

Solar Potential vs. Residential Electric Load



	Solar Technical Potential	Estimated Residential Potential	Residential Electric Use	Plus gas Space heat	Plus gas Water heat	Solar Percent				
						current res. use	with 30% EE	add elec SH+WH, no EE	with 30% EE	
Arizona	22.736	16.143	32	1	1	50%	72%	47%	67%	>75%
California	106.411	75.552	84	13	13	90%	128%	69%	98%	50-74%
Colorado	16.162	11.475	14	7	3	81%	115%	48%	68%	
NM & Nevada	17.28	12.269	18	3	2	69%	99%	56%	80%	
Florida	63.987	45.431	104	0	1	44%	63%	43%	62%	
Georgia	31.116	22.092	52	5	3	43%	61%	37%	53%	
Tennessee	19.685	13.976	37	3	1	38%	54%	34%	49%	
Texas	78.717	55.889	122	8	7	46%	66%	41%	59%	
Virginia	22.267	15.810	43	4	2	37%	53%	32%	46%	
Carolinas	42.833	30.411	76	7	2	40%	58%	36%	52%	
Massachusetts	11.723	8.323	17	5	1	48%	69%	37%	53%	
New Jersey	15.768	11.195	28	14	5	40%	57%	24%	34%	
New York	28.78	20.434	47	29	8	43%	62%	24%	35%	
Pennsylvania	22.215	15.773	51	15	4	31%	44%	23%	32%	
Illinois	30.086	21.361	49	21	6	43%	62%	28%	40%	
Michigan	23.528	16.705	33	18	5	50%	72%	30%	42%	
Missouri	16.16	11.474	32	6	2	36%	51%	28%	41%	
Wisconsin	13.939	9.897	20	8	2	50%	72%	33%	47%	
Indiana/Ohio	47.215	33.523	79	23	6	43%	61%	31%	44%	
Kansas/Nebraska	14.299	10.152	19	6	2	53%	75%	38%	54%	
Covers 23 states						2 > 75%	4 > 75%	0 > 75%	2 > 75%	
						7 > 50%	19 > 50%	1 > 50%	10 > 50%	

Notes:
 Solar technical potential from National Renewable Energy Laboratory, www.nrel.gov/docs/fy12osti/51946.pdf.
 Residential potential is 71% of total potential based on ratio of residential to building PV projected for 2040 in AEO16.
 Current residential electric use by state from EIA Residential Energy Consumption Survey, <http://www.eia.gov/consumption/residential/data/2009/index.cfm?view=consumption>.
 Our analysis assumes all homes with a solar technical potential can and do install solar.
 For heat pump cases, our analysis assumes all homes with natural gas, propane and fuel oil for space and water heat can and do install heat pumps.
 For heat pump cases we assume a heat pump COP of 2 and a power plant heat rate of 7000 Btu/kWh (based on an efficient combined cycle gas plant)