



American Wind Industry: Past and Future Growth

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American Wind Energy Association (AWEA)

- **Founded in 1974**
- **More than 2,500 business members**
 - **Wind project developers**
 - **Wind turbine manufacturers**
 - **Component manufacturers: towers, blades, gears**

www.AWEA.org provides extensive info on wind, AWEA events, and opportunities to get involved in the American wind market.

Overview

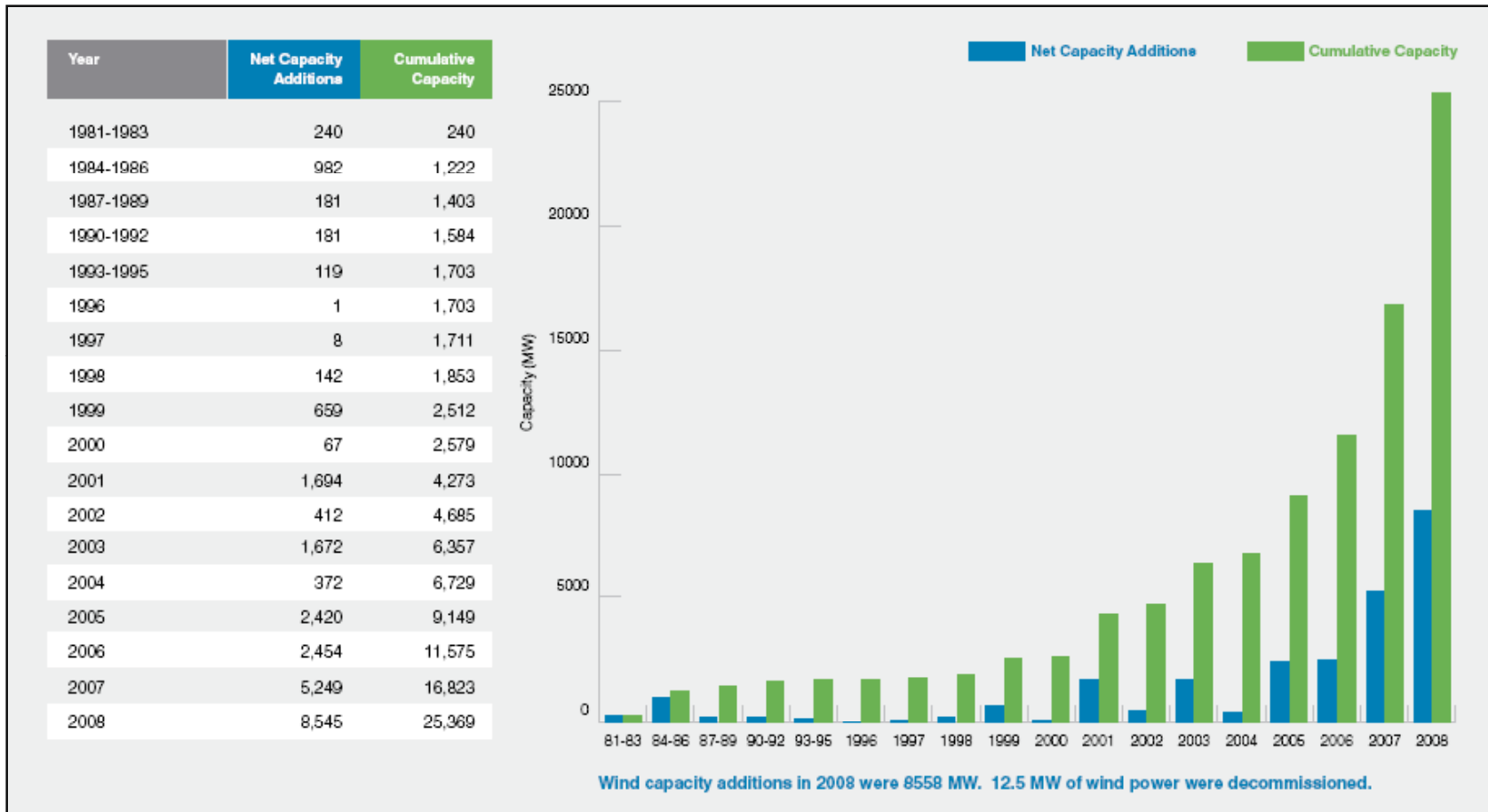
- **US Wind Industry:** Historical Growth, Current Status and Potential
- **Supply Chain:** Major Players, Opportunities, Market Drivers
- **Legislative:** Policies, Incentives, Taxes and Tariffs
- **Foreign Players in the U.S. Market**



US Wind Industry: Past and Future Growth, Current Status

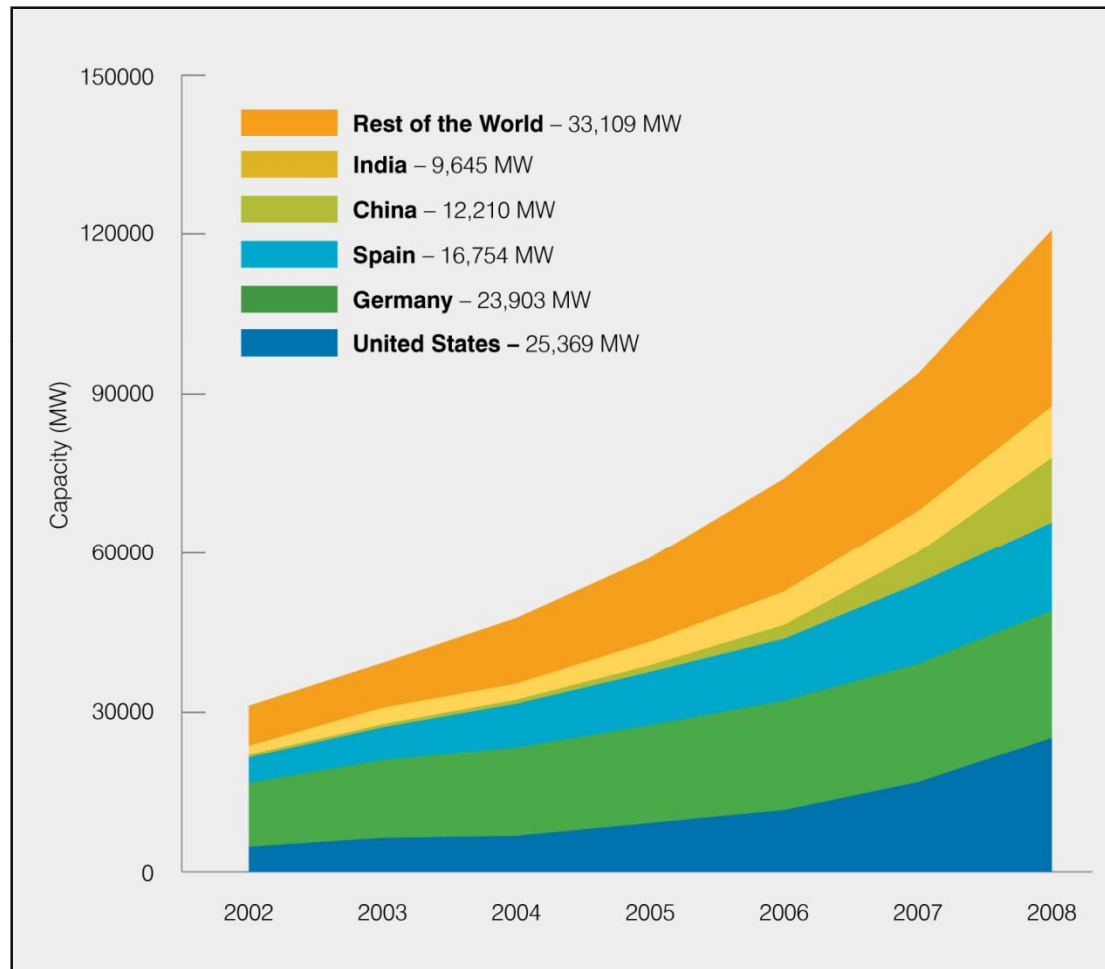


US Wind Industry: Past Growth



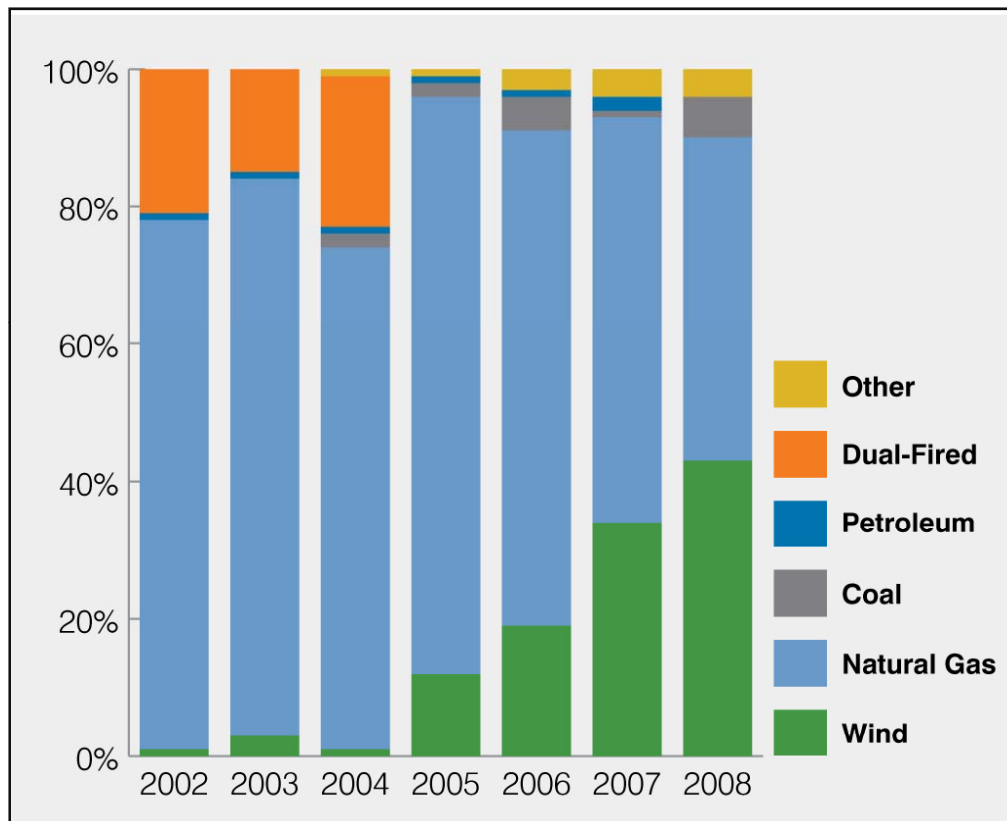
US wind installations grew by over 50% in 2008!

U.S. Became the World Leader in Installed Capacity in 2008



•The U.S. overtook wind leader Germany in 2008 with the most installed capacity for wind

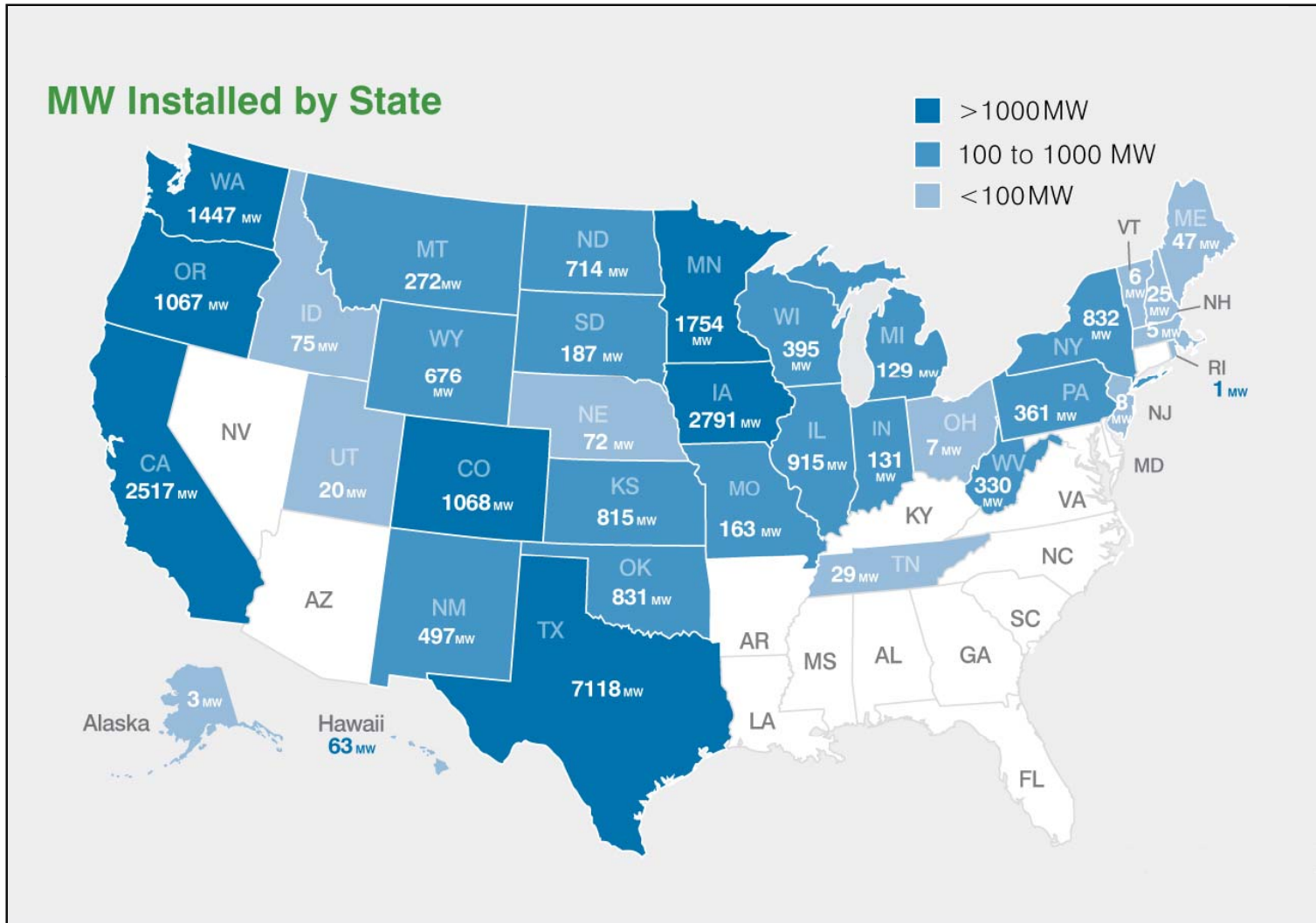
Percentage of Generation Added by Year



8,545 MW added in 2008

42% of all new generating facilities added in 2008 were wind power plants, up from less than 2% of new capacity in 2004

Installed Wind Projects through 4Q 2008



US Wind Industry: Current

The US is currently number one in terms of overall wind installation.

1Q 2009 Installations: 3005.95 MW

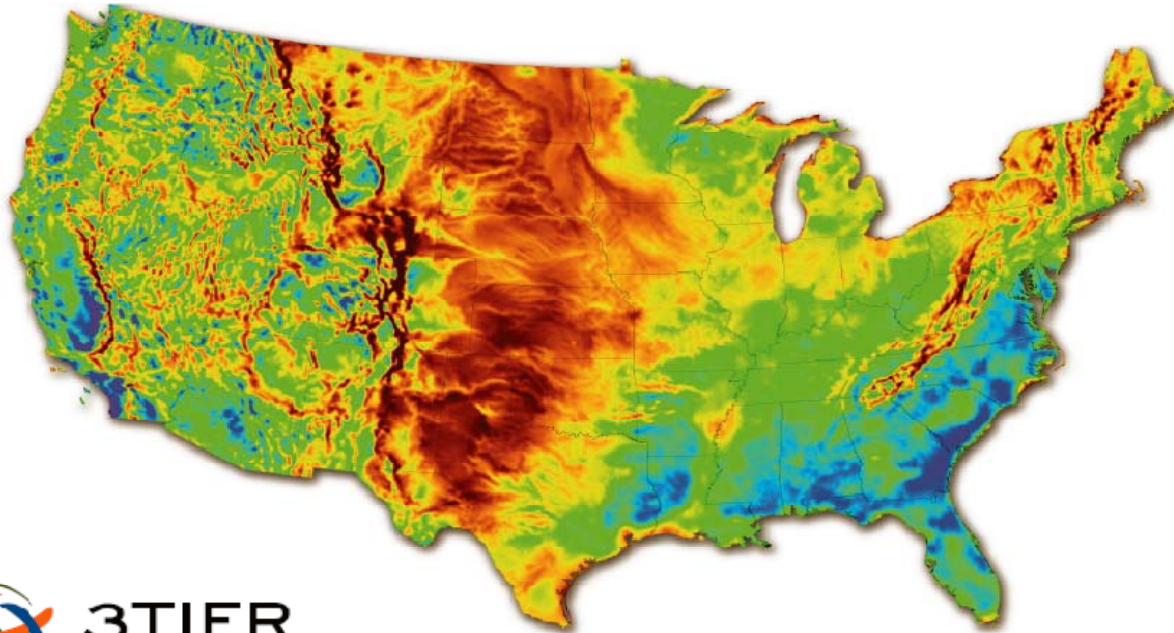
2Q 2009 Installations: 1,217.87 MW

3Q 2009 Installations: 1649.20 MW

1Q-3Q 2009 Total: 5873.02 MW → 31109 MW total

AWEA expects at least 7,000 MW to be online by the end of the year – over 32 GW in total installation.

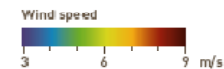
Potential Market: U.S. Wind Resource Map



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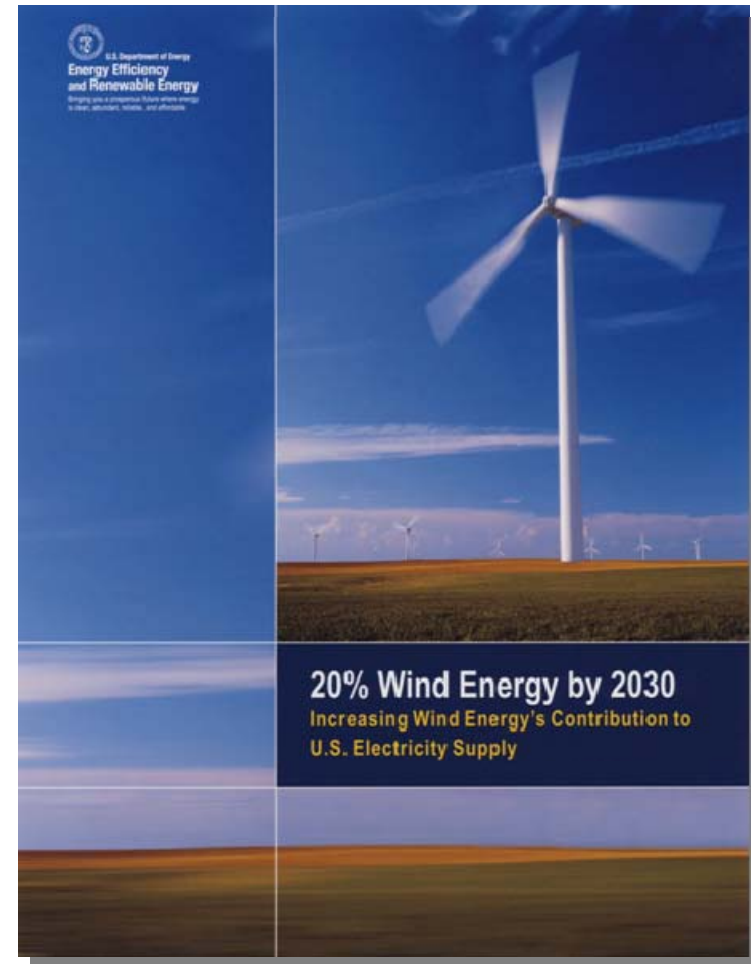
5km Wind Map at 80m



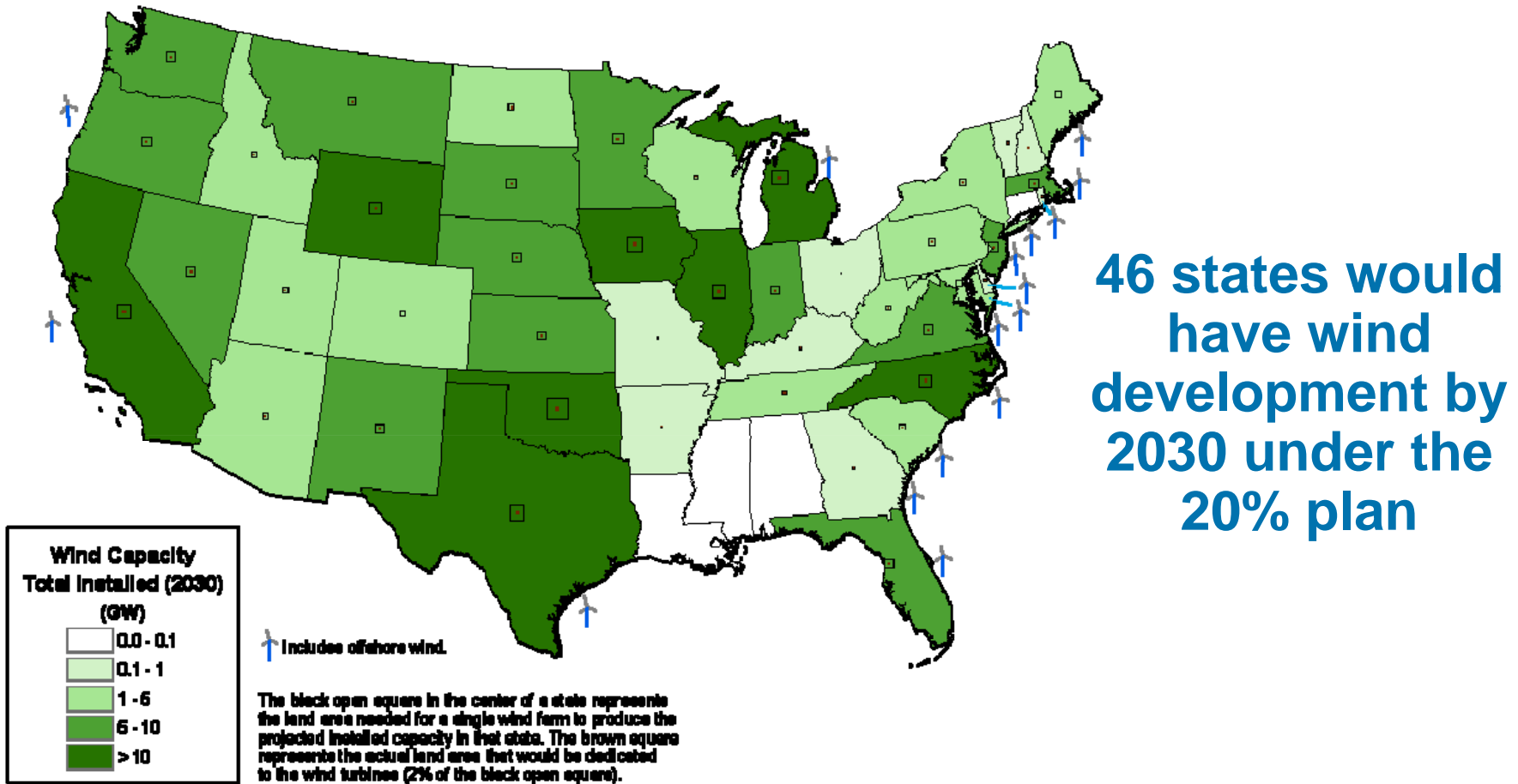
The U.S. has excellent wind resources, especially in the center of the country and in mountainous regions.

Potential Market: 20% Wind Energy by 2030

U.S. Department of Energy:
“The U.S. possesses sufficient and affordable wind resources to obtain at least 20% of its electricity from wind by the year 2030.”



Potential Market: Wind Project Development



Source: U.S. DOE, 20% Wind Energy by 2030



Policy Environment



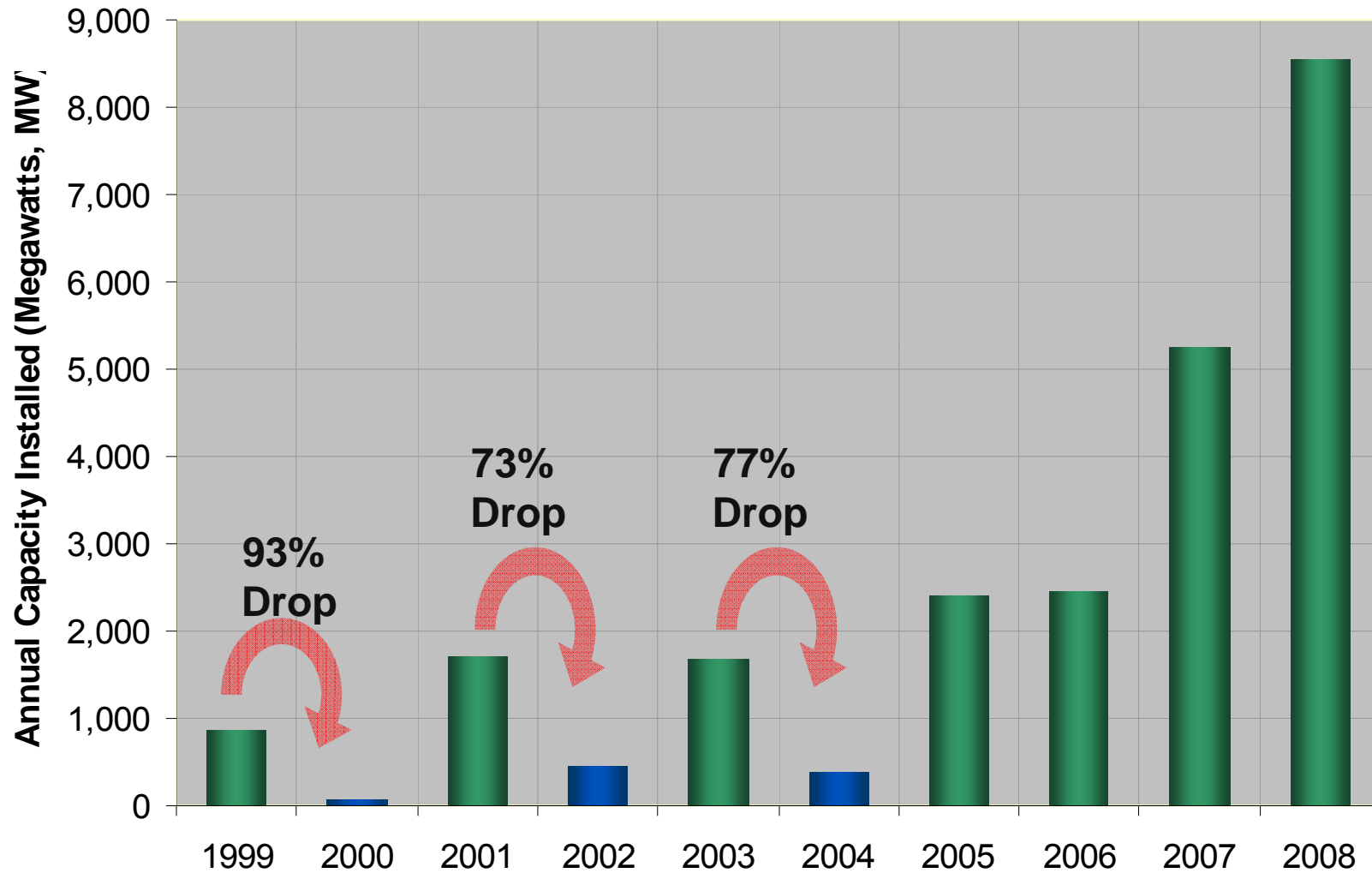
Driving the American Market

The policy primarily responsible for the growth of the American wind industry has been the Production Tax Credit (PTC), though it has been inconsistent.

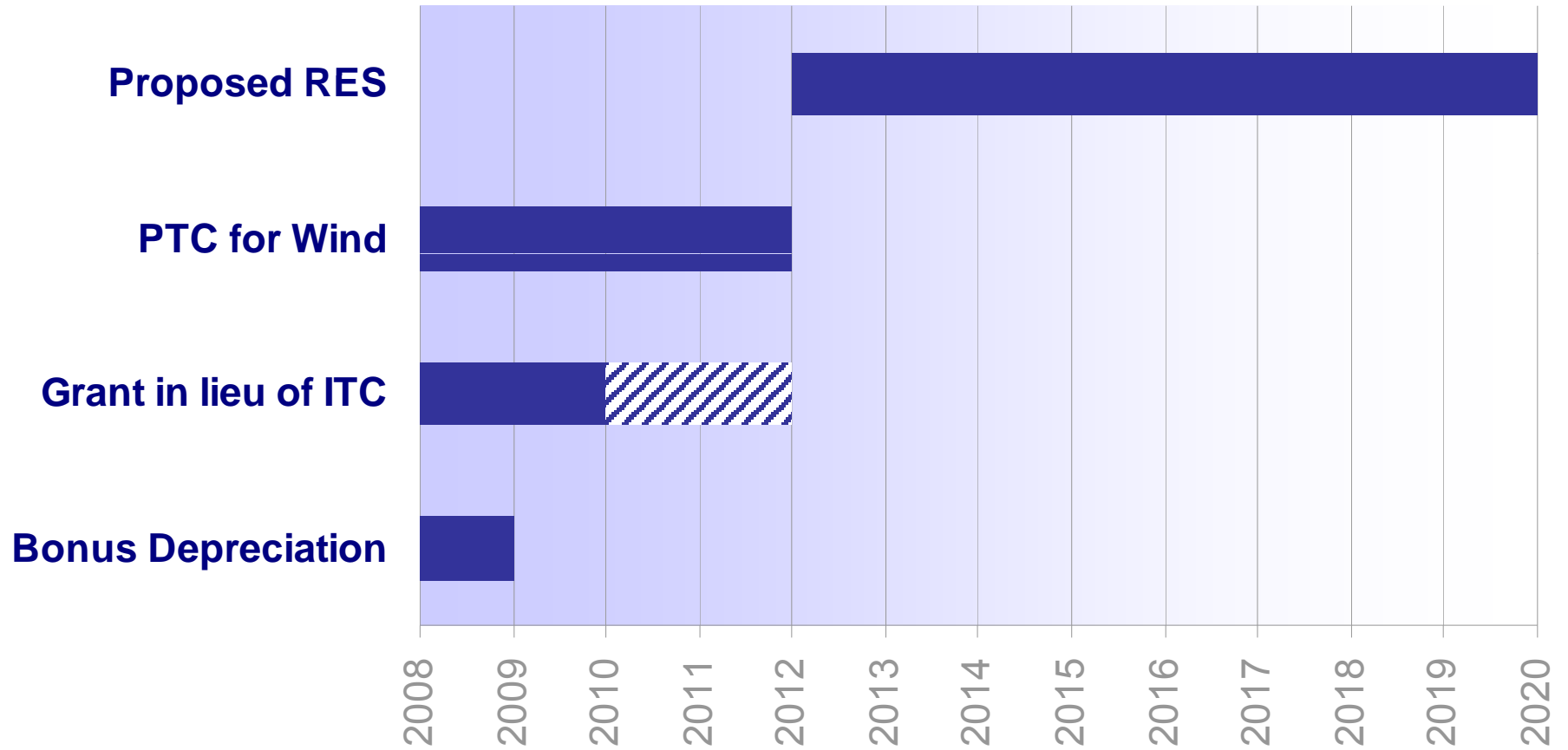
The PTC is a tax credit based on the amount of electricity generated from wind.

Now that the industry has matured, a long-term, federal policy is needed to continue growth and enhance domestic manufacturing

Effect of PTC on Wind Installations



Policy Timeline for Wind – Looking Ahead



Recovery Act Benefits Wind Industry

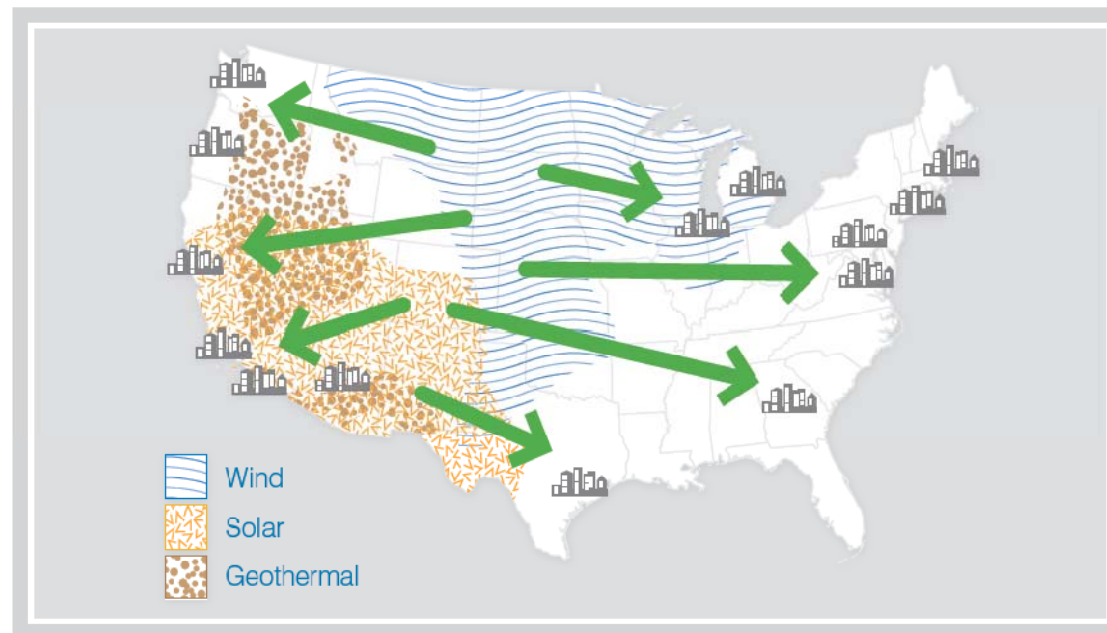
- **Production tax credit (PTC) extension through 2012**
- **Temporary ability to receive Treasury grant in place of PTC**
- **Small wind turbines now eligible for full 30% ITC**
- **New 30% manufacturing tax credit**
- **New loan guarantee program**
- **R&D funding**
- **Transmission funding**

National Renewable Electricity Standard

- **Seeking a 25% of the nation's electricity to come from renewables by 2025**
 - **Set an aggressive near-term target for 2012**
- **Would send a strong signal to businesses that we are committed to the US manufacturing base**
- **Would require investment in new transmission infrastructure and reform of outdated policies**

Green Power Superhighways

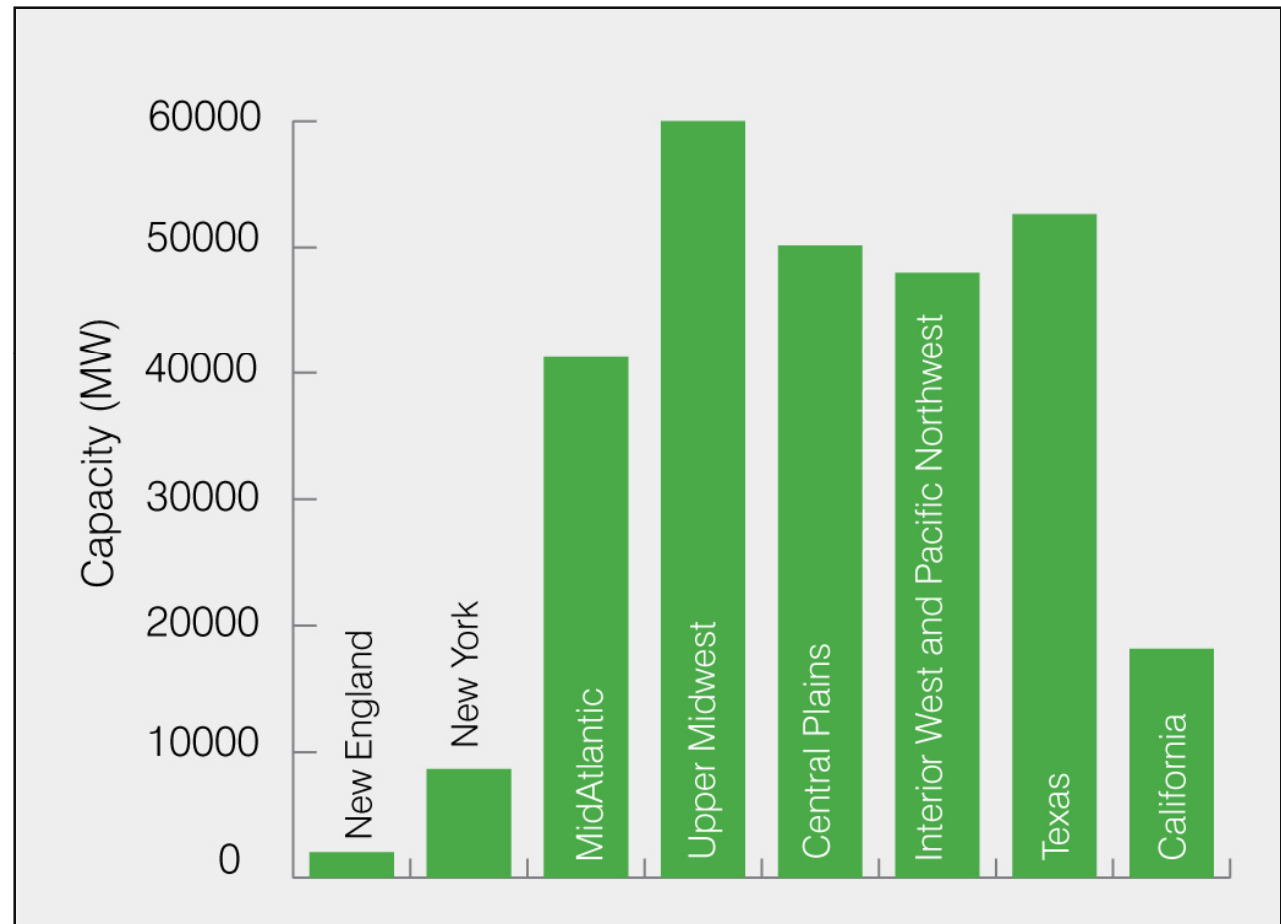
- Link areas with vast supplies of renewables to areas of high electricity demand green power superhighways
- Improve grid operations



Source: AWEA and SEIA

Wind Projects Waiting in Queues

Close to 300,000 MW of proposed wind projects are in inter-connection queues.

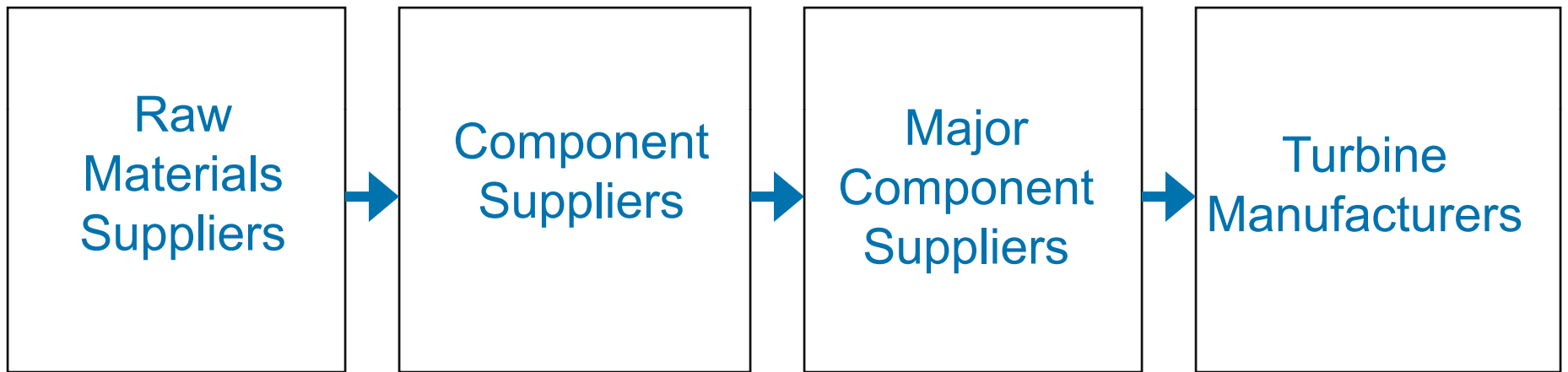




US Wind Supply Chain



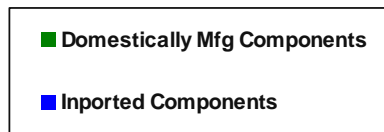
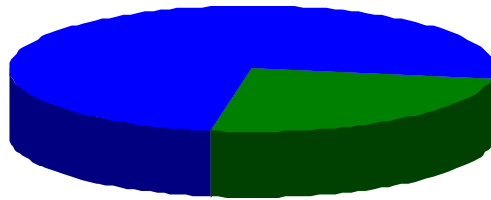
Basic Supply Chain



Domestically Manufactured Components

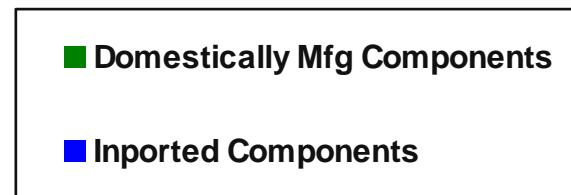
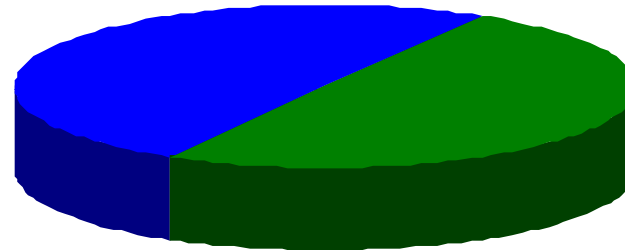
There has been a dramatic shift towards domestic manufacturing for wind turbine components

2005



~25% domestic components
~2,500 MW installed
~1,500 turbines installed

2008

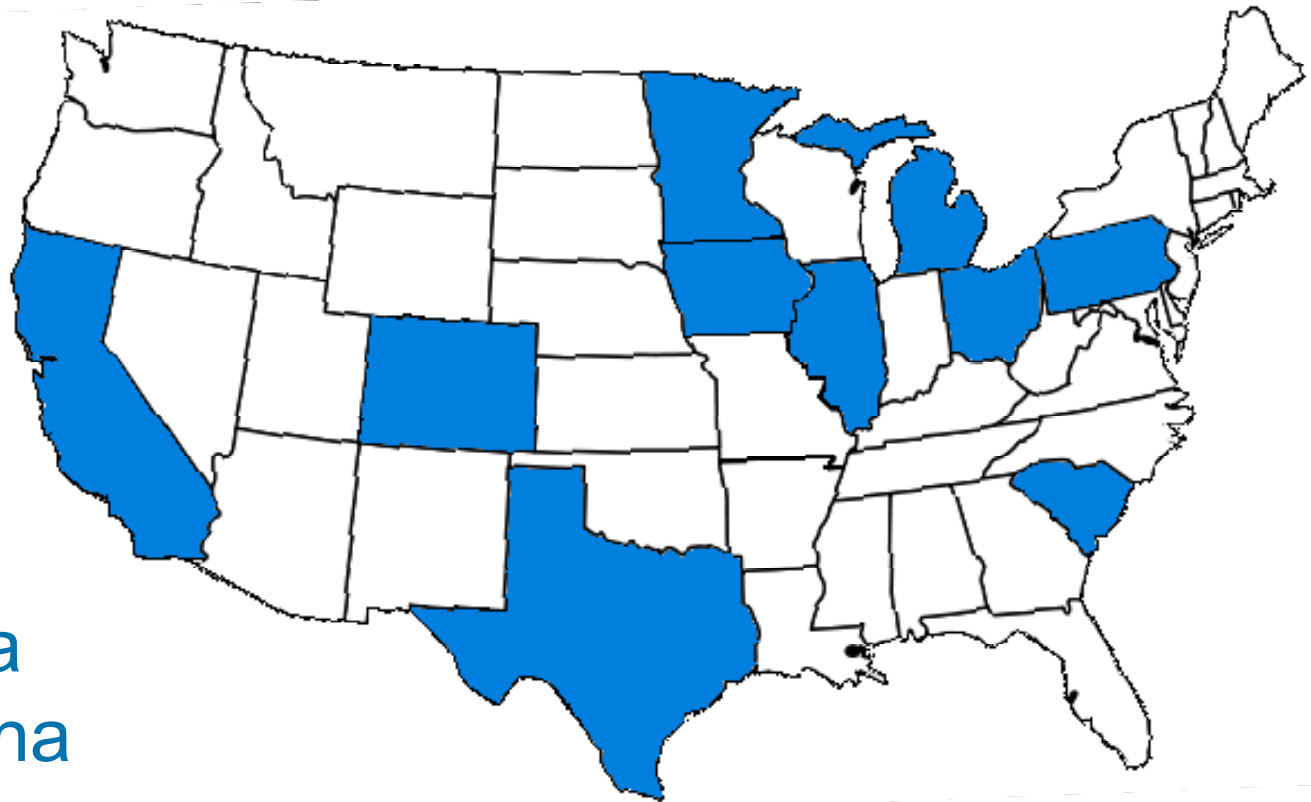


~50% domestic components
~8,500 MW installed
~5,300 turbines installed

Primary States for Manufacturing

States with five or more major facilities
(online or announced):

- California
- Colorado
- Iowa
- Illinois
- Michigan
- Minnesota
- Ohio
- Pennsylvania
- South Carolina
- Texas

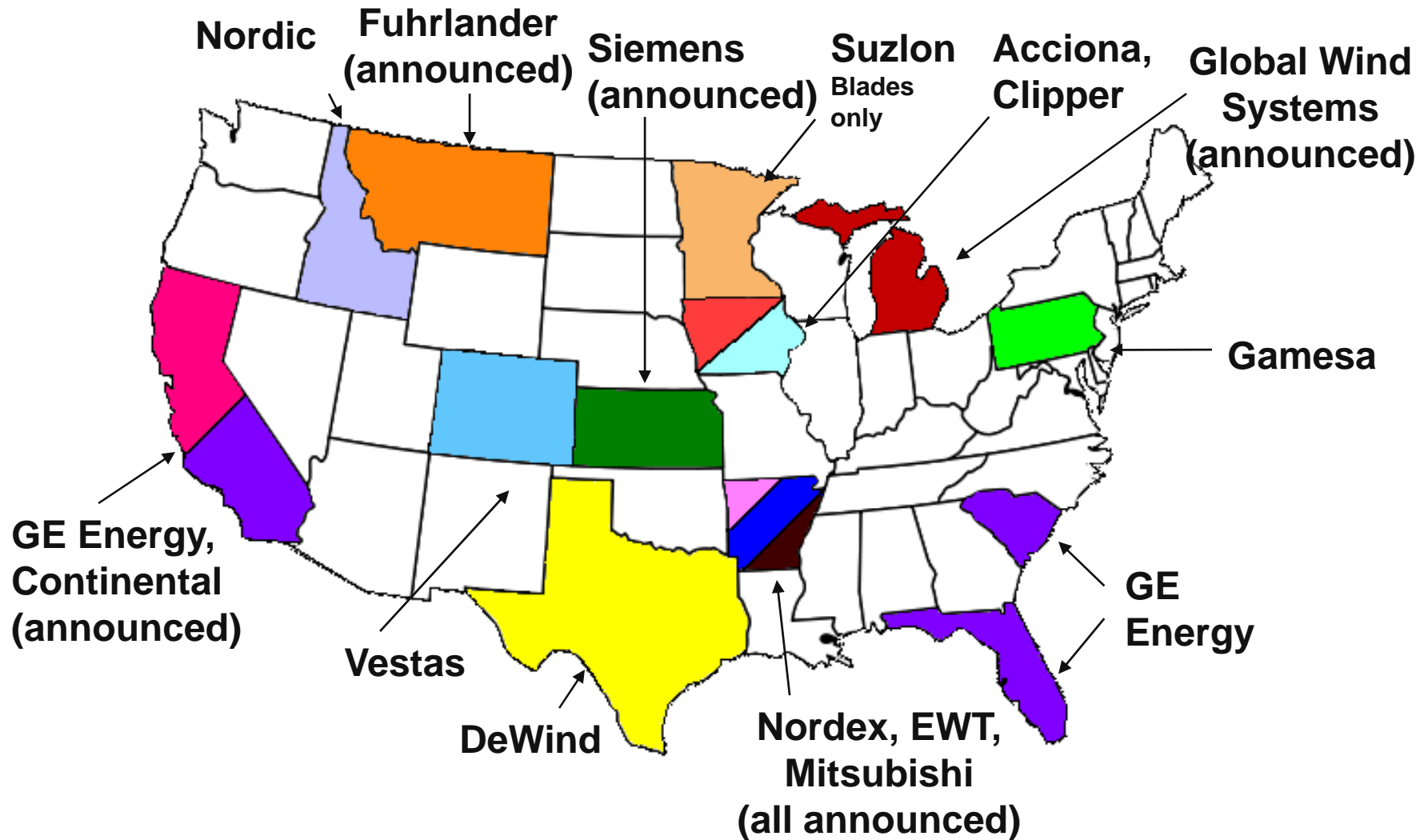


Utility-Scale Turbine Manufacturers with a U.S. Manufacturing Presence

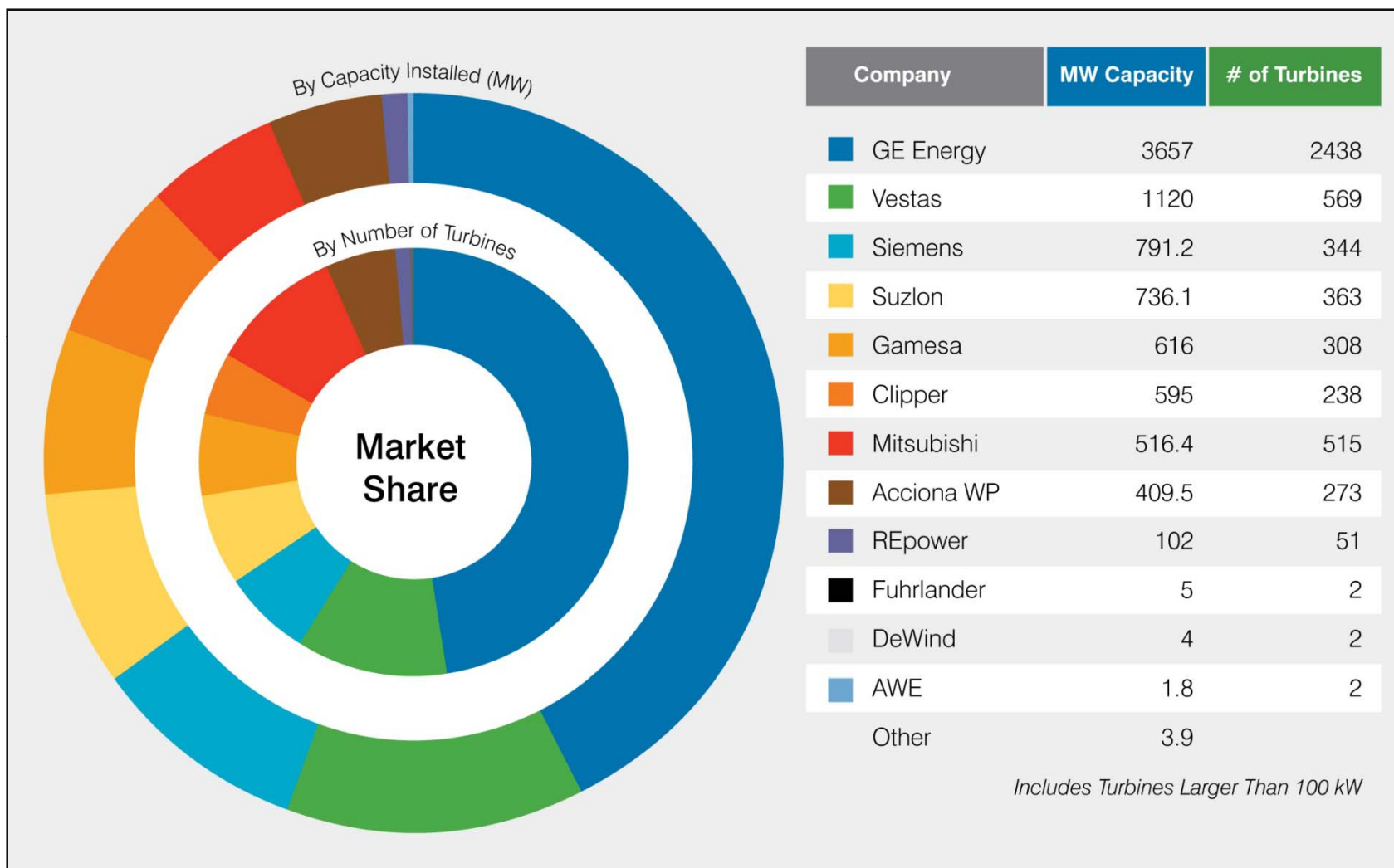
- **Acciona**
- **Clipper**
- **DeWind (purchased by Daewoo)**
- **Gamesa**
- **GE Energy**
- **Nordic**
- **Siemens**
- **Suzlon**
- **Vestas**
- ***Continental (Announced)***
- ***EWT (Announced)***
- ***Fuhrlander (Announced)***
- ***Global Wind Systems (Announced)***
- ***Mitsubishi (Announced)***
- ***Nordex (Announced)***



Turbine Manufacturer Locations



2008 Installations by Manufacturers





International Players in the U.S. Market



Information About Importing

There are no quotas that limit the import of turbines or components into the U.S. market

However, there is a drive among turbine manufacturers to domesticate their supply chains and rely on manufacturers with U.S. facilities.

Generator sets imported to the U.S. are subject to a 2.5% tariff. Other tariffs may apply and the definition of generator set includes any and all components imported with a generator set.

Information About Incentives

Different states and cities may be able to provide incentives to locate new manufacturing facilities in their jurisdictions. These incentives are tailored to the manufacturers, and may include:

- **Loans and grants**
- **Sales, property or payroll tax reductions**
- **Infrastructure improvements**
- **Free land to build on**

Thank you!

More information :

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www.awea.org/events