

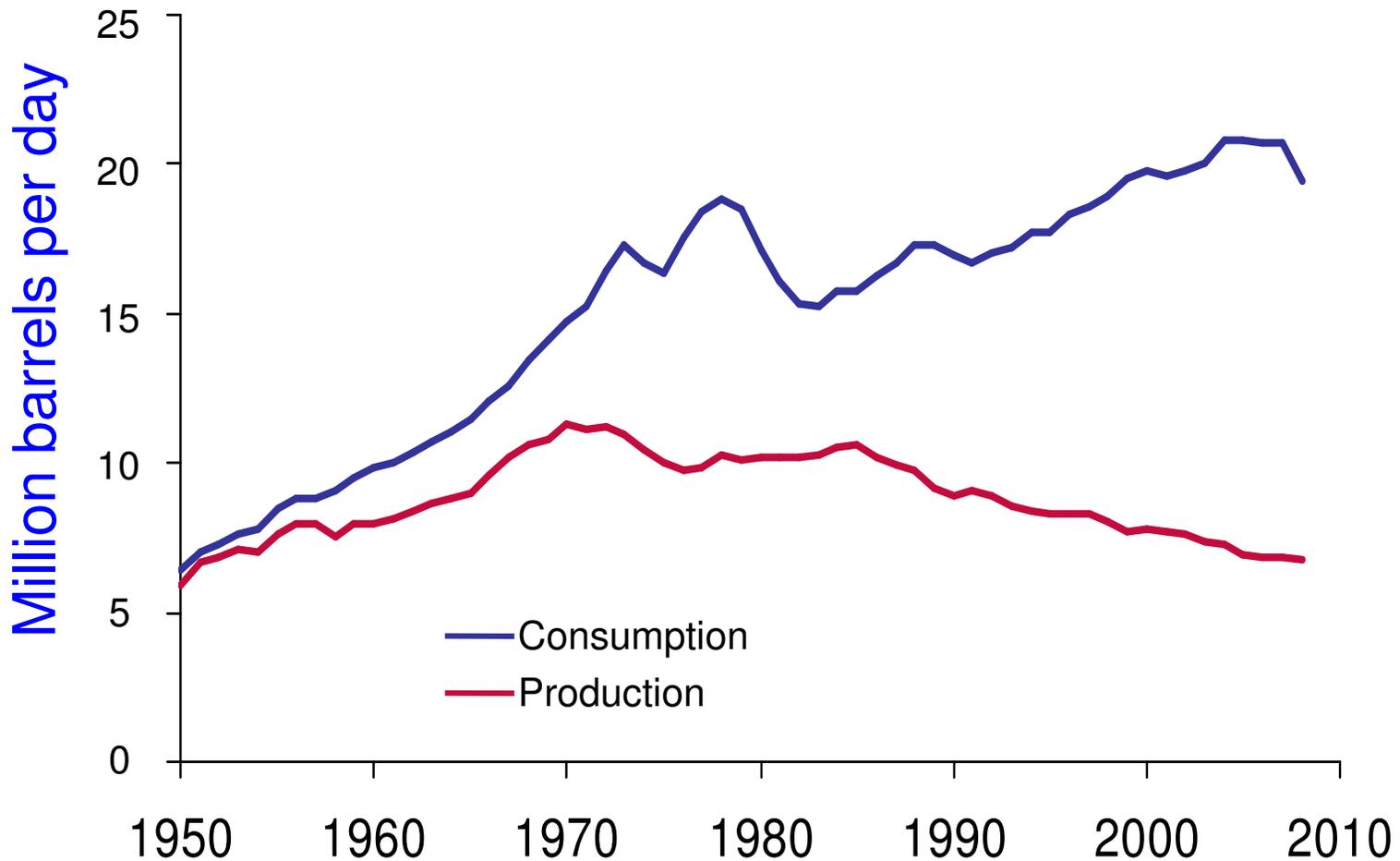
# Laying the Foundation for a Generation of Clean Energy Jobs

Energy and Climate Stakeholders Briefing  
October 7, 2009

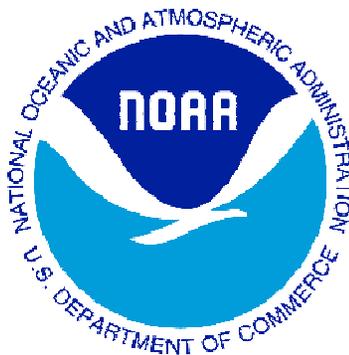
We need a new industrial revolution to ensure American competitiveness, decrease our dependency on foreign oil, and mitigate climate change.

The United States has the opportunity to be the innovation leader.

# We are dependent on foreign oil



US became a net oil importer in the 1940s



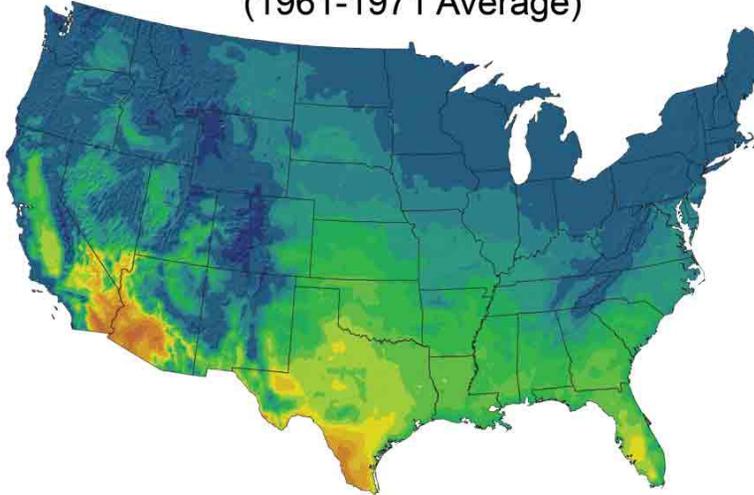
June 2009 summary of climate change impacts on the United States.

Sources include the IPCC and CCSP (Climate Change Science Program)

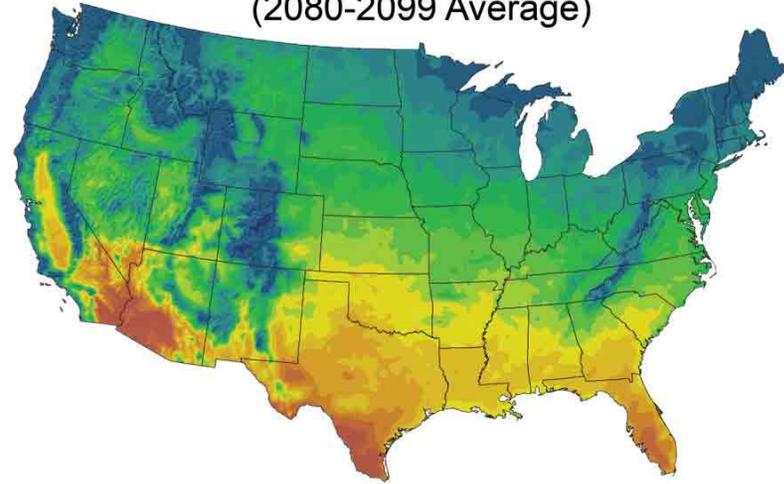


# Days above 90° F

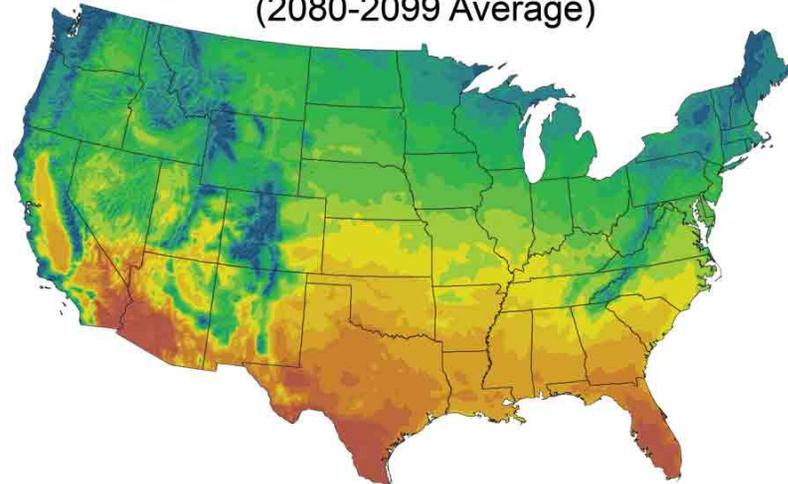
Recent Past  
(1961-1971 Average)



Projected End-of-Century under  
Lower Emissions Scenario<sup>91</sup>  
(2080-2099 Average)



Projected End-of-Century under  
Higher Emissions Scenario<sup>91</sup>  
(2080-2099 Average)



Chicago:

~ 10 days to 75 -90 days  
greater than 90° F

St. Louis:

~ 45 days to ~ 120 days  
(1/3 of the year)

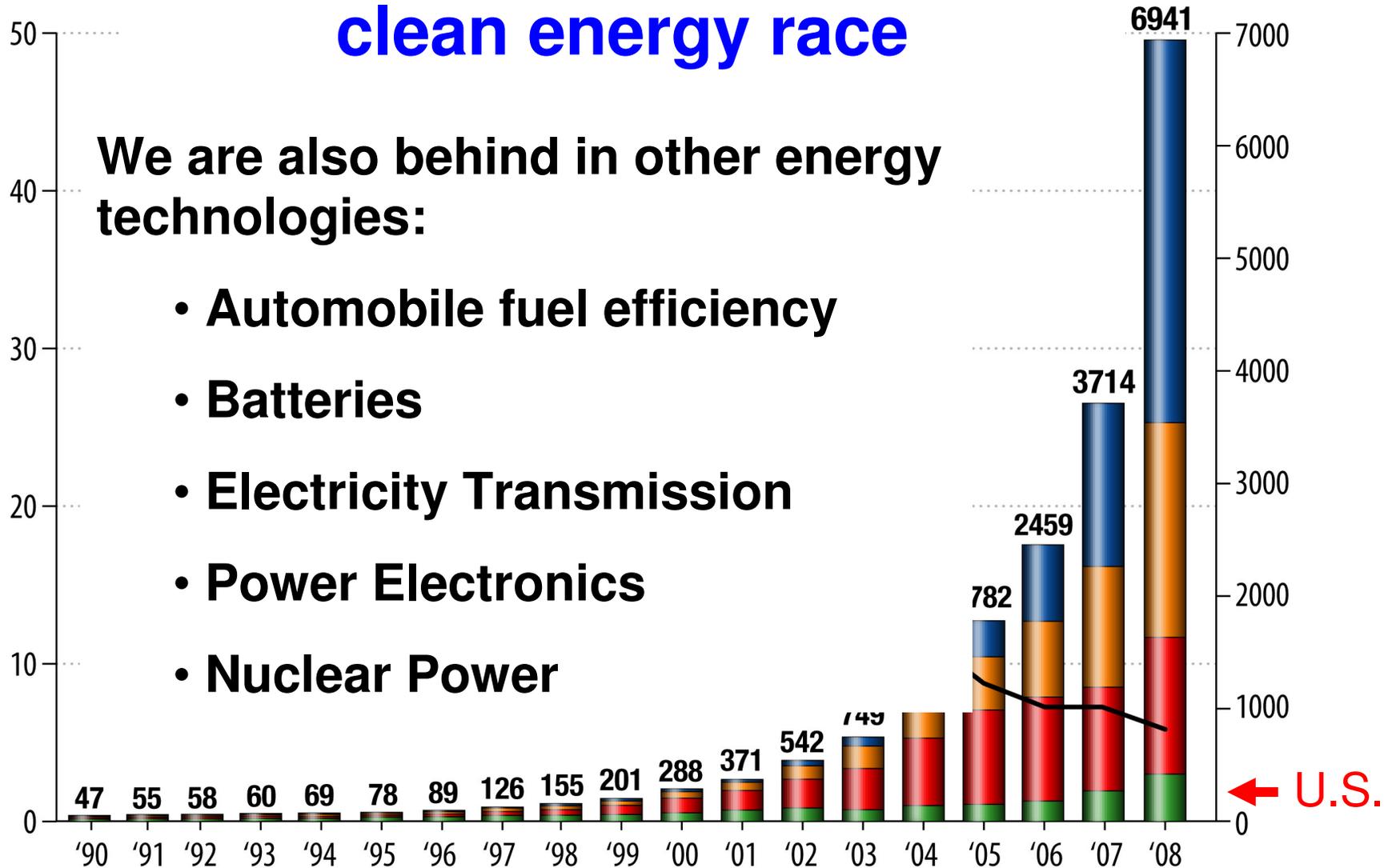
Number of Days per Year



# We are falling behind in the clean energy race

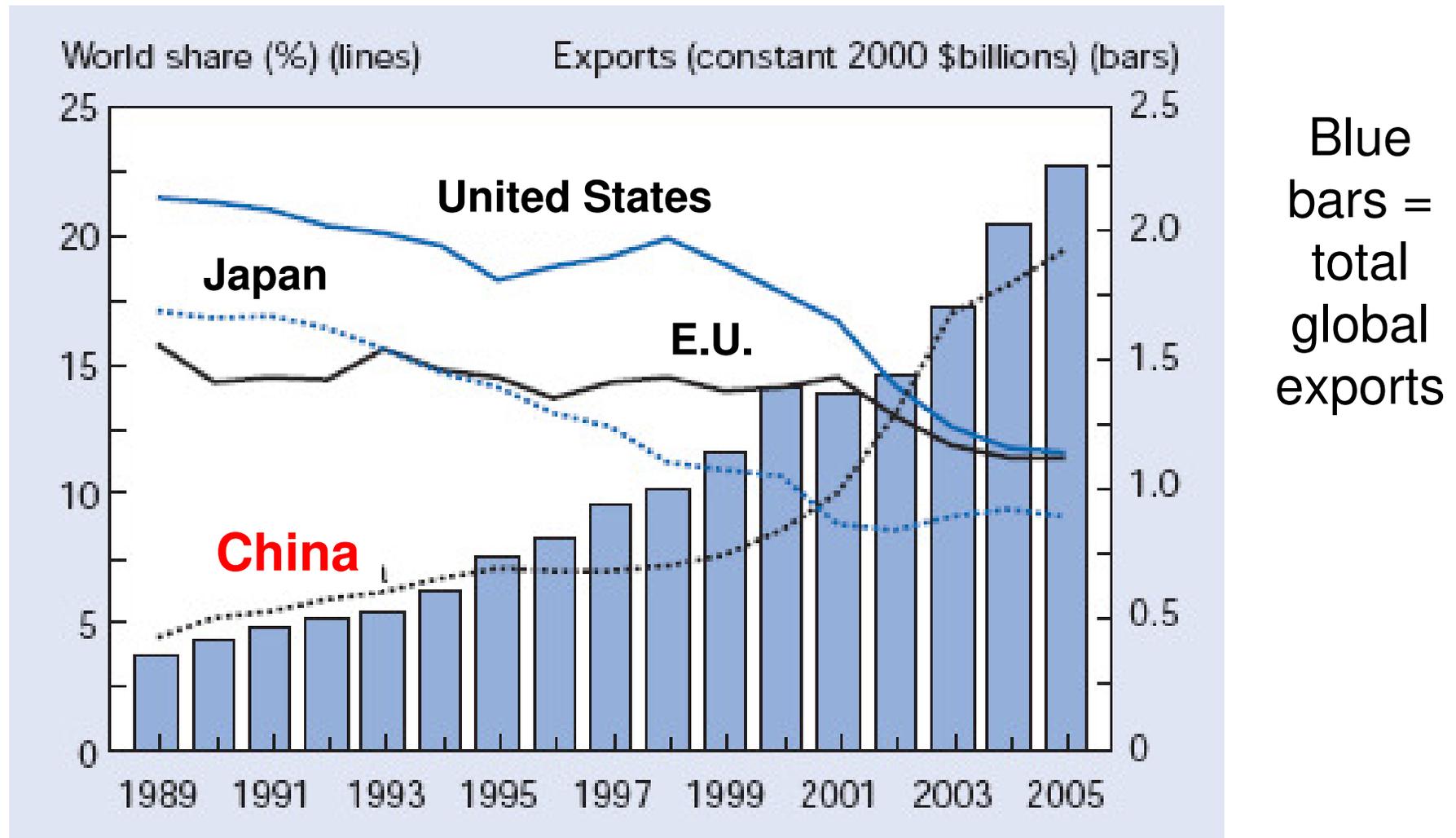
We are also behind in other energy technologies:

- Automobile fuel efficiency
- Batteries
- Electricity Transmission
- Power Electronics
- Nuclear Power



Worldwide shipments of Solar Photovoltaics – in Megawatts

# China's high-tech manufacturing is soaring



# China is spending \$12.6 million every hour on clean energy

Goal: generate 10% of its electricity from renewable sources by 2010 and 15% by 2020.

11<sup>th</sup> Five Year Plan: reduce energy intensity by 20% by 2010



Wind target:  
100 GW by 2020



State Grid: \$44 B by 2012 and  
\$88 B by 2020 in UHV  
transmission lines

# Wind and Solar: A \$3.5 Trillion Market

As the world moves to limit carbon pollution, more than 500,000 wind turbines will be needed by 2030

At roughly \$4 million per turbine, this represents a market of more than \$2 trillion



The global market for solar PV panels amounts to nearly 3 million panels worth \$1.5 trillion

(Source: IEA's 2008 World Energy Outlook 440 PPM Case, using typical facility sizes and costs from EIA)

# Today, we are announcing:



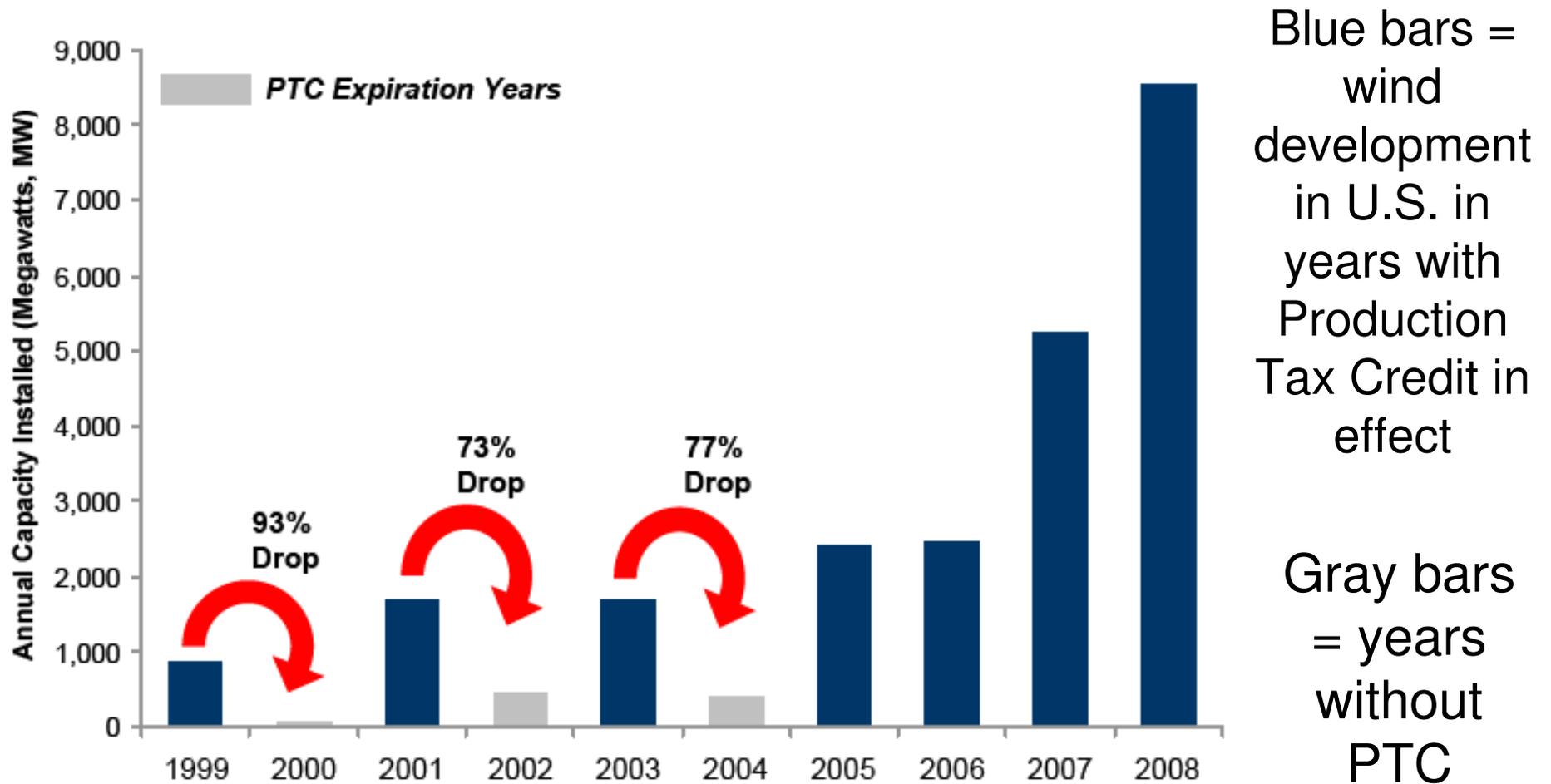
## **The creation of the Financial Institution Partnership Program**

*The \$4 B of ARRA money will support \$32B in loan guarantees and create **\$40-50 Billion in project investments** with a streamlined approval process*

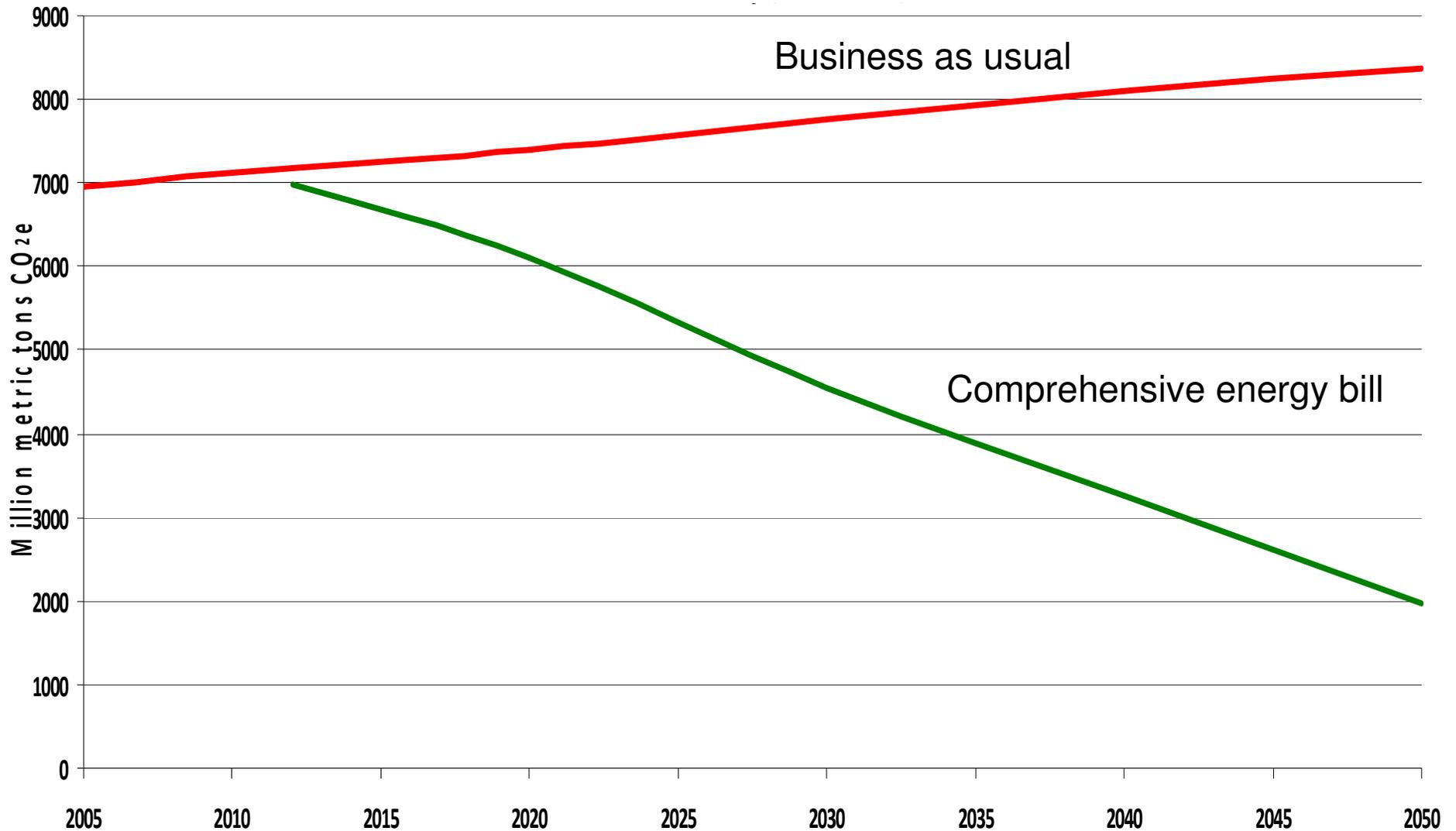
**We are also providing \$750 million to accelerate conventional renewable energy projects**

*To cover loan guarantees that could support as much as \$4 to 8 billion in lending*

# Stable incentives spur clean energy businesses



# The most important long term incentive is a cap on carbon emissions



President Obama: More than 80% emissions reduction by 2050

# A Clean Energy Transition Will Create Jobs

One Wind Turbine Requires 1,500 Bolts

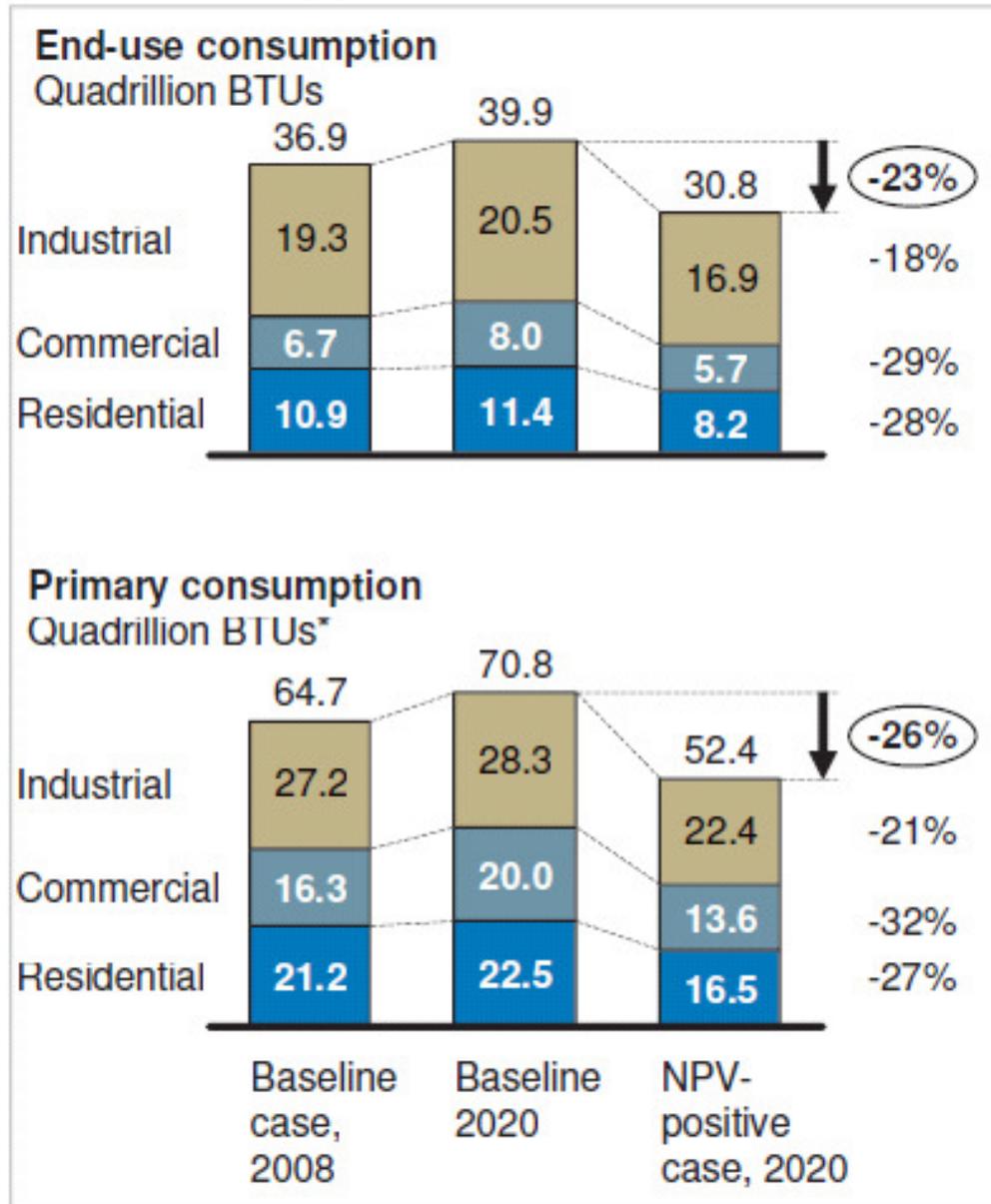


These bolts are manufactured by Cardinal Fastener, a rapidly growing company in Bedford Heights, Ohio

Cardinal will triple its workforce next year to 150 employees

These Ohio-made bolts are used by every U.S. turbine manufacturer and are also exported to foreign manufacturers

# McKinsey: Energy Efficiency is a vast, low-carbon energy resource for the U.S. economy



**McKinsey: Energy efficiency could abate 1.1 giga-tons of greenhouse gases annually, at a savings of \$680 B, based on Net Present Value estimate.**

**Investments in energy efficiency will create jobs.**

**Money saved on energy costs is pumped back into the economy.**

# A Clean Energy Transition is Affordable

Three analyses confirm the Waxman-Markey approach would cost about a postage stamp per household per day

Congressional Budget Office:  
About **44¢** a day in 2020

Environmental Protection Agency:  
About **22 – 30¢** a day - annualized  
average through 2050

Energy Information Administration:  
About **37¢** a day in 2020

