

Enlightened Energy

Making Smart Decisions about our Energy Future

Our use of fossil fuels unfortunately has a time limit. One of the easiest ways to avoid a modern energy crisis is to invest in renewable energy like wind and solar. But like with any investment, we need to make smart decisions. We need to first know where the sun will shine or where the wind will blow. Not every backyard needs a wind farm, nor does every rooftop needs a solar panel. With technology making great strides, we don't need to fear green energy any more.

Green Energy Myths

"Green energy is too expensive."

1 According to the Department of Energy, the price of wind energy in 2011 was 4 cents per kilowatt-hour. In some windy locations, it was as low as 2.2 ^[1] Solar costed 7 cents per kilowatt-hour.^[2] Coal, the current cheapest energy source, is 3.5 cents per kilowatt-hour.^[3]

"Green technology is only competitive because of subsidies!"

2 All major energy sources in the U.S. receive subsidies, but some more than others. Last year coal, oil, and gas received \$553 billion, whereas renewables received \$43 billion.^[4]

"Weather is too unpredictable!"

3 As renewable sources become more widespread and connected, we can always have a station producing enough energy to keep our lives going. Texas reduced wind energy waste by 75% last year simply by adding 2,500 miles of wire to their grid.^[5]

"Oh, we're halfway there!"

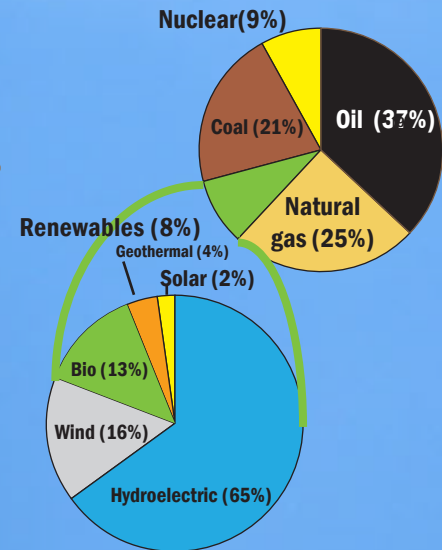
In May 2012, Germany (which is as sunny as the Pacific Northwest) produced 50% of its domestic energy using solar power.^[6]



What's going on here?

The Great Lakes, where nothing can block the wind. 50% of the U.S. population lives within 50 miles of shore, making off-shore wind a smart option.

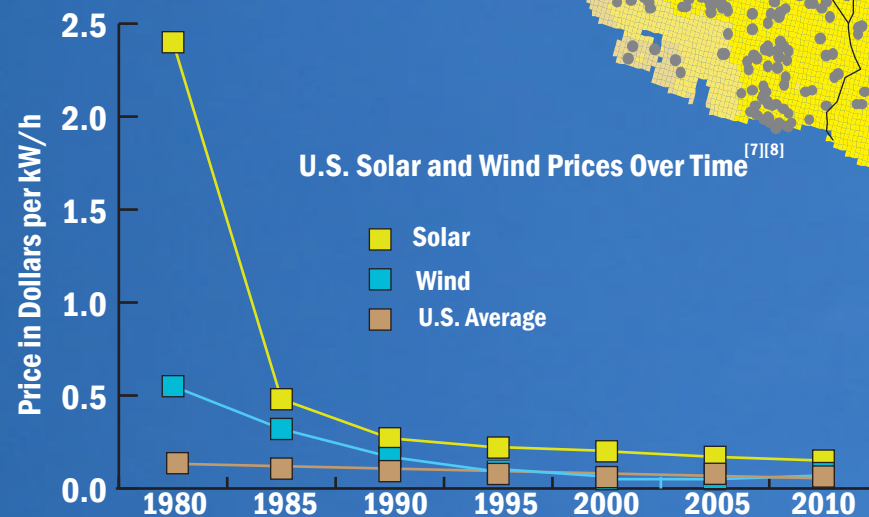
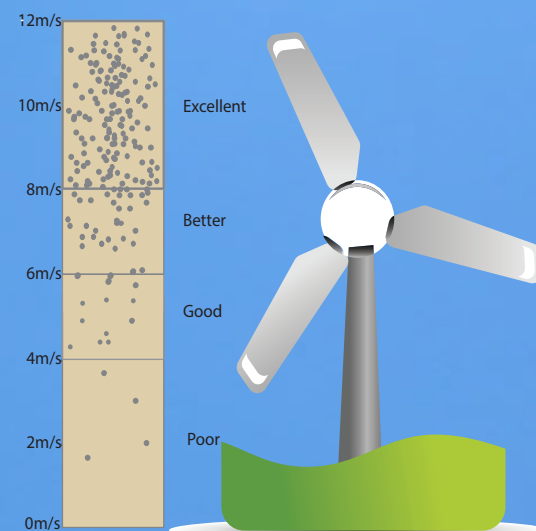
U.S. Energy Sources 2011



Solar Radiation in Watts per Square Meter

0-3	3-4	4-5	5-7	7+
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Department of Energy Wind Classes



Graphic Data Sources:

- http://www1.eere.energy.gov/wind/pdfs/2012_wind_technologies_market_report.pdf
- <http://www1.eere.energy.gov/solar/pdfs/51190.pdf>
- <http://www.renewableenergyaccess.com/rea/news/story?id=35854>
- <http://www.bloomberg.com/news/2010-07-29/fossil-fuel-subsidies-are-12-times-support-for-renewables-study-shows.html>
- <http://online.wsj.com/news/articles/SB10001424127887324432404579052900100464562>
- <http://www.reuters.com/article/2012/05/26/us-climate-germany-solar-idUSBRE84P0FI20120526>
- <http://www.awea.org/Resources/Content.aspx?ItemNumber=5547>
- <http://www.abakus-solar.us/blog/misconception-of-solar-energy-price/>
- <http://www.eia.gov/totalenergy/data/monthly/pdf/mer.pdf>

Sources:

Map Data Sources:
National Renewable Energy Laboratory
http://www.nrel.gov/gis/data_wind.html
http://www.nrel.gov/gis/data_solar.html

Created by Daniel Knuth December 2013
Geography 370 Final Project
Map: Lambert Equal Area Conic Projection
Standard Parallels: 33°N 45°N
Standard Meridian: 96°W