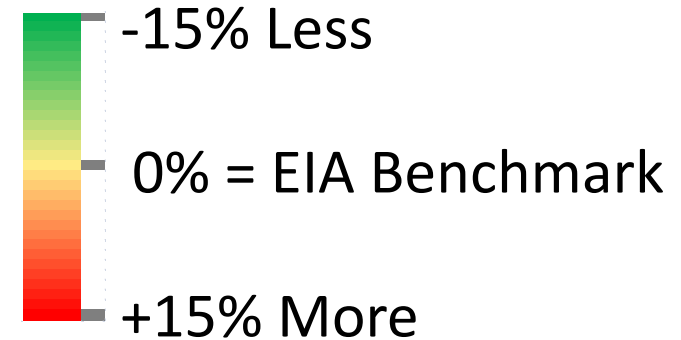
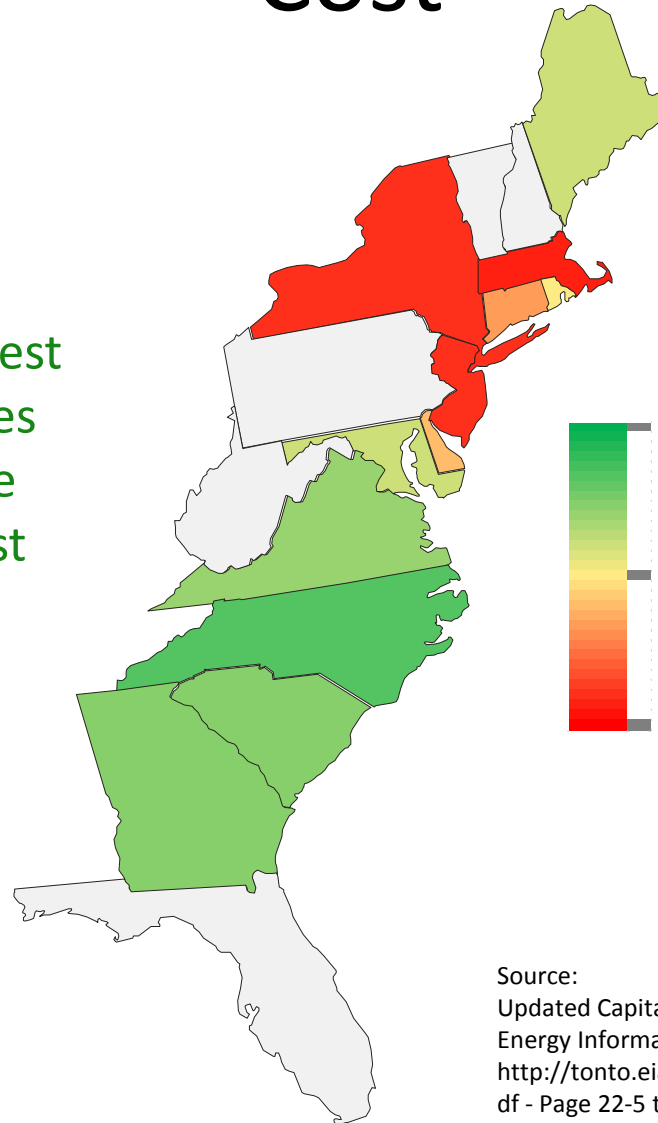


# Estimated Offshore Wind Construction Cost

Ranked:  
Lowest to Highest

NC	-9.3%
GA	-7.0%
SC	-6.5%
VA	-5.7%
ME	-2.6%
MD	-2.1%
RI	+0.8%
DE	+3.1%
CT	+5.7%
NY	+12.7%
NJ	+12.7%
MA	+13.2%

Four lowest cost states are in the Southeast

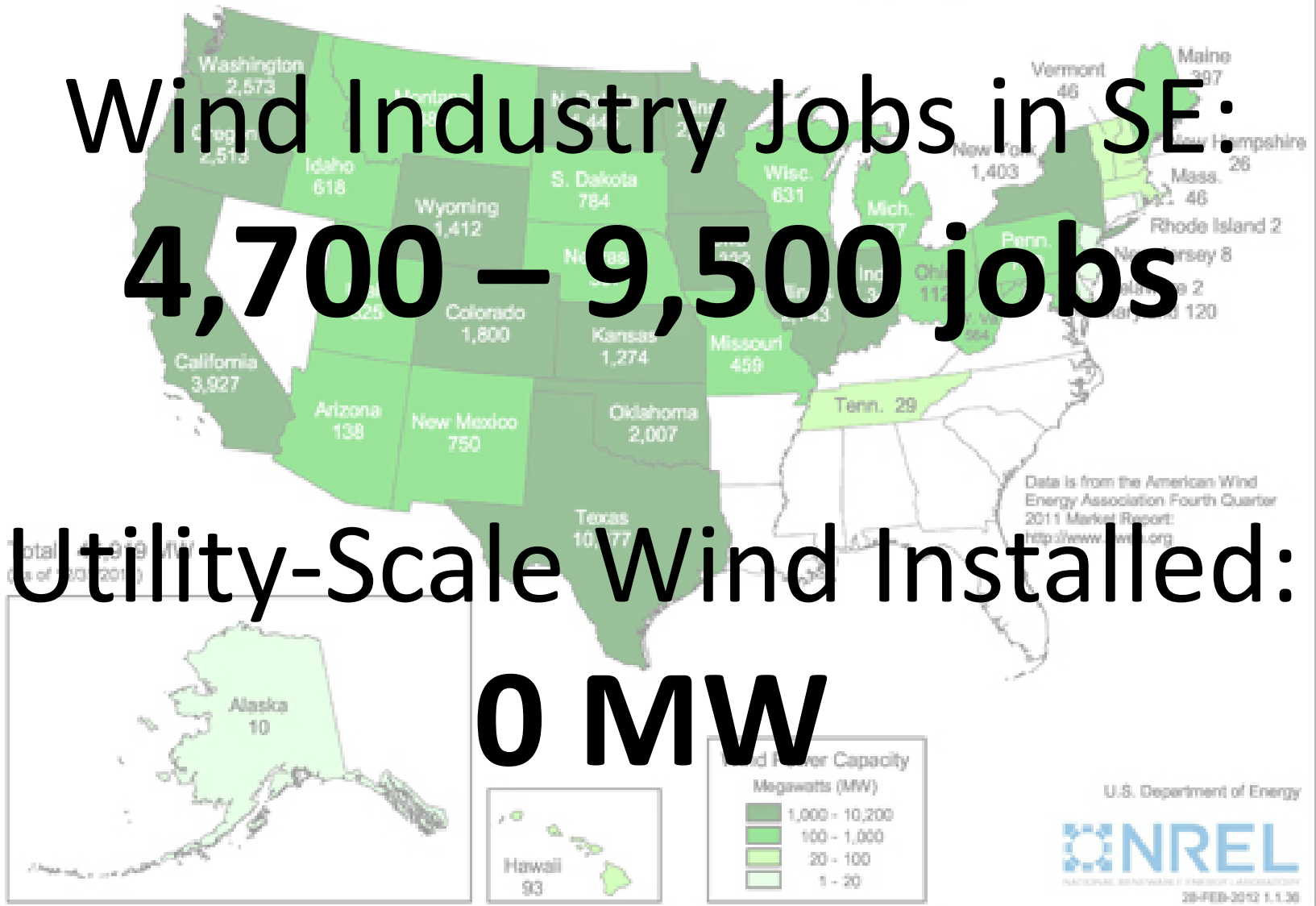


Source:  
Updated Capital Cost Estimates for Electricity Generation Plants, U.S.  
Energy Information Administration, Nov 2010  
[http://tonto.eia.doe.gov/oiaf/beck\\_plantcosts/pdf/updatedplantcosts.pdf](http://tonto.eia.doe.gov/oiaf/beck_plantcosts/pdf/updatedplantcosts.pdf)  
df - Page 22-5 to 22-6

2011 Year End Wind Power Capacity (MW)

Wind Industry Jobs in SE:  
**4,700 – 9,500 jobs**

Utility-Scale Wind Installed:  
**0 MW**



Data is from the American Wind Energy Association Fourth Quarter 2011 Market Report: <http://www.awea.org>

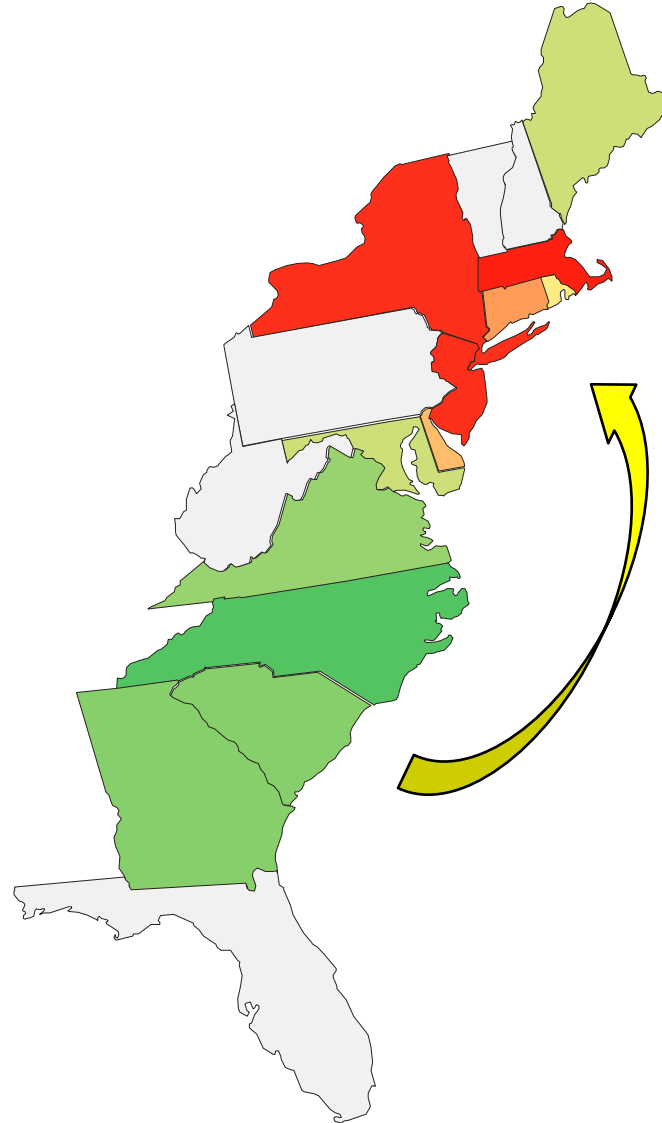


# Ratepayer Impact

## Southeast vs. Other Regions

The Southeast Has...	Effect on \$/month Impact	Why?
Large Market Size	↓	Wider base to spread the cost
Low Construction Cost	↓	proxy for per kWh Energy Cost
Low Electricity Rates	↑	higher premium per kWh

# Future Energy Exporter?



# Thank You.



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