

Production of biofuels and wastes

Terajoules

Table Notes

The conversion of fuelwood (solid volume, 9.135 TJ/m³) is based on an average 20-30% moisture content of wood from an unspecified species.

The methodology used for estimating fuel bagasse production for certain countries is derived from the work done by the Economic Commission for Latin America and the Caribbean (ECLAC). Although several different methodologies have been devised, the one selected assumes a yield of 3.26 tons of fuel bagasse at 50% humidity per ton of cane sugar produced. This methodology was used for instances where national data on bagasse production were not

available. In these cases, data were derived from sugar production figures extracted from the Sugar Yearbook of the International Sugar Organization (London).

Biogasoline includes Other liquid biofuels.

The total column excludes charcoal as it is the only secondary energy product in the table.

Please refer to the Definitions Section on pages ix to xv for the appropriate product description/classification, and xvi to xvii for the descriptions of relevant flows.

Figure 29: Production of fuelwood by region, 1990-2016

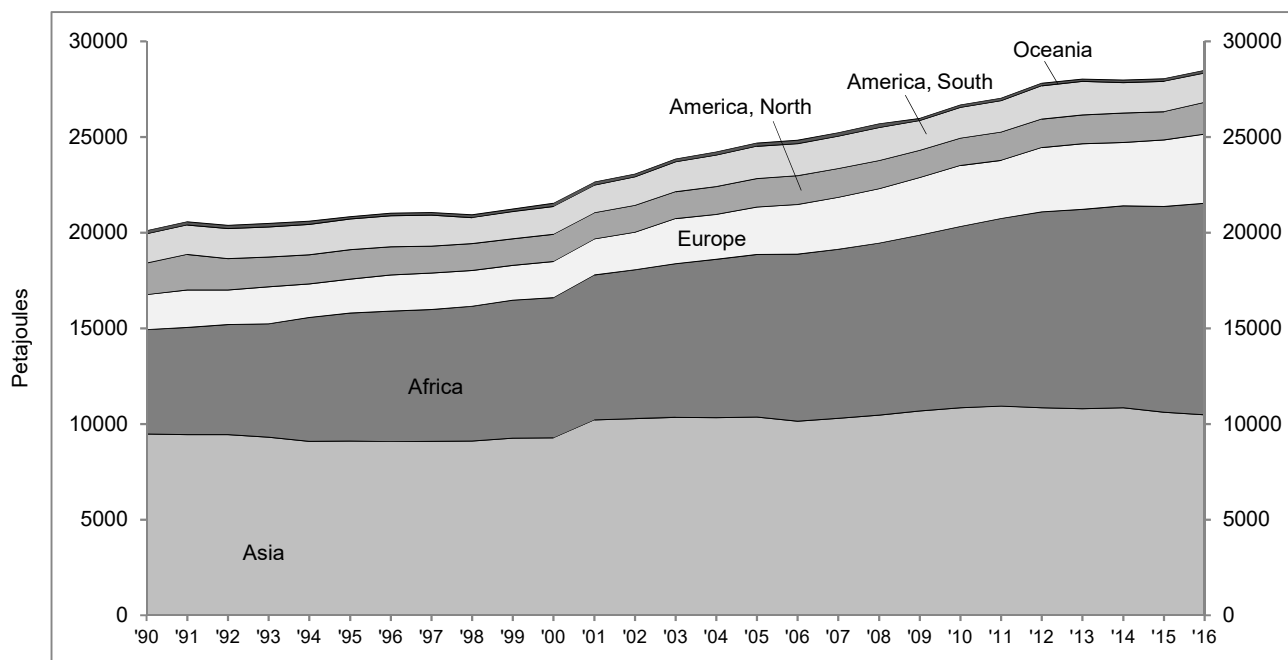


Figure 30: Production of charcoal by region, 1990-2016

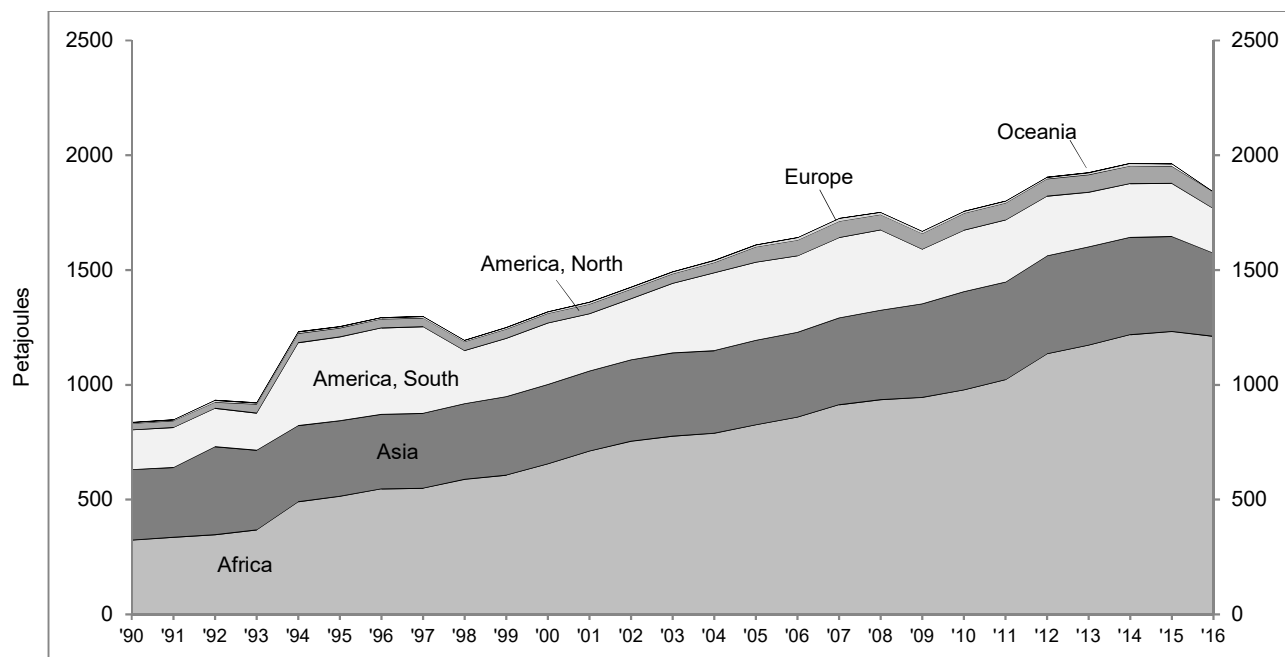


Figure 31: Production of total solid biofuels by region, 2016

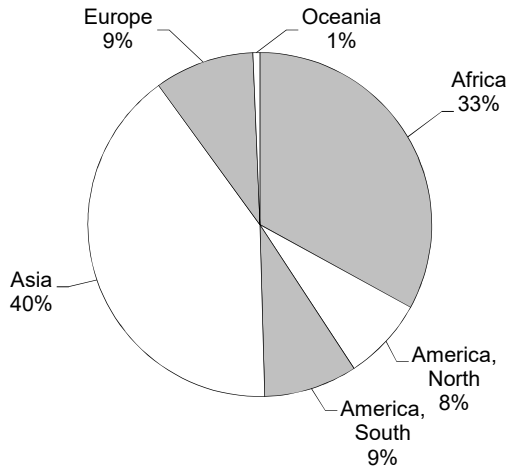


Figure 32: Production of biogases by region, 2016

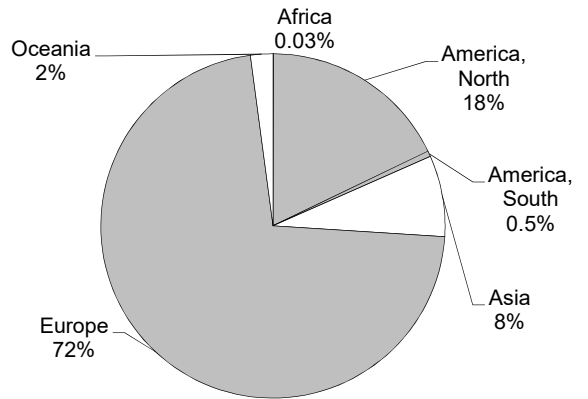


Figure 33: Production of bagasse by region, 2016

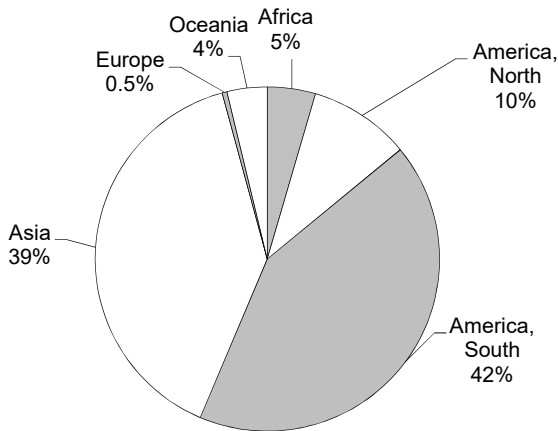


Figure 34: Production of liquids biofuels by region, 2016

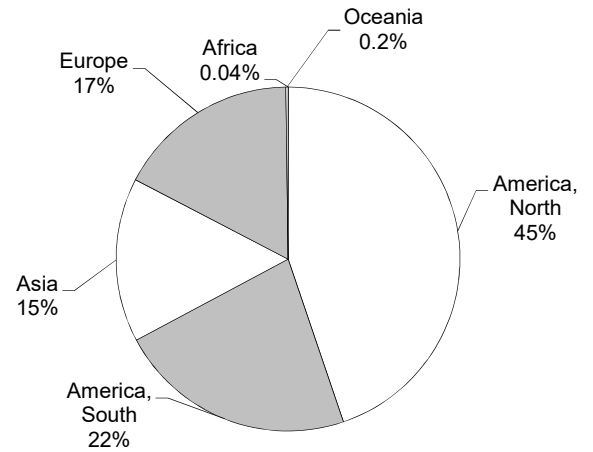


Figure 35: Production of energy from wastes by region, 2016

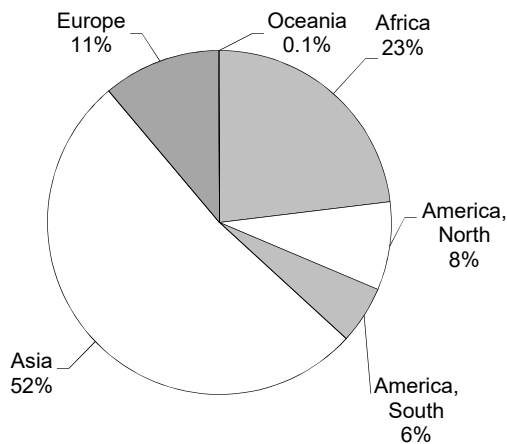


Table 12

Production of biofuels and wastes

Terajoules

Country or area	Year	Solid biofuels					
		Fuelwood	Animal waste	Vegetal waste	Bagasse	Black liquor	Charcoal
World	2013	28,031,228	687,020	11,177,754	3,528,909	1,747,466	1,923,690
	2014	27,981,749	716,106	11,339,805	3,628,497	1,864,695	1,963,933
	2015	28,038,253	569,286	11,341,641	3,595,525	1,795,348	1,962,830
	2016	28,489,290	617,770	11,776,349	3,606,948	1,663,248	1,852,188
Africa	2013	10,415,755	154,551	3,006,454	184,231	4,000	1,171,795
	2014	10,545,347	158,083	3,085,157	179,963	4,000	1,217,725
	2015	10,756,211	162,048	3,159,243	168,105	4,066	1,232,491
	2016	11,045,090	166,360	3,245,967	163,292	4,066	1,211,094
Algeria	2013	918	..	..	..	..	..
	2014	251	..	..	..	..	..
	2015	292	..	..	..	..	..
	2016	283	..	..	..	..	..
Angola	2013	197,556	..	128,410	..	..	37,318
	2014	205,960	..	133,872	..	..	38,911
	2015	205,960	..	133,872	..	..	38,911
	2016	210,096	..	136,560	..	..	39,678
Benin	2013	98,665	..	2,764	226	..	14,927
	2014	105,118	..	2,847	252	..	15,429
	2015	110,625	..	2,973	252	..	15,783
	2016	101,255	..	3,061	252	..	16,196
Botswana	2013	6,328	..	..	..	..	2,181
	2014	6,357	..	..	..	..	2,198
	2015	6,387	..	..	..	..	2,216
	2016	6,387	..	..	..	..	2,216
Burkina Faso	2013	121,779	..	..	1,035	..	18,786
	2014	123,505	..	..	633	..	19,311
	2015	125,268	..	..	633	..	19,850
	2016	126,702	..	..	633	..	20,345
Burundi	2013	54,874	..	..	650	..	7,936
	2014	54,801	..	..	542	..	7,788
	2015	54,801	..	..	579	..	7,788
	2016	54,801	..	..	596	..	7,788
Cabo Verde	2013	1,508	..	..	..	..	26
	2014	1,501	..	..	..	..	19
	2015	*1,516	..	..	..	..	*19
	2016	*1,501	..	..	..	..	*19
Cameroon	2013	193,507	..	6,505	..	..	6,815
	2014	198,403	..	6,670	..	..	6,992
	2015	254,926	..	6,838	..	..	6,785
	2016	261,669	..	5,131	..	..	6,962
Central African Rep.	2013	18,270	..	..	..	..	5,988
	2014	18,270	..	..	..	..	6,097
	2015	18,270	..	..	..	..	6,209
	2016	18,270	..	..	..	..	6,308
Chad	2013	67,769	..	..	770	..	12,812
	2014	68,869	..	..	829	..	13,142
	2015	69,992	..	..	885	..	13,479
	2016	70,942	..	..	881	..	13,806
Comoros	2013	2,621	..	..	..	..	1,271
	2014	2,689	..	..	..	..	1,307
	2015	2,758	..	..	..	..	1,342
	2016	2,817	..	..	..	..	1,372
Congo	2013	40,389	..	20,193	..	..	5,900
	2014	41,404	..	20,703	..	..	6,077
	2015	42,467	..	21,234	..	..	6,225
	2016	43,572	..	21,787	..	..	6,638

Table 12

Production of biofuels and wastes

Terajoules

Non-biomass wastes		Liquid biofuels		Biogases	Total
Industrial waste	Municipal waste	Biogasoline	Biodiesel		
854,911	1,289,079	1,928,292	966,185	847,570	51,058,414
882,634	1,319,388	2,032,134	1,078,401	929,495	51,772,904
907,302	1,355,546	2,126,115	1,056,954	956,477	51,742,448
1,031,409	1,380,774	2,157,350	1,132,354	978,144	52,833,636
3,227	..	161	..	256	13,768,635
3,096	..	1,367	..	229	13,977,242
3,129	..	1,394	..	273	14,254,469
3,108	..	1,447	..	271	14,629,601
..	918
..	251
..	292
..	283
..	325,966
..	339,832
..	339,832
..	346,656
..	101,655
..	108,217
..	113,850
..	104,568
..	6,328
..	6,357
..	6,387
..	6,387
..	122,813
..	124,138
..	125,901
..	127,336
..	55,524
..	55,343
..	55,380
..	55,396
..	1,508
..	1,501
..	*1,516
..	*1,501
..	200,012
..	205,073
..	7	261,771
..	7	266,807
..	18,270
..	18,270
..	18,270
..	18,270
..	68,539
..	69,697
..	70,877
..	71,824
..	2,621
..	2,689
..	2,758
..	2,817
..	60,582
..	62,107
..	63,701
..	65,359

Table 12

Production of biofuels and wastes

Terajoules

Country or area	Year	Solid biofuels					Charcoal
		Fuelwood	Animal waste	Vegetal waste	Bagasse	Black liquor	
Côte d'Ivoire	2013	411,252	..	1,450	..	..	41,359
	2014	421,878	..	1,489	..	..	42,392
	2015	391,481	..	1,928	..	..	45,666
	2016	389,868	..	1,986	..	..	44,180
Dem. Rep. of the Congo	2013	1,060,330	..	10,804	..	..	108,472
	2014	1,096,788	..	5,824	..	..	112,189
	2015	1,135,176	..	6,028	..	..	116,112
	2016	1,174,908	..	6,229	..	..	120,183
Djibouti	2013	3,408	..	..	..	..	1,484
	2014	3,461	..	..	..	..	1,509
	2015	3,516	..	..	..	..	1,534
	2016	3,560	..	..	..	..	1,554
Egypt	2013	161,199	..	35,798	25,023	..	41,223
	2014	161,625	..	36,601	23,160	..	41,595
	2015	162,058	..	37,389	23,286	..	41,979
	2016	162,325	..	39,098	23,412	..	42,303
Equatorial Guinea	2013	4,083	..	..	..	..	289
	2014	4,083	..	..	..	..	295
	2015	4,083	..	..	..	..	295
	2016	4,083	..	..	..	..	310
Eritrea	2013	21,896	2,574	1,456	..	..	4,720
	2014	22,382	2,631	1,488	..	..	4,956
	2015	23,122	2,720	1,537	..	..	5,192
	2016	25,511	3,000	1,697	..	..	5,369
Eswatini	2013	10,131	..	..	17,290	*4,000	1,361
	2014	10,277	..	..	17,336	*4,000	1,397
	2015	10,426	..	..	17,583	*4,066	1,434
	2016	10,526	..	..	14,757	*4,066	1,464
Ethiopia	2013	962,335	141,839	139,031	9,267	..	118,540
	2014	975,143	145,318	142,440	9,946	..	139,172
	2015	988,160	149,058	146,106	8,811	..	124,478
	2016	999,269	152,834	149,807	8,934	..	127,343
Gabon	2013	49,854	..	3,019	612	..	631
	2014	*49,786	..	3,048	598	..	643
	2015	*49,968	..	3,104	592	..	655
	2016	*50,000	..	3,556	705	..	667
Gambia	2013	6,595	..	..	..	..	1,856
	2014	6,687	..	..	..	..	1,894
	2015	6,773	..	..	..	..	1,936
	2016	6,846	..	..	..	..	1,972
Ghana	2013	97,555	..	..	..	..	42,707
	2014	99,627	..	..	..	..	43,976
	2015	99,322	..	..	..	..	43,843
	2016	98,907	..	..	..	..	43,695
Guinea	2013	110,689	..	..	579	..	10,969
	2014	111,209	..	..	579	..	11,209
	2015	111,730	..	..	604	..	11,455
	2016	112,050	..	..	629	..	11,679
Guinea-Bissau	2013	24,788	..	..	..	..	2,027
	2014	25,141	..	..	..	..	2,075
	2015	25,499	..	..	..	..	2,124
	2016	25,808	..	..	..	..	2,172
Kenya	2013	*600,973	..	22,353	15,057	..	188,664
	2014	593,629	..	23,393	14,640	..	188,422
	2015	545,871	..	24,139	15,393	..	191,316
	2016	520,065	..	25,223	14,616	..	135,818

Table 12

Production of biofuels and wastes

Terajoules

Non-biomass wastes		Liquid biofuels		Biogases	Total
Industrial waste	Municipal waste	Biogasoline	Biodiesel		
..	412,702
..	423,367
..	393,409
..	391,854
..	1,071,134
..	1,102,612
..	1,141,204
..	1,181,137
..	3,408
..	3,461
..	3,516
..	3,560
..	222,020
..	221,386
..	222,733
..	224,835
..	4,083
..	4,083
..	4,083
..	4,083
..	25,926
..	26,501
..	27,379
..	30,208
..	31,421
..	31,613
..	32,075
..	29,349
..	..	161	..	..	1,252,632
..	..	214	..	..	1,273,061
..	..	241	..	..	1,292,376
..	..	268	..	..	1,311,112
..	53,485
..	*53,432
..	*53,665
..	*54,261
..	6,595
..	6,687
..	6,773
..	6,846
..	97,555
..	99,627
..	99,322
..	98,907
..	111,268
..	111,789
..	112,334
..	112,679
..	24,788
..	25,141
..	25,499
..	25,808
..	*638,383
..	631,662
..	585,403
..	559,903

Table 12

Production of biofuels and wastes

Terajoules

Country or area	Year	Solid biofuels					
		Fuelwood	Animal waste	Vegetal waste	Bagasse	Black liquor	Charcoal
Lesotho	2013	19,326	*8,180	*1,335	..	..	3,009
	2014	19,398	*8,190	*1,340	..	..	3,065
	2015	19,471	*8,377	*1,371	..	..	3,121
	2016	19,497	*8,400	*1,375	..	..	3,171
Liberia	2013	70,992	..	..	..	..	7,722
	2014	73,480	..	..	..	..	8,010
	2015	76,056	..	..	..	..	8,309
	2016	78,534	..	..	..	..	8,595
Libya	2013	6,395	..	..	..	..	..
	2014	6,333	..	..	..	..	..
	2015	6,352	..	..	..	..	..
	2016	6,424	..	..	..	..	..
Madagascar	2013	121,733	..	..	1,938	..	46,021
	2014	124,318	..	..	1,440	..	46,021
	2015	126,899	..	..	2,189	..	46,021
	2016	129,303	..	..	2,193	..	46,021
Malawi	2013	51,094	..	..	7,351	..	15,538
	2014	51,711	..	..	7,552	..	15,919
	2015	52,350	..	..	7,300	..	16,309
	2016	52,882	..	..	6,772	..	16,674
Mali	2013	48,637	..	..	805	..	5,065
	2014	50,860	..	..	1,259	..	5,045
	2015	51,439	..	..	1,259	..	8,113
	2016	51,896	..	..	1,009	..	8,375
Mauritania	2013	17,925	..	..	..	..	5,927
	2014	18,325	..	..	..	..	6,086
	2015	18,736	..	..	..	..	6,245
	2016	19,092	..	..	..	..	6,390
Mauritius	2013	174	..	..	9,738	..	18
	2014	164	..	..	9,336	..	18
	2015	155	..	..	11,104	..	18
	2016	154	..	..	9,946	..	15
Mayotte	2013	242	..	..	..	..	..
	2014	242	..	..	..	..	..
	2015	242	..	..	..	..	..
	2016	242	..	..	..	..	..
Morocco	2013	39,716	..	..	741	..	502
	2014	39,302	..	..	703	..	561
	2015	39,335	..	..	718	..	561
	2016	63,752	..	..	*718	..	561
Mozambique	2013	348,121	..	18,280	9,645	..	21,093
	2014	357,972	..	18,798	10,572	..	21,063
	2015	367,995	..	19,324	9,313	..	27,730
	2016	382,549	..	20,088	8,811	..	41,979
Namibia	2013	11,858	..	1,449	..	..	3,983
	2014	12,458	..	1,449	..	..	4,278
	2015	13,419	..	1,449	..	..	4,750
	2016	13,419	..	1,449	..	..	4,750
Niger	2013	58,776	500	378	..	..	1,376
	2014	*60,071	*500	*405	..	..	*1,420
	2015	63,457	*510	*410	..	..	1,486
	2016	65,581	*510	*410	..	..	1,535
Nigeria	2013	2,336,770	..	2,210,364	273	..	110,419
	2014	2,280,848	..	2,269,954	158	..	114,077
	2015	2,341,562	..	2,330,400	378	..	117,115
	2016	2,388,955	..	2,387,458	503	..	119,387

Table 12

Production of biofuels and wastes

Terajoules

Non-biomass wastes		Liquid biofuels		Biogases	Total
Industrial waste	Municipal waste	Biogasoline	Biodiesel		
..	28,841
..	28,928
..	29,219
..	29,272
..	70,992
..	73,480
..	76,056
..	78,534
..	6,395
..	6,333
..	6,352
..	6,424
..	123,671
..	125,758
..	129,088
..	131,496
*98	58,543
*98	59,361
*98	59,748
*99	59,753
..	49,443
..	52,119
..	52,698
..	52,905
..	17,925
..	18,325
..	18,736
..	19,092
..	*68	9,979
..	*70	9,570
..	73	11,333
..	67	10,167
..	242
..	242
..	242
..	242
3,129	43,586
2,998	43,003
3,031	43,084
3,009	67,480
..	376,046
..	387,342
..	396,632
..	411,448
..	13,307
..	13,907
..	14,868
..	14,868
..	59,654
..	*60,976
..	64,377
..	66,501
..	4,547,407
..	4,550,960
..	4,672,340
..	4,776,916

Table 12

Production of biofuels and wastes

Terajoules

Country or area	Year	Solid biofuels					
		Fuelwood	Animal waste	Vegetal waste	Bagasse	Black liquor	Charcoal
Réunion	2013	922	..	..	3,920	..	434
	2014	921	..	..	4,145	..	434
	2015	920	..	..	4,396	..	434
	2016	917	..	..	4,171	..	433
Rwanda	2013	*82,368	..	..	151	..	*17,865
	2014	*83,129	..	..	252	..	*17,995
	2015	*83,476	..	..	126	..	*18,113
	2016	*83,476	..	..	126	..	*18,113
Sao Tome and Principe	2013	941	..	..	..	..	271
	2014	959	..	..	..	..	276
	2015	1,023	..	..	..	..	280
	2016	1,029	..	..	..	..	283
Senegal	2013	69,442	..	1,021	2,055	..	14,219
	2014	71,649	..	1,053	2,120	..	11,918
	2015	73,876	..	1,085	2,186	..	10,148
	2016	60,730	..	1,136	2,768	..	8,526
Seychelles	2013	29	..	..	..	..	..
	2014	29	..	..	..	..	..
	2015	29	..	..	..	..	..
	2016	29	..	..	..	..	..
Sierra Leone	2013	52,097	..	..	201	..	12,125
	2014	52,517	..	..	201	..	12,449
	2015	52,965	..	..	201	..	12,744
	2016	53,330	..	..	201	..	13,039
Somalia	2013	127,495	..	..	579	..	35,022
	2014	128,241	..	..	579	..	35,022
	2015	128,241	..	..	579	..	34,854
	2016	135,387	..	..	579	..	36,127
South Africa	2013	448,265	..	67,662	59,279	..	5,573
	2014	448,872	..	67,754	53,287	..	1,720
	2015	449,620	..	67,866	41,000	..	1,720
	2016	450,537	..	68,005	39,817	..	1,717
South Sudan	2013	7,826	..	..	..	..	325
	2014	8,400	..	..	..	..	325
	2015	8,022	..	..	..	..	325
	2016	8,103	..	..	..	..	325
St. Helena and Depend.	2013	6	..	..	..	..	..
	2014	*5	..	..	..	..	..
	2015	*5	..	..	..	..	..
	2016	*5	..	..	..	..	..
Sudan	2013	346,699	..	40,634	..	..	46,050
	2014	354,540	..	41,639	..	..	57,171
	2015	362,757	..	42,739	..	..	57,732
	2016	435,797	..	47,319	..	..	58,322
Togo	2013	106,063	..	1,258	..	..	19,234
	2014	108,910	..	1,292	..	..	19,765
	2015	111,818	..	1,327	..	..	20,097
	2016	114,507	..	1,359	..	..	20,739
Tunisia	2013	34,214	1,458	4,088	..	..	6,018
	2014	34,384	1,444	4,074	..	..	6,136
	2015	34,558	1,383	3,800	..	..	6,284
	2016	39,262	1,616	4,370	..	..	6,431
Uganda	2013	521,640	..	..	*14,278	..	29,500
	2014	543,816	..	..	*17,375	..	30,604
	2015	567,076	..	..	*16,603	..	31,439
	2016	587,576	..	..	*18,170	..	31,439

Table 12

Production of biofuels and wastes

Terajoules

Non-biomass wastes		Liquid biofuels		Biogases	Total
Industrial waste	Municipal waste	Biogasoline	Biodiesel		
..	188	5,030
..	159	5,225
..	193	5,508
..	197	5,285
..	*82,520
..	*83,380
..	*83,602
..	*83,602
..	941
..	959
..	1,023
..	1,029
..	72,518
..	74,822
..	77,147
..	64,634
..	29
..	29
..	29
..	29
..	52,298
..	52,718
..	53,166
..	53,531
..	128,074
..	128,820
..	128,820
..	135,966
..	575,206
..	569,913
..	558,486
..	558,359
..	7,826
..	8,400
..	8,022
..	8,103
..	6
..	*5
..	*5
..	*5
..	387,333
..	396,179
..	405,496
..	483,116
..	107,321
..	110,202
..	113,145
..	115,866
..	39,759
..	39,902
..	39,741
..	45,248
..	535,918
..	561,191
..	583,678
..	605,746

Table 12

Production of biofuels and wastes

Terajoules

Country or area	Year	Solid biofuels					
		Fuelwood	Animal waste	Vegetal waste	Bagasse	Black liquor	Charcoal
United Rep. of Tanzania	2013	708,344	..	130,691	378	..	54,752
	2014	742,758	..	137,635	396	..	57,142
	2015	770,550	..	142,010	378	..	58,971
	2016	800,224	..	146,786	378	..	60,800
Zambia	2013	264,870	..	45,222	..	..	31,211
	2014	273,675	..	46,218	..	..	31,949
	2015	290,383	..	44,229	..	..	32,686
	2016	319,839	..	49,669	..	..	37,052
Zimbabwe	2013	183,503	..	112,289	2,390	..	266
	2014	188,213	..	115,171	2,074	..	266
	2015	192,976	..	118,085	1,757	..	266
	2016	200,041	..	122,408	1,714	..	266
America, North	2013	1,507,037	383,653	728,042	274,045	977,438	77,019
	2014	1,536,045	402,196	736,900	296,845	1,006,511	77,380
	2015	1,473,997	259,206	662,199	310,390	930,633	74,881
	2016	1,657,047	301,150	564,317	343,747	797,071	72,185
Anguilla	2013	*2	..	..	..	..	..
	2014	*2	..	..	..	..	..
	2015	*2	..	..	..	..	..
	2016	*2	..	..	..	..	..
Aruba	2013	17	..	..	..	..	5
	2014	18	..	..	..	..	6
	2015	19	..	..	..	..	6
	2016	20	..	..	..	..	6
Bahamas	2013	305	..	..	..	..	33
	2014	307	..	..	..	..	33
	2015	308	..	..	..	..	33
	2016	308	..	..	..	..	33
Barbados	2013	45	..	..	518	..	9
	2014	45	..	..	463	..	9
	2015	44	..	..	455	..	9
	2016	44	..	..	462	..	9
Belize	2013	1,151	..	..	2,071	..	22
	2014	1,151	..	..	2,632	..	22
	2015	1,151	..	..	2,799	..	23
	2016	1,151	..	..	2,777	..	23
Bermuda	2013	..	..	..	..	..	..
	2014	..	..	..	..	..	..
	2015	..	..	..	..	..	..
	2016	..	..	..	..	..	..
British Virgin Islands	2013	13	..	..	..	..	2
	2014	14	..	..	..	..	2
	2015	14	..	..	..	..	2
	2016	14	..	..	..	..	2
Canada	2013	360,069	..	..	..	191,861	..
	2014	379,138	..	..	..	182,966	..
	2015	299,607	..	..	..	195,115	..
	2016	285,378	..	..	..	180,428	..
Costa Rica	2013	12,213	..	4,742	11,061	..	38
	2014	11,254	..	4,851	11,447	..	47
	2015	11,053	..	4,279	11,269	..	57
	2016	10,349	..	5,565	11,269	..	45
Cuba	2013	12,641	..	*88	28,085	..	3,339
	2014	10,931	..	*88	35,554	..	3,685
	2015	9,858	..	*88	38,163	..	2,227
	2016	10,111	..	*88	29,295	..	2,726

Table 12

Production of biofuels and wastes

Terajoules

Non-biomass wastes		Liquid biofuels		Biogases	Total
Industrial waste	Municipal waste	Biogasoline	Biodiesel		
..	..	..	..	..	839,413
..	..	..	..	..	880,789
..	..	..	..	..	912,938
..	..	..	..	..	947,388
..	..	..	..	..	310,092
..	..	..	..	..	319,893
..	..	..	..	..	334,612
..	..	..	..	..	369,508
..	..	..	..	..	298,182
..	..	1,152	..	..	306,610
..	..	1,152	..	..	313,970
..	..	1,179	..	..	325,342
66,915	305,575	1,098,201	170,642	178,575	5,690,123
64,987	304,316	1,179,440	166,557	202,439	5,896,236
56,941	303,472	1,217,602	164,790	197,371	5,576,602
51,550	312,230	1,265,704	206,117	174,279	5,673,211
..	..	..	..	..	*2
..	..	..	..	..	*2
..	..	..	..	..	*2
..	..	..	..	..	*2
..	..	..	..	..	17
..	..	..	..	..	18
..	..	..	..	..	19
..	..	..	..	..	20
..	..	..	..	..	305
..	..	..	..	..	307
..	..	..	..	..	308
..	..	..	..	..	308
..	..	..	..	..	563
..	..	..	..	..	507
..	..	..	..	..	499
..	..	..	..	..	506
..	..	..	..	..	3,222
..	..	..	..	..	3,783
..	..	..	..	..	3,950
..	..	..	..	..	3,928
..	*565	..	..	..	*565
..	*605	..	..	..	*605
..	*605	..	..	..	*605
..	*605	..	..	..	*605
..	..	..	..	..	13
..	..	..	..	..	14
..	..	..	..	..	14
..	..	..	..	..	14
5,429	7,399	36,073	4,048	16,664	621,543
5,606	7,658	37,413	9,826	16,977	639,583
5,783	7,658	36,368	9,973	16,977	571,480
5,960	7,658	35,939	13,984	16,977	546,324
..	..	742	..	4	28,762
..	..	705	..	4	28,261
..	..	705	..	4	27,310
..	..	630	..	4	27,817
..	..	374	..	..	41,188
..	..	372	..	..	46,945
..	..	*348	..	..	48,457
..	..	*348	..	..	39,841

Table 12

Production of biofuels and wastes

Terajoules

Country or area	Year	Solid biofuels					
		Fuelwood	Animal waste	Vegetal waste	Bagasse	Black liquor	Charcoal
Dominica	2013	69	..	..	..	..	7
	2014	69	..	..	..	..	7
	2015	69	..	..	..	..	7
	2016	68	..	..	..	..	7
Dominican Republic	2013	9,743	..	..	507	..	1,466
	2014	9,939	..	..	530	..	1,528
	2015	10,140	..	..	449	..	1,596
	2016	10,313	..	..	510	..	1,658
El Salvador	2013	15,712	..	..	7,495	..	1,092
	2014	16,109	..	..	7,640	..	1,092
	2015	14,411	..	..	11,525	..	1,092
	2016	11,568	..	..	11,247	..	1,092
Greenland	2013	..	..	..	..	..	..
	2014	..	..	..	..	..	..
	2015	..	..	..	..	..	..
	2016	..	..	..	..	..	..
Grenada	2013	273	..	..	22	..	57
	2014	296	..	..	20	..	60
	2015	300	..	..	20	..	62
	2016	304	..	..	20	..	63
Guadeloupe	2013	137	..	..	*1,506	..	62
	2014	137	..	..	*1,622	..	62
	2015	137	..	..	1,737	..	63
	2016	137	..	..	*1,737	..	63
Guatemala	2013	183,663	..	..	52,353	..	2,036
	2014	199,158	..	..	56,283	..	2,095
	2015	188,300	..	..	55,979	..	*2,154
	2016	223,935	..	..	85,152	..	*2,213
Haiti	2013	138,054	..	..	963	..	38,173
	2014	134,364	..	..	931	..	38,232
	2015	137,436	..	..	958	..	37,052
	2016	139,415	..	..	972	..	37,583
Honduras	2013	82,367	..	..	14,158	..	18
	2014	83,804	..	..	11,974	..	18
	2015	90,423	..	..	15,390	..	30
	2016	91,790	..	..	15,943	..	30
Jamaica	2013	2,773	..	..	3,687	..	1,133
	2014	2,773	..	..	3,926	..	1,133
	2015	*2,773	..	..	*4,311	..	1,121
	2016	*2,744	..	..	*4,663	..	1,121
Martinique	2013	91	..	..	246	..	53
	2014	91	..	..	248	..	53
	2015	91	..	..	308	..	53
	2016	91	..	..	335	..	53
Mexico	2013	255,520	..	61,991	53,758	1	..
	2014	254,274	..	37,708	71,125	0	..
	2015	253,164	..	37,151	68,415	1	..
	2016	251,887	..	38,276	70,264	3	..
Nicaragua	2013	41,895	..	3,531	15,255	..	384
	2014	41,935	..	4,775	15,695	..	207
	2015	42,000	..	4,899	16,735	..	207
	2016	42,066	..	4,131	14,364	..	207
Panama	2013	7,236	..	..	5,395	..	38
	2014	7,191	..	..	4,901	..	38
	2015	7,146	..	..	4,764	..	36
	2016	7,102	..	..	6,319	..	35

Table 12

Production of biofuels and wastes

Terajoules

Non-biomass wastes		Liquid biofuels		Biogases	Total
Industrial waste	Municipal waste	Biogasoline	Biodiesel		
..	69
..	69
..	69
..	68
..	10,250
..	10,469
..	10,589
..	10,822
..	526	23,733
..	409	24,158
..	588	26,524
..	522	23,337
..	117	..	..	..	117
..	92	..	..	..	92
..	98	..	..	..	98
..	94	..	..	..	94
..	295
..	316
..	320
..	324
..	*1,643
..	*1,759
..	1,874
..	*1,874
..	236,016
..	255,441
..	244,279
..	309,086
..	139,017
..	135,295
..	138,394
..	140,387
..	96,525
..	95,778
..	105,813
..	107,733
..	6,460
..	6,699
..	*7,085
..	*7,407
..	867	..	..	..	1,204
..	791	..	..	..	1,131
..	829	..	..	..	1,228
..	793	..	..	..	1,219
1,690	1,970	374,930
861	1,939	365,907
472	1,961	361,164
552	1,912	362,894
..	60,681
..	62,405
..	63,634
..	60,561
..	12,630
..	12,092
..	11,910
..	13,421

Table 12

Production of biofuels and wastes

Terajoules

Country or area	Year	Solid biofuels					
		Fuelwood	Animal waste	Vegetal waste	Bagasse	Black liquor	Charcoal
St. Lucia	2013	90	..	..	..	..	10
	2014	90	..	..	..	..	10
	2015	90	..	..	..	..	11
	2016	89	..	..	..	..	10
St. Pierre-Miquelon	2013	5	..	..	..	..	..
	2014	5	..	..	..	..	..
	2015	5	..	..	..	..	..
	2016	5	..	..	..	..	..
St. Vincent-Grenadines	2013	67	..	..	..	..	11
	2014	67	..	..	..	..	11
	2015	66	..	..	..	..	11
	2016	66	..	..	..	..	11
Trinidad and Tobago	2013	291	..	..	..	..	59
	2014	289	..	..	..	..	59
	2015	286	..	..	..	..	59
	2016	284	..	..	..	..	59
Turks and Caicos Islands	2013	10	..	..	..	..	4
	2014	10	..	..	..	..	4
	2015	10	..	..	..	..	4
	2016	11	..	..	..	..	4
United States	2013	382,583	*383,653	*657,691	76,966	*785,576	28,969
	2014	382,583	*402,196	*689,479	71,854	*823,545	28,969
	2015	405,092	*259,206	*615,782	77,113	*735,517	28,969
	2016	567,795	*301,150	*516,257	88,418	*616,640	25,134
America, South	2013	1,743,547	..	646,270	1,482,632	34,293	238,307
	2014	1,591,083	..	675,505	1,474,966	112,753	232,991
	2015	1,588,188	..	750,342	1,479,116	121,782	231,268
	2016	1,534,579	..	805,364	1,526,557	151,948	194,291
Argentina	2013	29,917	..	16,915	47,313	..	10,679
	2014	36,397	..	27,141	36,259	..	14,573
	2015	38,220	..	24,459	33,673	..	15,222
	2016	34,931	..	19,550	34,735	..	12,685
Bolivia (Plur. State of)	2013	12,537	..	4,606	29,269	..	1,062
	2014	13,151	..	4,815	30,311	..	1,062
	2015	13,725	..	*4,953	31,460	..	1,062
	2016	13,529	..	*6,904	33,447	..	1,062
Brazil	2013	987,722	..	554,035	1,259,722	..	195,143
	2014	1,005,206	..	574,738	1,244,602	..	191,957
	2015	1,006,403	..	648,338	1,255,521	..	190,098
	2016	935,588	..	710,063	1,301,691	..	163,578
Chile	2013	428,535	..	..	..	..	7,287
	2014	240,937	..	..	..	65,771	2,124
	2015	237,262	..	..	..	64,768	2,154
	2016	227,188	..	..	..	94,908	1,918
Colombia	2013	57,706	..	10,796	78,565	7,630	8,142
	2014	67,046	..	6,488	94,375	12,069	7,552
	2015	65,155	..	7,075	90,232	12,437	7,759
	2016	118,020	..	258	95,861	12,681	649
Ecuador	2013	11,821	..	..	19,469	..	..
	2014	11,850	..	..	21,581	..	..
	2015	10,945	..	..	25,175	..	..
	2016	10,704	..	..	21,301	..	..
Falkland Is. (Malvinas)	2013	7	..	..	..	..	3
	2014	7	..	..	..	..	3
	2015	7	..	..	..	..	3
	2016	8	..	..	..	..	3

Table 12

Production of biofuels and wastes

Terajoules

Non-biomass wastes		Liquid biofuels		Biogases	Total
Industrial waste	Municipal waste	Biogasoline	Biodiesel		
..	90
..	90
..	90
..	89
..	5
..	5
..	5
..	5
..	67
..	67
..	66
..	66
..	291
..	289
..	286
..	284
..	10
..	10
..	10
..	11
59,796	296,627	1,061,012	166,594	159,411	4,029,909
58,520	295,170	1,140,950	156,731	183,110	4,204,138
50,686	294,282	1,180,181	154,818	177,841	3,950,517
45,038	303,080	1,228,787	192,133	154,864	4,014,162
..	..	587,946	93,848	1,610	4,590,147
..	..	612,979	117,145	3,503	4,587,932
..	..	658,616	88,654	5,135	4,691,834
..	..	618,520	118,688	5,364	4,761,020
..	..	10,023	73,526	..	177,695
..	..	10,372	95,864	..	206,033
..	..	12,596	67,160	..	176,108
..	..	13,748	97,851	..	200,816
..	46,412
..	48,277
..	50,138
..	53,880
..	..	564,837	..	..	3,366,315
..	..	588,126	..	..	3,412,672
..	..	629,693	..	..	3,539,954
..	..	588,850	..	..	3,536,192
..	559	429,094
..	2,325	309,033
..	3,671	305,701
..	3,747	325,843
..	..	7,049	19,151	..	180,896
..	..	7,501	19,713	..	207,192
..	..	8,241	19,533	..	202,673
..	..	8,087	19,199	..	254,106
..	..	188	..	216	31,694
..	..	*188	..	342	33,960
..	..	*188	..	479	36,787
..	..	*188	..	282	32,475
..	7
..	7
..	7
..	8

Table 12

Production of biofuels and wastes

Terajoules

Country or area	Year	Solid biofuels					
		Fuelwood	Animal waste	Vegetal waste	Bagasse	Black liquor	Charcoal
French Guiana	2013	1,299	..	..	6	..	242
	2014	1,346	..	..	22	..	254
	2015	1,394	..	..	11	..	263
	2016	1,421	..	..	*12	..	268
Guyana	2013	1,096	..	..	6,014	..	46
	2014	1,277	..	..	5,540	..	50
	2015	1,228	..	..	5,998	..	47
	2016	1,073	..	..	5,587	..	42
Paraguay	2013	90,272	..	23,627	5,236	..	13,610
	2014	92,418	..	23,412	5,035	..	13,381
	2015	94,953	..	23,530	5,035	..	12,686
	2016	79,538	..	24,563	4,028	..	12,139
Peru	2013	81,755	..	8,242	22,301	..	*1,859
	2014	82,166	..	7,701	23,128	..	1,829
	2015	80,220	..	7,419	20,726	..	1,770
	2016	78,830	..	7,174	19,877	..	1,741
Suriname	2013	1,066	..	*816	0	..	..
	2014	1,028	..	*823	0	..	..
	2015	1,220	..	821	..	..	..
	2016	914	..	735	..	..	..
Uruguay	2013	27,038	..	8,316	1,421	26,663	..
	2014	26,080	..	11,207	1,149	34,913	..
	2015	25,245	..	*14,309	*1,467	*44,577	..
	2016	21,809	..	*16,420	*1,710	*44,359	..
Venezuela (Bolivar. Rep.)	2013	12,777	..	18,918	13,317	..	236
	2014	12,174	..	19,180	12,965	..	207
	2015	12,211	..	19,440	9,818	..	207
	2016	11,027	..	19,698	8,307	..	207
Asia	2013	10,804,020	136,653	6,495,127	1,442,309	203,345	428,334
	2014	10,854,566	138,353	6,554,681	1,538,111	211,714	424,767
	2015	10,611,105	141,111	6,428,954	1,486,816	202,695	412,931
	2016	10,484,525	143,729	6,847,885	1,420,960	157,634	361,801
Afghanistan	2013	15,765	..	..	..	..	3,610
	2014	16,063	..	..	..	..	3,714
	2015	16,368	..	..	..	..	3,821
	2016	16,660	..	..	..	..	3,927
Armenia	2013	14,123	..	..	..	..	..
	2014	16,279	..	..	..	..	..
	2015	6,360	1,068	..	..	..	..
	2016	7,743	2,311	..	..	..	..
Azerbaijan	2013	3,855	..	..	..	..	148
	2014	3,289	..	..	..	..	177
	2015	3,088	..	..	..	..	177
	2016	1,270	..	..	..	..	6
Bahrain	2013	63	..	..	..	..	33
	2014	63	..	..	..	..	33
	2015	64	..	..	..	..	33
	2016	65	..	..	..	..	34
Bangladesh	2013	244,961	117,126	222,935	2,769	..	9,779
	2014	243,561	118,558	225,660	2,769	..	9,850
	2015	242,179	119,987	228,381	1,762	..	9,922
	2016	239,844	121,178	230,649	1,888	..	9,947
Bhutan	2013	45,715	..	..	..	..	207
	2014	46,216	..	..	..	..	207
	2015	46,722	..	..	..	..	207
	2016	47,088	..	..	..	..	207

Table 12

Production of biofuels and wastes

Terajoules

Non-biomass wastes		Liquid biofuels		Biogases	Total
Industrial waste	Municipal waste	Biogasoline	Biodiesel		
..	1,306
..	1,367
..	1,405
..	1,433
..	7,110
..	6,817
..	7,226
..	6,661
..	..	3,853	..	..	122,987
..	..	4,279	..	..	125,144
..	..	5,069	..	..	128,586
..	..	6,259	..	..	114,387
..	..	1,394	37	835	114,564
..	..	1,608	110	836	115,549
..	..	1,313	110	985	110,774
..	..	322	0	1,335	107,537
..	1,881
..	1,850
..	2,040
..	1,649
..	..	603	1,133	..	65,174
..	..	906	1,457	..	75,712
..	..	1,517	1,851	..	*88,965
..	..	1,067	1,638	..	*87,003
..	45,012
..	44,319
..	41,469
..	39,032
446,045	181,130	113,149	300,686	54,954	20,177,417
457,669	182,618	124,990	321,765	65,734	20,450,201
465,288	192,442	137,473	345,601	61,971	20,073,456
552,537	162,333	147,316	360,761	74,440	20,352,120
..	15,765
..	16,063
..	16,368
..	16,660
..	14,123
..	16,279
..	7,428
..	10,054
..	2,104	..	..	..	5,959
..	2,628	..	..	..	5,917
..	3,037	..	..	..	6,125
..	2,772	..	..	..	4,042
..	63
..	63
..	64
..	65
..	587,791
..	590,548
..	592,309
..	593,559
..	45,715
..	46,216
..	46,722
..	47,088

Table 12

Production of biofuels and wastes

Terajoules

Country or area	Year	Solid biofuels					
		Fuelwood	Animal waste	Vegetal waste	Bagasse	Black liquor	Charcoal
Brunei Darussalam	2013	107	..	..	..	..	9
	2014	107	..	..	..	..	9
	2015	106	..	..	..	..	9
	2016	106	..	..	..	..	9
Cambodia	2013	167,311	..	158	..	..	25,960
	2014	171,447	..	201	..	..	26,403
	2015	176,140	..	545	..	..	26,845
	2016	180,799	..	602	..	..	27,229
China	2013	1,633,621	..	1,484,547	330,599	..	50,050
	2014	1,604,309	..	1,572,324	315,409	..	49,773
	2015	1,574,744	..	1,580,328	258,327	..	49,090
	2016	1,545,363	..	1,613,903	251,547	..	49,090
China, Macao SAR	2013	..	..	..	..	..	..
	2014	..	..	..	..	..	..
	2015	..	..	..	..	..	..
	2016	..	..	..	..	..	..
Cyprus	2013	181	..	28	..	..	30
	2014	105	..	198	..	..	30
	2015	150	..	121	..	..	30
	2016	241	..	146	..	..	59
Georgia	2013	23,231	..	18	..	..	..
	2014	22,607	..	10	..	..	..
	2015	19,408	..	8	..	..	..
	2016	18,747	13	15	..	..	..
India	2013	3,883,781	..	3,679,243	578,273	..	94,548
	2014	3,750,397	..	3,629,601	655,230	..	90,890
	2015	3,612,485	..	3,567,415	726,800	..	87,114
	2016	3,654,193	..	3,784,803	624,165	..	88,117
Indonesia	2013	1,795,239	..	475,710	64,269	..	17,671
	2014	1,884,621	..	481,657	65,411	..	21,624
	2015	1,920,460	..	386,296	63,061	..	14,131
	2016	1,935,789	..	385,493	56,012	..	22,096
Iran (Islamic Rep. of)	2013	73,994	1,175	7,500	..	..	35
	2014	73,994	1,175	7,500	..	..	30
	2015	73,994	1,175	7,500	..	..	27
	2016	*73,994	*1,175	8,400	..	..	30
Iraq	2013	1,807	..	..	..	..	738
	2014	1,856	..	..	..	..	738
	2015	1,935	..	..	..	..	767
	2016	2,148	..	..	..	..	856
Israel	2013	*183	..	..	..	..	..
	2014	*183	..	..	..	..	..
	2015	*183	..	..	..	..	..
	2016	*183	..	..	..	..	..
Japan	2013	42,856	..	129,642	3,121	181,750	354
	2014	44,525	..	128,546	3,147	185,782	354
	2015	45,915	..	142,507	3,147	183,076	354
	2016	68,081	..	68,495	0	138,762	354
Jordan	2013	2,978	..	..	..	..	1,281
	2014	3,051	..	..	..	..	1,315
	2015	3,133	..	..	..	..	1,350
	2016	3,197	..	..	..	..	1,380
Kazakhstan	2013	2,762	..	..	..	..	14
	2014	2,202	..	..	..	..	14
	2015	2,202	..	..	..	..	14
	2016	2,202	..	..	..	..	30

Table 12

Production of biofuels and wastes

Terajoules

Non-biomass wastes		Liquid biofuels		Biogases	Total
Industrial waste	Municipal waste	Biogasoline	Biodiesel		
..	107
..	107
..	106
..	106
..	167,469
..	171,648
..	176,685
..	181,401
220,786	..	84,294	231,494	..	3,985,341
233,878	..	87,920	241,445	..	4,055,285
200,666	..	93,543	256,893	..	3,964,501
213,297	..	100,307	275,474	..	3,999,891
..	*1,842	..	..	..	*1,842
..	*2,058	..	..	..	*2,058
..	*1,296	..	..	..	*1,296
..	*1,273	..	..	..	*1,273
0	74	466	749
273	13	..	0	475	1,064
124	24	..	37	471	927
197	9	..	..	492	1,085
..	0	23,249
..	0	22,617
..	0	19,416
..	0	18,775
..	8,141,297
..	8,035,228
..	7,906,700
..	8,063,161
..	2,335,218
..	2,431,689
..	2,369,817
..	2,377,294
..	127	82,796
..	127	82,796
..	127	82,796
..	282	*83,851
..	1,807
..	1,856
..	1,935
..	2,148
..	353	536
..	593	776
..	559	742
..	795	978
129,149	52,832	429	331	231	540,341
144,928	52,036	375	478	264	560,081
174,434	52,068	54	478	242	601,921
227,671	30,584	54	478	5,756	539,881
..	72	3,050
..	72	3,123
..	90	3,223
..	100	3,297
..	2,762
..	2,202
..	2,202
..	2,202

Table 12

Production of biofuels and wastes

Terajoules

Country or area	Year	Solid biofuels					
		Fuelwood	Animal waste	Vegetal waste	Bagasse	Black liquor	Charcoal
Korea, Dem.Ppl's.Rep.	2013	45,686	..	..	..	..	4,750
	2014	45,928	..	..	..	..	4,779
	2015	46,163	..	..	..	..	4,809
	2016	46,381	..	..	..	..	4,838
Korea, Republic of	2013	28,710	..	1,573	..	9,598	..
	2014	74,353	..	0	..	13,494	..
	2015	69,022	..	0	..	9,672	..
	2016	67,887	..	0	..	9,581	..
Kuwait	2013	176	..	..	..	..	86
	2014	176	..	..	..	..	87
	2015	181	..	..	..	..	87
	2016	183	..	..	..	..	87
Kyrgyzstan	2013	140	..	..	..	..	..
	2014	130	..	..	..	..	..
	2015	130	..	..	..	..	..
	2016	43	..	..	..	..	..
Lao People's Dem. Rep.	2013	52,052	..	..	2,165	..	5,708
	2014	52,683	..	..	2,392	..	5,879
	2015	53,348	..	..	3,147	..	6,050
	2016	*52,920	..	..	3,147	..	*6,048
Lebanon	2013	4,988	..	..	..	..	325
	2014	4,979	..	..	..	..	295
	2015	4,971	..	..	..	..	295
	2016	4,971	..	..	..	..	295
Malaysia	2013	24,339	..	15,955	226	..	858
	2014	23,925	..	9,346	226	..	861
	2015	23,526	..	9,878	226	..	864
	2016	23,146	..	9,878	2,394	..	*1,124
Maldives	2013	145	..	..	..	..	24
	2014	147	..	..	..	..	25
	2015	148	..	..	..	..	25
	2016	149	..	..	..	..	25
Mongolia	2013	5,481	..	..	..	..	..
	2014	5,481	..	..	..	..	..
	2015	5,481	..	..	..	..	..
	2016	5,481	..	..	..	..	..
Myanmar	2013	428,574	..	26,317	*2,355	..	826
	2014	432,238	..	26,542	*2,355	..	826
	2015	399,487	..	23,948	2,494	..	826
	2016	401,168	..	24,105	*2,494	..	*826
Nepal	2013	341,392	17,836	*14,811	16,873	..	2,419
	2014	381,166	18,087	14,811	17,082	..	2,419
	2015	351,623	18,338	17,333	*17,719	..	325
	2016	355,127	18,504	17,505	3,524	..	325
Oman	2013	390	..	..	..	..	199
	2014	402	..	..	..	..	194
	2015	414	..	..	..	..	200
	2016	425	..	..	..	..	205
Other Asia	2013	8,839	..	..	..	..	..
	2014	10,383	..	..	..	..	..
	2015	16,624	..	..	..	..	..
	2016	5,821	..	..	..	..	..
Pakistan	2013	270,944	..	*165,000	143,029	..	2,300
	2014	269,784	..	*168,500	135,592	..	2,358
	2015	269,784	..	*172,034	126,411	..	2,418
	2016	269,784	..	*175,506	141,268	..	2,466

Table 12

Production of biofuels and wastes

Terajoules

Non-biomass wastes		Liquid biofuels		Biogases	Total
Industrial waste	Municipal waste	Biogasoline	Biodiesel		
..	45,686
..	45,928
..	46,163
..	46,381
95,926	36,341	..	12,806	9,917	194,871
78,446	36,953	5,261	13,579	9,330	231,416
88,702	40,708	8,686	15,198	7,726	239,714
109,305	39,467	10,823	17,995	6,955	262,013
..	176
..	176
..	181
..	183
..	140
..	130
..	130
..	43
..	54,217
..	55,074
..	56,495
..	*56,067
..	4,988
..	4,979
..	4,971
..	4,971
..	17,370	..	57,890
..	22,522	..	56,019
..	24,766	..	58,396
..	18,437	..	53,855
..	145
..	147
..	148
..	149
..	5,481
..	5,481
..	5,481
..	5,481
..	457,246
..	461,135
..	425,929
..	427,767
..	6,711	397,623
..	6,711	437,857
..	11,688	416,701
..	11,729	406,389
..	390
..	402
..	414
..	425
..	55,412	4,750	..	254	69,255
..	55,156	3,091	..	224	68,854
..	57,016	2,273	..	200	76,113
..	55,950	0	..	269	62,040
..	578,973
..	573,876
..	568,229
..	586,558

Table 12

Production of biofuels and wastes

Terajoules

Country or area	Year	Solid biofuels					
		Fuelwood	Animal waste	Vegetal waste	Bagasse	Black liquor	Charcoal
Philippines	2013	175,173	516	39,169	19,003	..	52,065
	2014	177,028	533	39,662	19,243	..	54,481
	2015	175,999	543	39,317	22,365	..	55,976
	2016	171,236	549	38,750	27,819	..	58,690
Qatar	2013	47	..	..	..	..	23
	2014	47	..	..	..	..	23
	2015	47	..	..	..	..	23
	2016	47	..	..	..	..	23
Singapore	2013	285	..	..	..	..	150
	2014	280	..	..	..	..	*148
	2015	276	..	..	..	..	146
	2016	271	..	..	..	..	143
Sri Lanka	2013	156,526	..	..	1,475	..	..
	2014	159,976	..	..	1,148	..	..
	2015	156,317	..	..	1,517	..	..
	2016	150,651	..	..	1,862	..	..
State of Palestine	2013	3,013	..	436	..	..	..
	2014	3,332	..	726	..	..	..
	2015	3,135	..	*625	..	..	..
	2016	3,460	..	564	..	..	..
Syrian Arab Republic	2013	280	..	..	..	..	30
	2014	285	..	..	..	..	30
	2015	238	..	..	..	..	30
	2016	236	..	..	..	..	30
Tajikistan	2013	50,225	..	..	..	..	..
	2014	*50,225	..	..	..	..	..
	2015	*50,225	..	..	..	..	..
	2016	50,225	..	..	..	..	..
Thailand	2013	518,371	..	187,957	238,965	11,997	134,166
	2014	537,420	..	208,908	278,054	12,438	127,027
	2015	504,764	..	212,555	225,232	9,947	126,526
	2016	345,454	..	448,520	271,799	9,291	62,599
Timor-Leste	2013	966	..	..	..	..	..
	2014	925	..	..	..	..	..
	2015	886	..	..	..	..	..
	2016	850	..	..	..	..	..
Turkey	2013	93,848	..	44,128	..	..	..
	2014	90,519	..	40,489	..	..	..
	2015	77,791	..	40,163	..	..	..
	2016	68,831	..	40,551	..	..	..
Turkmenistan	2013	100	..	..	..	..	..
	2014	100	..	..	..	..	..
	2015	100	..	..	..	..	..
	2016	100	..	..	..	..	..
Uzbekistan	2013	238	..	..	..	..	..
	2014	238	..	..	..	..	..
	2015	219	..	..	..	..	..
	2016	219	..	..	..	..	..
Viet Nam	2013	635,912	..	..	39,186	..	17,730
	2014	642,777	..	..	40,053	..	17,907
	2015	649,684	..	..	34,609	..	18,113
	2016	656,748	..	..	33,040	..	18,320
Yemen	2013	4,649	..	..	..	..	2,213
	2014	4,768	..	..	..	..	2,272
	2015	4,886	..	..	..	..	2,331
	2016	4,999	..	..	..	..	2,390

Table 12

Production of biofuels and wastes

Terajoules

Non-biomass wastes		Liquid biofuels		Biogases	Total
Industrial waste	Municipal waste	Biogasoline	Biodiesel		
..	1,499	2,316	4,939	..	242,615
..	1,640	4,357	5,285	..	247,747
..	955	6,172	6,496	..	251,848
..	447	8,314	7,050	..	254,165
..	..	..	..	..	47
..	..	..	..	..	47
..	..	..	..	..	47
..	..	..	..	..	47
..	26,917	..	..	..	27,202
..	27,063	..	..	..	27,344
..	27,830	..	..	..	28,105
..	27,436	..	..	..	27,707
..	..	..	..	..	158,001
..	..	..	..	..	161,123
..	..	..	..	..	157,833
..	..	..	..	..	152,512
..	..	..	..	..	3,448
..	..	..	..	..	4,058
..	..	..	..	..	3,760
..	..	..	..	..	4,024
..	..	..	..	..	280
..	..	..	..	..	285
..	..	..	..	..	238
..	..	..	..	..	236
..	..	..	..	..	50,225
..	..	..	..	..	*50,225
..	..	..	..	..	*50,225
..	..	..	..	..	50,225
..	4,183	20,395	32,862	28,312	1,043,042
..	5,071	22,512	37,131	38,285	1,139,819
..	9,508	24,951	39,192	29,749	1,055,898
..	4,395	25,889	39,008	33,341	1,177,697
..	..	..	..	..	966
..	..	..	..	..	925
..	..	..	..	..	886
..	..	..	..	..	850
184	..	965	810	8,511	148,445
144	..	1,474	1,325	9,653	143,604
1,362	..	1,796	2,539	11,119	134,770
2,067	..	1,930	2,318	14,721	130,418
..	..	..	..	..	100
..	..	..	..	..	100
..	..	..	..	..	100
..	..	..	..	..	100
..	..	..	..	..	238
..	..	..	..	..	238
..	..	..	..	..	219
..	..	..	..	..	219
..	..	..	..	..	675,098
..	..	..	..	..	682,830
..	..	..	..	..	684,293
..	..	..	..	..	689,788
..	..	..	..	..	4,649
..	..	..	..	..	4,768
..	..	..	..	..	4,886
..	..	..	..	..	4,999

Table 12

Production of biofuels and wastes

Terajoules

Country or area	Year	Solid biofuels					
		Fuelwood	Animal waste	Vegetal waste	Bagasse	Black liquor	Charcoal
Europe	2013	3,432,682	12,163	292,839	13,645	508,309	7,844
	2014	3,322,927	17,474	278,493	12,591	508,740	10,673
	2015	3,477,157	6,921	331,656	11,984	515,651	10,853
	2016	3,621,321	6,531	303,627	16,323	532,456	12,407
Albania	2013	8,433	..	..	..	..	..
	2014	8,161	..	..	..	..	..
	2015	8,960	..	..	..	..	..
	2016	7,787	..	..	..	..	..
Andorra	2013	..	..	..	..	..	..
	2014	..	..	..	..	..	..
	2015	..	..	..	..	..	..
	2016	..	..	..	..	..	..
Austria	2013	163,551	..	7,559	..	30,088	30
	2014	140,598	..	8,324	..	30,329	30
	2015	150,934	..	8,933	..	28,545	30
	2016	156,089	..	7,836	..	32,785	59
Belarus	2013	70,568	..	3,071	..	..	118
	2014	67,562	..	2,790	..	..	89
	2015	68,924	..	2,701	..	..	89
	2016	68,613	..	2,403	..	..	118
Belgium	2013	53,947	133	3,150	..	1,735	..
	2014	38,570	97	5,826	..	1,733	..
	2015	41,957	266	5,800	..	1,666	..
	2016	45,422	783	6,124	..	1,762	..
Bosnia and Herzegovina	2013	*6,458	..	..	..	..	679
	2014	30,229	..	..	..	..	1,298
	2015	30,354	..	..	..	..	1,298
	2016	30,729	..	..	..	..	1,328
Bulgaria	2013	40,906	..	850	..	5,235	148
	2014	40,501	..	..	..	4,987	177
	2015	45,681	..	..	..	2,898	177
	2016	42,194	..	..	..	4,733	118
Croatia	2013	61,312	..	12	..	..	177
	2014	57,543	..	12	..	..	236
	2015	63,861	..	19	..	..	236
	2016	64,080	..	32	..	..	266
Czechia	2013	96,966	..	4,761	..	14,218	..
	2014	98,604	..	5,096	..	15,281	..
	2015	102,917	..	5,581	..	15,196	..
	2016	103,427	..	5,789	..	15,114	..
Denmark	2013	38,795	..	21,125	..	..	..
	2014	35,481	..	19,134	..	..	..
	2015	46,757	..	19,824	..	..	..
	2016	46,576	..	19,921	..	..	..
Estonia	2013	35,807	..	7,471	..	1,408	..
	2014	38,208	..	7,398	..	1,374	..
	2015	41,571	..	7,721	..	1,340	..
	2016	50,850	..	6,206	..	1,385	..
Finland	2013	195,269	256	2,133	..	140,701	..
	2014	196,230	204	1,499	..	141,905	..
	2015	187,269	244	1,230	..	142,056	..
	2016	199,729	239	1,604	..	146,307	..
France	2013	385,629	97	13,223	0	34,821	..
	2014	335,170	177	11,493	0	33,248	..
	2015	357,670	340	12,265	0	34,217	..
	2016	416,582	0	14,226	0	33,724	..

Table 12

Production of biofuels and wastes

Terajoules

Non-biomass wastes		Liquid biofuels		Biogases	Total
Industrial waste	Municipal waste	Biogasoline	Biodiesel		
334,113	802,373	122,183	397,330	595,358	6,510,995
352,705	832,454	107,403	468,150	638,339	6,539,276
378,045	859,633	105,638	452,830	672,093	6,811,608
420,299	906,211	119,450	444,802	703,133	7,074,153
..	..	..	..	..	8,433
..	..	..	..	..	8,161
..	..	..	..	..	8,960
..	..	..	..	..	7,787
..	*232	..	..	..	*232
..	*241	..	..	..	*241
..	*248	..	..	..	*248
..	*255	..	..	..	*255
19,512	15,722	2,680	6,440	8,235	253,787
19,321	18,705	5,575	9,642	12,234	244,728
20,114	19,346	5,655	12,622	12,561	258,711
23,090	18,530	5,709	10,562	13,109	267,710
1,037	..	..	957	381	76,014
1,156	..	..	1,030	373	72,912
1,157	..	..	810	398	73,989
1,286	..	..	736	390	73,428
13,607	28,829	7,278	11,040	7,913	127,632
13,526	30,133	6,808	16,413	8,672	121,778
13,479	30,679	6,516	9,126	9,584	119,073
13,359	30,924	6,327	8,648	9,496	122,845
..	..	..	..	..	*6,458
..	..	..	..	..	30,229
..	..	..	..	..	30,354
..	..	..	..	..	30,729
322	644	322	1,582	93	49,954
951	272	563	2,208	435	49,917
1,073	489	670	1,766	820	53,397
883	1,646	724	2,282	2,511	54,972
366	..	..	1,214	693	63,597
425	..	..	1,288	1,096	60,364
390	..	..	626	1,507	66,403
425	..	..	37	1,952	66,526
6,742	5,786	2,787	6,698	23,910	161,868
8,194	5,755	2,787	8,059	25,457	169,233
9,382	5,570	2,814	6,182	25,681	173,323
10,361	5,968	3,109	5,483	25,161	174,412
..	35,060	603	..	4,588	100,171
..	35,271	575	..	5,561	96,022
..	34,444	411	..	6,415	107,851
..	34,980	192	..	9,146	110,815
..	4,411	..	..	302	49,399
..	2,851	..	..	403	50,234
..	2,819	..	..	550	54,001
..	2,944	..	..	448	61,833
2,120	15,933	1,384	11,261	3,725	372,782
2,219	17,949	1,413	12,586	4,173	378,178
1,792	19,622	999	15,382	4,321	372,915
1,793	22,434	1,288	3,864	4,694	381,952
2,149	122,734	21,065	80,187	24,249	684,154
3,058	121,120	19,537	86,848	25,272	635,923
5,584	126,532	15,920	89,571	30,370	672,469
4,595	129,052	15,223	83,021	31,822	728,245

Table 12

Production of biofuels and wastes

Terajoules

Country or area	Year	Solid biofuels					
		Fuelwood	Animal waste	Vegetal waste	Bagasse	Black liquor	Charcoal
Germany	2013	417,169	..	5,614	..	33,674	..
	2014	436,947	..	5,905	..	35,478	..
	2015	462,327	..	6,483	..	36,183	..
	2016	468,334	..	5,838	..	35,337	..
Greece	2013	28,171	..	5,985	..	..	59
	2014	29,663	..	6,633	..	..	30
	2015	30,583	..	9,293	..	..	30
	2016	26,809	..	6,440	..	..	30
Hungary	2013	98,212	230	13,796	..	82	..
	2014	86,037	87	12,474	..	330	..
	2015	91,350	291	13,222	..	265	..
	2016	87,231	323	12,624	..	283	..
Iceland	2013	238	..	..	..	..	..
	2014	238	..	..	..	..	..
	2015	247	..	..	..	..	..
	2016	256	..	..	..	..	..
Ireland	2013	7,046	628	..	..	..	..
	2014	7,386	1,423	..	..	..	..
	2015	7,233	1,203	..	..	..	..
	2016	8,635	835	..	..	..	..
Isle of Man	2013	..	..	..	..	..	..
	2014	..	..	..	..	..	..
	2015	..	..	..	..	..	..
	2016	..	..	..	..	..	..
Italy	2013	303,913	..	7,918	..	..	295
	2014	264,871	..	8,921	..	..	295
	2015	297,890	..	9,433	..	..	295
	2016	293,118	..	9,672	..	..	295
Jersey	2013	..	..	..	..	..	..
	2014	..	..	..	..	..	..
	2015	..	..	..	..	..	..
	2016	..	..	..	..	..	..
Kosovo	2013	10,394	..	..	..	..	..
	2014	10,438	..	..	..	..	..
	2015	10,721	..	..	..	..	..
	2016	14,823	..	..	..	..	..
Latvia	2013	73,277	..	58	..	..	295
	2014	85,567	..	99	..	..	384
	2015	83,986	..	135	..	..	325
	2016	86,776	..	136	..	..	354
Liechtenstein	2013	172	..	..	..	..	..
	2014	187	..	..	..	..	..
	2015	209	..	..	..	..	..
	2016	202	..	..	..	..	..
Lithuania	2013	43,355	..	238	..	..	30
	2014	46,749	..	457	..	..	30
	2015	49,852	..	585	..	..	30
	2016	49,647	..	591	..	..	30
Luxembourg	2013	1,752	..	265	..	..	..
	2014	2,513	..	243	..	..	..
	2015	2,085	..	217	..	..	..
	2016	2,460	..	186	..	..	..
Malta	2013	..	..	..	..	..	..
	2014	..	..	..	..	..	..
	2015	..	..	..	..	..	..
	2016	..	..	..	..	..	..

Table 12

Production of biofuels and wastes

Terajoules

Non-biomass wastes		Liquid biofuels		Biogases	Total
Industrial waste	Municipal waste	Biogasoline	Biodiesel		
49,437	245,060	21,481	107,125	287,845	1,167,405
52,968	254,310	23,878	123,354	311,259	1,244,099
52,659	250,720	23,781	113,528	328,840	1,274,521
59,095	259,750	25,584	114,779	338,922	1,307,639
883	..	..	5,594	3,704	44,337
868	..	..	5,741	3,640	46,545
3,732	..	..	5,410	3,826	52,844
2,517	..	..	5,594	4,258	45,618
1,693	3,475	7,584	5,152	3,336	133,560
2,267	3,709	7,906	4,894	3,323	121,027
2,520	4,728	10,613	5,373	3,335	131,697
3,510	4,470	11,417	5,741	3,708	129,307
..	0	..	..	71	309
..	0	..	..	71	309
..	0	..	..	69	316
..	0	..	..	71	327
4	4,607	..	920	2,062	15,267
0	4,929	..	994	2,187	16,919
0	5,265	..	994	2,287	16,982
0	5,467	..	994	2,356	18,287
..	570	..	..	..	570
..	540	..	..	..	540
..	517	..	..	..	517
..	522	..	..	..	522
12,994	69,302	4,485	16,891	76,013	491,516
12,532	71,882	3,178	21,344	82,105	464,833
12,696	70,840	5,392	21,234	78,355	495,839
13,082	72,908	15,443	21,197	78,505	503,925
..	*616	..	..	..	*616
..	*658	..	..	..	*658
..	*732	..	..	..	*732
..	*813	..	..	..	*813
..	..	..	..	..	10,394
..	..	..	..	..	10,438
..	..	..	..	..	10,721
..	..	..	..	..	14,823
84	85	80	2,429	2,695	78,708
168	171	0	2,760	3,136	91,901
84	256	80	2,429	3,674	90,644
113	256	134	1,656	3,762	92,833
..	356	..	..	1	530
..	378	..	..	21	586
..	380	..	..	22	612
..	388	..	..	20	611
155	943	616	4,306	649	50,262
258	970	268	4,416	876	53,994
303	1,337	429	4,342	981	57,829
626	2,495	375	3,790	1,341	58,866
641	1,225	..	..	653	4,536
640	1,171	..	..	701	5,268
569	1,365	..	..	739	4,975
546	1,400	..	..	833	5,425
..	..	..	37	59	96
..	..	..	37	65	102
..	..	..	37	69	106
..	..	..	37	80	117

Table 12

Production of biofuels and wastes

Terajoules

Country or area	Year	Solid biofuels					
		Fuelwood	Animal waste	Vegetal waste	Bagasse	Black liquor	Charcoal
Montenegro	2013	7,445	..	..	..	..	12
	2014	7,527	..	..	..	..	15
	2015	8,304	..	..	..	..	18
	2016	8,395	..	..	..	..	24
Netherlands	2013	34,153	..	12,994	..	..	177
	2014	40,875	..	13,139	..	..	..
	2015	42,811	..	14,281	..	..	..
	2016	43,762	..	13,425	..	..	..
Norway	2013	41,653	..	..	..	..	..
	2014	32,524	..	..	..	..	..
	2015	35,784	..	..	..	..	..
	2016	35,528	..	..	..	..	..
Poland	2013	211,876	..	74,367	..	11,081	..
	2014	201,369	..	57,354	..	10,607	..
	2015	204,512	..	57,919	..	11,013	..
	2016	206,522	..	50,806	..	11,249	..
Portugal	2013	54,140	..	16,051	..	41,266	590
	2014	53,329	..	17,490	..	40,995	236
	2015	59,877	..	7,606	2,487	41,179	236
	2016	61,818	..	3,196	3,305	43,610	266
Republic of Moldova	2013	19,302	..	7,979	..	..	30
	2014	21,686	..	8,171	..	..	30
	2015	22,024	158	7,736	..	..	30
	2016	25,213	12	7,246	..	..	30
Romania	2013	153,097	..	..	..	..	628
	2014	152,640	..	..	..	..	487
	2015	147,416	..	..	..	..	177
	2016	149,864	..	..	..	..	67
Russian Federation	2013	126,851	..	..	..	..	1,510
	2014	115,921	..	..	..	..	1,552
	2015	118,109	..	..	..	..	1,543
	2016	121,911	..	..	..	..	2,065
Serbia	2013	46,823	..	..	..	..	325
	2014	46,518	..	..	..	..	354
	2015	46,240	..	..	..	..	354
	2016	46,259	..	..	..	..	443
Slovakia	2013	15,140	..	1,425	..	15,615	118
	2014	15,618	..	1,737	..	14,443	124
	2015	17,277	..	6,813	..	13,164	118
	2016	19,118	..	2,153	..	13,672	103
Slovenia	2013	25,527	..	269	..	..	..
	2014	22,037	..	263	..	..	..
	2015	24,436	..	273	..	..	..
	2016	25,239	..	236	..	..	..
Spain	2013	148,981	567	34,189	13,645	20,532	1,062
	2014	156,406	560	26,234	12,591	20,275	1,062
	2015	142,420	449	43,829	9,497	24,039	1,062
	2016	144,188	449	38,474	13,018	25,917	1,062
Sweden	2013	227,662	149	..	..	157,853	..
	2014	215,728	110	..	..	157,755	..
	2015	218,230	76	..	..	163,890	..
	2016	227,021	52	..	..	166,578	..
Switzerland	2013	42,460	..	..	..	..	..
	2014	37,020	..	..	..	..	..
	2015	38,060	..	..	..	..	..
	2016	41,350	..	..	..	..	..

Table 12

Production of biofuels and wastes

Terajoules

Non-biomass wastes		Liquid biofuels		Biogases	Total
Industrial waste	Municipal waste	Biogasoline	Biodiesel		
..	..	..	..	..	7,445
..	..	..	..	..	7,527
..	..	..	..	..	8,304
..	..	..	..	..	8,395
..	60,809	11,095	50,600	12,777	182,428
..	61,576	..	63,296	13,094	191,980
..	60,173	..	59,947	13,693	190,905
..	61,527	..	53,802	13,339	185,855
3,371	13,837	0	..	700	59,561
3,497	14,169	0	..	600	50,790
3,519	15,202	0	..	1,100	55,605
3,356	14,965	..	..	1,200	55,049
14,761	5,513	5,119	23,626	7,593	353,935
16,993	6,099	3,832	27,195	8,685	332,135
16,997	6,593	4,718	28,962	9,581	340,295
18,795	15,484	5,281	33,046	10,930	352,113
1,963	8,097	137	11,003	2,763	135,420
2,680	6,845	164	12,328	3,432	137,263
1,011	8,155	110	13,211	3,457	137,092
2,961	8,680	82	12,291	3,364	139,307
130	..	274	..	36	27,721
207	..	0	..	178	30,242
73	..	0	..	401	30,392
142	..	0	..	361	32,974
1,695	14	1,099	5,042	822	161,768
2,738	189	322	4,048	810	160,747
2,968	159	1,045	5,520	767	157,875
3,164	193	1,528	6,293	739	161,780
177,615	..	..	..	..	304,466
179,858	..	..	..	..	295,779
198,890	..	..	..	..	316,999
218,670	..	..	..	..	340,581
12	..	..	..	184	47,019
17	..	..	..	215	46,750
15	..	..	..	242	46,497
23	..	..	..	307	46,589
5,165	1,099	2,787	3,864	2,300	47,395
5,072	1,720	2,841	3,717	4,025	49,173
6,905	1,668	3,002	3,901	6,223	58,952
7,583	1,530	3,136	4,048	6,357	57,597
1,453	..	..	74	1,454	28,777
1,809	..	..	0	1,290	25,399
1,802	..	..	0	1,242	27,753
1,876	..	..	..	1,264	28,615
..	16,724	9,702	26,496	20,072	290,908
..	17,098	10,291	44,602	14,791	302,848
..	21,102	10,479	40,958	10,954	303,727
..	19,698	6,968	50,048	10,264	309,024
1,087	57,233	8,500	4,784	6,070	463,338
863	59,853	5,618	5,778	6,422	452,126
749	63,387	5,447	5,115	7,009	463,903
746	66,990	6,802	4,011	7,265	479,465
10,532	44,220	..	184	4,014	101,410
11,864	45,050	..	184	4,354	98,472
10,234	46,430	..	221	4,585	99,530
10,790	48,150	..	258	4,898	105,446

Table 12

Production of biofuels and wastes

Terajoules

Country or area	Year	Solid biofuels					
		Fuelwood	Animal waste	Vegetal waste	Bagasse	Black liquor	Charcoal
T.F.Yug.Rep. Macedonia	2013	15,106	..	176	..	..	..
	2014	14,617	..	164	..	..	..
	2015	13,431	..	203	..	..	..
	2016	11,910	..	249	..	..	..
Ukraine	2013	58,254	..	..	..	..	1,564
	2014	71,938	..	..	..	..	4,248
	2015	87,769	..	..	..	..	4,809
	2016	114,133	..	..	..	..	5,753
United Kingdom	2013	62,871	10,103	48,160	..	..	..
	2014	59,720	14,816	57,637	..	..	..
	2015	67,120	3,894	89,554	..	..	..
	2016	68,721	3,838	88,214	..	..	..
Oceania	2013	128,187	..	9,023	132,047	20,081	392
	2014	131,781	..	9,069	126,022	20,977	398
	2015	131,595	..	9,247	139,114	20,521	405
	2016	146,727	..	9,189	136,071	20,073	410
Australia	2013	29,525	..	679	126,711	20,081	..
	2014	32,879	..	789	119,450	20,977	..
	2015	31,646	..	1,006	132,643	20,521	..
	2016	34,649	..	933	131,669	20,073	..
Fiji	2013	338	..	..	4,533	..	71
	2014	338	..	..	5,691	..	72
	2015	338	..	..	5,591	..	72
	2016	338	..	..	3,521	..	73
French Polynesia	2013	41	..	..	..	..	15
	2014	42	..	..	..	..	15
	2015	42	..	..	..	..	16
	2016	42	..	..	..	..	16
Kiribati	2013	28	..	*494	..	..	11
	2014	29	..	*499	..	..	11
	2015	29	..	*500	..	..	11
	2016	30	..	*502	..	..	12
Marshall Islands	2013	..	..	*195	..	..	..
	2014	..	..	*190	..	..	..
	2015	..	..	*185	..	..	..
	2016	..	..	*190	..	..	..
Micronesia (Fed. States of)	2013	23	..	..	..	..	11
	2014	23	..	..	..	..	11
	2015	24	..	..	..	..	11
	2016	24	..	..	..	..	11
New Caledonia	2013	113	..	..	..	..	17
	2014	114	..	..	..	..	18
	2015	115	..	..	..	..	18
	2016	115	..	..	..	..	18
New Zealand	2013	44,884	..	..	..	..	..
	2014	45,113	..	..	..	..	..
	2015	46,147	..	..	..	..	..
	2016	58,272	..	..	..	..	..
Niue	2013	1	..	..	..	..	0
	2014	1	..	..	..	..	0
	2015	1	..	..	..	..	0
	2016	1	..	..	..	..	0
Papua New Guinea	2013	50,544	..	*5,263	803	..	188
	2014	50,544	..	*5,263	880	..	192
	2015	50,544	..	*5,263	880	..	195
	2016	50,544	..	*5,263	880	..	198

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Terajoules

Non-biomass wastes		Liquid biofuels		Biogases	Total
Industrial waste	Municipal waste	Biogasoline	Biodiesel		
..	0	15,282
..	128	14,909
..	80	13,713
..	12,159
..	..	1,956	..	..	60,210
..	..	858	..	..	72,796
..	..	482	..	600	88,851
..	..	161	..	1,367	115,660
4,583	39,237	11,149	9,826	85,396	271,324
8,556	48,840	10,988	5,262	89,383	295,202
9,348	60,875	7,075	5,483	97,835	341,184
16,912	73,792	9,970	12,586	108,893	382,925
4,611	..	6,653	3,680	16,815	321,097
4,177	..	5,956	4,784	19,251	322,017
3,899	..	5,393	5,078	19,633	334,480
3,915	..	4,912	1,987	20,656	343,530
4,611	..	6,486	3,680	13,928	205,701
4,177	..	5,816	4,747	16,316	205,151
3,899	..	5,226	5,078	16,693	216,712
3,915	..	4,770	1,987	17,471	215,468
..	4,871
..	6,029
..	5,929
..	3,859
..	41
..	42
..	42
..	42
..	*522
..	*528
..	*529
..	*532
..	*195
..	*190
..	*185
..	*190
..	23
..	23
..	24
..	24
..	..	*5	..	..	118
..	..	*5	..	..	119
..	..	*5	..	..	120
..	..	*7	..	..	122
..	..	107	0	2,887	47,878
..	..	80	37	2,935	48,165
..	..	107	..	2,940	49,194
..	..	107	..	3,185	61,564
..	1
..	1
..	1
..	1
..	56,610
..	56,687
..	56,687
..	56,687

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Terajoules

Country or area	Year	Solid biofuels					
		Fuelwood	Animal waste	Vegetal waste	Bagasse	Black liquor	Charcoal
Samoa	2013	639	..	373	..	..	14
	2014	639	..	306	..	..	15
	2015	639	..	270	..	..	15
	2016	639	..	*277	..	..	16
Solomon Islands	2013	1,200	..	*2,020	..	..	40
	2014	1,209	..	*2,023	..	..	41
	2015	1,220	..	*2,024	..	..	42
	2016	1,223	..	*2,024	..	..	42
Tonga	2013	19	..	..	..	..	7
	2014	19	..	..	..	..	7
	2015	19	..	..	..	..	7
	2016	19	..	..	..	..	7
Vanuatu	2013	831	..	..	..	..	17
	2014	831	..	..	..	..	17
	2015	831	..	..	..	..	18
	2016	831	..	..	..	..	18

Production of biofuels and wastes

Terajoules

Non-biomass wastes		Liquid biofuels		Biogases	Total
Industrial waste	Municipal waste	Biogasoline	Biodiesel		
..	1,012
..	945
..	909
..	917
..	*3,220
..	*3,232
..	*3,244
..	*3,247
..	19
..	19
..	19
..	19
..	*55	..	886
..	*55	..	886
..	*55	..	886
..	*27	..	859