

**Table 10.1 Renewable Energy Production and Consumption by Source**  
(Trillion Btu)

	Production <sup>a</sup>				Consumption								
	Biomass			Total Renewable Energy <sup>e</sup>	Hydroelectric Power <sup>f</sup>	Geothermal <sup>g</sup>	Solar <sup>h</sup>	Wind <sup>i</sup>	Biomass				Total Renewable Energy
	Wood <sup>b</sup>	Bio-fuels <sup>c</sup>	Total <sup>d</sup>						Wood <sup>j</sup>	Waste <sup>k</sup>	Bio-fuels <sup>l</sup>	Total	
1950 Total	1,562	NA	1,562	1,907	344	NA	NA	NA	1,562	NA	NA	1,562	1,907
1955 Total	1,424	NA	1,424	1,821	397	NA	NA	NA	1,424	NA	NA	1,424	1,821
1960 Total	1,320	NA	1,320	1,830	510	(s)	NA	NA	1,320	NA	NA	1,320	1,830
1965 Total	1,335	NA	1,335	2,008	672	1	NA	NA	1,335	NA	NA	1,335	2,008
1970 Total	1,429	NA	1,431	2,289	856	2	NA	NA	1,429	2	NA	1,431	2,289
1975 Total	1,497	NA	1,499	2,544	1,034	11	NA	NA	1,497	2	NA	1,499	2,544
1980 Total	2,474	NA	2,475	3,445	953	17	NA	NA	2,474	2	NA	2,475	3,445
1985 Total	2,687	93	3,016	4,018	970	32	(s)	(s)	2,687	236	93	3,016	4,018
1990 Total	2,216	111	2,735	3,863	999	63	56	10	2,216	408	111	2,735	3,863
1995 Total	2,370	198	3,099	4,295	1,061	60	64	11	2,370	531	200	3,101	4,297
2000 Total	2,262	233	3,006	4,093	940	69	59	19	2,262	511	236	3,008	4,096
2005 Total	2,137	561	3,101	4,220	922	84	52	61	2,137	403	574	3,114	4,233
2006 Total	2,099	716	3,212	4,430	987	86	54	91	2,099	397	766	3,262	4,480
2007 Total	2,089	970	3,472	4,582	845	91	57	118	2,089	413	983	3,485	4,595
2008 Total	2,059	1,374	3,868	5,085	869	97	61	189	2,059	435	1,357	3,851	5,068
2009 Total	1,935	1,570	3,957	5,309	933	105	63	252	1,935	452	1,553	3,940	5,293
2010 Total	2,217	1,868	4,553	5,943	888	111	68	323	2,217	468	1,821	4,506	5,896
2011 Total	2,213	2,037	4,712	6,404	1,090	116	76	410	2,213	462	1,941	4,616	6,308
2012 Total	2,151	1,936	4,554	6,187	943	117	94	480	2,151	467	1,899	4,517	6,150
2013 Total	2,338	2,000	4,835	6,561	916	117	120	573	2,338	496	2,026	4,861	6,587
2014 Total	2,401	2,135	5,052	6,836	885	118	161	620	2,401	516	2,099	5,016	6,799
2015 Total	2,312	2,201	5,031	6,846	850	118	196	651	2,312	518	2,185	5,015	6,829
2016 Total	2,299	2,329	5,132	7,188	914	117	251	774	2,227	503	2,333	5,063	7,120
2017 Total	2,264	2,407	5,166	7,505	1,025	118	329	868	2,185	495	2,364	5,045	7,383
2018 Total	2,356	2,471	5,314	7,744	998	118	384	930	2,262	487	2,355	5,105	7,535
2019 Total	2,341	2,432	5,215	7,753	982	116	430	1,010	2,237	442	2,376	5,056	7,594
2020 Total	2,076	2,194	4,710	7,465	973	118	511	1,153	1,970	440	2,136	4,545	7,301
2021 January	180	191	409	637	84	10	32	103	172	38	169	379	607
February	162	152	348	553	69	9	36	91	154	34	154	342	547
March	179	194	411	678	72	10	51	134	167	38	194	399	667
April	171	187	393	651	66	10	59	123	162	36	186	383	642
May	176	206	418	690	80	10	67	115	168	36	207	410	682
June	175	201	410	657	80	10	66	91	164	34	200	398	645
July	181	209	426	651	75	10	66	74	173	36	204	413	639
August	182	195	413	649	69	10	64	92	172	35	200	407	643
September	175	185	395	621	58	10	59	99	164	34	186	385	611
October	172	214	422	650	58	10	50	110	164	35	214	413	641
November	173	216	424	664	66	10	42	122	161	35	207	403	643
December	183	224	445	707	80	10	35	136	171	38	209	418	680
Total	2,109	2,374	4,914	7,807	858	118	627	1,290	1,989	430	2,331	4,751	7,644
2022 January	184	214	435	698	83	10	42	128	175	37	193	404	666
February	171	190	394	652	73	9	47	128	159	33	177	370	628
March	181	212	430	733	83	10	63	147	169	37	207	412	715
April	173	198	406	712	68	10	71	158	164	34	195	393	700
May	182	214	430	743	80	10	79	144	170	35	208	412	725
June	182	214	430	726	89	10	83	115	168	33	213	414	710
July	185	218	436	713	84	10	83	101	175	34	206	415	692
August	184	211	429	672	72	10	77	84	174	34	213	421	664
September	177	193	402	633	58	10	70	93	162	32	192	387	618
October	174	217	425	659	49	10	63	112	163	34	216	413	647
November	174	219	427	686	61	10	47	141	164	34	209	407	665
December	183	211	429	680	70	10	40	132	169	35	205	409	661
Total	2,150	2,511	5,073	8,307	869	118	765	1,482	2,012	412	2,433	4,857	8,091
2023 January	R 182	220	437	702	76	11	44	134	174	36	210	420	685
February	162	198	393	660	64	9	51	144	154	32	190	376	R 644
March	180	222	436	735	69	10	67	152	165	34	220	420	R 719
April	160	212	404	700	60	10	79	147	152	32	207	391	687
May	R 175	229	438	741	94	10	90	109	R 164	34	234	432	735
June	168	230	430	692	66	10	92	94	156	32	232	R 420	R 682
July	172	232	437	712	72	10	R 98	95	162	33	223	418	693
August	177	230	440	712	72	10	93	97	163	33	235	431	703
September	166	227	425	R 669	56	10	82	96	153	32	224	408	652
October	166	231	430	R 701	62	10	74	124	154	33	233	420	690
November	R 168	229	R 430	R 684	62	10	56	126	159	32	219	410	664
December	173	248	456	714	66	10	51	131	162	36	235	432	690
Total	2,049	2,708	5,155	8,422	818	120	878	1,451	1,918	398	2,662	4,978	8,245

<sup>a</sup> For hydroelectric power, geothermal, solar, wind, and biomass waste, production equals consumption.

<sup>b</sup> Wood and wood-derived fuels. Through 2015, wood production equals consumption. Beginning in 2016, wood production equals consumption plus densified biomass exports.

<sup>c</sup> Total biomass inputs to the production of fuel ethanol and biodiesel. Beginning in 2011, also includes production of renewable diesel fuel. Beginning in 2014, also includes production of other biofuels.

<sup>d</sup> Includes biomass waste.

<sup>e</sup> Hydroelectric power, geothermal, solar, wind, and biomass.

<sup>f</sup> Conventional hydroelectricity net generation (converted to Btu by multiplying by the heat content of electricity in Table A6).

<sup>g</sup> Geothermal electricity net generation (converted to Btu by multiplying by the heat content of electricity in Table A6), and geothermal heat pump and direct use energy.

<sup>h</sup> Solar photovoltaic (PV) and solar thermal electricity net generation (converted to Btu by multiplying by the heat content of electricity in Table A6), and solar thermal direct use energy.

<sup>i</sup> Wind electricity net generation (converted to Btu by multiplying by the heat content of electricity in Table A6).

<sup>j</sup> Wood and wood-derived fuels.

<sup>k</sup> Municipal solid waste from biogenic sources, landfill gas, sludge waste, agricultural byproducts, and other biomass. Through 2000, also includes non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived fuels).

<sup>l</sup> Fuel ethanol (minus denaturant), biodiesel, renewable diesel fuel, and other biofuels consumption; plus losses and co-products from the production of fuel ethanol and biodiesel.

R=Revised. NA=Not available. (s)=Less than 0.5 trillion Btu.

Notes: • Production data are estimates. Consumption data are estimates, except for hydroelectric power in 1949–1978 and 1989 forward, and wind. • See Note, "Renewable Energy Production and Consumption," at end of section.

• Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

Web Page: See <http://www.eia.gov/totalenergy/data/monthly/#renewable> (Excel and CSV files) for all available annual data beginning in 1949 and monthly data beginning in 1973.

Sources: • **Production:** Tables 10.2a–10.4c and U.S. Energy Information Administration, Form EIA-63C, "Densified Biomass Fuel Report." • **Consumption:** Tables 10.2a–10.2c.