



Advancing Wind Power in Illinois Conference 2011

Andy Cukurs

Suzlon Wind Energy Corporation

Wind Energy Executives Panel

Plenary Session

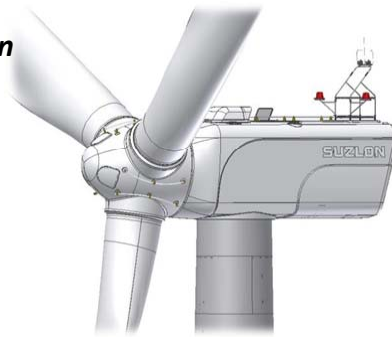
Thursday, July 21, 2011, 11:30 AM

IWWG Advancing Wind Power

Andy Cukurs, CEO
Suzlon Wind Energy Corporation

*Where is wind power headed in
2012 and beyond?*

July 21, 2011



Suzlon Wind Energy Corporation

Presentation Overview

- ✦ My background
- ✦ Industry trends
- ✦ Market Drivers
- ✦ Is wind poised for growth?



My Background

Professional background

Education

- BSME - University of Illinois at Chicago (1985)
- MBA - University Of Chicago (1994)

Work Experience

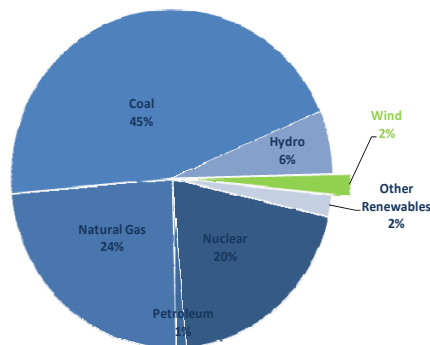
- Project Management & Engineering *APV Crepaco*
- VP Engineering – *APV Americas*
- Managing Director – *APV Beverage*
- President & CEO – *NEG Micon USA*
- CEO & Chairman – *Suzlon Wind Energy Corporation*

Suzlon Wind Energy Corporation:

- ✈ North American sales and service division of Suzlon
- ✈ More than **420 employees** located across the US
- ✈ Over **1200 wind turbines** and **2500 MW** of installed capacity
- ✈ Serve **26 OMS service offices** in **17 states** across the U.S.
- ✈ State of the art **24/7 monitoring center**
- ✈ **Central Distribution & Wind Turbine Training Facility** centrally located in Elgin, IL

Trends in Energy Today

Renewable Electricity as a Percentage of U.S. Electricity in 2010



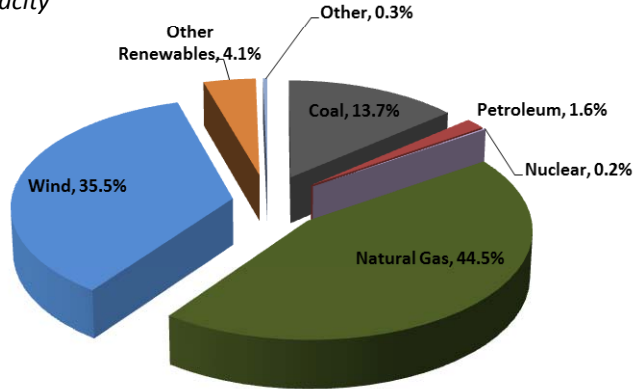
- ✈ Electricity from wind power capacity in the U.S. will supply the equivalent of:
 - Over 10 million American homes
 - Nearly 10 nuclear power plants
- ✈ 94.6 million MWh of wind produced in 2010
- ✈ Wind provided 2.3% of U.S. electricity in 2010
- ✈ Iowa produced over 15% of state's annual electricity generation; Texas, the overall leader in installed capacity, produced 6%

Source: Energy Information Administration Electric Power Monthly 2010

Trends in Energy Today

Wind has captured 35% of all new generating capacity in America since 2007

Percent of New
Installed Capacity
2007-2010

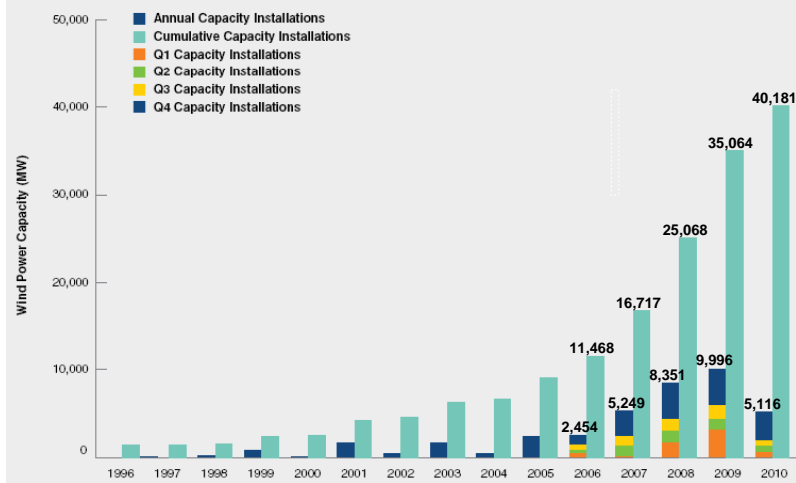


Data Source: AWEA, EIA, SEIA, SNL

Trends in Energy Today

U.S. Annual and Cumulative Wind Power

Capacity Growth (Utility-Scale Wind)



AWEA US Wind Industry Annual Market Report Year ending 2010

Trends in Energy Today

Where do we go from here?

- ✦ Will the US consume less energy in 2020 than it does today?
- ✦ How will we replace the coal plants that get retired over the next 5-7 years?
- ✦ Is Shale Gas for real?
- ✦ Carbon sequestration?
- ✦ Is there a future in nuclear, if so, when?

Trends in Energy Today

Growth in US installations over last decade

In 2000, California hosted more than 60% of the U.S. wind power capacity.

Today, 38 U.S. states shared 40,181 MW of utility-scale wind installations.

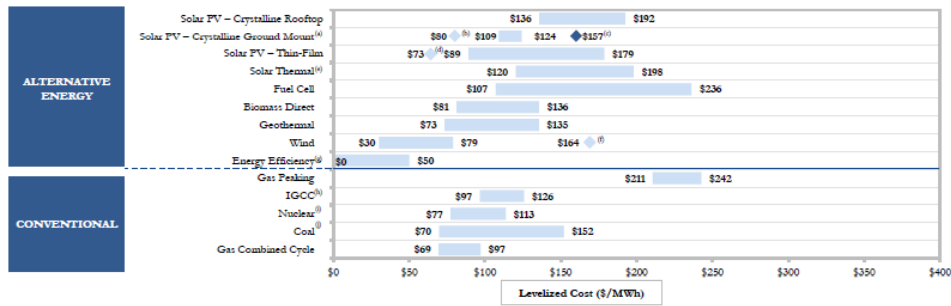
14 U.S. States part of "Gigawatt Club" with more than 1,000 MW of wind installations



Source: AWEA

Trends in Energy Today

Wind competitive on wholesale prices for nearly a decade



Wholesale price range reflects flat block of power across 23 pricing nodes
Wind power prices include sample of projects built from 1998-2008

Source: NREL

Trends in Energy Today

Societal: Strong political drive – Americans favor wind energy

March 2010 survey by Neil Newhouse, Public Opinion Strategies, Anna Bennett, Bennett, Petts & Normington

89%

American voters – 84% of Republicans, 88% of Independents and 93% of Democrats – who believe increasing the amount of energy the nation gets from wind is a good idea

October 2010 survey by Harris Interactive

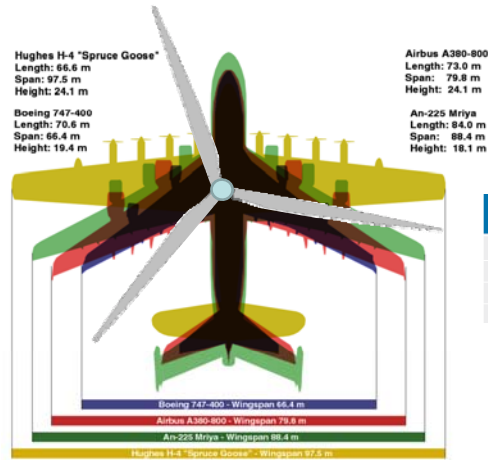
87%

Americans who favor building more wind farms – same broad majority as in 5 other nations surveyed

Source: AWEA, December 2010

Trends in Energy Today

Wind turbine technology continues to evolve quickly



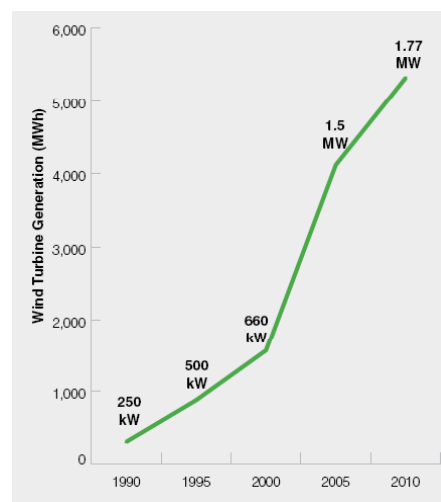
Sizes for Typical Utility-Scale Wind Turbines Installed in 2010

Capacity Range	1-3 MW
Tower height range	45 – 105 meters
Rotor diameter range	57 – 101 meters
Blade length range	26.8 – 49 meters

A typical wind turbine is 90% steel | average weight is 200 to 400 tons

Trends in Energy Today

Wind turbine technology continues to increase productivity



Higher tower heights and larger rotor diameters have increased output of turbines.

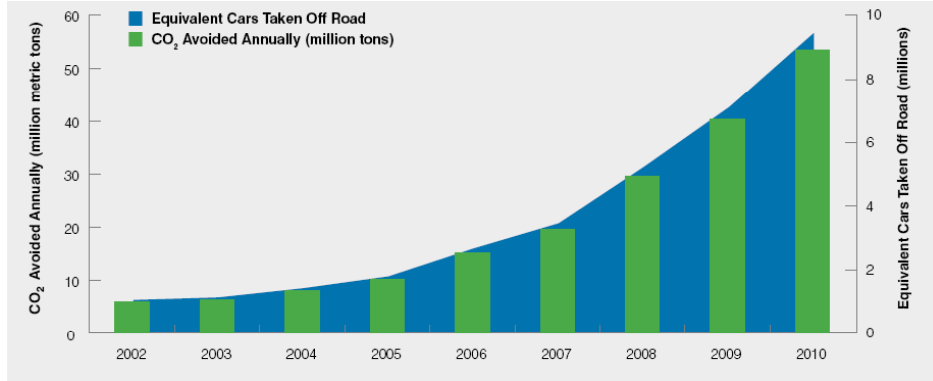
Technology has improved with increased turbine availability, better siting, enhanced with state of art SCADA.

Today's turbines are 7 times larger than in 1990 and can produce 15 times more electricity.

35,600 turbines installed in US to date, with 2,900 in 2010 alone | average WTG size is 1.77 MW

Market Drivers

Environmental: Wind energy produces no GHG emissions



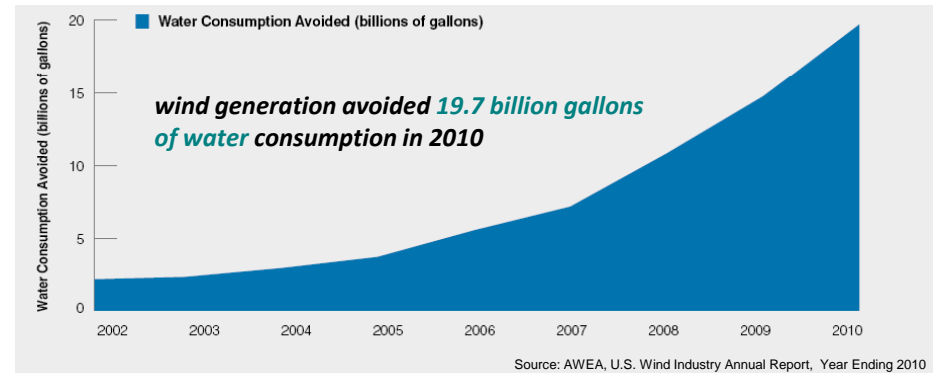
Source: AWEA, U.S. Wind Industry Annual Report, Year Ending 2010

Wind power emits no pollution:

U.S. wind fleet in 2010 avoided 54 million metric tons of CO₂ - equal to the emissions from 9.5 million cars

Market Drivers

Environmental: Wind energy means zero air & water impact

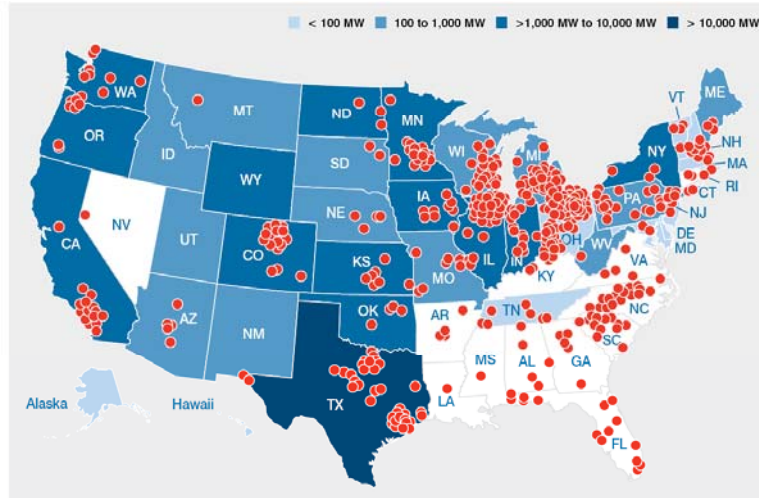


Source: AWEA, U.S. Wind Industry Annual Report, Year Ending 2010

20% wind power will save 4 trillion gallons of water through 2030 compared to fossil fuels and nuclear

Market Drivers

Manufacturing to bring economic benefits to communities

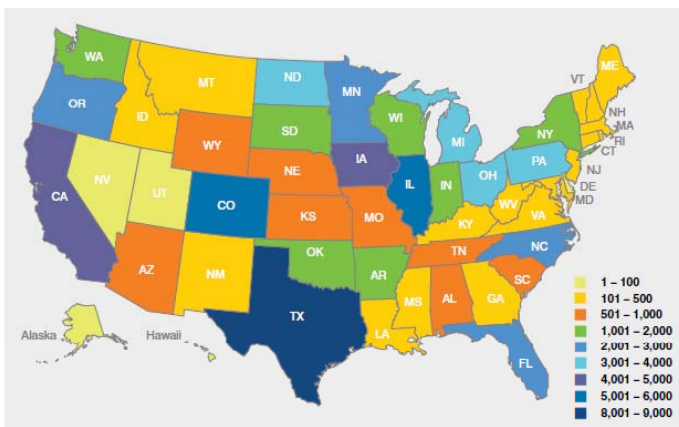


Wind is One of the Fastest-Growing Sources of U.S. Manufacturing
wind was 40% of new generation 2008-09; over 400 factories nationwide

Source: AWEA, U.S. Wind Industry Annual Report, Year Ending 2010

Market Drivers

Employment: Wind energy growth creates jobs



U.S. Wind Industry Jobs by State

Of the 75,000 jobs across the wind industry, Texas ranked No.1 with the largest amount of new capacity in 2010, energy-hub and offices in Houston and strong manufacturing across the state.

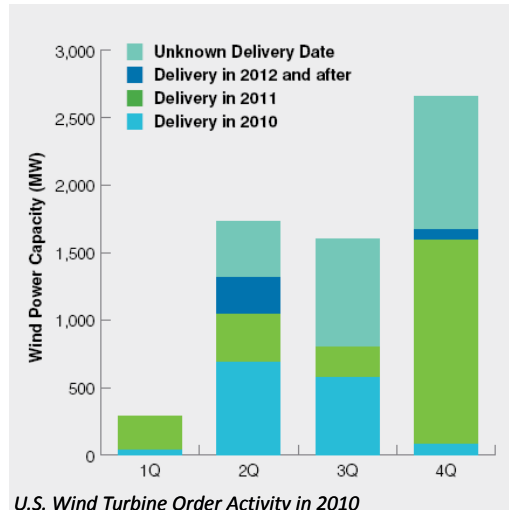
Illinois took the No. 2 spot with strong 2010 installations and growing manufacturing base.

With the recent heaving manufacturing investment in Colorado, the state ranked No. 3 in terms of wind jobs.

Fast-Growing U.S. Industry Adds New Jobs

Wind Industry is poised for growth

“American wind energy is ramping up, and these first-quarter figures indicate an industry poised for a renaissance. Refined technologies, affordable prices, and continued demand for clean, homegrown.” said Denise Bode, AWEA CEO



In total, 6,280 MW of turbines were ordered in 2010.

✈ 1,400 MW of turbines delivered in 2010 were ordered in the same year.

✈ 2,300 MW of turbine orders placed for 2011 (with majority in placed in 4Q10: 1,500 MW)





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POWERING A GREENER TOMORROW

Thank You

Suzlon Wind Energy Corporation