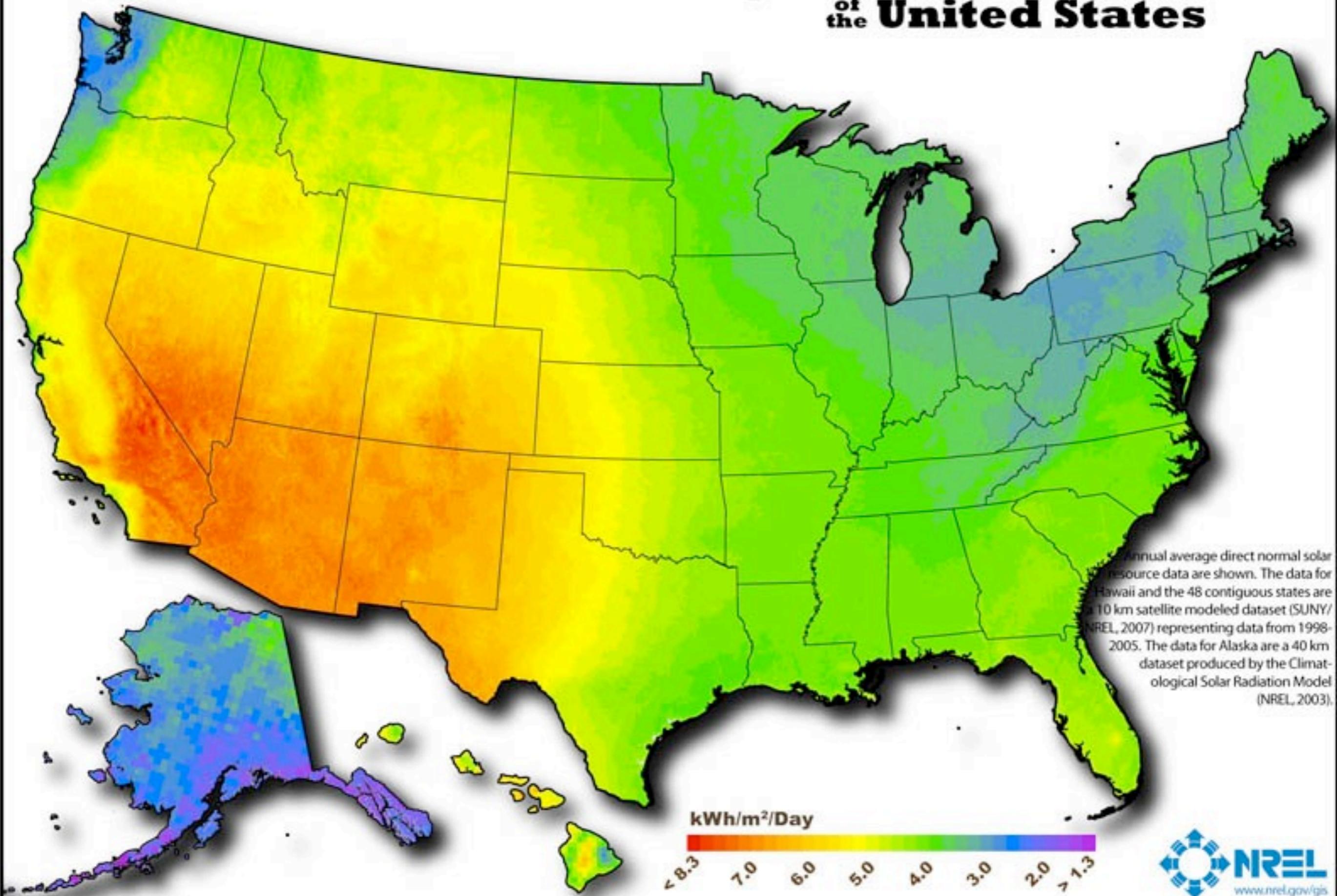




***Asia-Pacific Energy
Regulators Forum***

***August 2, 2012
Washington, D.C.***

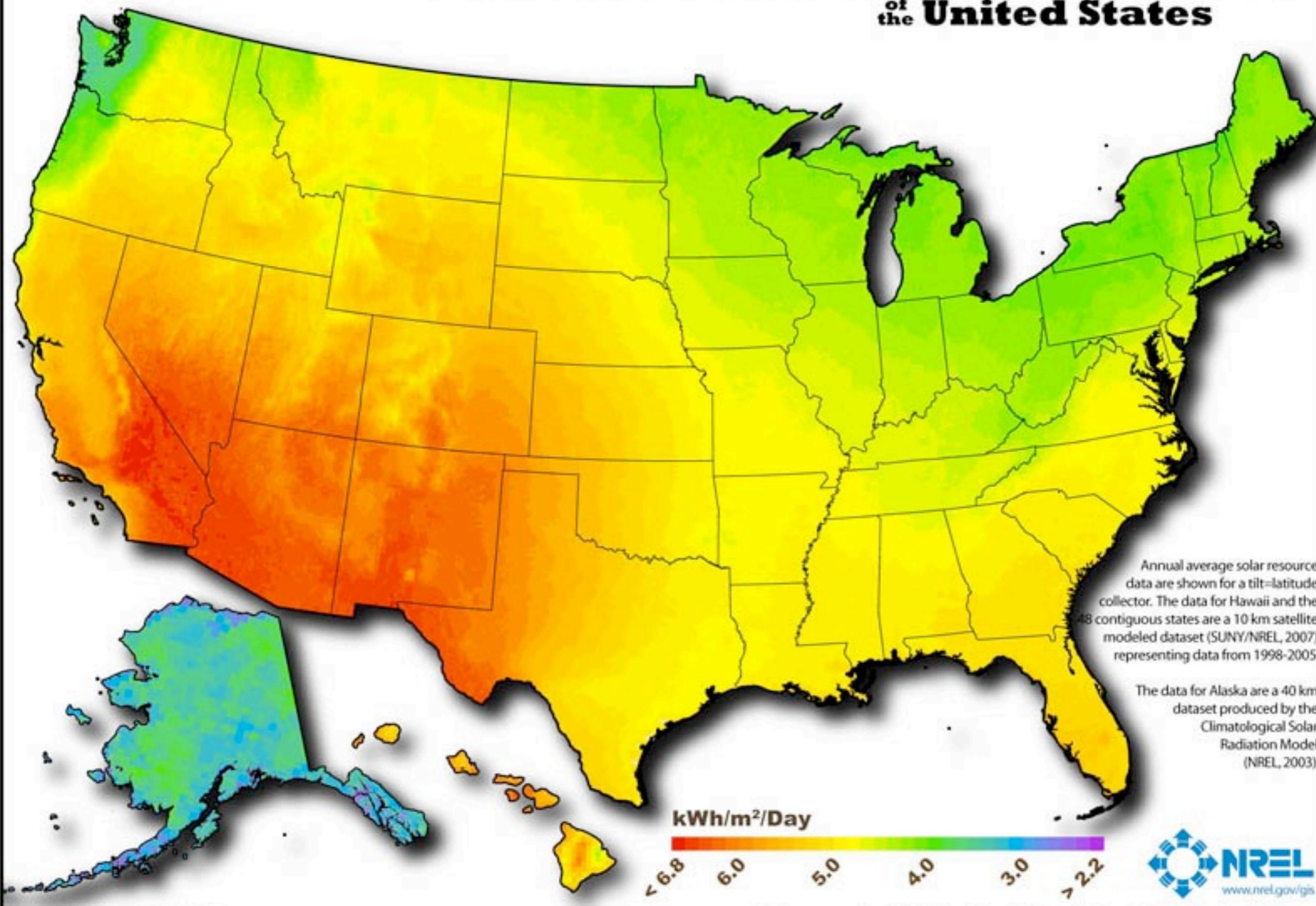
Concentrating Solar Resource of the United States



Author : Billy Roberts - October 20, 2008

This map was produced by the National Renewable Energy Laboratory for the U.S. Department of Energy.

Photovoltaic Solar Resource of the United States



Annual average solar resource data are shown for a tilt=latitude collector. The data for Hawaii and the 48 contiguous states are a 10 km satellite modeled dataset (SUNY/NREL, 2007) representing data from 1998-2005.

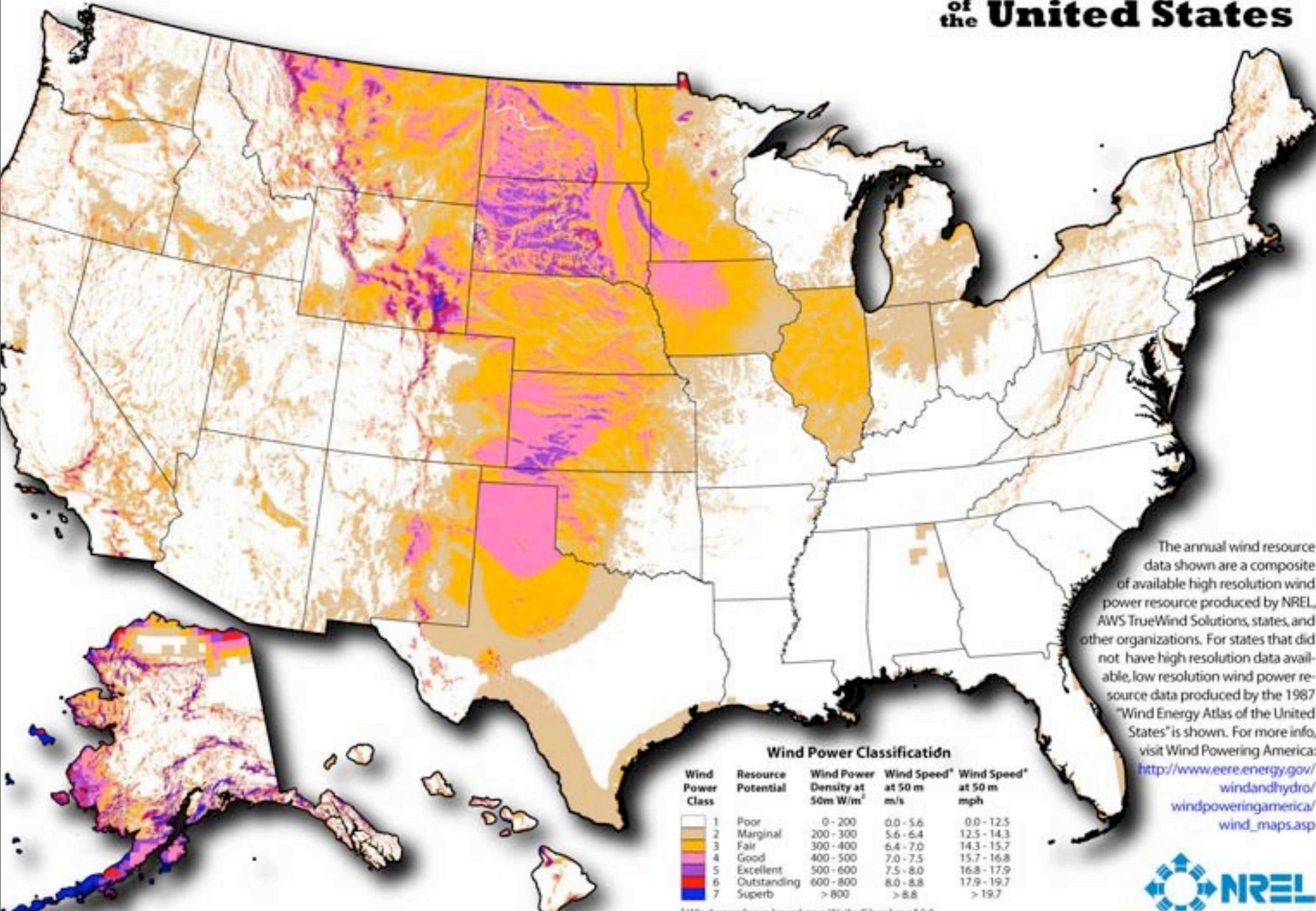
The data for Alaska are a 40 km dataset produced by the Climatological Solar Radiation Model (NREL, 2003).



This map was produced by the National Renewable Energy Laboratory for the U.S. Department of Energy.

Author : Billy Roberts - October 20, 2008

Wind Resource (50m) of the United States



The annual wind resource data shown are a composite of available high resolution wind power resource produced by NREL, AWS TrueWind Solutions, states, and other organizations. For states that did not have high resolution data available, low resolution wind power resource data produced by the 1987 "Wind Energy Atlas of the United States" is shown. For more info, visit Wind Powering America: http://www.eere.energy.gov/windandhydro/windpoweringamerica/wind_maps.asp

Wind Power Classification

Wind Power Class	Resource Potential	Wind Power Density at 50m W/m ²	Wind Speed* at 50 m m/s	Wind Speed* at 50 m mph
1	Poor	0 - 200	0.0 - 5.6	0.0 - 12.5
2	Marginal	200 - 300	5.6 - 6.4	12.5 - 14.3
3	Fair	300 - 400	6.4 - 7.0	14.3 - 15.7
4	Good	400 - 500	7.0 - 7.5	15.7 - 16.8
5	Excellent	500 - 600	7.5 - 8.0	16.8 - 17.9
6	Outstanding	600 - 800	8.0 - 8.8	17.9 - 19.7
7	Superb	> 800	> 8.8	> 19.7



Total Installed PV System Prices and Costs of Electricity (Global Avg)

Year	System Price (\$/w)	LCOE Range (cents/kwh)
2007	\$7.20	28 - 47
2008	\$7.00	27 - 45
2009	\$5.12	20 - 34
2010	\$4.55	18 - 30
2011	\$3.47	14 - 23
2012*	\$2.69	11 - 19
2013*	\$2.43	10 - 17
2014*	\$2.19	9 - 15
2015*	\$2.02	8 - 14
2016*	\$1.87	7 - 14
2017*	\$1.73	7 - 13
2018*	\$1.60	6 - 12
2019*	\$1.48	6 - 11
2020*	\$1.37	6 - 10
2021*	\$1.28	5 - 10

LCOE – Levelized Cost of Electricity

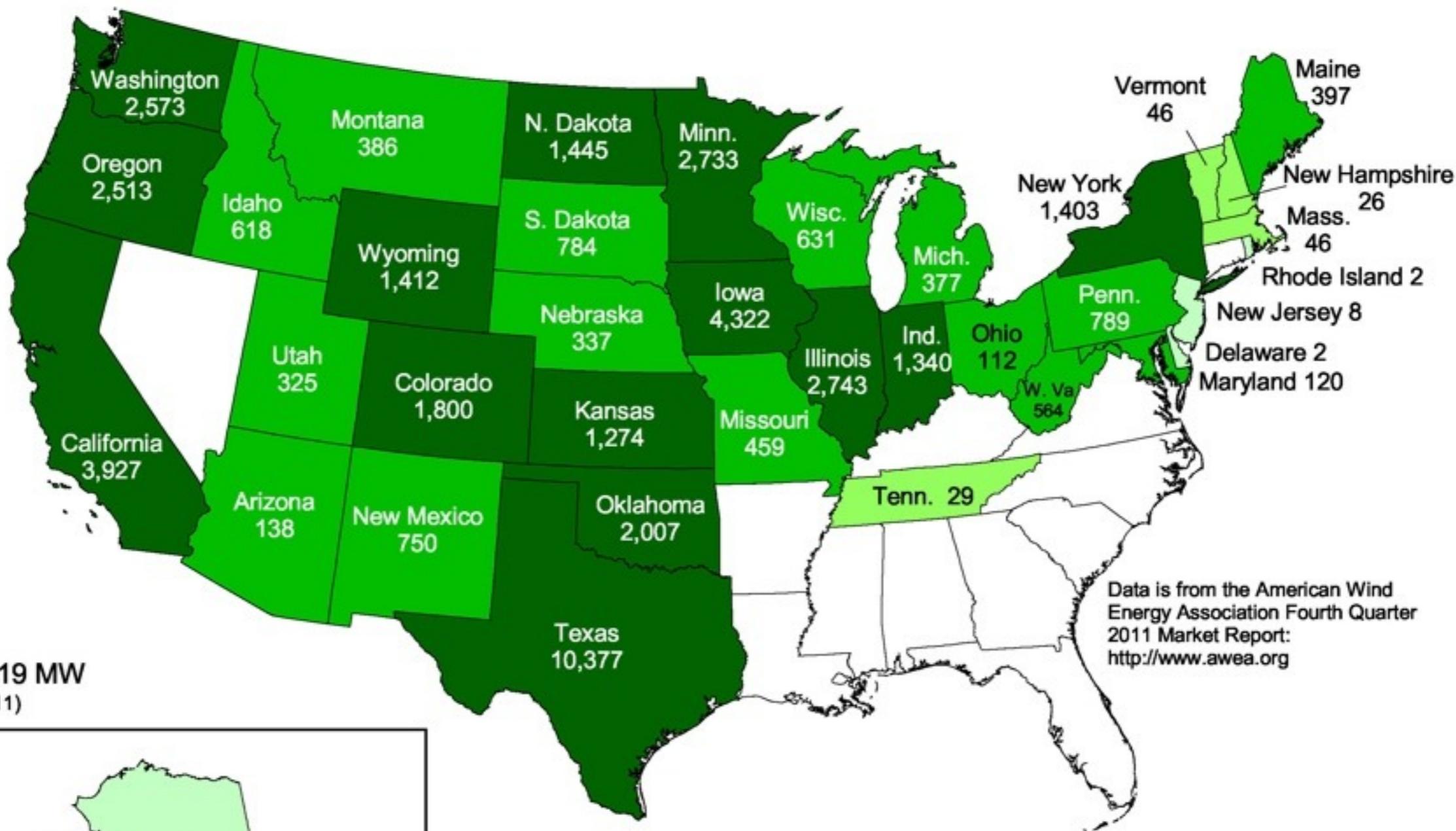
Source: Clean Edge, Inc. 2012 (*estimated)

Total Installed Wind System Prices and Costs of Electricity (US)

Year	LCOE Range (cents/kwh)
2002-2003	\$.038 to \$.058
2009-2010	\$.058 to \$.075
2012-2013	\$.036 to \$.042

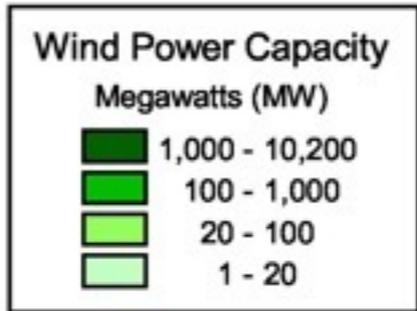
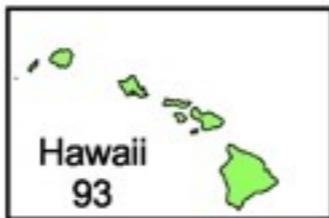
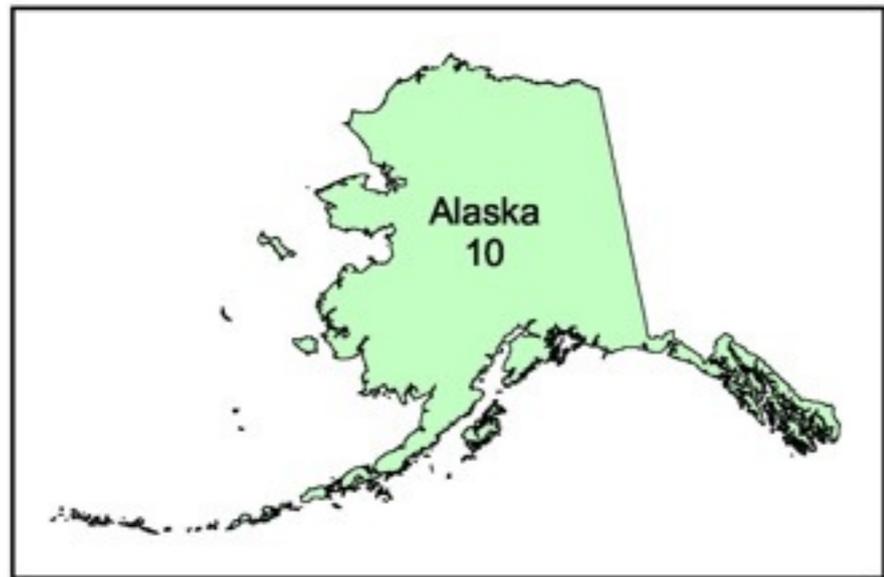
Source: NREL Wind Energy Report 2012

2011 Year End Wind Power Capacity (MW)

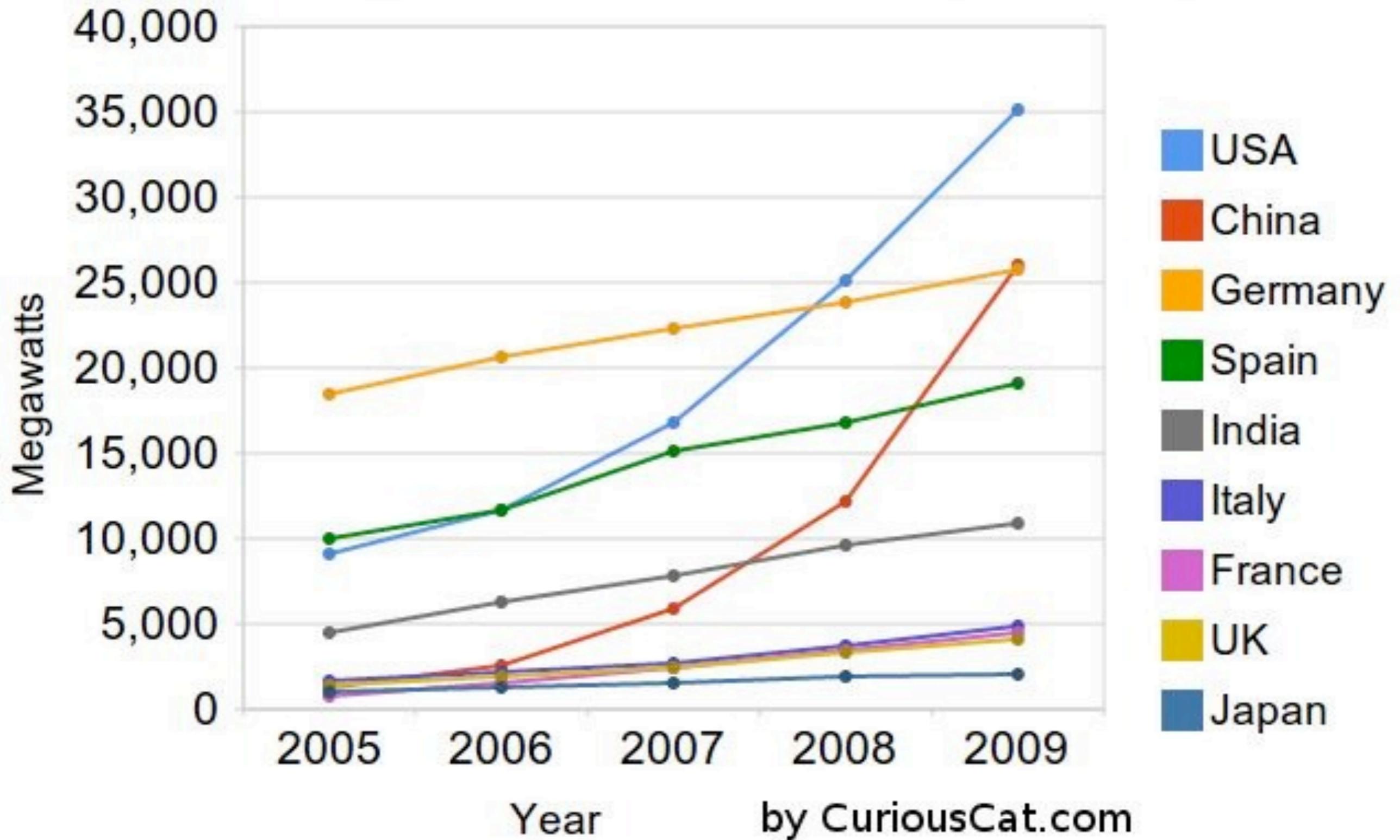


Total: 46,919 MW
(As of 12/31/2011)

Data is from the American Wind Energy Association Fourth Quarter 2011 Market Report: <http://www.awea.org>



Global Installed Wind Capacity 2005-2009



Integrated Solution Strategies
for Coordinated Wind Power
and Grid Development

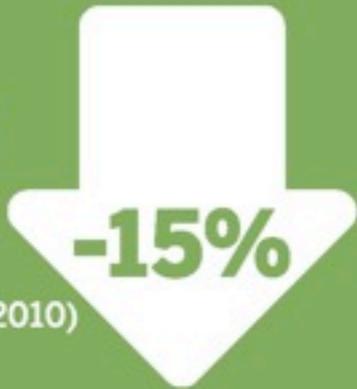
- International Experience and China Practices

State Grid Energy Research Institute

Vestas Wind Technology (China) Co., Ltd

U.S. SOLAR INDUSTRY INDICATORS
FOR THE FIRST QUARTER OF 2011

SOLAR SYSTEM PRICE



(VS. Q1 2010)

NEW SOLAR PV INSTALLATIONS



INSTALLED SOLAR
2.85GW ENOUGH TO POWER 570,000 CUMULATIVE TYPICAL HOMES



UNDER CONSTRUCTION
1.1GW CONCENTRATING SOLAR POWER ENOUGH TO POWER 220,000 TYPICAL HOMES



TOTAL GROWTH OF U.S. SOLAR MARKET FROM '09-'10 (BY REVENUE)



100,000 U.S. SOLAR INDUSTRY JOBS

MORE JOBS THAN U.S. STEEL PRODUCTION (ACCORDING TO SOLAR ENERGY INDUSTRIES ASSOCIATION; BUREAU OF LABOR STATISTICS)



MANUFACTURING GROWTH

(YEAR-OVER-YEAR; THE FEDERAL RESERVE)



TOP 10 SOLAR STATES

	Q1 2011	Q1 2010	CHANGE IN RANK
CA	1	1	—
NJ	2	2	—
AZ	3	3	—
PA	4	8	▲4
CO	5	5	—
NY	6	7	▲1
MA	7	9	▲2
MD	8	16	▲8
OR	9	13	▲4
TX	10	15	▲5

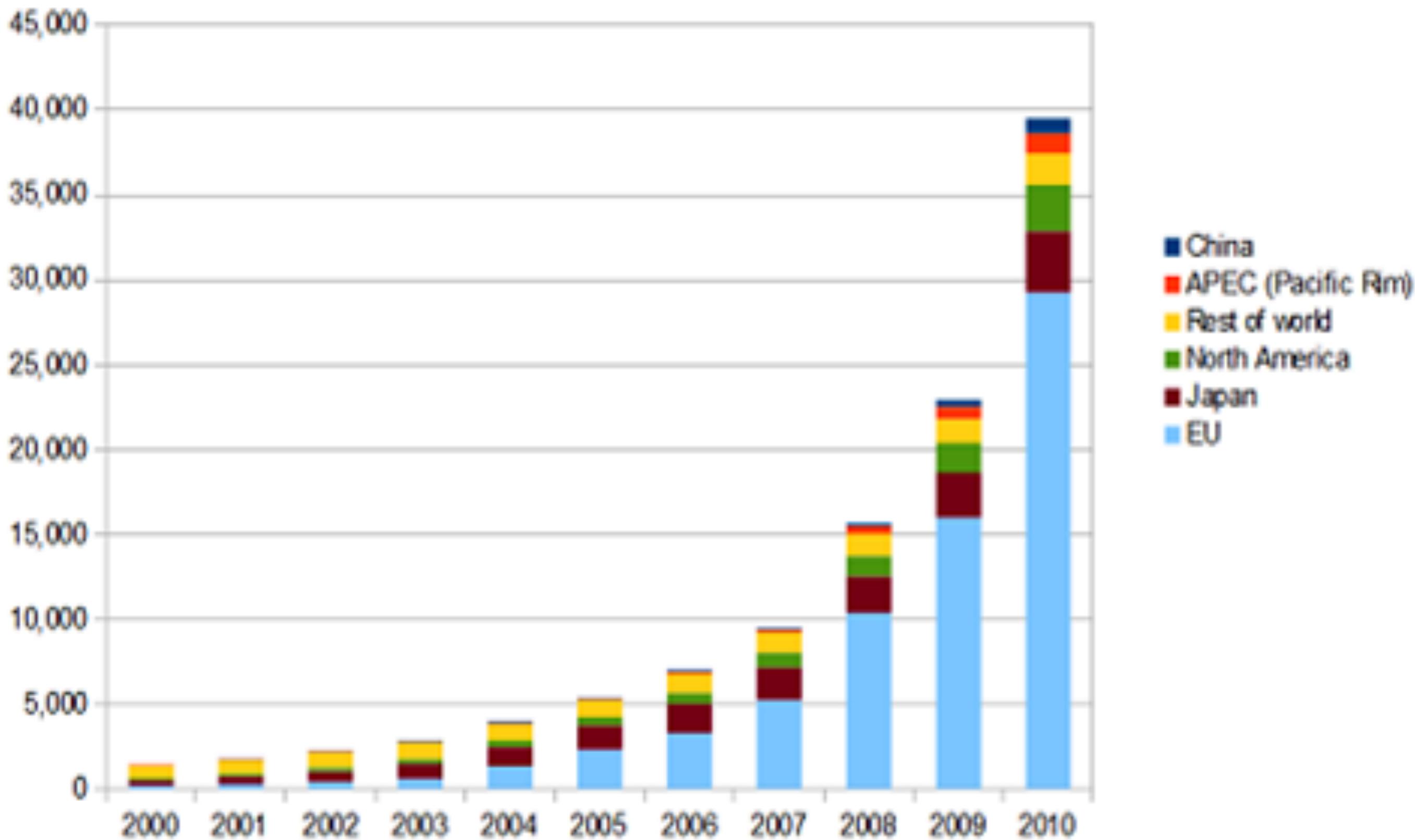
Q1 2011 vs. Q1 2010

Global Clean Energy Market Size

Year	Solar PV Global Market Sz. (in \$Billions)	Wind Power Global Market Sz. (in \$Billions)	Biofuels Global Market Sz. (in \$Billions)
2000	\$2.5	\$4.0	N/A
2001	\$3.0	\$4.6	N/A
2002	\$3.5	\$5.5	N/A
2003	\$4.7	\$7.5	N/A
2004	\$7.2	\$8.0	N/A
2005	\$11.2	\$11.8	\$15.7
2006	\$15.6	\$17.9	\$20.5
2007	\$20.3	\$30.1	\$25.4
2008	\$29.6	\$51.4	\$34.8
2009	\$36.1	\$63.5	\$44.9
2010	\$71.2	\$60.5	\$56.4
2011	\$91.6	\$71.5	\$83.0

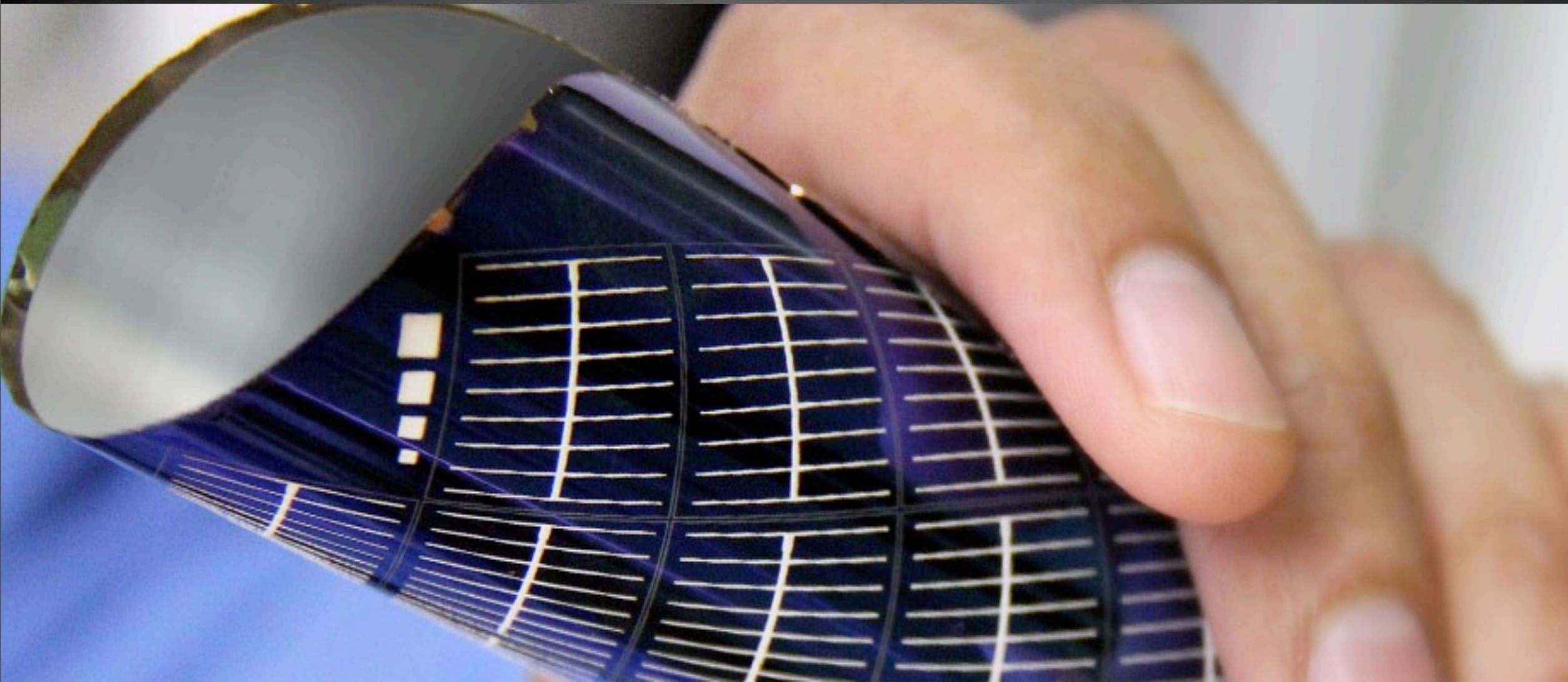
Global Cumulative Installed PV Solar Capacity

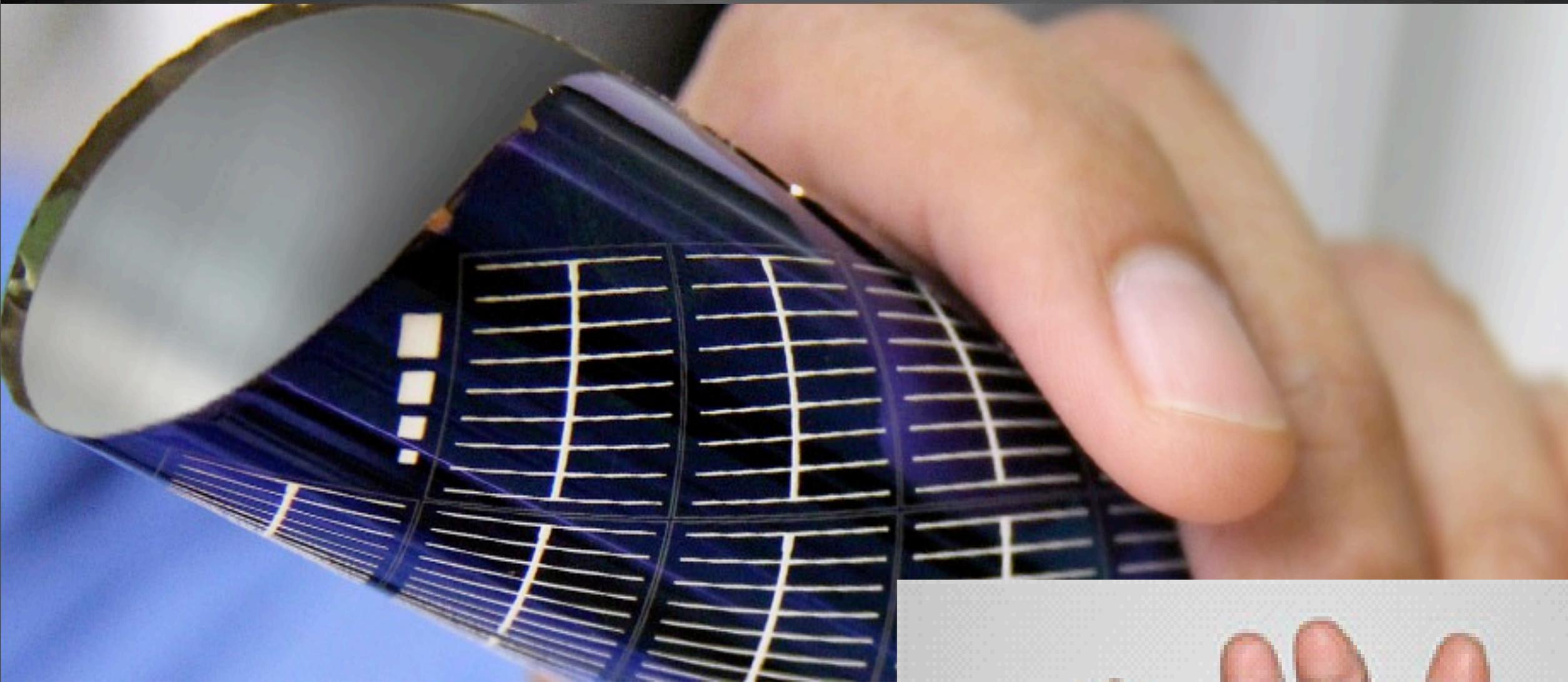
Source: EPIA data





Source: NREL







Monday, August 6, 2012



Source: AirForce Times



Source: AirForce Times



Source: CleanTechnica



Source: BrightSource Energy



