



# The Top Ten Wind Power Myths

Susan Sloan, AWEA

Mitch King, Old Mill Power, VA

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FEATURES

U.S. Wind Energy Project Map

New Projects Completed in 2005 (PDF)

NEW

Wind Energy Outlook 2005

AWEA Membership Directory

NEW

E&ETV OnPoint April 20, 2005



ONLINE VIDEO Randy Swisher AWEA Executive Director

PHOTOS & FOOTAGE



Contact Christine Real de Azua at (202) 383-2508 or via email at Christine@aweaa.org

aweaa newsroom

News Releases

31 January 2006 News Release

State of the Union Advance: AWEA Statement on Wind Energy's Role as Part of a Balanced Energy Policy

24 January 2006 News Release

U.S. Wind Industry Ends Most Productive Year, Sustained Growth Expected For at Least Next Two Years

22 December 2005 News Release

American Wind Energy Association Promotes Environmental Stewardship in 2005

13 December 2005 News Release

Federal Energy Regulatory Commission Issues Green Light Decision on Wind Energy

02 December 2005 News Release

Give the Gift of a Cleaner Environment with our "Windy" Gift List

28 November 2005 News Release

AWEA Statement on "here we go again," Anti-wind Amendments in Coast Guard and Defense Legislation

03 November 2005 News Release

U.S. Wind Industry to Break Installation Records, Expand by More Than 35% in 2005 Wind-generated electricity helping ease natural gas crunch

12 October 2005 AWEA Statement

AWEA Statement on Natural Gas Crisis, EIA Winter Outlook Report

RESOURCES

Wind Energy Press Kit

- Wind Energy Basics
Wind Energy Potential - Top 20 States
Wind Energy Fast Facts
Industry Rankings
Industry Contact List
Editorial Calendar

Top Issues

- Natural Gas Shortage
Transmission

Publications & Reports

- Frequently Asked Questions/Tutorial
Online Reports
Factsheets

NEW Wind Industry News

- 3-Foot Strip = \$25 Million Savings for Wind Farm - Bloomington Pantagraph, USA (11 Nov 2005)
New Project for Wind Farm Company - Pittsburgh Post Gazette, PA (05 Nov 2005)
Illinois Firm Wants to Build Greenbrier Wind



# AMERICAN WIND ENERGY ASSOCIATION

Wind energy works for America's economy, environment and energy security

Contact AWEA



**AWEA. THE VOICE OF THE WIND ENERGY INDUSTRY.**

*The mission of the American Wind Energy Association is to promote wind power growth through advocacy, communication and education.*

## WHAT'S NEW

[State of the Union Advance: AWEA Statement on Wind Energy's Role as Part of a Balanced Energy Policy](#)  
- January 31, 2006

[AWEA 2006 Wind Energy Calendar](#)



[Order Here](#)

## NEWS HIGHLIGHTS

[U.S. Wind Industry Ends Most Productive Year, Sustained Growth Expected For at Least Next Two Years](#) - January 24, 2006

[AWEA Wind Energy Association Promotes Environmental Stewardship in 2005](#) - December 22, 2005

[Give the Gift of a Cleaner Environment with our "Windy" Gift List](#) - December 2, 2005

[AWEA Statement on "'here we go again," Anti-wind Amendments in Coast Guard and Defense Legislation](#)  
- November 28, 2005

## UPCOMING EVENTS

[AWEA Event Calendar](#)

[NEW - AWEA Renewable Portfolio Standards \(RPS\) Workshop](#) - March 7-8, 2006

[3rd AWEA Project Siting Workshop](#)  
- February 22, 2006

[Member Forum: Developing Wind Farms and Good Neighbors - Building Community Support as a Key to Success](#) - February 23, 2006

[WINDPOWER 2006](#) - June 4-7, 2006

## SITE GUIDE

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# if not wind... then what?

Traditional energy generation poses increasing environmental, supply and economic challenges. Wind energy is a clean, cost-effective option from an abundant, domestic resource. Like all electricity sources, wind energy has some impacts, but adding more wind to our traditional fuel mix is important to striking a healthy energy balance. Our society, even with increased energy efficiency, demands a steadily growing amount of electricity. We must consider how that power is made: if not wind, then what? [Learn More](#)

## Wind Energy Fact

Wind energy will generate over 17 billion kilowatt-hours in the U.S. in 2005, enough electricity to power 1.6 million homes.

[> More...](#)

## Wind Energy Fact

A single wind turbine can provide \$2,000-\$4,000 each year in farm or ranch income and only use 2-5% of the land for the turbine and access road.

[> More...](#)

## Five Myths About Wind Energy

Wind power is still a relatively new technology to many people, and a number of myths – some based on old technologies, some based on misunderstandings – abound on issues such as sound, subsidies and safety.

[> More](#)



## 2005 Statistics on Wind Energy

How much electricity does wind power make in the U.S.? What fuels are displaced by wind energy? Which states have the most wind energy potential? These answers and many more in our facts and figures page.

[> More](#)



## Wind Energy Works

The *Wind Energy Works!* coalition is a new national broad-based alliance that will support wind energy development across the country as the first major step toward a clean and safe energy future.

[> More](#)





[WEW! Factsheet](#) | [Coalition Members](#) | [News](#) | [Action](#) | [Contact Us](#) | [Home](#)



## Wind Energy Works!

On July 6, 2005, a broad national coalition of wind energy advocates - **Wind Energy Works!** - was launched to actively and aggressively engage in the public conversation about the merits of wind energy and act as a counterbalance to the misinformation being spread by wind energy opponents.

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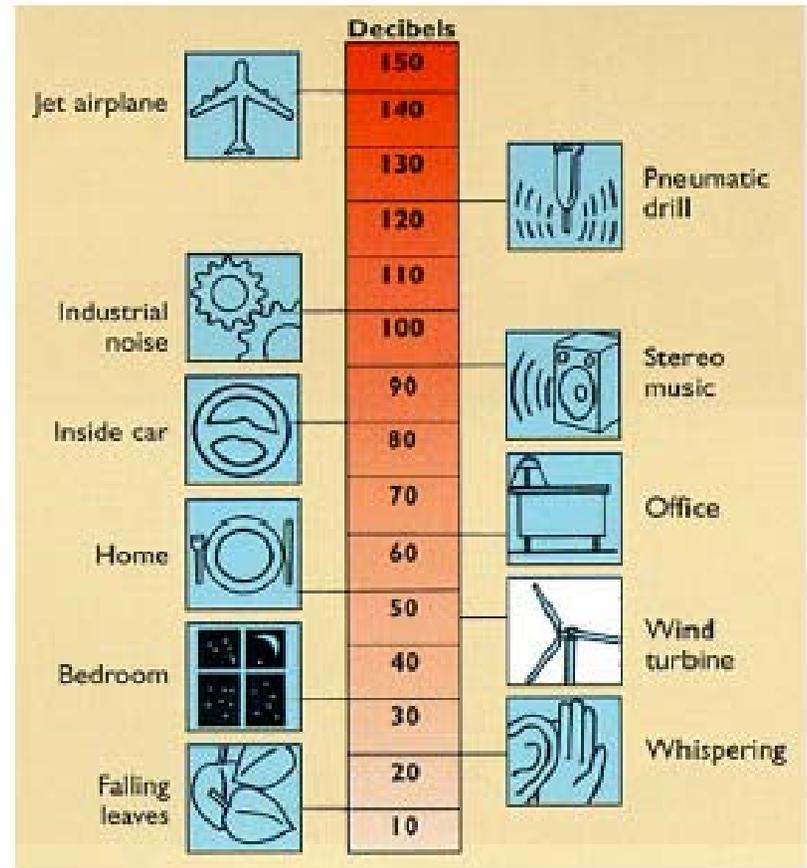


## 65+ Member Organizations to Date

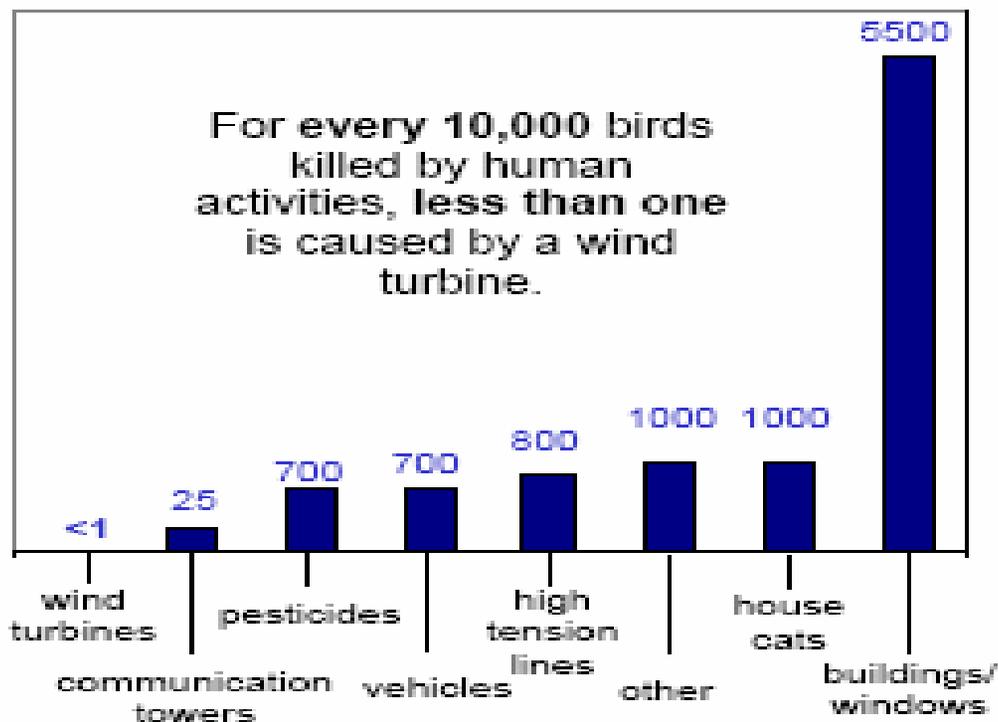
Clean Energy	39%
Environmental	21%
Biz / Eco Devo	16%
Agricultural	6%
Government	6%
Faith-based	5%
Academic	3%
Health	2%
Utility	2%

# Myth #1: Noise

- ❑ “I can’t sleep at night!”
- ❑ “They’re louder than a chain saw!”
- ❑ Facts: An operating modern wind farm at a distance of 750 to 1000 feet is no noisier than a kitchen refrigerator or a moderately quiet room.



## Myth #2: Kills Birds



- ❑ “Condor Cuisinarts...Epic disease due to mice overrunning the planet as raptors all gone..”

Facts: Overall impact on birds is extremely low compared with other human-related activities. Bird deaths from wind energy will never be more than a small fraction of bird deaths caused by other human-related sources, such as cats and buildings.



## Myth #3: Flicker

- ❑ Almost never a problem for residences, and in the few cases where it could be, it is easily avoided.
- ❑ The effect can be precisely calculated to determine whether a flickering shadow will fall on a given location near a wind farm, and how many hours in a year it will do so.
- ❑ Potential problems can be easily identified using these methods, and solutions range from the appropriate setback from the turbines to planting trees to disrupt the effect.
- ❑ Should not be a problem in the U.S. because at U.S. latitudes (except Alaska) the sun's angle is not very low in the sky.
- ❑ If any effect is experienced, it is generally short-lived, as in a few hours over a year's time.



© 1999 American Wind Energy Association



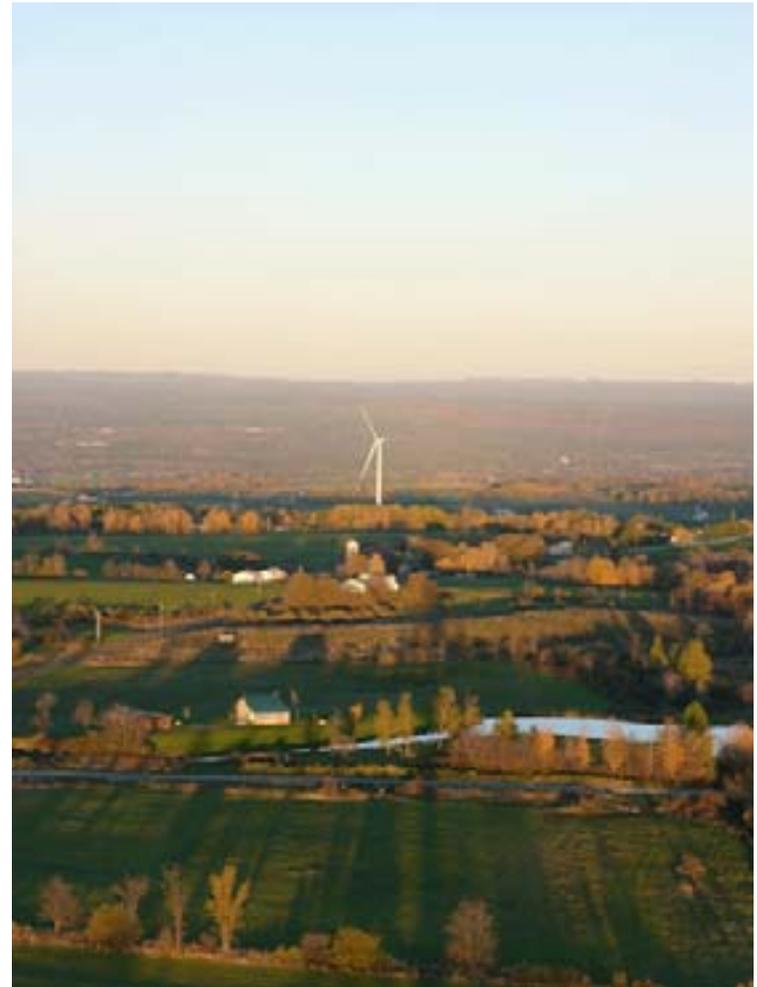
## Myth #4: Ice Throw

- ❑ “We’re gonna die...Ice throw will bury us, destroying our homes and health!”
- ❑ Facts: Setbacks are sufficient to protect against danger to the public.
- ❑ Ice buildup slows a turbine's rotation and will be sensed by a turbine's control system, causing the turbine to shut down.



# Myth #5: Property Values Decline

- ❑ “We’re in danger of losing our homes!”
- ❑ Facts: There is no evidence that the presence of a commercial windfarm within sight of a property systematically decreases that property’s value. In fact, a nationwide study conducted in 2003 surveyed property near multiple wind farms and found that not only do wind farms not harm property values, in some cases the values increased. <[www.repp.org](http://www.repp.org)>





## Myth #6: View Shed

- ❑ “They ruin our view!”
- ❑ Beauty is in the eye of the beholder. Some people feel wind turbines are majestic. Wind farm developers have computer-modeling tools that accurately depict virtual views from given spots in the surrounding area. Careful design of a wind project can alleviate many visual concerns.





## Myth #7: Too Expensive

- ❑ “Wind power is too expensive...”
- ❑ Facts: wind energy is now in a range that is competitive with power from new conventional power plants.
- ❑ Up-front, capital cost of wind energy is more expensive than that of some traditional power technologies such as natural gas. However, there is no cost of fuel
- ❑ In good locations the "levelized" cost (which includes the cost of capital, the cost of fuel, and the cost of operations and maintenance over the lifetime of the plant) of wind energy can now be less than that of other energy sources.



# Myth #8: Federal Subsidies Unfair

- ❑ “Wind is too highly subsidized!”
- ❑ Facts: Wind receives a tax credit that provides an inflation-adjusted 1.5 cents for each kilowatt-hour generated, over the first ten years of the project which reduces the tax liability of a wind farm, but is not a subsidy of public money flowing to the wind farm owner.
- ❑ Largest subsidy may be that the environmental impacts from fossil fuel use are not reflected through higher costs of those energy sources.
  - all of society must pay the price for dirty air, polluted water, climate change, dangerous fuel spills, and hazardous cleanup and disposal of fuel byproducts attributed to other energy sources.
- ❑ Clean, renewable, domestic wind energy produces no emissions, requires no fuel and the cost is fixed and predictable over time.



# Myth #9: Only Big, Out of State Developers Get the Money

- ❑ "Only big fat companies get wealthy – at our expense!"
- ❑ Facts: increases the local taxes assessed
- ❑ Supports the local tax base, helping to pay for schools and roads far more than their impact to local facilities.
  - One large (108-turbine) project in rural Prowers County, Colorado, increased the county's tax base by 29%.
- ❑ Increases employment from the wind farm operation and construction and the money pumped in the local economy through the construction project
  - Increased hotel stays
  - Restaurant revenues

What 1,000 megawatts of Wind Brought to Texas	
Taxable value of wind power plants:	<i>\$777 million</i>
Property tax payments to local school districts:	<i>\$11.6 million in 2002</i>
Landowner royalty income:	<i>\$2.5 million in 2002</i>
Wind-related jobs:	<i>2,500</i>



# Myth #10: Needs to Be Backed Up with Dispatchable Fossil Fuel

- ❑ Because of the grid's inherent design, there is no need to back up every megawatt of wind energy with a megawatt of fossil fuel or dispatchable power.
- ❑ The electric grid is designed to have more generation sources than are needed at any one time because no power plant is 100% reliable.
- ❑ It is a complicated system designed to absorb many impacts, from electric generation sources going off-line to industrial customers starting up energy-intensive equipment.
- ❑ The grid operator matches electricity generation to electricity use, and wind energy's variability is just one more variable in the mix.



# Mitch King

- ❑ NIMBYism is growing
- ❑ Developers should acknowledge it's OK to object to nearby electrical infrastructure
  - But make clear it's not OK to exaggerate the truth to stop a project
- ❑ Eloquence and White Papers and Letters to the Editor Accentuate the Discussion and Create Need to Respond
- ❑ The Developer Can't Get Down and Wrestle in the Mud- we all get dirty..



# Who ya gonna call?

## Susan Sloan, NIMBY Buster

- Start with regional and local experts
- Track articles that are being submitted locally, regionally and nationally
- Q: How credible are these NIMBYs?
- Q: Are they worthy of a fully researched and complete response?
- Pull from AWEA sources



# Michigan Experience

NIMBYs Exploit Mi Land Use Planning...and It is Trouble:  
Thank you, Thomas Jefferson!

1250 Townships

650 Villages and Cities

83 Counties

550 School Districts

Create the Michigan Wind Working Group and develop the  
MI Siting Guidelines



# Michigan Experience

Certain Local Realtors want to break up the Centennial Farms with Lake Michigan views finance the NIMBYs and invite opponents, NY and Eastern Web Sites to provide outrageous claims

Response: Enlist MSU Extension, The Farm Bureau, et al to underscore the VALUE of KEEPING FAMILY FARMS, FAMILY FARMS

“So goes agriculture, so goes the nation,” Matthew Bonnett, Cheboygan County

Distribute the REPP Property Value

Mackinaw City “Nay-Sayer” Shows up in other local communities to “Throw the Skunk in the Punch Bowl.”

Respectful Responses: Regularly scheduled visits to the Mackinaw Wind Turbines, “Come Up and Listen and See for Yourself”



# Siting Panel

## Wind Powering America Summit June 8, 2010

### The “Triple Bottom Line”

**Financial Capital:** Competitive, Stable Price 2006-2026,  
New, 21<sup>st</sup> Century Jobs, New, Clean Technologies

**Social Capital:** Community Economic Development,  
Energy Independence and Increased Public Health

**Ecological Capital:** Protecting Our Great Lakes,  
Watersheds



# Visit Our Mackinaw City Wind Farm





# Mackinaw City Project, Generating >11 million kWh





**EST.** \$3.1 Million Lease Payments 35 MW Project , \$58/MWh @ 25% cap.

Higher of \$3000 or 3%: \$63,000 -\$80,000/Yr. \$1,600,000

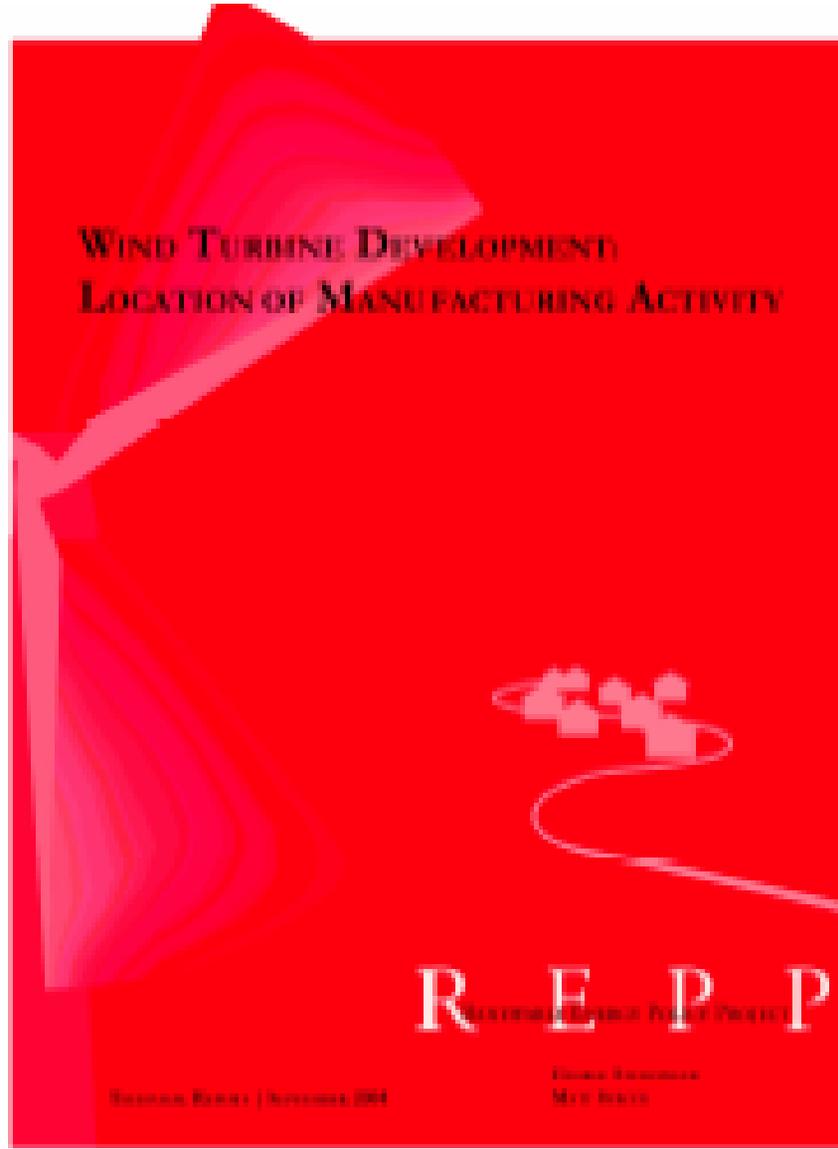
❑ Good Neighbor Fund = \$500/WTG = \$10,500/Yr. = \$ 210,000

❑ PILOT (Estimated Payment in Lieu of Taxes) = \$1,383,000

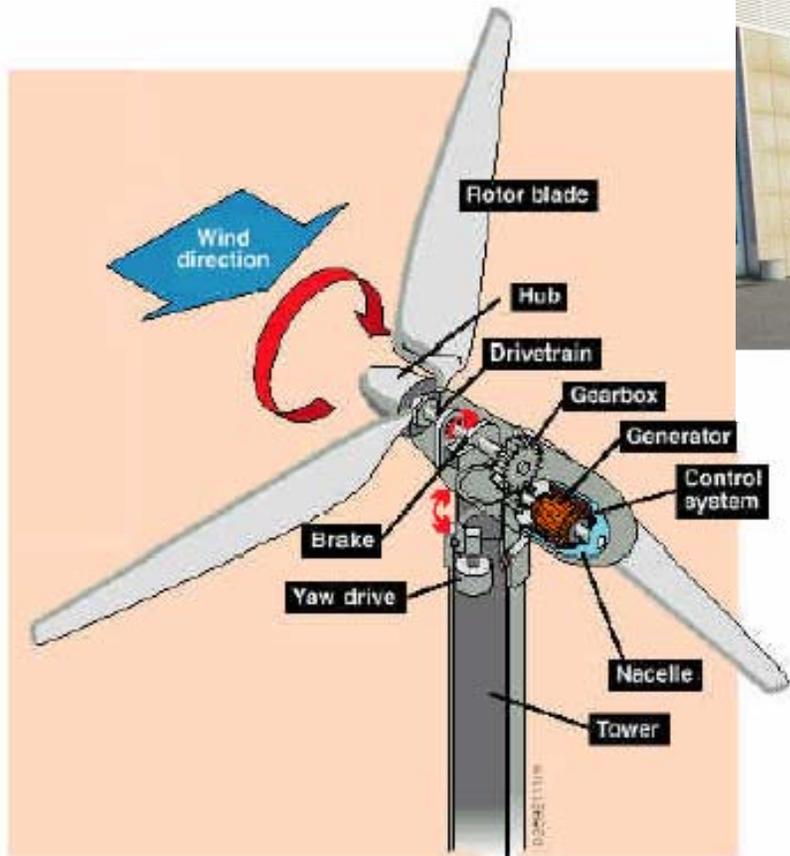
<b>ESTIMATES</b>	Per Year	2006-2012	2012-2026	2006-2026
School Dst. 1	\$25,000/Yr.	\$ 150,000	\$165,000	\$315,000
School Dst. 2	\$25,000/Yr.	\$ 150,000	\$165,000	\$315,000
Township	\$35,000/Yr.	\$ 210,000	\$228,000	\$438,000
County	\$25,000/Yr.	\$ 150,000	\$165,000	\$315,000
	\$135,000/Yr.	\$660,000	\$723,000	
	\$1,383,000			



# Wind Power Stimulates 21<sup>st</sup> Century Technologies



# Wind Power Projects Will Spur U.S. Manufacturing

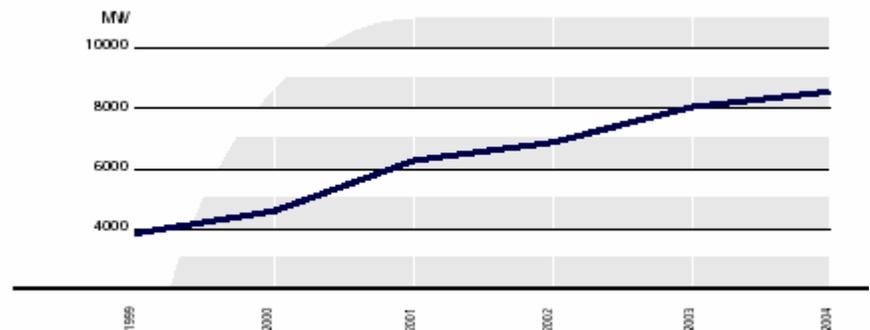


Wind Turbine Nomenclature



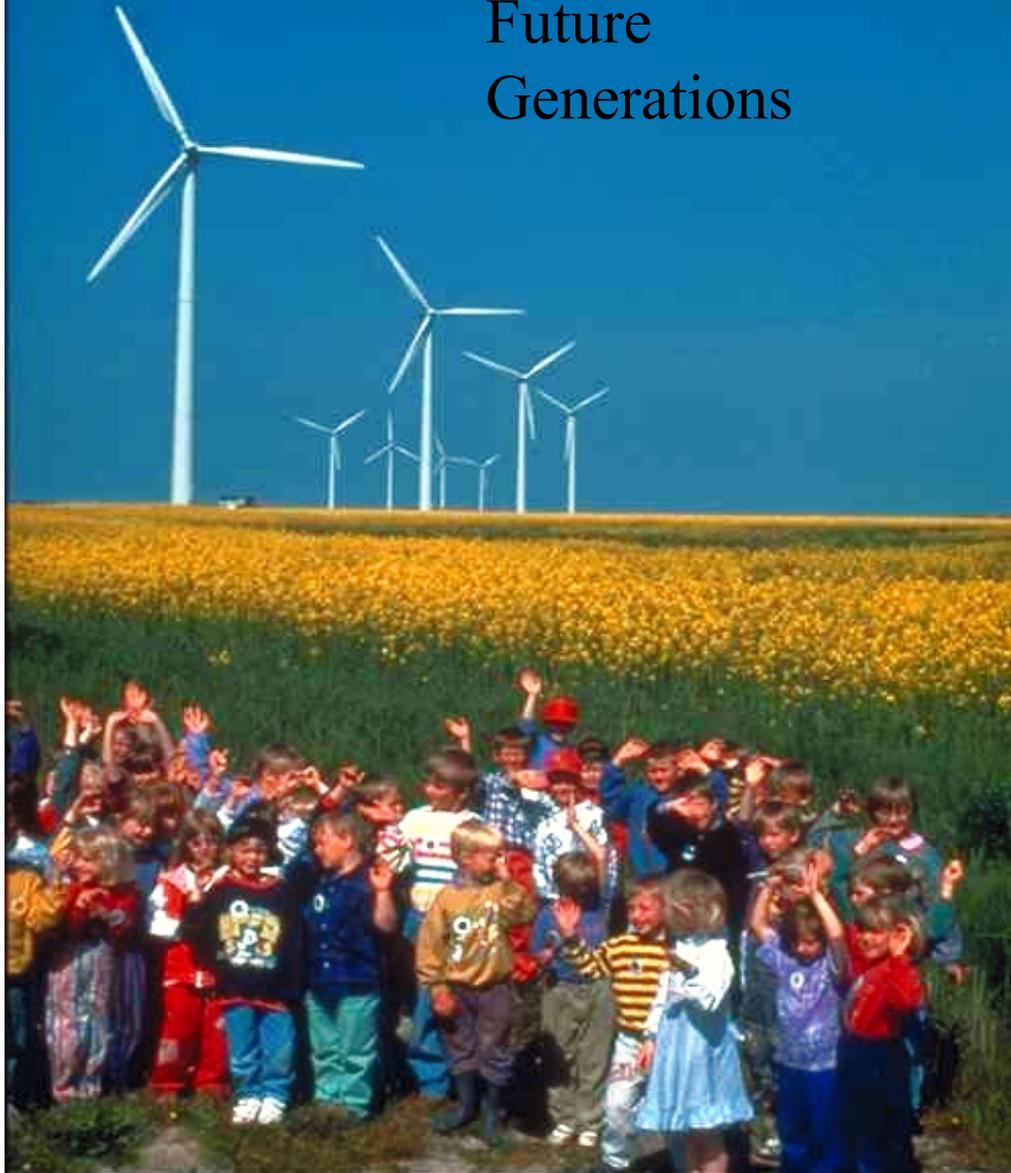
ii

Global growth in wind energy

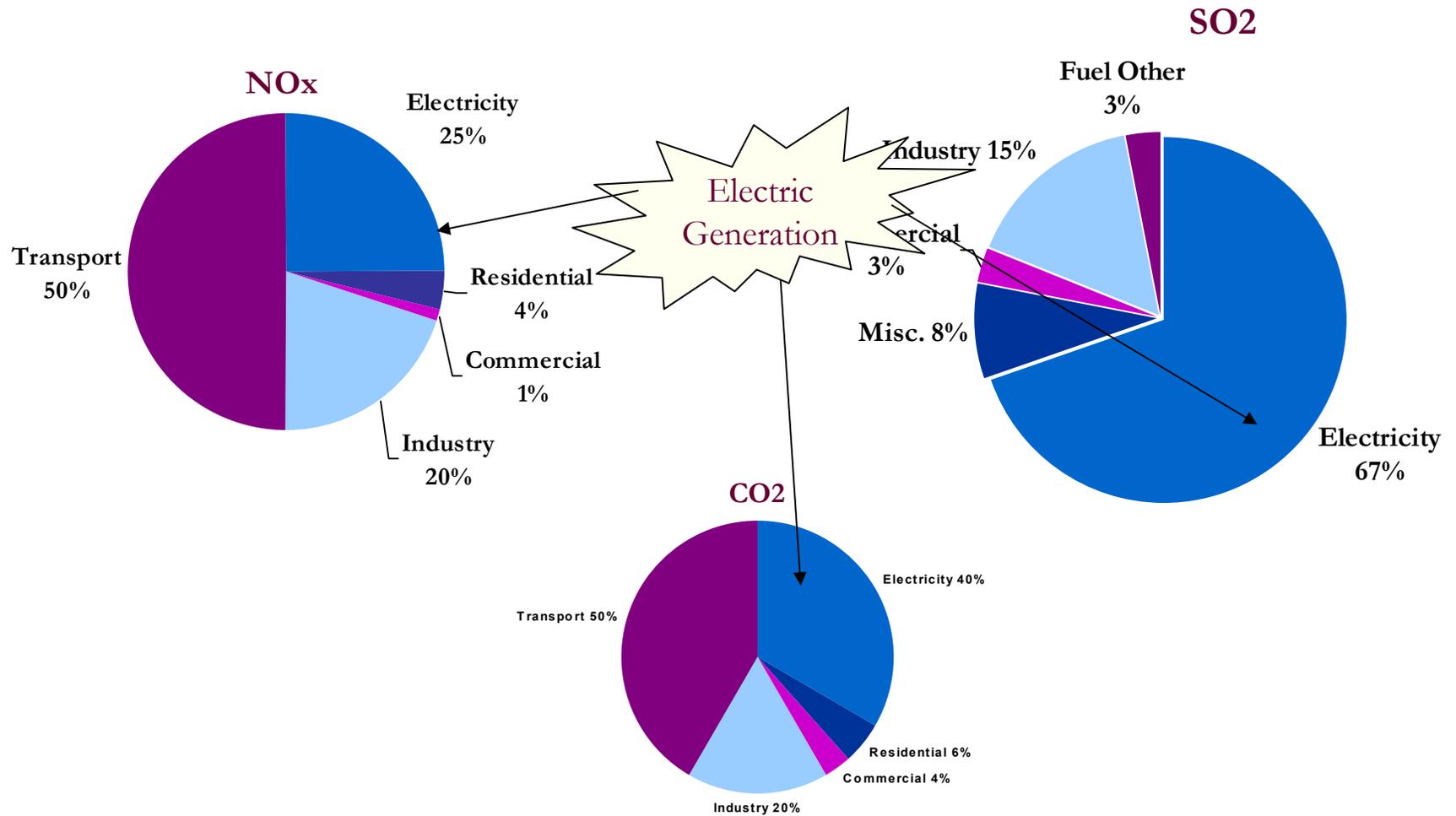


Source: World Market Update 2000  
BTM Consult

Protecting  
Prime  
Farmland for  
Future  
Generations



# Cut the Risk of Rising Emissions and Health Costs?



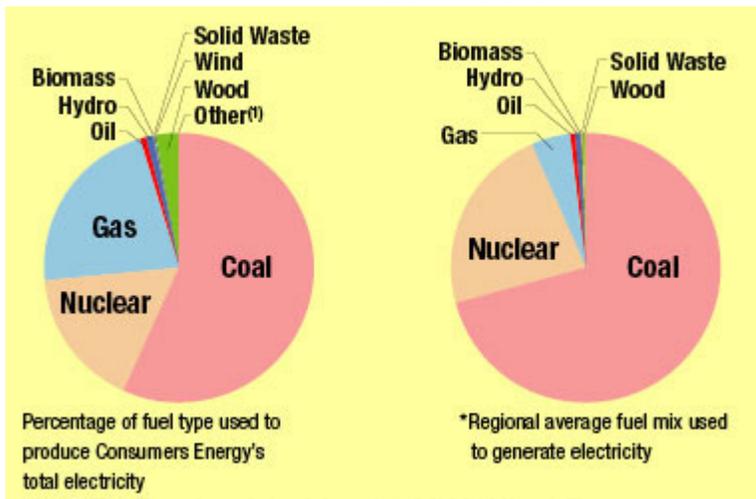
Source: EPA, 1998

# Annual Public Health & Safety Benefits of Oceana

## Wind Farm

Source: Consumers Energy

Consumers Energy Supply Profile



Pollution To Be Avoided by 35 MW Wind Farm

75 million KWh (75,000 MWh) Annually

Pollutant	Consumers Energy Annual Pounds Produced	Regional Annual Pounds Produced
Sulfur Dioxide	687,000	1,402,500
Carbon Dioxide	179,580,000	157,087,500
Oxides of Nitrogen	243,750	525,000
High-level Nuclear Waste	495 N/A	555
Mercury	Unregulated See MDEQ Mercury Task	N/A

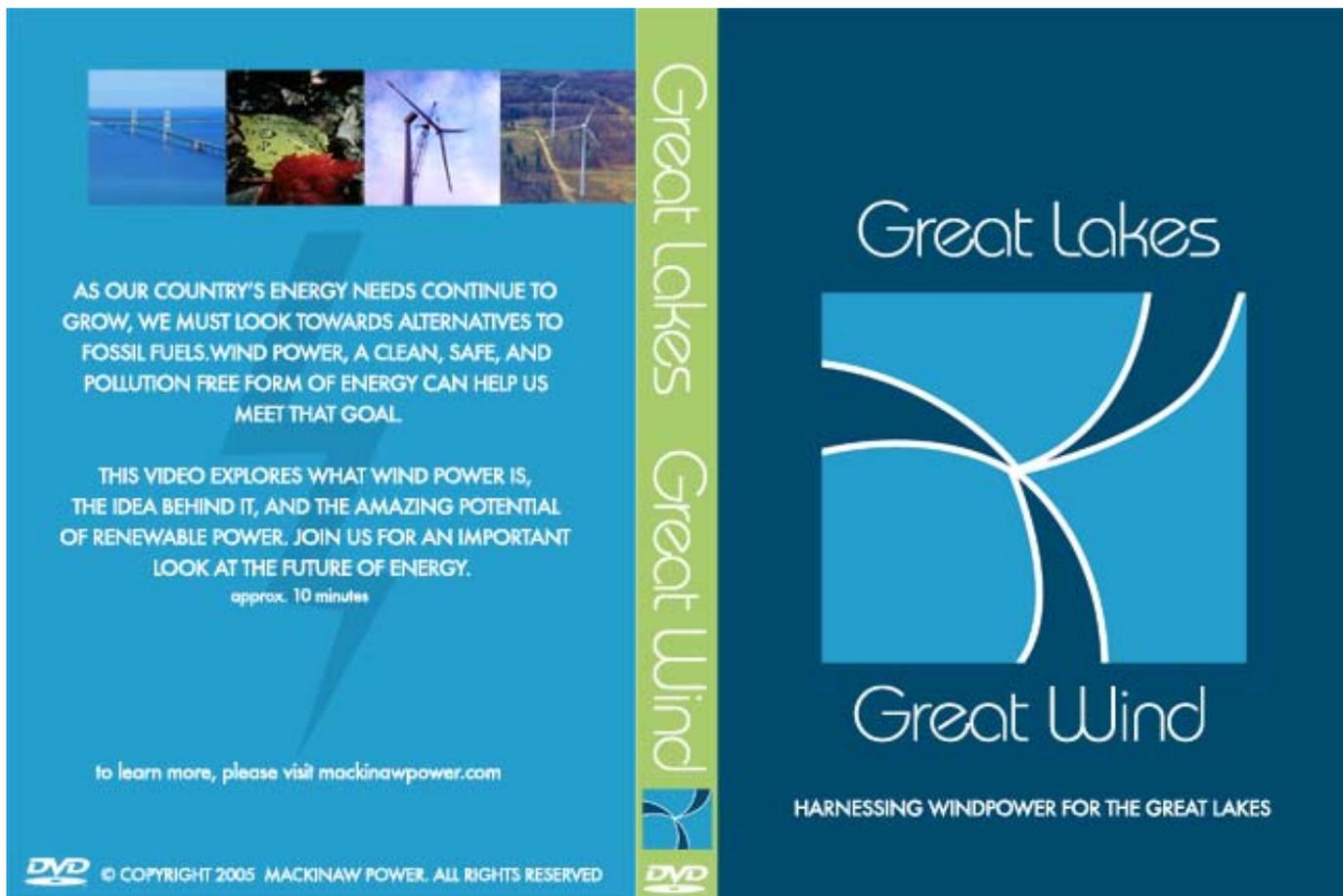
### Environmental Characteristics of Consumers Energy Electricity

APRIL 1, 2003 - MARCH 31, 2004

Fuel source	Percentage of fuel type used to produce Consumers Energy's total electricity	Regional* average fuel mix used to generate electricity
Coal	55.2%	70.4%
Nuclear	17.7%	23.1%
Gas	22.4%	4.5%
Oil	0.6%	0.6%
Hydroelectric	1.2%	0.6%
Biofuel	0%	0%
Biomass	< 0.1%	0.1%
Solar	0%	0%
Solid Waste Incineration	< 0.1%	0.2%
Wind	< 0.1%	0%
Wood	2.8%	0.4%
Other **	< 0.1%	0%

Emissions/waste in pounds per megawatt-hour	Consumers Energy's emissions/waste for fossil/nuclear generation	Regional* average emissions/waste for fossil/nuclear generation
Sulfur Dioxide	9.16	18.70
Carbon Dioxide	2329.4	2094.50
Oxides of Nitrogen	3.25	7.0
High-level Nuclear Waste <sup>***</sup>	0.0066	0.0074

# Sale of "Great Lakes, Great Wind" 2005 Video by Ben Vander Veen Results in a Contribution to the Straits Area Community Foundation





## How does energy touch our daily lives?

Look closer.



### Wind Power

A single wind turbine can measure 40 stories high and generate enough electricity to power 1,000 homes



### Solar Energy

Every hour, the sun showers Earth with more energy than the world's population uses in a whole year.



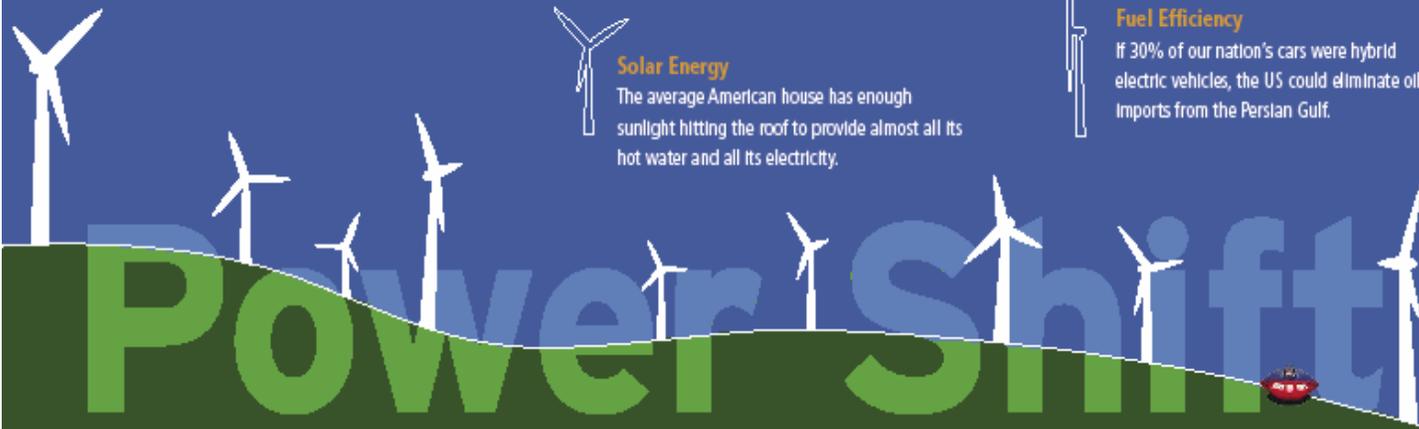
### Solar Energy

The average American house has enough sunlight hitting the roof to provide almost all its hot water and all its electricity.



### Fuel Efficiency

If 30% of our nation's cars were hybrid electric vehicles, the US could eliminate oil imports from the Persian Gulf.



### Energy Efficiency

If every household in the US replaced one light bulb with a CFL, it would be equal to avoiding the pollution of 1 million cars.



### Green Power

Electricity generated from renewable energy sources is known as "green power." On average, every kilowatt-hour of green power prevents the emission of more than one pound of carbon dioxide into the atmosphere.



### Energy Efficiency

Energy efficient choices can save a family about one third on their energy bill with similar savings of greenhouse gas emissions.

WORLDLINK FOUNDATION  
[www.goworldlink.org](http://www.goworldlink.org)





## “Power Shift” Public Awareness Campaign for Massachusetts





## Linking Power Shift to Energy Independence and the State's Energy Future



- ❑ To create an enduring “power shift” in any state or community requires a link between education and action. The Michigan Power Shift program offers a unique opportunity to connect increased energy literacy with a discussion on how to create Michigan’s energy future.
  
- ❑ Please visit the World Link site to debate and discuss how Michigan can increase energy independence.
  
- ❑ Join the dialogue on Michigan’s energy future by adding your thoughts how to debate the policies. Check it out. Question the powers that be. Contribute your expertise to complement the Governor's recent directive to prepare a comprehensive Michigan Energy Plan by 2007.



## Wind Farms Empower the Community

“Wealth From the Wind” Community  
Economic Growth \$12 Million/35 MW

Catalyst for sustainable, 21st century  
jobs and technology

Serves Demonstrated Need: 75,000,000  
kWh = All 9,000 Oceana Homes

Increases Competitiveness: Customers  
lock in competitive, stable prices,  
2006-2026 +

Cuts risks of rising, volatile energy prices,  
national security and emissions

