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Wind in the South and Other Tall Orders

North Carolina

2011 Sustainable Energy Conference

Raleigh, North Carolina

David C. Shadle
Vice President
East Development

April 26, 2011

Elk River Wind Power Project, Kansas

About Us: Iberdrola Group

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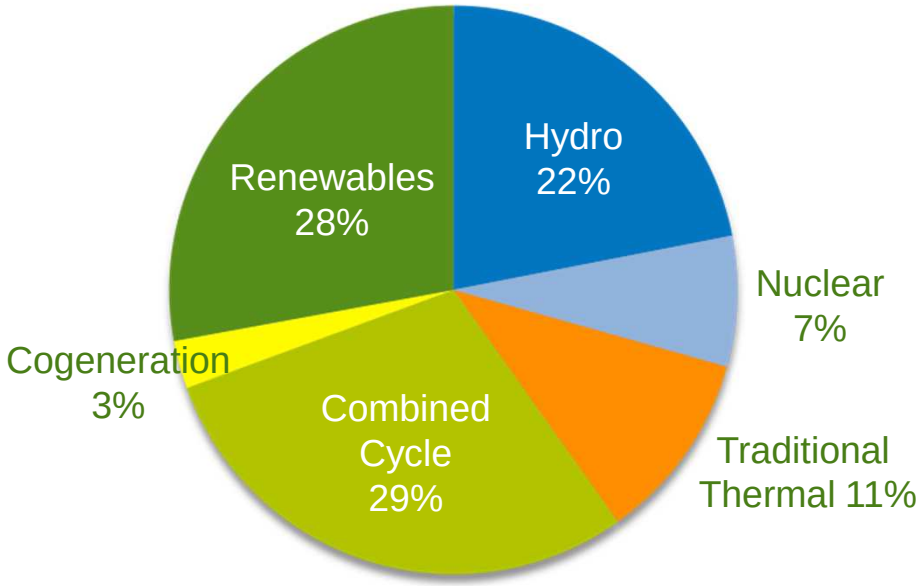
More than 44,900 MWs of installed capacity…

- 108-year history with roots in hydroelectric
- Leading wind producer worldwide with 12.5 GW installed, 62.6 GW pipeline
- 30,000 employees in 40 countries
- One of the lowest CO2 emissions levels in the electricity sector
- Strategic focus on US, UK, Latin America and Spain

Generation Capacity

(57% emissions-free)



…that is flexible and economical

Updated March 23, 2011

Our North American Asset Portfolio

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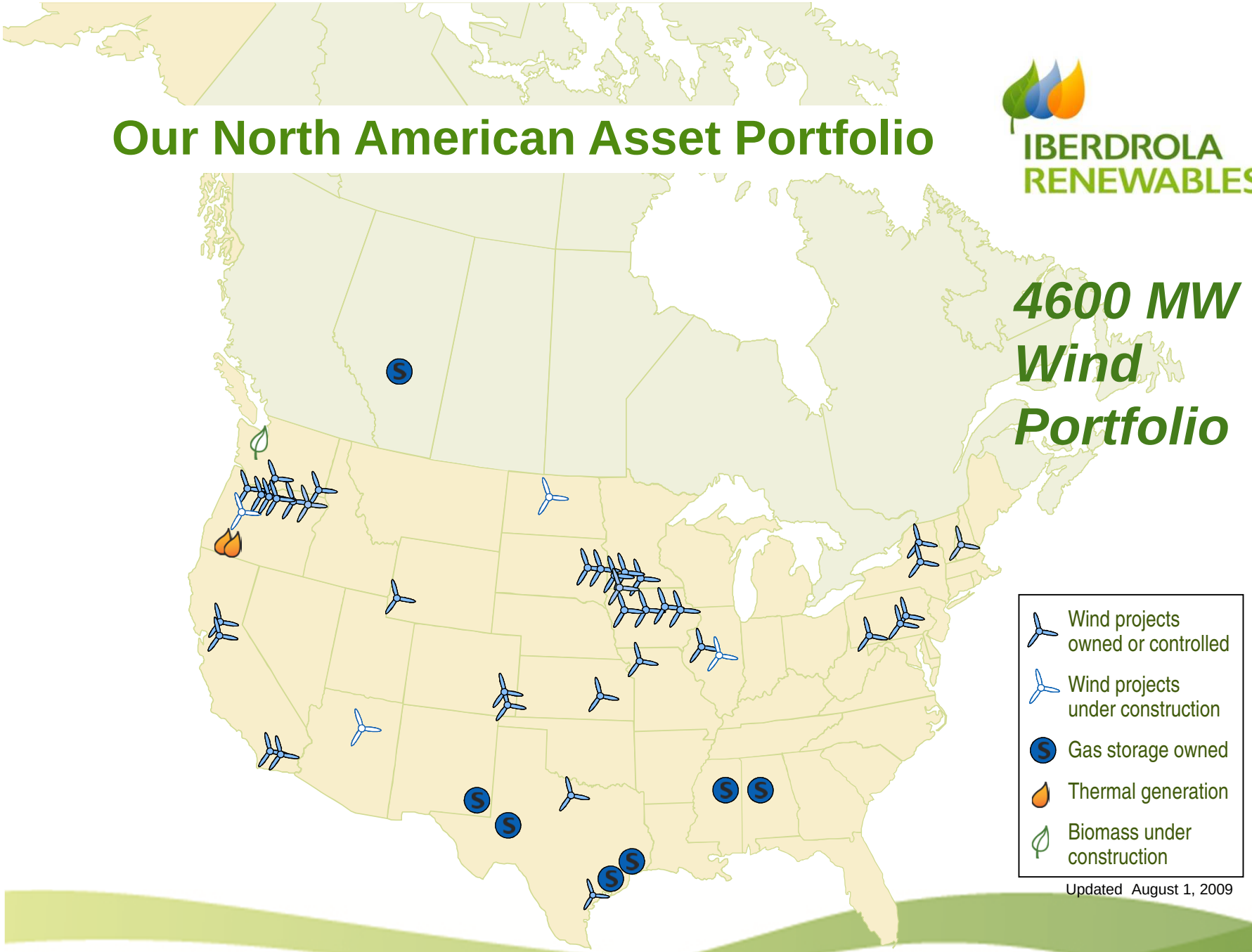
4600 MW Wind Portfolio



Updated August 1, 2009

U.S. top ten owners of new wind power capacity in 2010

Company	Capacity Added in 2010 (MW)
Iberdrola Renewables	1,074
NextEra Energy Resources	603
Horizon-EDPR	499
Terra-Gen Power	300
Duke Energy	251
Xcel Energy	201
E.ON Climate & Renewables	200
Invenergy	191
Portland General	175
CPV Renewable Energy	152

Source: AWEA.

Evolution of Wind Technology

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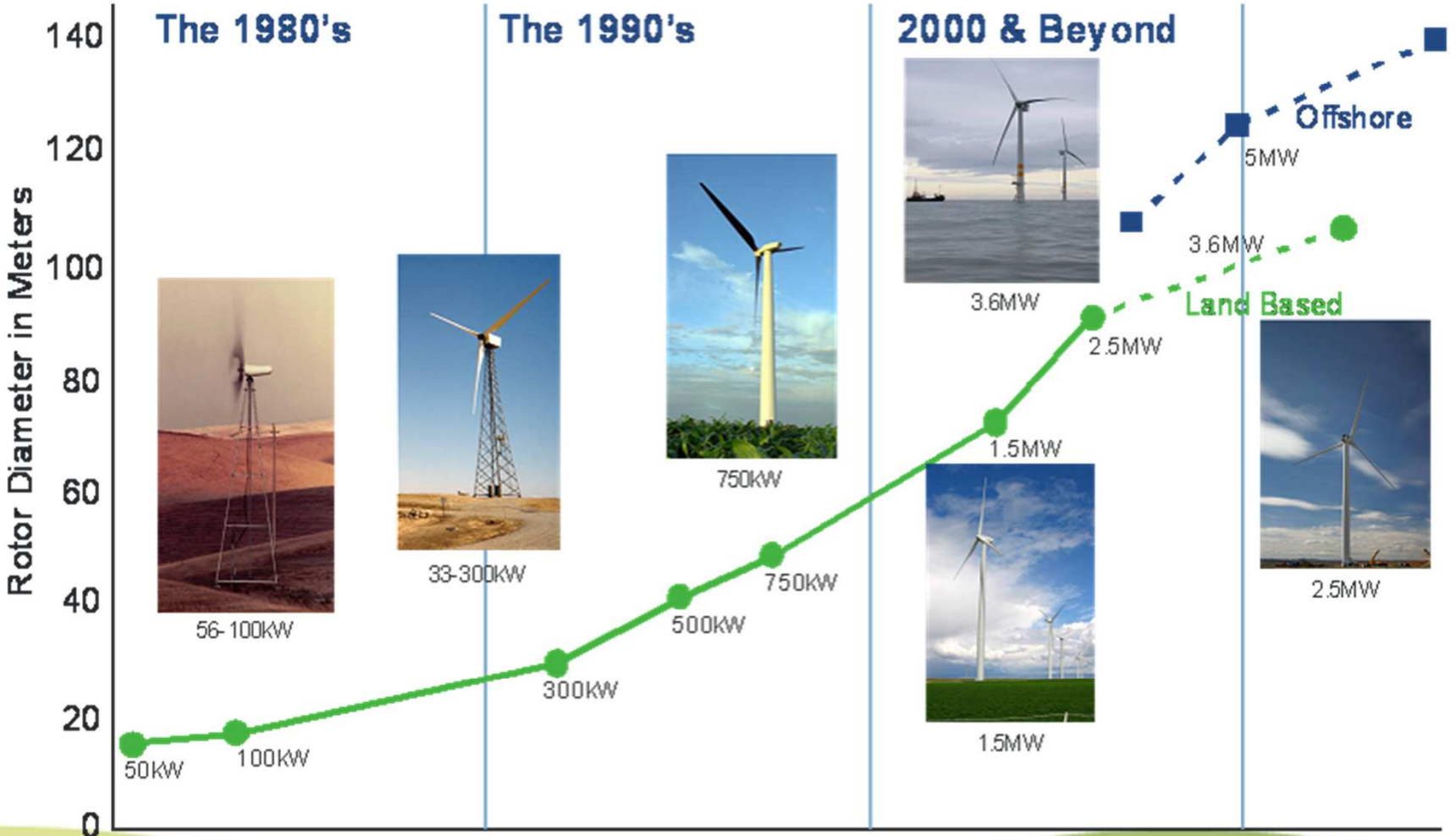
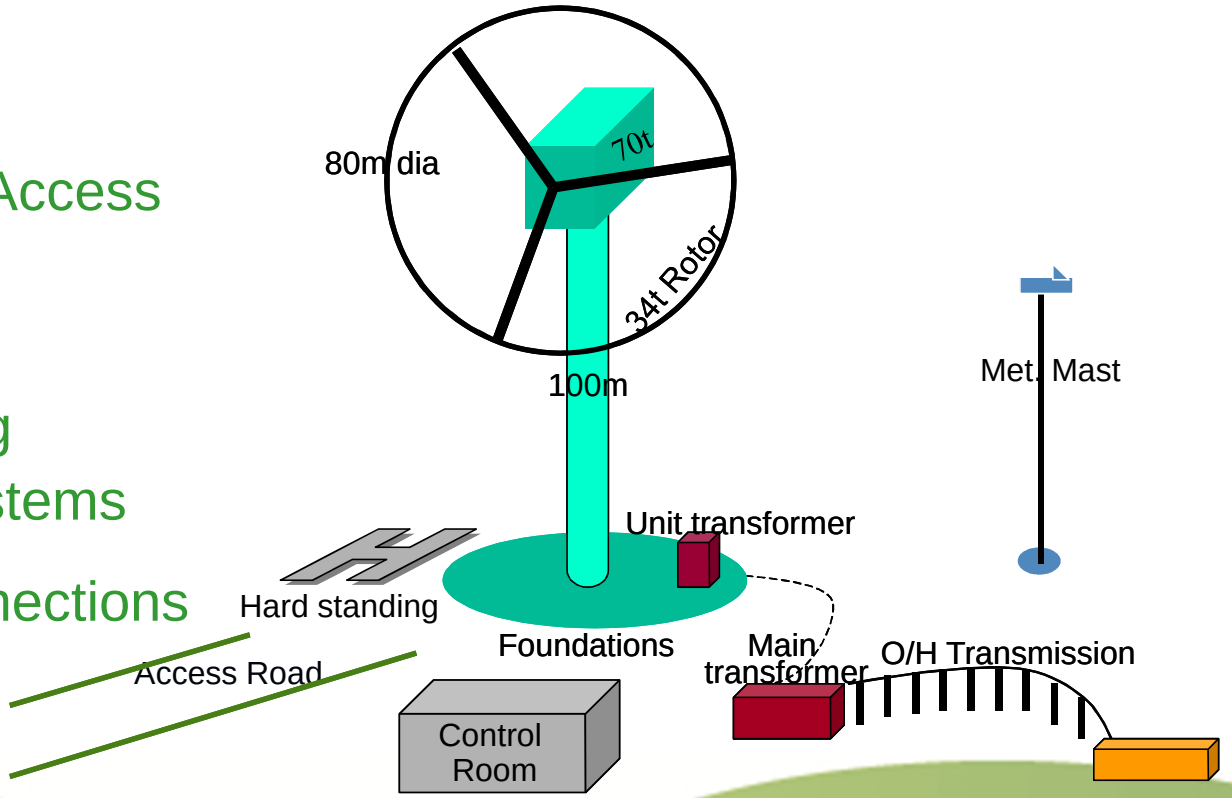


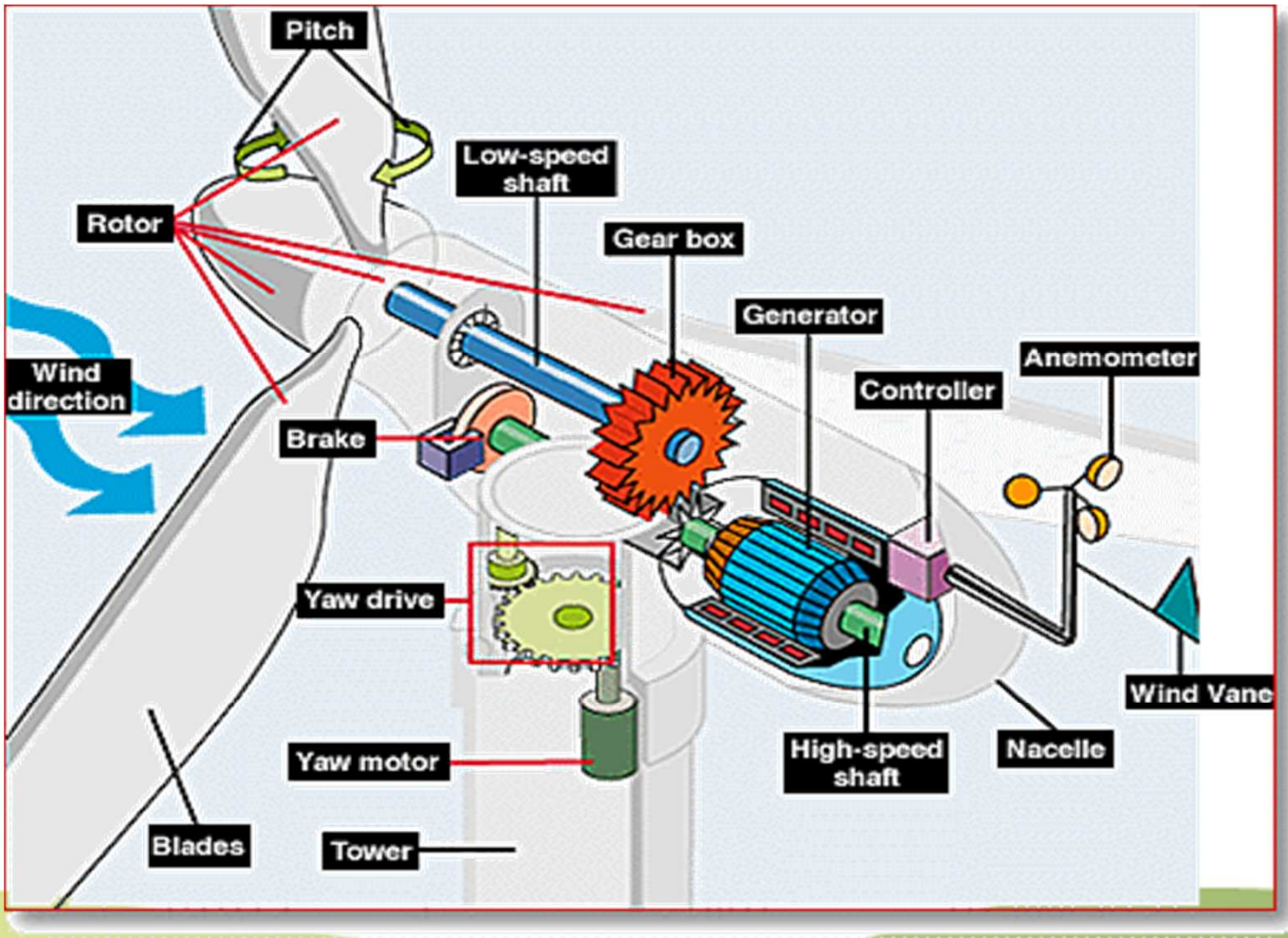
Background-Basics

Components

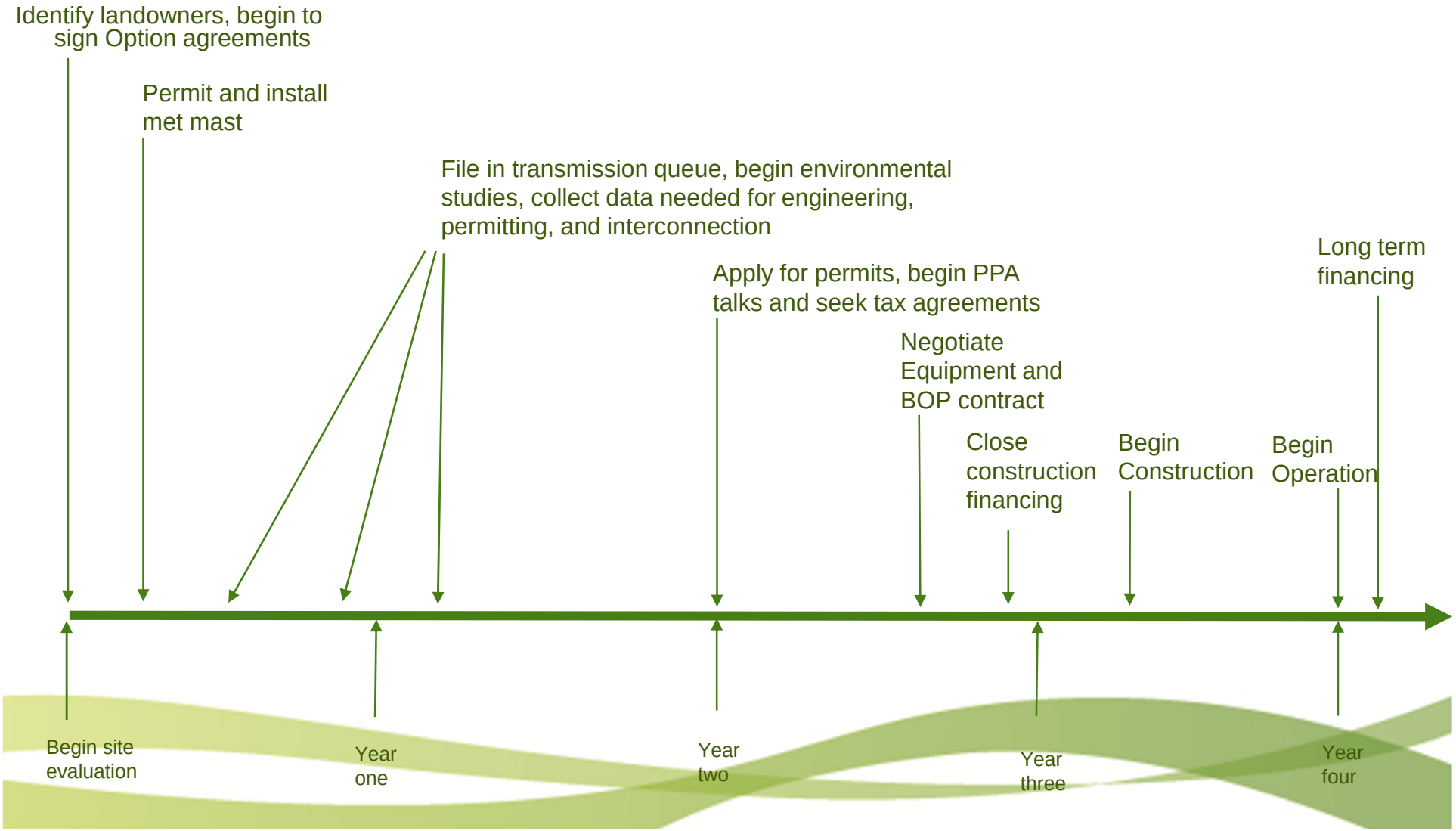
- Met Mast
- Roads
- Crane Pads/Access
- Foundations
- O&M Building
- Electrical Systems
- Network connections



Inside the Machine



Ideal Development Timeline



Phases of Development – Pre-Development

- "Fatal Flaw" Review
  - Wind resource study
  - **Transmission assessment**
  - Permitting Overview
  - Land Use Overview
  - Environmental Overview
  - Community Receptivity

Below are Meteorological (met) towers

Showing shelter box, PV panel, Cell antenna, and instruments. Met towers measure the "fuel" at the site every 10 minutes for at least one year.

Turbine Spacing

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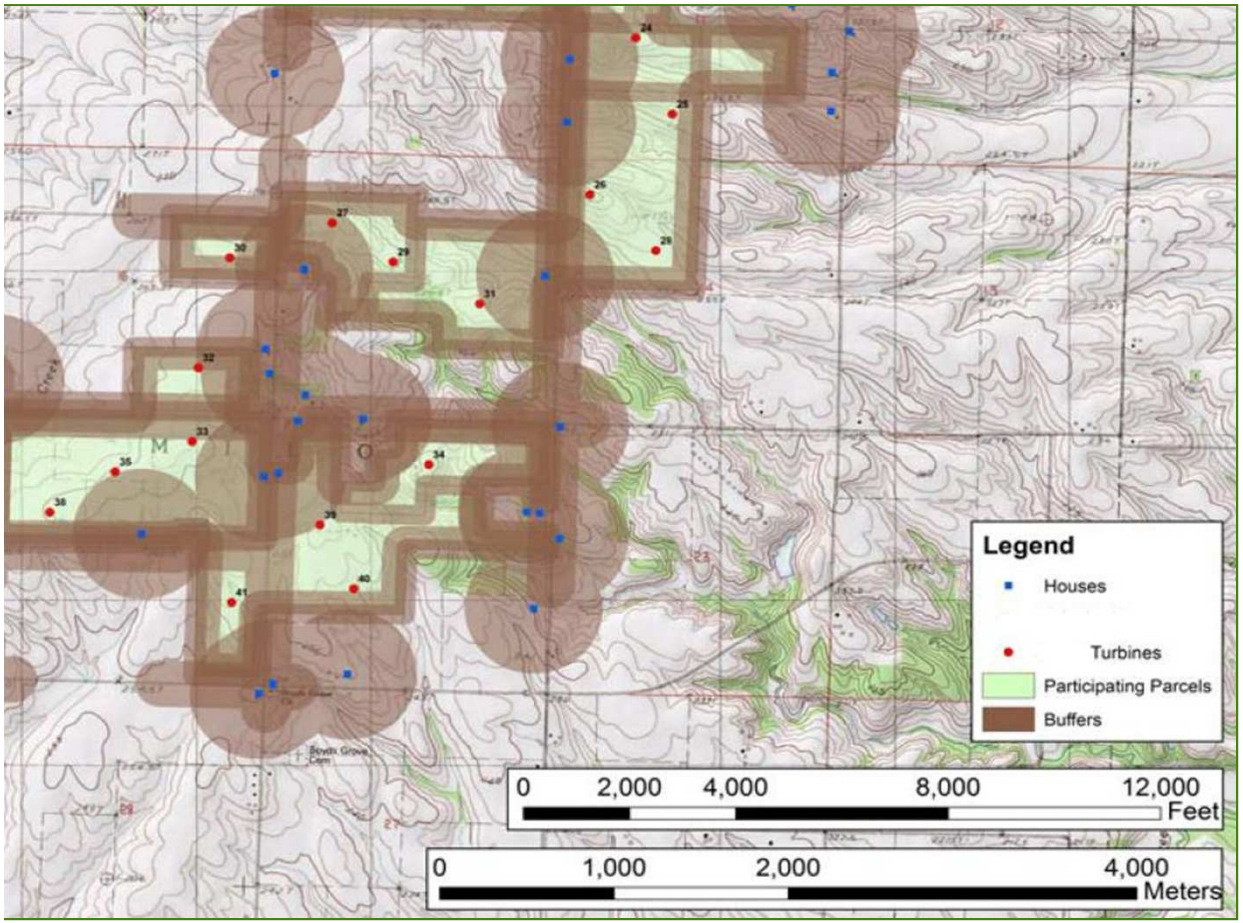
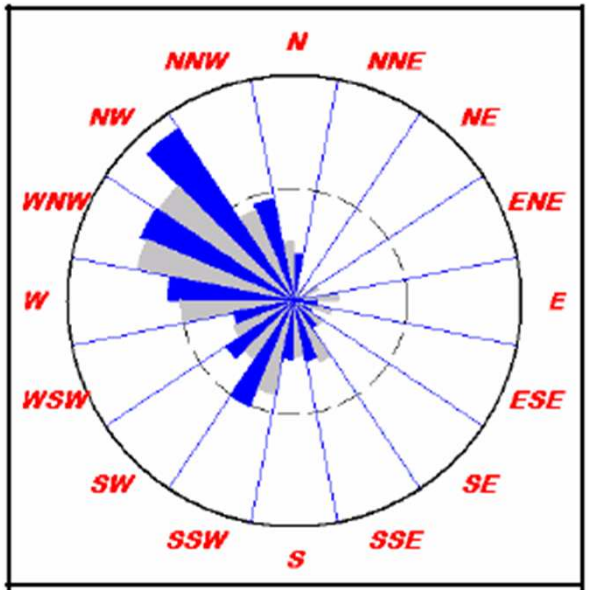


The above project layout shows turbines spaced between buffers from roads, parcel boundaries and residences.

Layouts incorporate factors such as topography, community setbacks and site specific wind resource.



A wind rose demonstrates wind power and frequency at given directions.

Phases of Development - Interconnection Studies

- Feasibility Study
- System Impact/ Facility Study
- Metering
- Standby Service
- Substation location
- Interconnection Agreement
- Upgrades to Interconnected Transmission Network

Phases of Development – Detailed Studies, Permitting, Complete Land Acquisition

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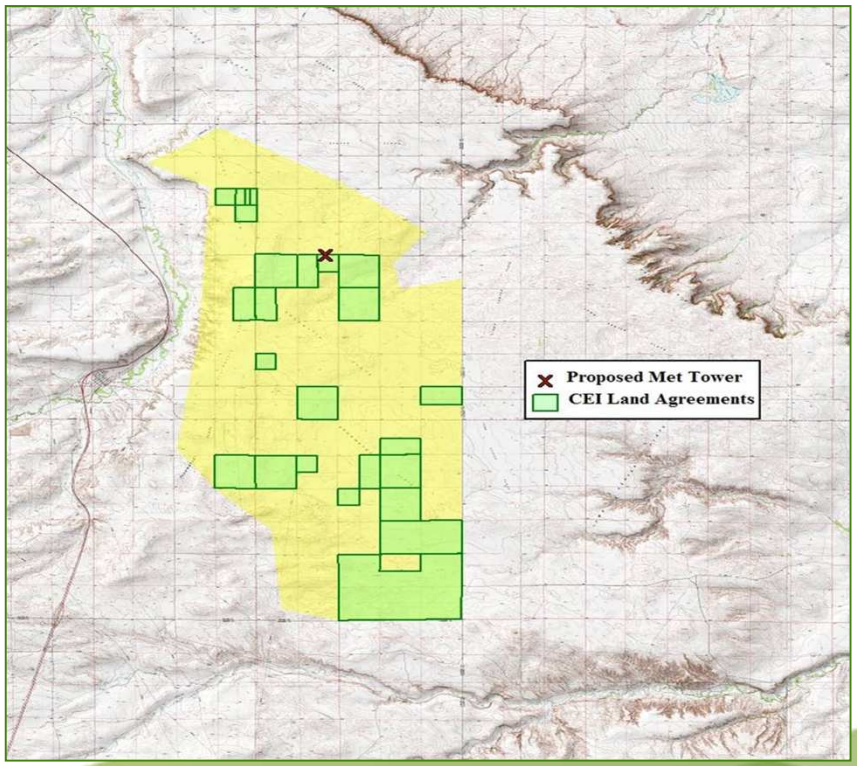

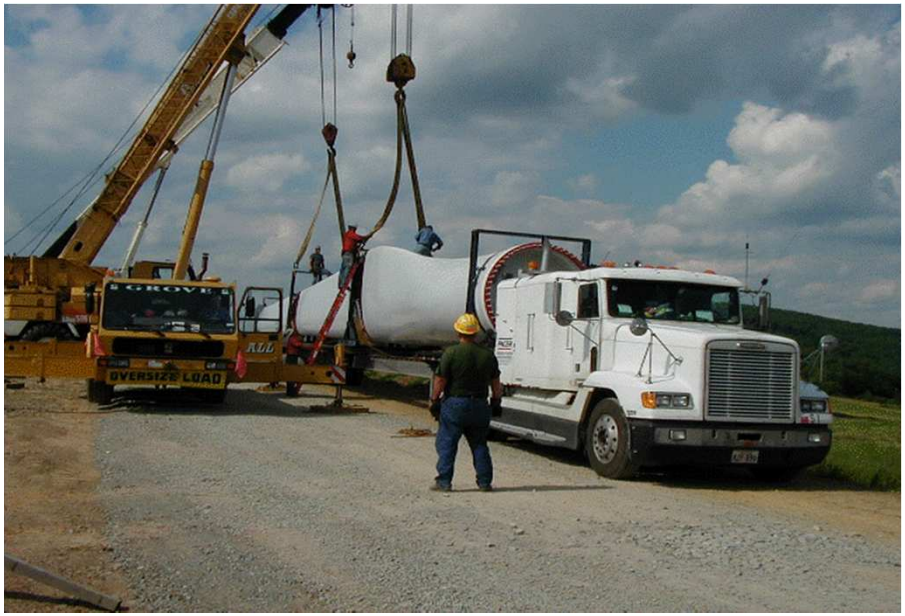

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Phases of Development – Construction

Operations

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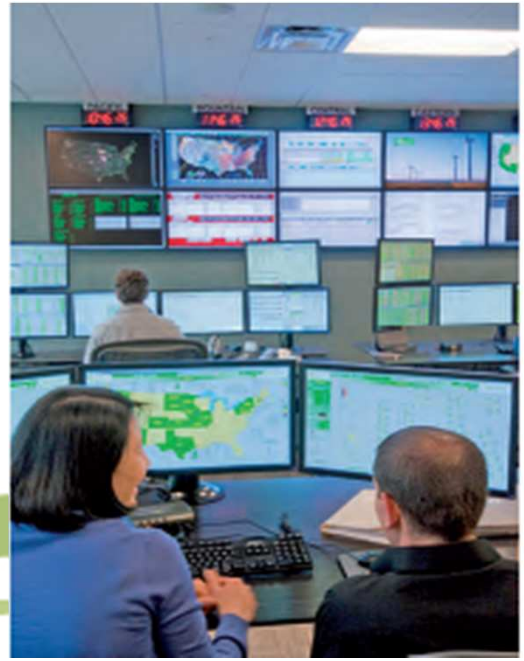
New projects for EBITDA improvement

Availability	Availability analysis - Detection of common causes and corrective actions - Especial focus on windfarms with less availability - Centralization and homogenization of information and analysis	1,0% increase in availability
Power curve	Power curve proprietary system - Implemented in IBR portfolio - Setting different alarm levels - Integrated daily management	0,5% long term performance optimization
Operation & Maintenance	Efficiency in O&M - Maintenance best practices - Synergies in operation - Maintenance practices standardization	Saving 2-3 €/kW in windfarms out of guarantee



Our U.S. Solar Strategy

- Leverage our expertise in siting, development, power sales, transmission and construction and operations to the solar sector
- Solar is a proven renewable technology that can achieve a commercial scale of interest for bulk power supply
- Utility scale projects (5-20MW in the East)

Thin Film

Crystaline PV

Parabolic Trough

Our U.S. Biomass Strategy

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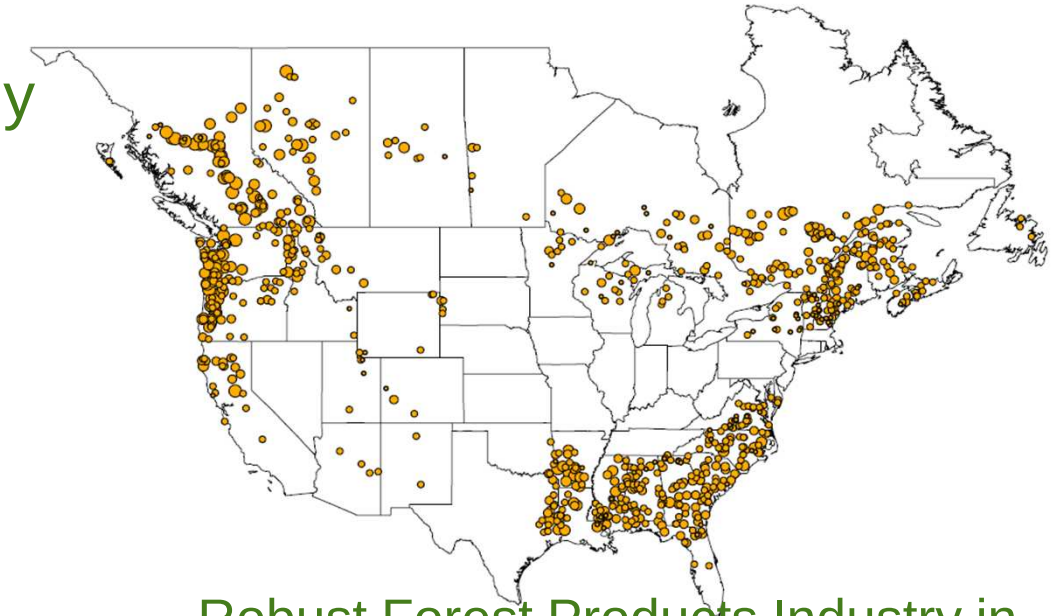
- Utilize our renewable energy skill sets
- Utilize existing customer relations
- Biomass favored in RPS standards in NC and other states



Robust Forest Products Industry in Eastern U.S.

Instant Capital Cost

Technology	$/KW	Heat Rate BTU/KWH
Nuclear	$4,500++	
Coal IGCC (w/CSS)	$4,500++	10,000
CCGas Turbine (H Class)	$1,000	6,500
Gas Turbine (F Class)	$700	10,500
Gas Turbine (Aeroderiv)	$800	9,200
Biomass	$3,300	12,000
Wind	$2,500	0
Solar	$4,600	0
Offshore Wind	$5,500+	0

BOTTOM LINE:
Wind is a competitive form of new energy

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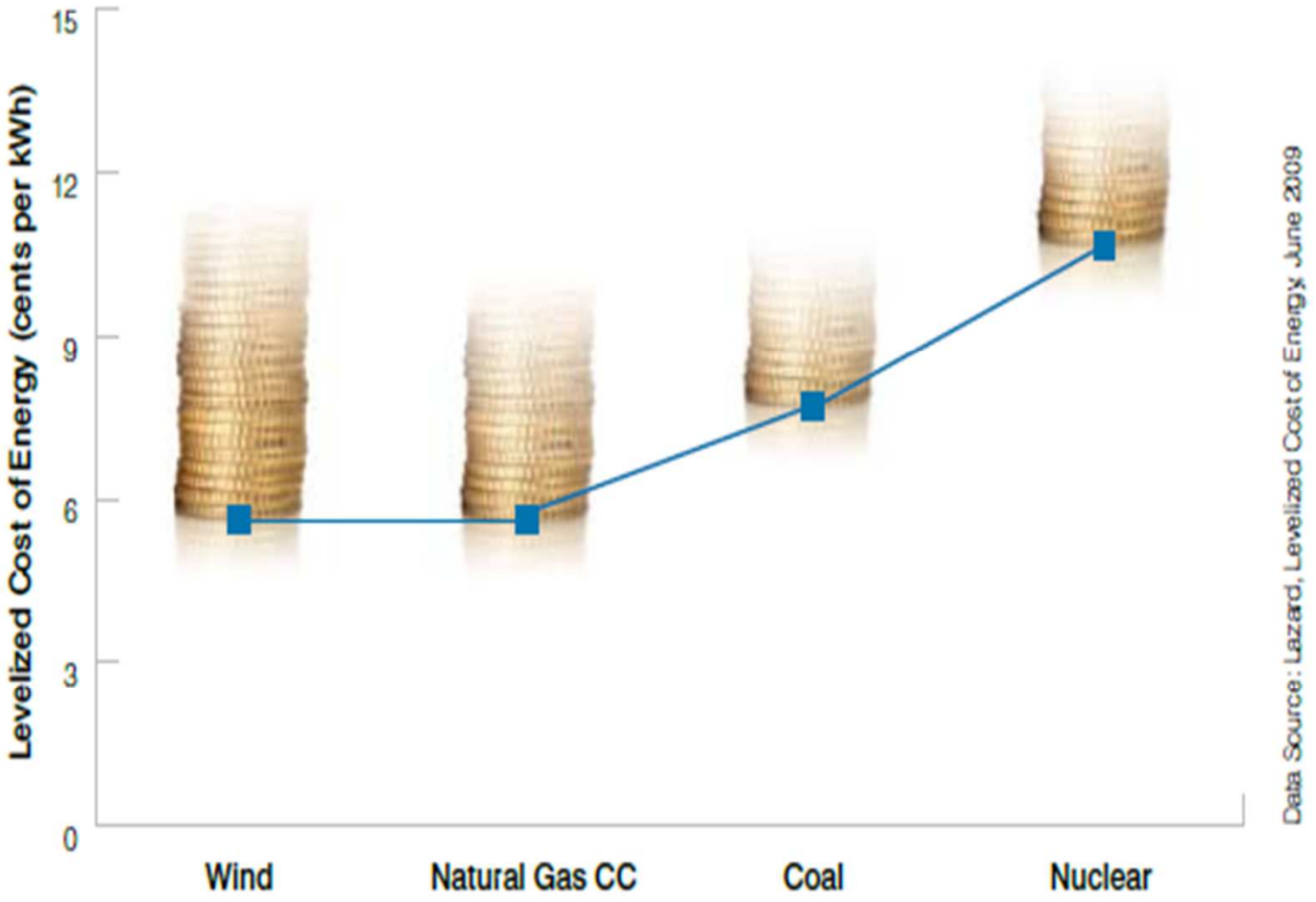
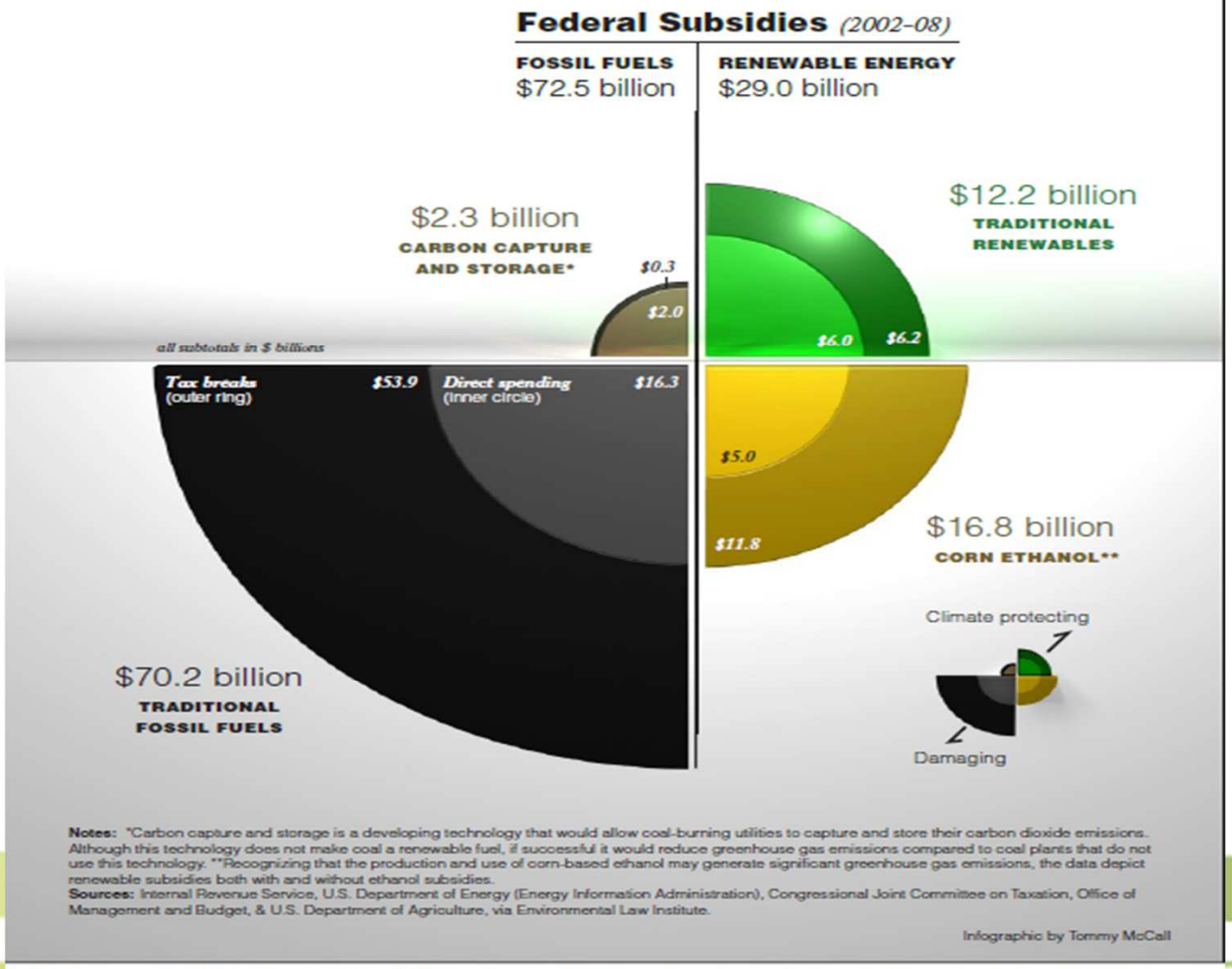


Energy Subsidies Black, Not Green

A soon-to-be released study of federal energy subsidies by the Environmental Law Institute, a nonpartisan research and policy organization, shows that the federal government has provided substantially larger subsidies to fossil fuels than to renewables. Subsidies to fossil fuels totaled approximately $72 billion over the seven-year study period, while subsidies for renewable fuels totaled $29 billion over the same period. The vast majority of subsidies support energy sources that emit high levels of greenhouse gases when used as fuel. Moreover, just a handful of tax breaks make up the largest portion of subsidies for fossil fuels, with the most significant of these, the Foreign Tax Credit, supporting the overseas production of oil. More than half of the subsidies for renewables are attributable to corn-based ethanol, the use of which, while decreasing American reliance on foreign oil, has generated concern about climate effects. These figures raise the question of whether scarce government funds might be better allocated to move the United States towards a low-carbon economy.



Notes: *Carbon capture and storage is a developing technology that would allow coal-burning utilities to capture and store their carbon dioxide emissions. Although this technology does not make coal a renewable fuel, if successful it would reduce greenhouse gas emissions compared to coal plants that do not use this technology. **Recognizing that the production and use of corn-based ethanol may generate significant greenhouse gas emissions, the data depict renewable subsidies both with and without ethanol subsidies.

Sources: Internal Revenue Service, U.S. Department of Energy (Energy Information Administration), Congressional Joint Committee on Taxation, Office of Management and Budget, & U.S. Department of Agriculture, via Environmental Law Institute.

Infographic by Tommy McCall

For Press Inquiries contact Brett Kitchen at 202-939-3833. Full report text and pdf of this graphic may be found online at: *http://www.eli.org/pressdetail.cfm?ID=205*

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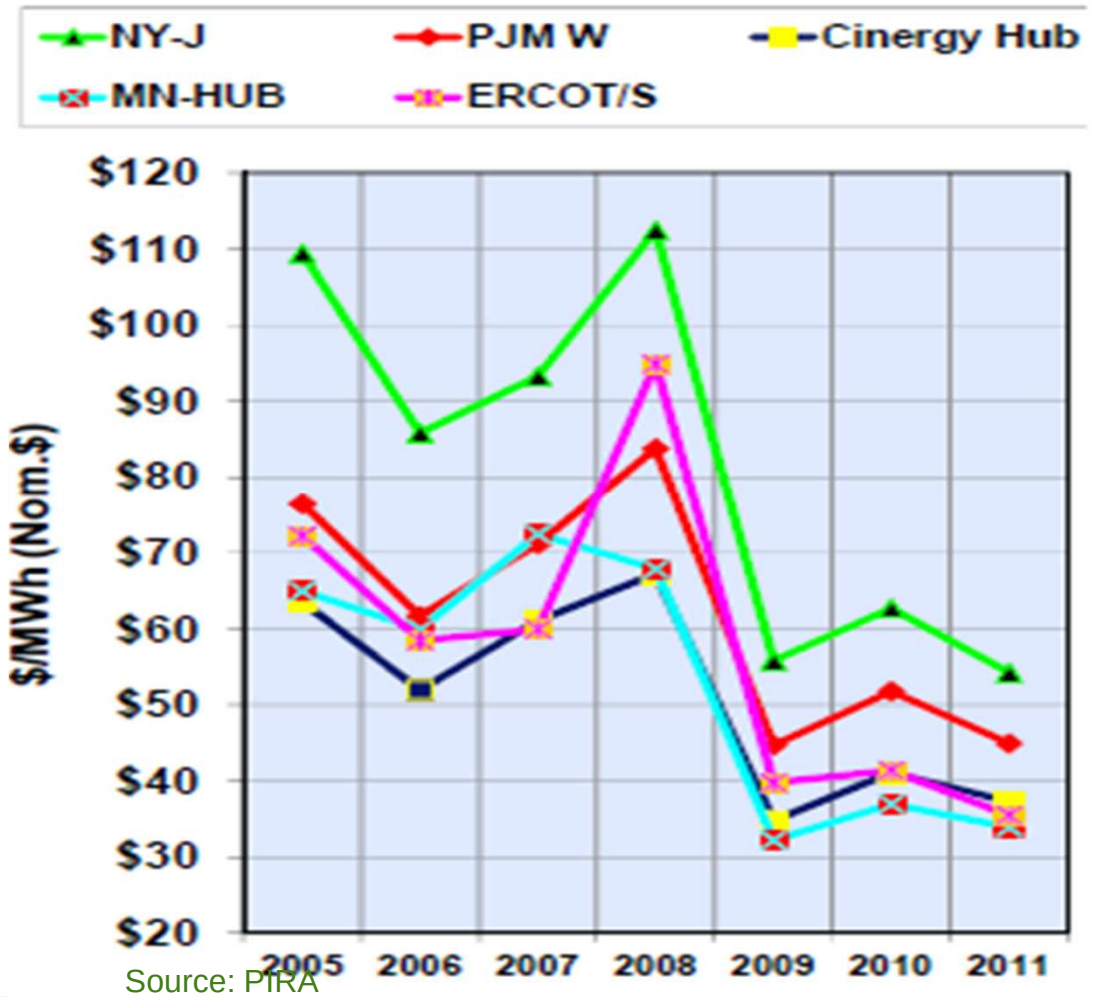
On-peak Power Prices
Near Five Year Low



Source: PIRA

Power Prices ↓

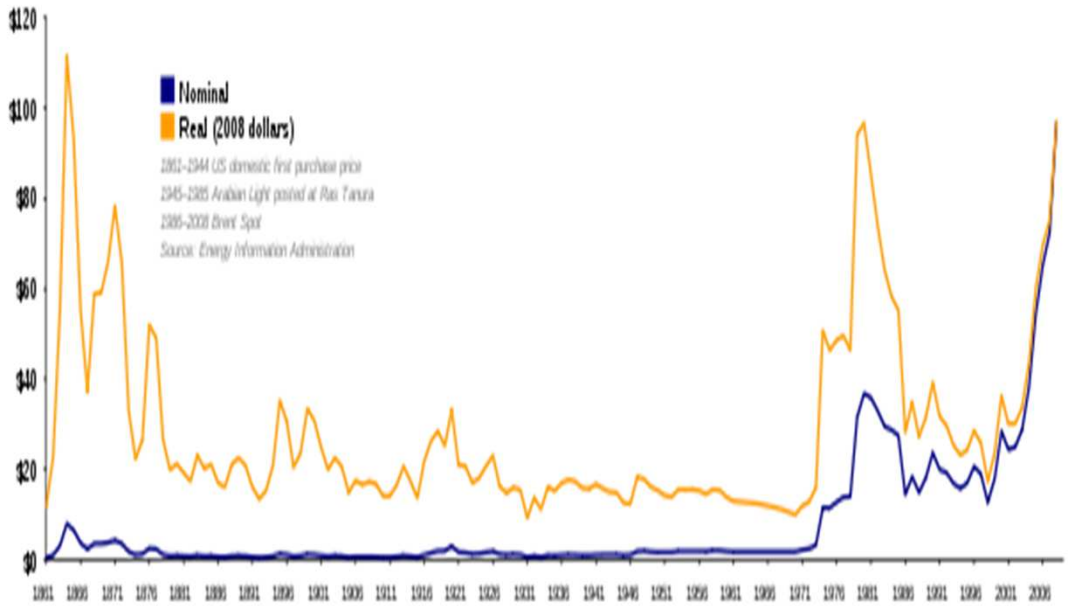
Demand ↓

Prospects for recovery?

Post Credit Crisis

- **Flight to quality**
  - Projects must be high quality-- internal spending, risk and return is carefully vetted
  - Proven Technology
  - Investment Grade—banks very risk adverse
  - ***Long term offtake agreements essential***

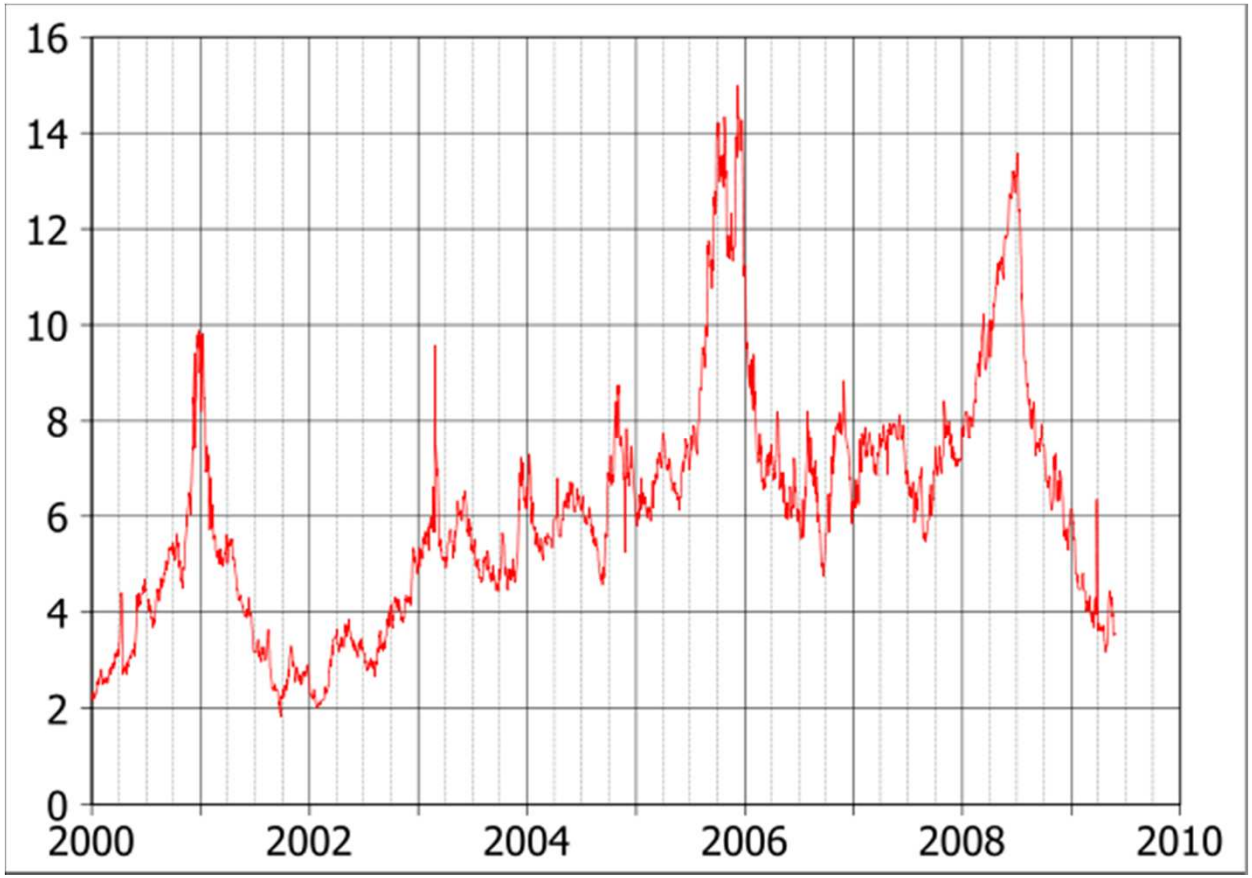
Fossil Fuel Volatility and Energy Insecurity can Drive up Prices



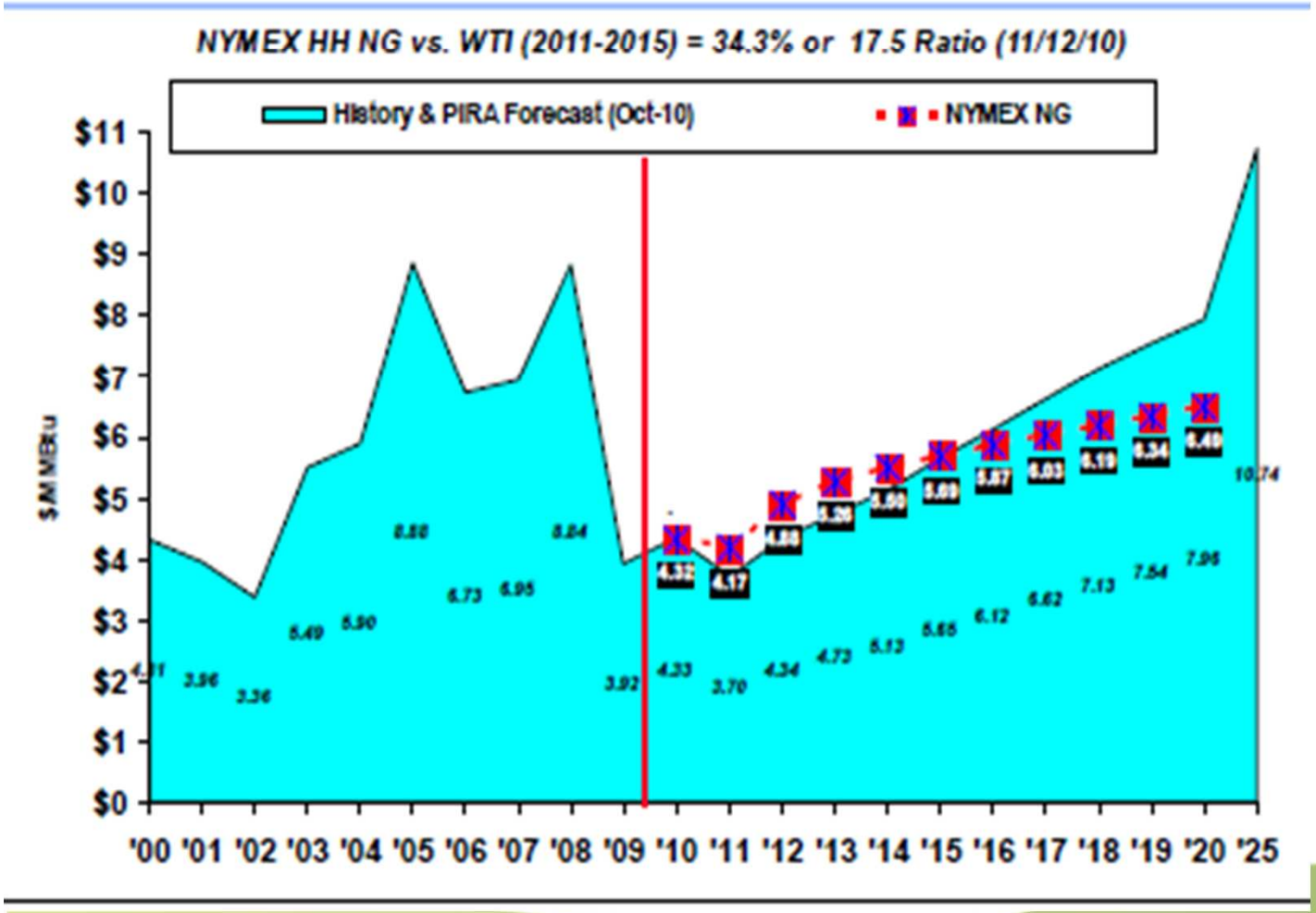
Oil Prices from 1861 to 2007

Henry Hub Natural Gas Prices

$ per cu M



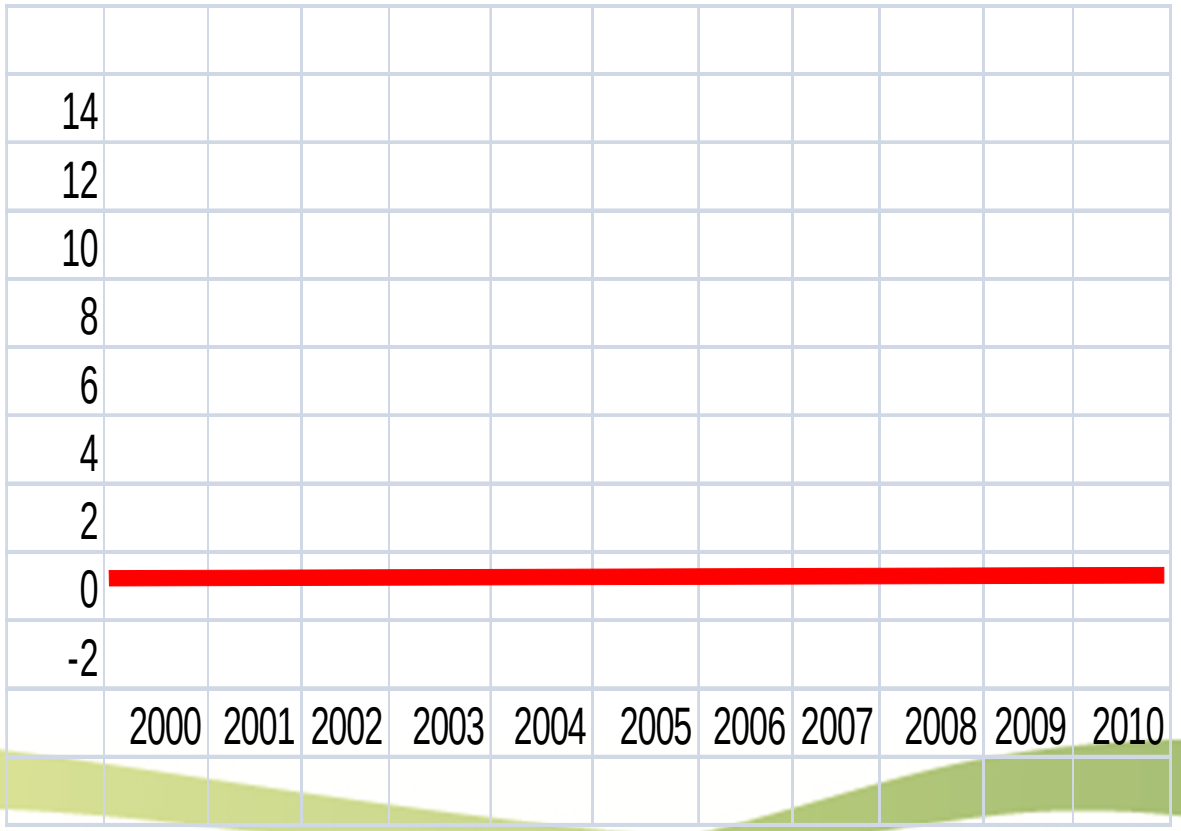
Long Term Natural Gas Trends



Renewables are a Hedge Against Fossil Fuel Volatility

U.S. Wind Prices

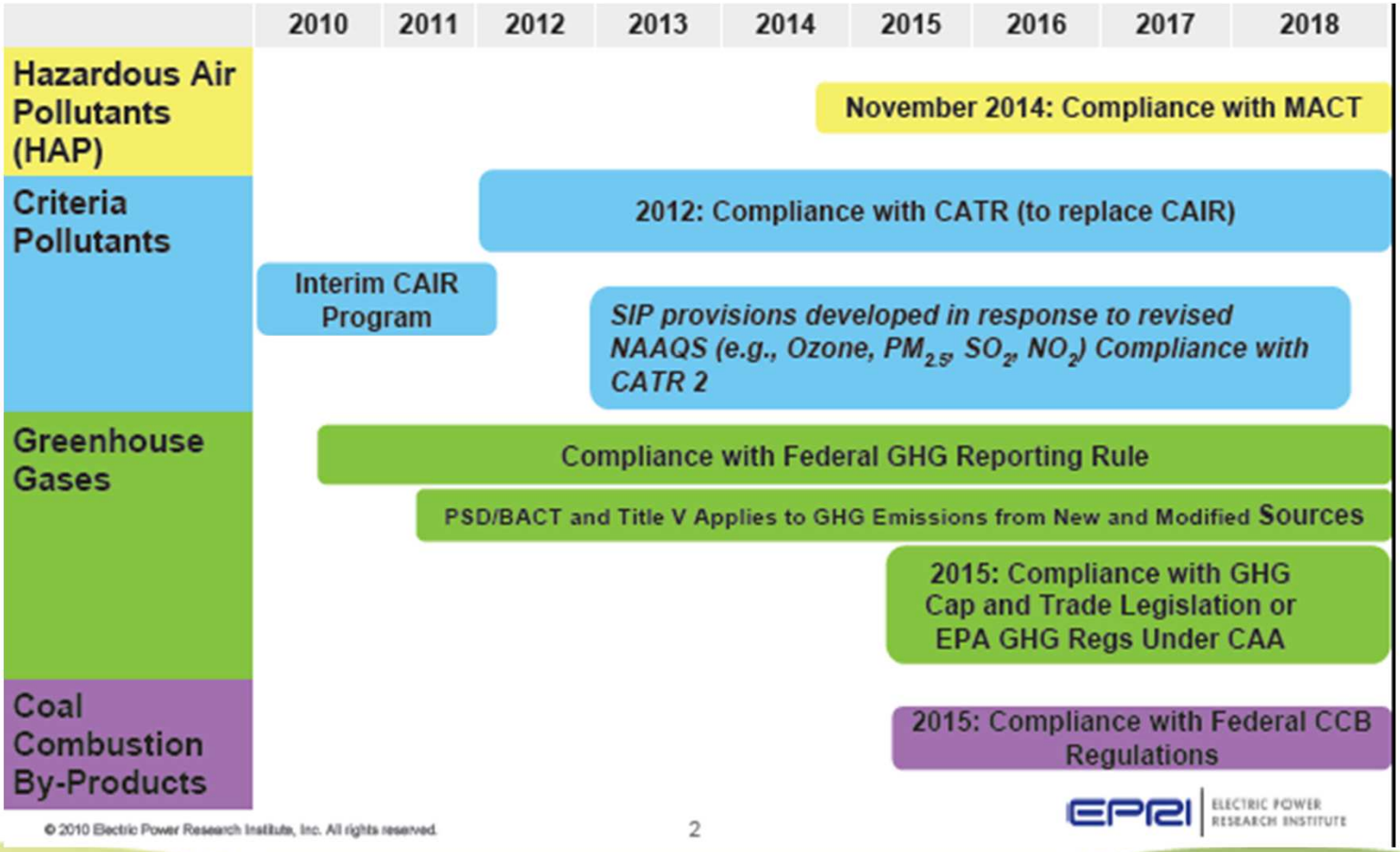
$ per cu M



Many Fossil Fuels are Imported into North Carolina

Example Formula:
Coal comes into state
$$$ leave state
Jobs follow dollars

Coming EPA Regulation of the Utility Sector



Step Change in Cost and Electric Demand Scenarios

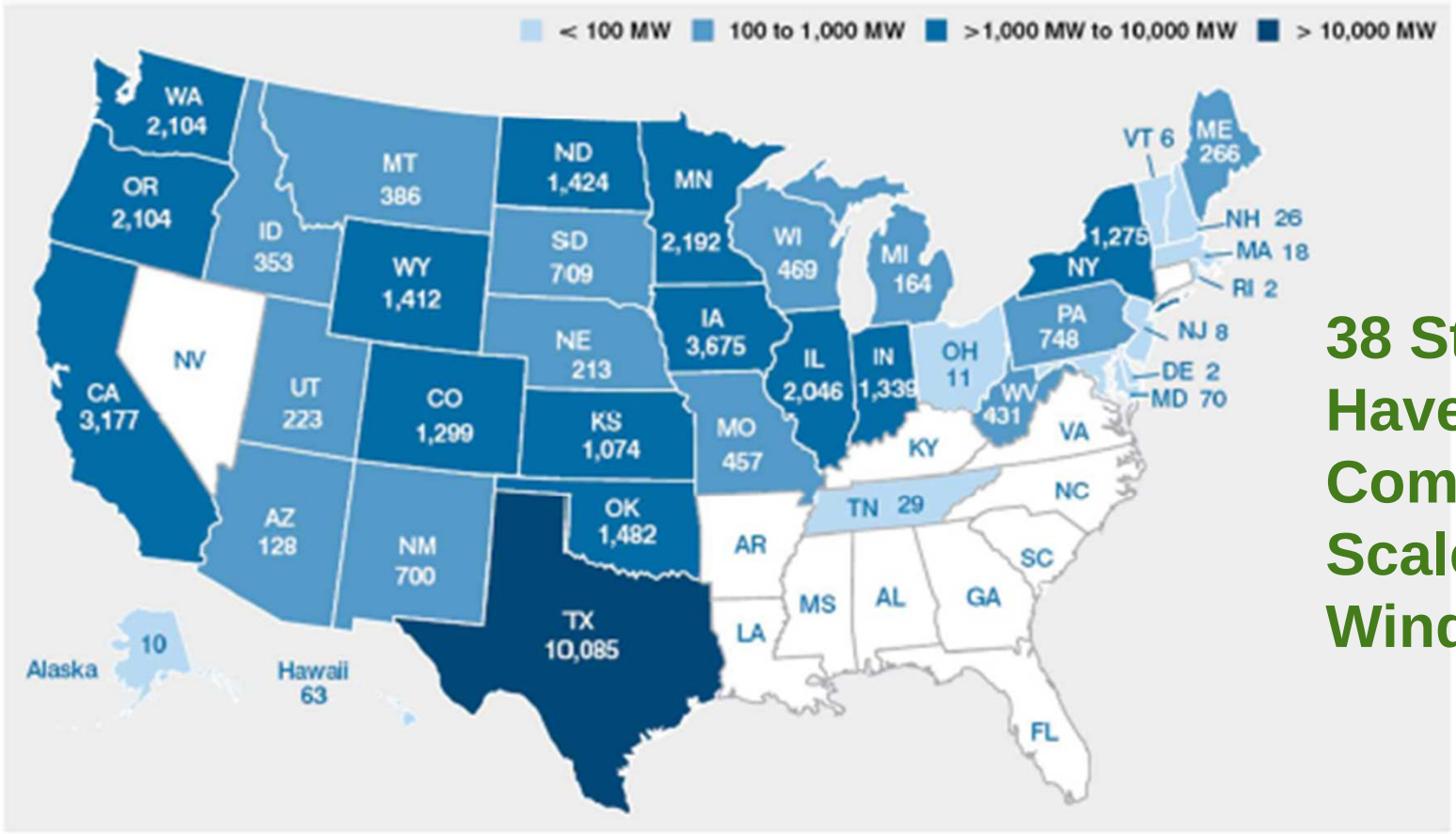
Continued run in oil, new regulations and other factors Drive electric use and costs

Telsa Motors

China, India, others keep growing at current rates….Importing our extra gas, coal and available oil

Pudong, Shanghai

U.S. Wind Capacity by State



38 States Have Commercial Scale Wind !!

Source: AWEA

Wind in the South

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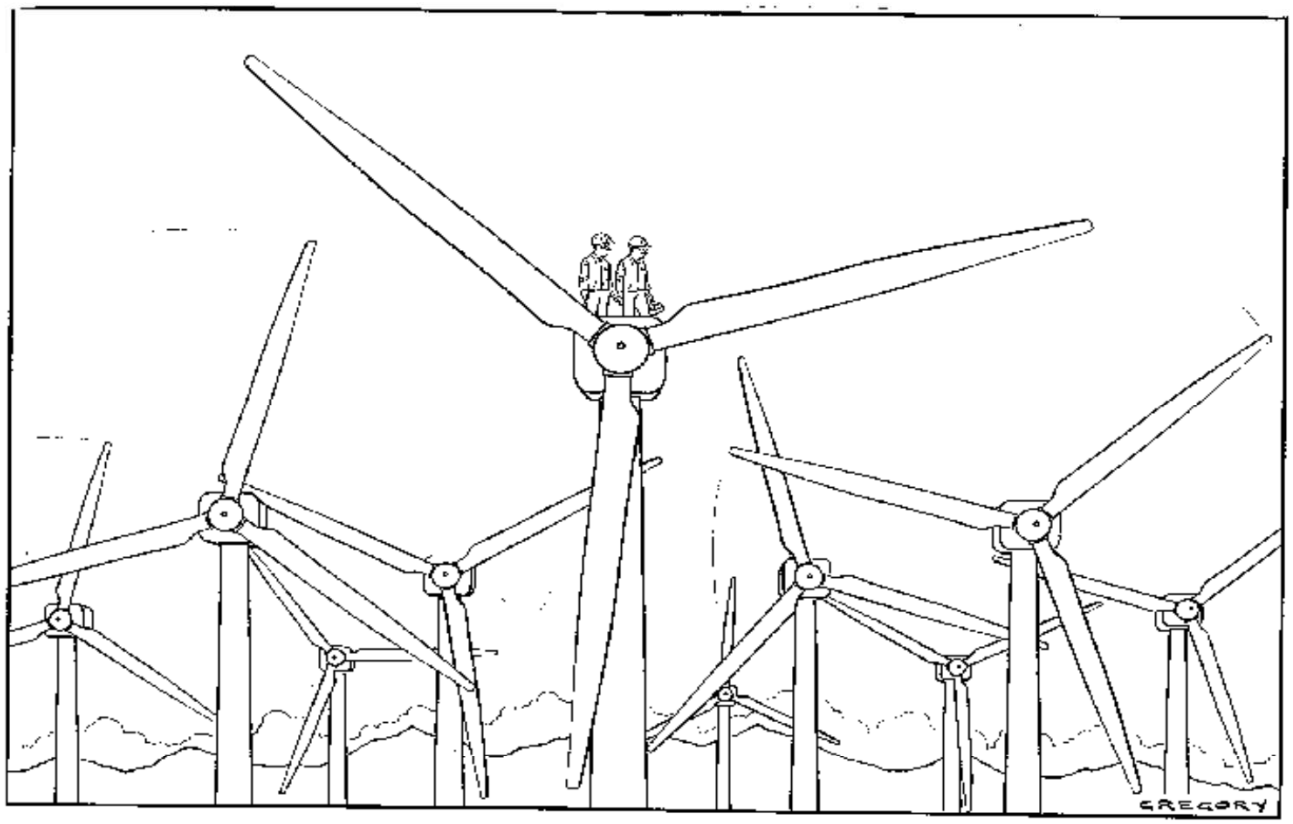

THE NEW YORKER, MAY 11, 20(

"Try Blowing on it"

Deal or
No Deal?

Commercial Scale, Land based Wind in the South

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- Desert wind—300 MW –North Carolina
  Perquimans and Pasquotank Counties
  Planned COD-2012

- High Lonesome 50 MW –Virginia
  Planned COD-2013

- Cumberland Heights 80-150 MW –Tennessee
  Planned COD-2014

Wind in North Carolina

- ✓Sound Fundamentals
  - ✓Adequate wind
  - ✓Supportive communities
  - ✓Available transmission
- ✓Competitive Regulations
  - ✓NC REPS program—"teeth" could improve
  - ✓Federal ITC/PTC—thru 2012
- ✓Predictable Requirements
  - ✓Siting requirements
  - ✓Environmental review
- •Desert wind—300 MW –North Carolina

  Poised to be the first commercial scale wind project in the state

Projects in North Carolina will add jobs and economic stimulus *now*

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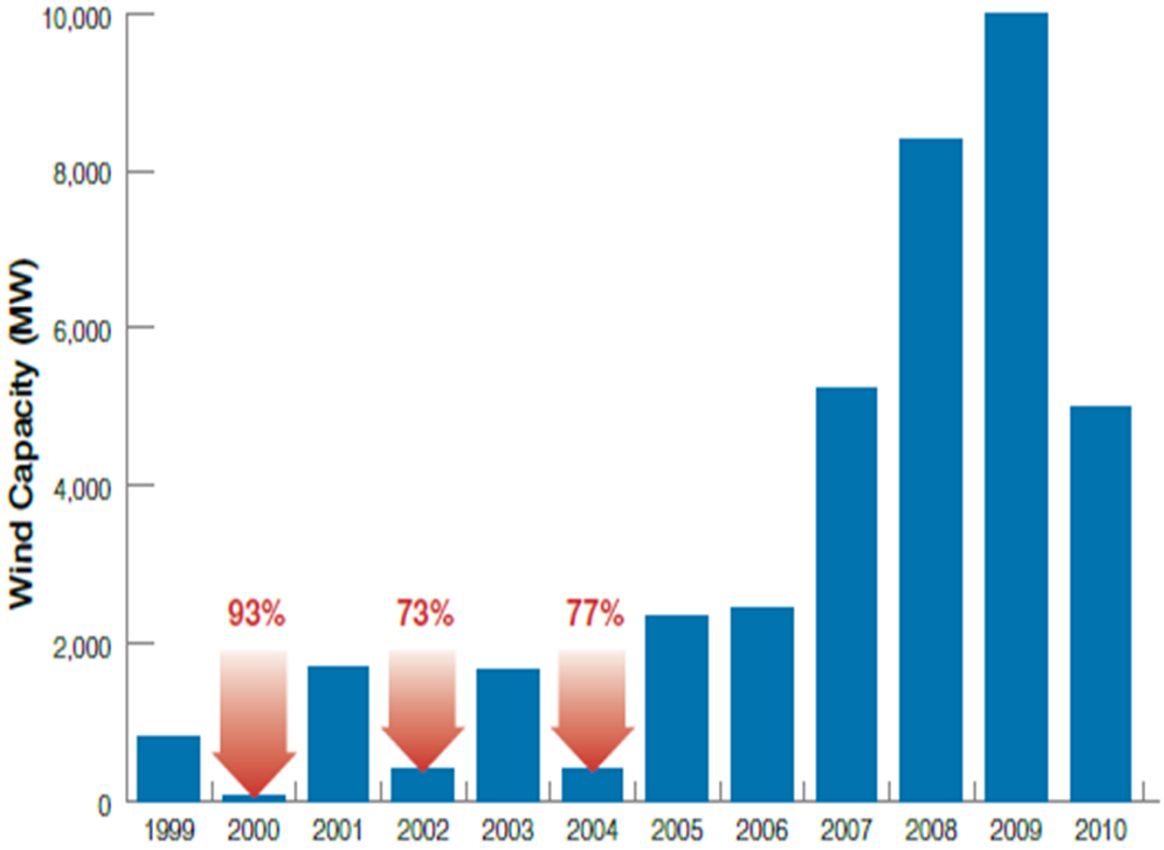
- Land lease payments
- Local taxes
- Local jobs
- Construction materials

Ongoing Renewables Dilemma

Predictable and Consistent Policies Drive Investment



Federal Tax credit highs and lows

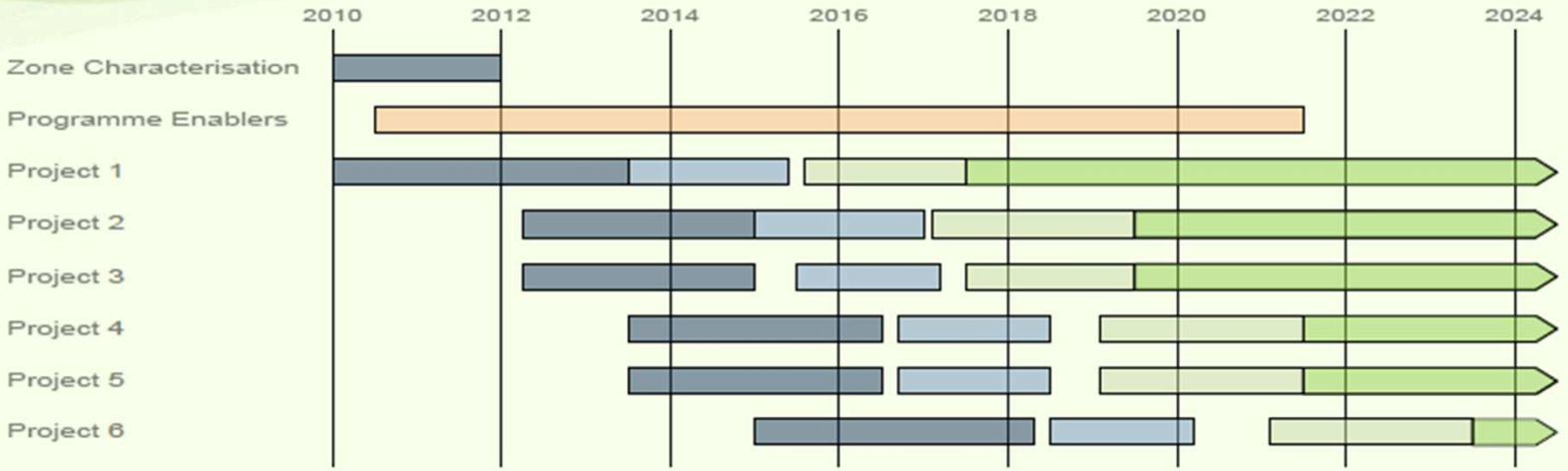
Federal Tax Credit for Wind expires on 12/31/12

Offshore Wind Industry

- Nearly 3000 MW worldwide
- Most activity is in Europe
- Drivers of the business in Europe:
  - Large price incentives
  - Deadlines for CO_2 reduction
  - No space on land
  - Few energy alternatives

IBR pipeline 10,000+ MW

Timing of U.S. Offshore?



Development includes the Zone Assessment and Planning activity as well as the consenting of each of the 6 wind farms currently being planned.

Project Enablers include zone wide activities on procurement, engineering design/standardisation and the formulation of systems and procedures for construction and operation of the projects.

Pre-Construction Activities include the detailed site investigation and design of each of the individual windfarms.

Construction Activities

Operational Activities

Action and Legislative Agenda

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- **Immediate Action: Complete projects now eligible for the ITC/ PTC programs**
  - **Deadlines---- 2012 Wind**
    ---- 2013 Biomass
    ---- 2016 Solar

- Near-Term incentives (2- 5 years):
  Multi-year ITC/PTC Extension

- Mid-Term incentives (5-10 years):
  - National RPS Program (25% by 2025)
  - Transmission Legislation

- Long-Term incentives(2020 and beyond):
  - Effective Carbon Regulation

Summary of the “take aways”

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- Successful renewables =
  - Competitive cost
  - Meaningful scale

- Investment quality
  - Established technology
  - Long term offtake

Summary of the “take aways”

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- Renewables provide needed diversification

- Act now to maximize benefits to all stakeholders

Summary of the “take aways”

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- **CONCLUSION—Commercial scale, land based wind energy can meet North Carolina’s sustainable energy needs now**