NEW US WIND ENERGY POTENTIAL ESTIMATES

Background and Explanation of Changes from Prior Estimates

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Estimates of Windy[1] Land Area and Wind Energy Potential, by State, for areas >= 40% Capacity Factor at 80m

February 4, 2010 (updated April 13, 2011 to add Alaska and Hawaii)

These estimates show, for each of the 50 states and the total U.S., the windy land area with a gross capacity factor (without losses) of 40% and greater at 80-m height above ground and the wind energy potential that could be possible from development of the "available" windy land area after exclusions. The "Installed Capacity" shows the potential megawatts (MW) of rated capacity that could be installed on the available windy land area, and the "Annual Generation" shows annual wind energy generation in gigawatt-hours (GWh) that could be produced from the installed capacity. AWS Truewind, LLC developed the wind resource data for windNavigator® (http://navigator.awstruewind.com) with a spatial resolution of 200 m. NREL produced the estimates of windy land area and windy energy potential, including filtering the estimates to exclude areas unlikely to be developed such as wilderness areas, parks, urban areas, and water features (see Wind Resource Exclusion Table for more detail).

	Windy Land Area >= 40% Gross Capacity Factor at 80m					Wind Energy Potential	
State	Total (km^2)	Excluded[2] (km^2)	Available (km^2)	Available % of State	% of Total Windy Land Excluded	Installed Capacity[3] (MW)	Annual Generation (GWh)
Alabama	3.2	3.2	0.0	0.00%	100.0%	0.0	0
Alaska	159,215.7	130,223.5	28,992.2	1.93%	81.8%	144,960.9	580,479
Arizona	47.9	40.4	7.4	0.00%	84.5%	37.2	135
Arkansas	194.6	145.7	48.9	0.04%	74.9%	244.4	901
California	4,035.0	2,986.3	1,048.7	0.26%	74.0%	5,243.5	20,543
Colorado	33,040.8	6,225.2	26,815.6	9.95%	18.8%	134,078.1	507,885
Connecticut	0.0	0.0	0.0	0.00%	0.0%	0.2	1
Delaware	0.0	0.0	0.0	0.00%	N/A	0.0	0
Florida	0.0	0.0	0.0	0.00%	N/A	0.0	0
Georgia	27.2	26.0	1.2	0.00%	95.6%	6.0	22
Hawaii	2,379.2	1,987.9	391.3	2.35%	83.6%	1,956.4	8,474
Idaho	2,121.0	1,948.8	172.2	0.08%	91.9%	861.0	3,294
Illinois	1,001.5	101.2	900.2	0.62%	10.1%	4,501.2	15,942
Indiana	1,396.6	210.4	1,186.3	1.27%	15.1%	5,931.4	21,387
Iowa	72,119.2	8,400.1	63,719.0	43.72%	11.6%	318,595.1	1,232,860
Kansas	163,169.6	11,104.9	152,064.8	71.36%	6.8%	760,323.9	3,024,280
Kentucky	0.0	0.0	0.0	0.00%	N/A	0.0	0
Louisiana	0.0	0.0	0.0	0.00%	N/A	0.0	0
Maine	856.8	633.3	223.4	0.27%	73.9%	1,117.2	4,411

Capacity Factor

← 44%

← 45%

NREL

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State	Total (km^2)	Excluded[2] (km^2)	Available (km^2)	Available % of State	% of Total Windy Land Excluded	Installed Capacity[3] (MW)	Annual Generation (GWh)
Maryland	6.0	3.6	2.4	0.01%	60.0%	12.0	43
Massachusetts	267.1	203.0	64.1	0.31%	76.0%	320.7	1,237
Michigan	432.2	353.4	78.8	0.05%	81.8%	394.0	1,420
Minnesota	41,476.1	6,439.9	35,036.2	16.05%	15.5%	175,181.0	681,616
Mississippi	0.0	0.0	0.0	0.00%	N/A	0.0	0
Missouri	1,507.3	144.1	1,363.2	0.76%	9.6%	6,815.9	24,672
Montana	98,308.5	18,737.2	79,571.4	20.91%	19.1%	397,856.8	1,529,560
Nebraska	165,445.2	10,012.2	155,433.0	77.58%	6.1%	777,165.0	3,084,090
Nevada	267.1	223.2	43.9	0.02%	83.6%	219.6	810
New Hampshire	421.6	340.6	81.0	0.34%	80.8%	404.8	1,593
New Jersey	0.4	0.4	0.0	0.00%	100.0%	0.0	0
New Mexico	39,573.8	2,424.7	37,149.1	11.80%	6.1%	185,745.3	712,877
New York	934.8	801.3	133.4	0.11%	85.7%	667.1	2,560
North Carolina	149.4	132.2	17.2	0.01%	88.5%	86.0	337
North Dakota	160,496.5	21,932.3	138,564.2	75.78%	13.7%	692,821.1	2,728,620
Ohio	45.1	44.9	0.2	0.00%	99.6%	0.8	3
Oklahoma	55,593.0	6,038.4	49,554.6	27.37%	10.9%	247,773.2	952,678
Oregon	2,969.1	2,527.8	441.3	0.18%	85.1%	2,206.6	8,439
Pennsylvania	85.0	55.3	29.6	0.03%	65.1%	148.2	546

← 41%