

### National Renewable Energy Laboratory Scenario Results

Projected Natural Gas Generation — Incremental Technology Improvement Scenario with 80 Percent Renewable Generation by 2050 (2014 Update)

Year	Natural Gas Combustion Turbine (GWh)	Natural Gas Combined Cycle (GWh)
2010	34,149,800	727,507,822
2012	57,766,058	1,207,868,752
2014	33,468,155	968,993,420
2016	30,942,710	990,657,627
2018	29,221,077	925,178,724
2020	22,619,362	851,945,824
2022	20,814,186	776,221,170
2024	18,514,572	735,520,981
2026	15,235,974	706,566,797
2028	11,610,264	711,170,587
2030	8,454,245	703,931,812
2032	7,289,053	711,447,906
2034	6,799,020	715,635,178
2036	6,060,485	697,276,112
2038	6,295,832	693,452,578
2040	5,924,304	610,520,053
2042	5,939,494	580,993,432
2044	6,782,280	505,359,365
2046	5,672,248	446,400,082
2048	6,288,081	402,828,839
2050	5,598,320	348,071,351

Source: NREL, *Renewable Electricity Futures Study (2014 Update)*,  
[http://www.nrel.gov/analysis/re\\_futures/](http://www.nrel.gov/analysis/re_futures/).

National Renewable Energy Laboratory Scenario Results  
 Projected Generation Capacity (GW) — Incremental Technology Improvement Scenario with 80 Percent Renewable Generation by 2050 (2014 Update)

state	year	hydro	gas_ct	gas_cc	coal	nuclear	geothermal	biomass	rooftop_pv	utility_pv	csp	onshore_wind	offshore_wind	storage	interruptible_load
Alabama	2050	4,309	1,804	9,141	6,167	860	0	2,104	373	7,681	0	4,295	0	2,006	1,491,919
Arizona	2050	5,993	3,005	8,514	161	3,937	0	65	6,709	2,134	14,400	13,938	0	1,648	1,967,621
Arkansas	2050	3,307	379	4,833	546	1,007	0	1,009	118	1,197	0	1,305	0	1,288	442,911
California	2050	13,153	8,646	14,354	0	2,240	14,794	1,091	19,778	1,676	2,671	25,349	166	13,244	3,633,985
Colorado	2050	1,482	2,883	2,005	0	0	0	14	3,411	133	1,365	11,046	0	6,930	860,427
Connecticut	2050	211	2,874	1,675	146	1,237	0	222	1,453	3,057	0	171	0	31	1,056,401
Delaware	2050	0	717	1,653	0	0	0	11	444	25	0	112	1,517	480	143,849
Florida	2050	176	11,308	30,406	799	853	0	1,389	7,816	29,622	1,513	0	22,864	1,647	5,302,574
Georgia	2050	2,567	7,321	5,388	6,484	5,615	0	2,582	1,148	5,934	0	0	13,548	1,855	1,844,995
Idaho	2050	5,178	416	258	3	0	10	85	70	0	0	4,171	0	0	283,164
Illinois	2050	1,169	14,795	3,140	0	8,082	0	121	560	1,063	0	16,651	0	6,952	1,031,388
Indiana	2050	500	6,243	2,444	7,563	0	0	1,487	422	1,594	0	12,966	0	1,540	833,815
Iowa	2050	924	1,135	1,014	0	0	0	17	656	0	0	9,080	0	3,428	373,399
Kansas	2050	1,876	2,557	0	0	1,184	0	14	720	77	0	48,427	0	6,212	1,726,226
Kentucky	2050	3,279	4,764	126	8,612	0	0	1,949	148	4,029	0	0	0	0	1,233,897
Louisiana	2050	1,304	1,380	6,900	0	984	0	1,280	941	1,998	0	7,978	3,480	0	874,342
Maine	2050	1,207	144	1,500	0	0	0	652	358	0	0	4,605	0	0	171,523
Maryland	2050	869	2,575	2,059	183	0	0	207	1,133	575	0	3,866	4,252	893	646,222
Massachusetts	2050	358	3,638	3,363	403	0	0	344	971	77	0	1,580	5,887	1,540	580,311
Michigan	2050	2,944	12,990	4,663	1	1,120	0	457	805	0	0	36,671	934	13,694	1,665,252
Minnesota	2050	458	3,074	2,023	0	0	0	412	509	1	0	9,176	0	6,962	541,423
Mississippi	2050	1,233	1,334	5,845	430	1,265	0	1,378	133	3,937	0	466	0	0	763,621
Missouri	2050	2,782	4,269	1,881	1,090	1,240	0	397	1,084	1,993	0	3,884	0	4,135	1,005,279
Montana	2050	4,274	185	0	0	0	0	2	223	0	0	8,500	0	828	314,504
Nebraska	2050	1,466	990	402	0	0	0	4	343	76	0	5,770	0	2,340	308,418
Nevada	2050	35	1,001	3,489	0	0	2,189	14	2,897	270	2,803	2,457	0	1,900	698,908
New Hampshire	2050	863	88	1,203	0	1,245	0	163	104	16	0	1,457	0	0	95,092
New Jersey	2050	162	9,843	2,414	1	2,333	0	185	1,526	1,889	0	479	10,925	3,996	1,124,428
New Mexico	2050	489	863	1,436	207	0	102	43	890	483	4,719	29,011	0	6,260	1,428,276
New York	2050	5,952	11,719	5,310	622	1,151	0	1,576	6,373	40	0	13,606	4,055	5,314	1,692,233
North Carolina	2050	2,516	4,387	2,884	4,183	3,252	0	1,850	1,636	4,379	0	3,030	2,578	1,014	1,613,222
North Dakota	2050	822	271	0	0	0	0	0	66	0	0	51,631	0	5,332	263,069
Ohio	2050	411	9,738	3,001	2,990	1,268	0	645	379	1,561	0	19,024	0	7,646	1,579,925
Oklahoma	2050	1,797	1,069	5,980	0	0	0	58	931	0	0	18,243	0	8,332	1,039,656
Oregon	2050	6,292	124	2,030	2	0	617	236	452	20	0	10,078	218	1,100	509,046
Pennsylvania	2050	3,059	9,279	7,948	9,823	5,774	0	4,086	1,911	3,269	0	5,350	5,233	4,216	1,556,835
Rhode Island	2050	5	827	778	0	0	0	24	439	0	0	0	0	26	128,557
South Carolina	2050	1,539	3,128	2,286	93	4,418	0	482	303	2,263	0	1,008	11,483	5,650	1,700,407
South Dakota	2050	1,743	472	0	0	0	0	0	162	0	0	2,087	0	3,990	131,149
Tennessee	2050	2,922	5,672	3,176	4,085	3,512	0	1,659	331	14,926	0	27	0	1,530	3,021,966
Texas	2050	2,842	9,858	29,870	8,276	5,008	0	2,013	11,174	9,860	4,753	32,873	18,005	28,461	5,673,192
Utah	2050	872	534	1,227	304	0	1,253	70	770	2	0	3,828	0	2,692	340,398
Vermont	2050	313	459	0	0	0	0	75	86	13	0	3,618	0	0	163,547
Virginia	2050	1,444	7,550	4,849	65	975	0	2,089	1,031	3,243	0	11,232	3,757	1,779	1,664,317
Washington	2050	29,272	0	2,397	2	1,118	0	454	2,357	1	0	22,362	0	1,663	1,095,819
West Virginia	2050	1,626	1,614	0	9,927	0	0	1,755	80	1,960	0	4,640	0	0	551,529
Wisconsin	2050	932	3,137	2,685	401	0	0	438	613	3	0	6,167	248	3,022	392,388
Wyoming	2050	529	203	0	0	0	0	0	167	0	0	17,046	0	4,383	178,230