

## Production of biofuels and wastes

Terajoules

### Table Notes

The conversion of fuelwood (solid volume, 9.135 TJ/m<sup>3</sup>) 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

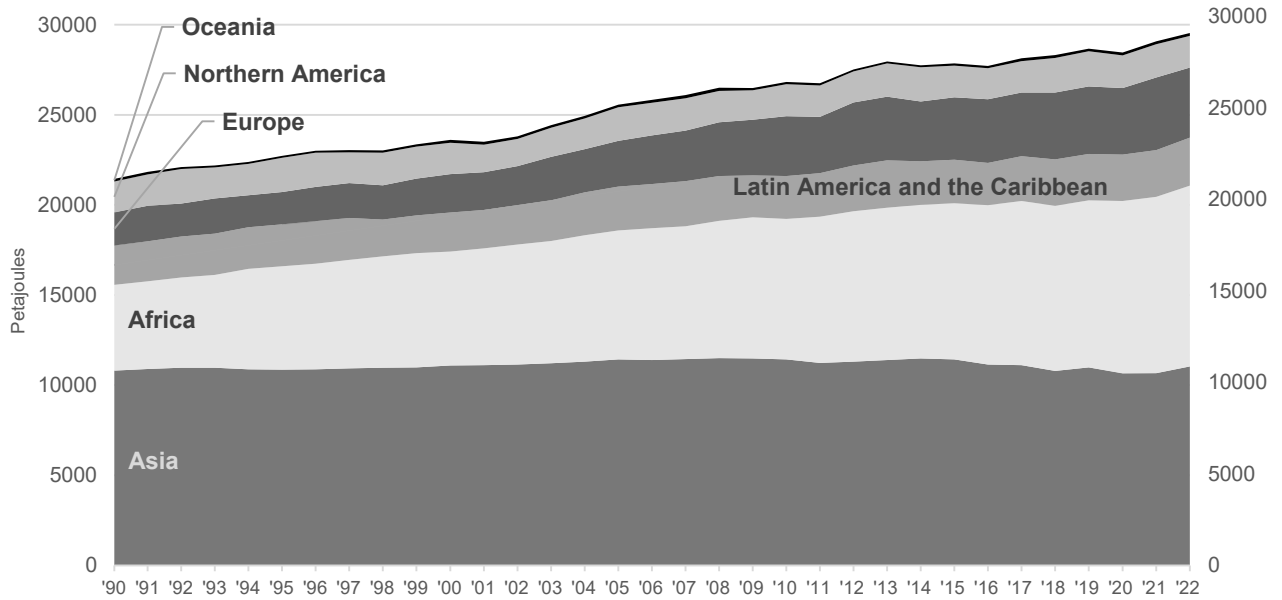
sugar production figures extracted from the Sugar Yearbook of the International Sugar Organization (London) or from the FAOSTAT database of the Food and Agriculture Organization of the United Nations.

Biogasoline includes Other liquid biofuels.

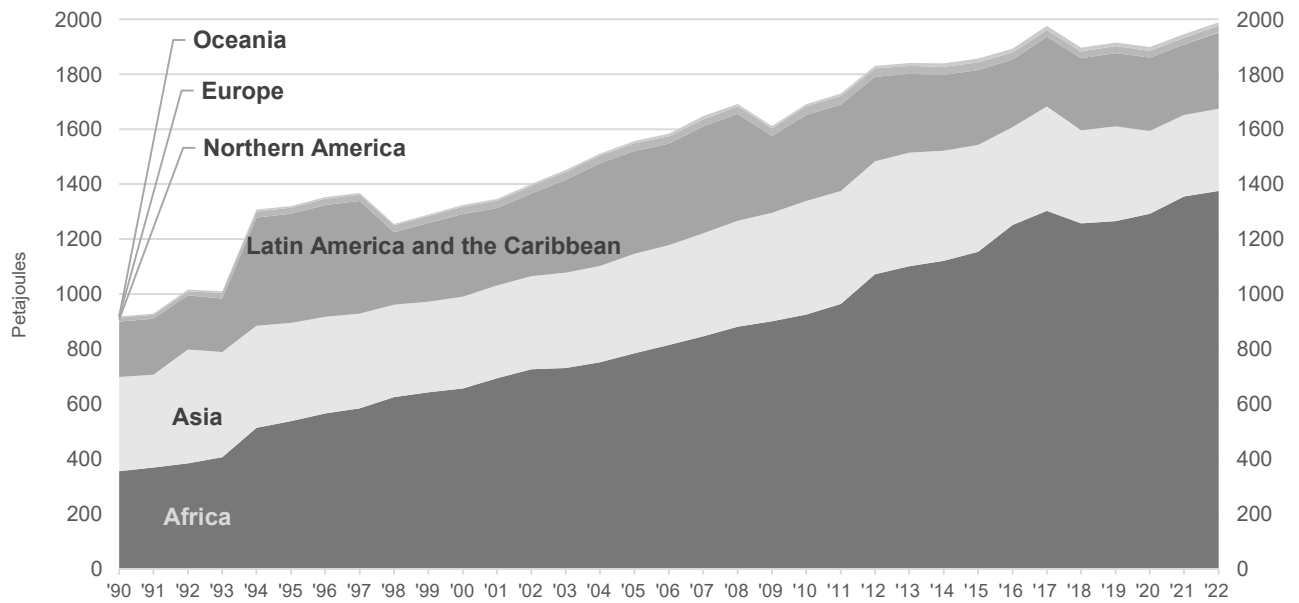
The total column excludes charcoal as it is the only secondary energy product in the table.

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.

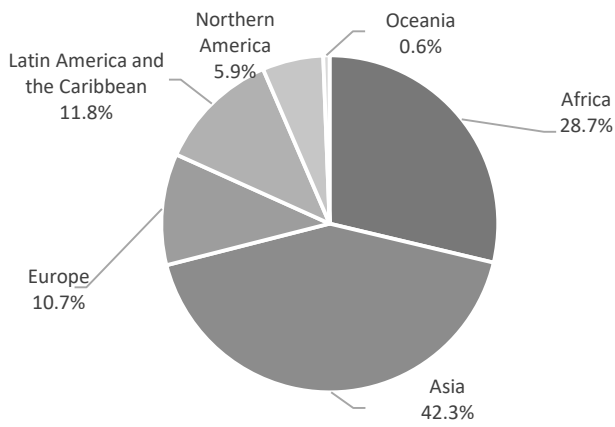
**Figure 32: Production of fuelwood by region, 1990-2022**



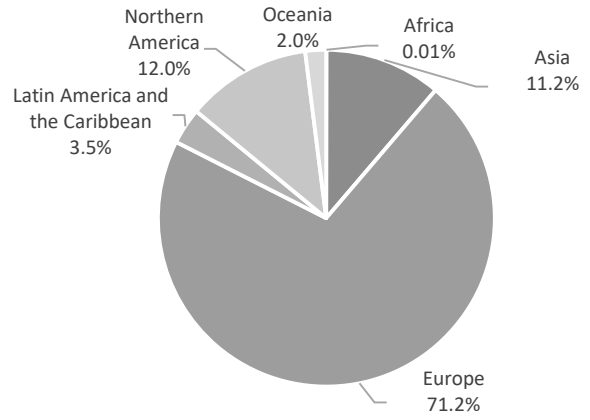
**Figure 33: Production of charcoal by region, 1990-2022**



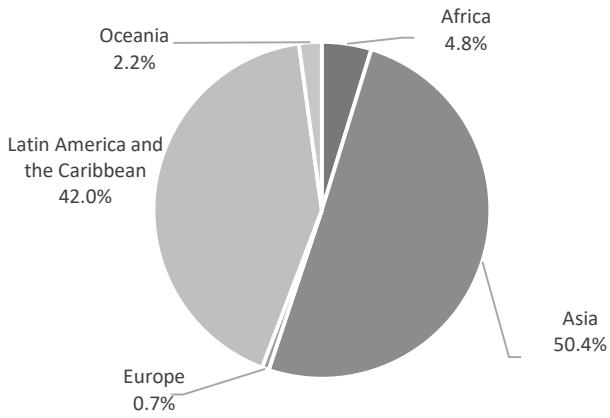
**Figure 34: Production of total solid biofuels by region, 2022**



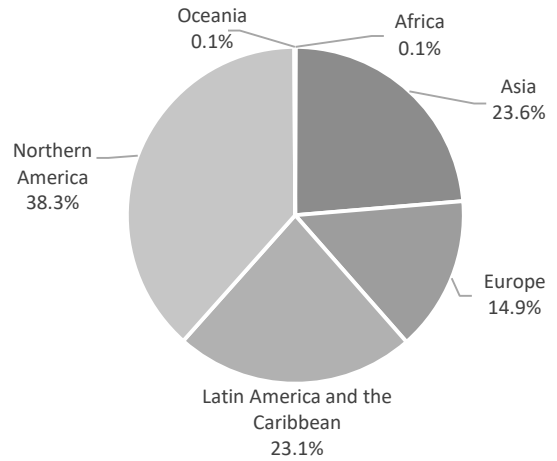
**Figure 35: Production of biogases by region, 2022**



**Figure 36: Production of bagasse by region, 2022**



**Figure 37: Production of liquids biofuels by region, 2022**



**Figure 38: Production of energy from waste by region, 2022**

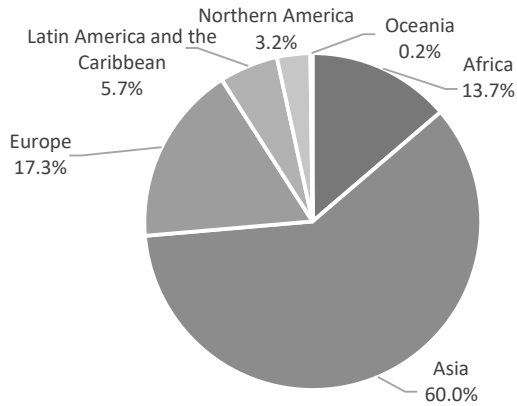


Table 13

## Production of biofuels and wastes

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Country or area	Year	Solid biofuels					
		Fuelwood	Animal waste	Vegetal waste	Bagasse	Black liquor	Charcoal
World	2019	28,673,832	328,149	7,559,362	3,955,725	1,828,805	1,914,945
	2020	28,447,734	329,900	7,755,475	4,028,380	1,723,047	1,898,823
	2021	29,073,915	346,253	8,434,921	3,861,699	1,764,480	1,946,083
	2022	29,537,368	347,521	8,045,507	4,060,944	1,751,058	1,988,795
Africa	2019	9,278,237	178,926	1,252,458	195,311	18,645	1,265,884
	2020	9,567,690	182,252	1,290,590	198,371	16,371	1,291,514
	2021	9,770,187	182,884	1,305,052	182,555	16,371	1,355,316
	2022	10,037,940	187,236	1,320,542	193,218	16,371	1,375,612
Algeria	2019	484	..	..	..	..	..
	2020	475	..	..	..	..	..
	2021	119	..	..	..	..	..
	2022	741	..	..	..	..	..
Angola	2019	171,135	..	111,234	*1,422	..	34,214
	2020	173,433	..	112,727	*1,429	..	34,663
	2021	175,585	..	114,126	*1,429	..	35,840
	2022	177,651	..	115,469	*1,429	..	36,261
Benin	2019	117,218	..	3,386	..	..	15,676
	2020	120,634	..	3,595	..	..	16,134
	2021	119,615	..	4,691	..	..	16,603
	2022	122,682	..	4,892	..	..	17,576
Botswana	2019	6,390	..	..	..	..	2,216
	2020	6,391	..	..	..	..	2,216
	2021	6,391	..	..	..	..	2,216
	2022	6,392	..	..	..	..	2,216
Burkina Faso	2019	174,888	..	1,650	1,084	..	30,562
	2020	*176,634	..	*1,663	*1,095	..	30,857
	2021	*181,047	..	*1,696	*1,122	..	31,624
	2022	*182,855	..	*1,704	*1,134	..	31,949
Burundi	2019	54,801	..	..	468	..	7,788
	2020	54,801	..	..	514	..	7,788
	2021	54,801	..	..	400	..	11,004
	2022	54,801	..	..	490	..	11,181
Cabo Verde	2019	*1,385	..	..	..	..	*20
	2020	*1,370	..	..	..	..	*19
	2021	*1,370	..	..	..	..	*19
	2022	*1,352	..	..	..	..	*19
Cameroon	2019	285,599	..	5,601	1,538	..	7,602
	2020	293,453	..	5,755	1,546	..	7,811
	2021	301,296	..	5,908	1,603	..	8,020
	2022	309,243	..	6,064	1,645	..	8,231
Central African Rep.	2019	38,284	..	..	..	..	435
	2020	39,241	..	..	..	..	446
	2021	43,165	..	..	..	..	490
	2022	*43,381	..	..	..	..	*493
Chad	2019	73,920	..	..	*985	..	14,839
	2020	74,948	..	..	*927	..	15,200
	2021	75,991	..	..	*942	..	15,572
	2022	77,054	..	..	*942	..	15,954
Comoros	2019	*4,202	..	*160	..	..	*266
	2020	*4,147	..	*160	..	..	*266
	2021	*4,102	..	*160	..	..	*266
	2022	*4,047	..	*160	..	..	*266
Congo	2019	46,210	..	23,105	..	..	7,194
	2020	46,866	..	23,433	..	..	7,296
	2021	47,550	..	23,775	..	..	7,403
	2022	48,245	..	24,122	..	..	7,511

Table 13

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Non-biomass wastes		Liquid biofuels		Biogases	Total
Industrial waste	Municipal waste	Biogasoline	Biodiesel		
1,132,807	1,406,224	2,418,751	1,830,542	1,005,070	50,139,266
1,157,539	1,415,264	2,179,465	1,776,554	1,033,809	49,847,168
1,179,715	1,431,135	2,288,402	1,970,441	1,091,545	51,442,507
1,188,065	1,447,919	2,321,706	2,067,573	1,101,784	51,869,446
3,106	1,393	2,581	..	118	10,930,776
2,828	1,407	2,504	..	134	11,262,146
3,090	1,428	2,589	..	118	11,464,273
2,875	1,440	2,562	..	112	11,762,293
..	..	..	..	..	484
..	..	..	..	..	475
..	..	..	..	..	119
..	..	..	..	..	741
..	..	..	..	..	283,791
..	..	..	..	..	287,589
..	..	..	..	..	291,140
..	..	..	..	..	294,549
..	..	..	..	..	120,604
..	..	..	..	..	124,229
..	..	..	..	..	124,306
..	..	..	..	..	127,574
..	..	..	..	..	6,390
..	..	..	..	..	6,391
..	..	..	..	..	6,391
..	..	..	..	..	6,392
..	1,393	..	..	*36	179,051
..	*1,407	..	..	*36	*180,835
..	*1,428	..	..	*36	*185,329
..	*1,440	..	..	*36	*187,168
..	..	..	..	..	55,268
..	..	..	..	..	55,315
..	..	..	..	..	55,201
..	..	..	..	..	55,291
..	..	..	..	..	*1,385
..	..	..	..	..	*1,370
..	..	..	..	..	*1,370
..	..	..	..	..	*1,352
..	..	..	..	7	292,745
..	..	..	..	7	300,761
..	..	..	..	7	308,814
..	..	..	..	7	316,959
..	..	..	..	..	38,284
..	..	..	..	..	39,241
..	..	..	..	..	43,165
..	..	..	..	..	*43,381
..	..	..	..	..	74,906
..	..	..	..	..	75,874
..	..	..	..	..	76,933
..	..	..	..	..	77,996
..	..	..	..	..	*4,362
..	..	..	..	..	*4,307
..	..	..	..	..	*4,262
..	..	..	..	..	*4,207
..	..	..	..	..	69,315
..	..	..	..	..	70,299
..	..	..	..	..	71,325
..	..	..	..	..	72,367

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Country or area	Year	Solid biofuels					Charcoal
		Fuelwood	Animal waste	Vegetal waste	Bagasse	Black liquor	
Côte d'Ivoire	2019	249,701	..	3,894	..	..	41,379
	2020	264,606	..	4,647	..	..	42,459
	2021	321,224	..	6,838	..	..	67,319
	2022	359,500	..	9,337	..	..	43,106
Dem. Rep. of the Congo	2019	1,219,458	..	..	4,131	..	249,494
	2020	1,270,090	..	..	4,131	..	256,921
	2021	1,311,685	..	..	*4,170	..	265,335
	2022	1,357,594	..	..	*4,232	..	274,622
Djibouti	2019	3,696	..	..	..	..	1,615
	2020	3,743	..	..	..	..	1,636
	2021	3,790	..	..	..	..	1,658
	2022	3,838	..	..	..	..	1,680
Egypt	2019	142,632	..	..	*23,939	..	43,279
	2020	143,592	..	..	32,247	..	42,427
	2021	144,517	..	..	26,726	..	42,736
	2022	142,112	..	..	34,541	..	43,047
Equatorial Guinea	2019	4,083	..	..	..	..	324
	2020	4,083	..	..	..	..	338
	2021	4,083	..	..	..	..	344
	2022	4,083	..	..	..	..	351
Eritrea	2019	26,133	2,770	1,508	..	..	4,841
	2020	26,500	2,808	1,529	..	..	4,918
	2021	26,911	2,852	1,553	..	..	5,008
	2022	*27,516	*2,916	*1,588	..	..	5,100
Eswatini	2019	*12,062	..	..	15,178	..	*295
	2020	12,062	..	..	15,956	..	277
	2021	12,062	..	..	14,150	..	277
	2022	*12,062	..	..	13,783	..	*295
Ethiopia	2019	1,305,207	162,923	159,697	3,241	..	163,645
	2020	1,334,603	166,332	163,038	2,909	..	167,899
	2021	1,335,581	166,966	163,660	2,529	..	176,588
	2022	1,396,178	171,265	167,874	*2,317	..	181,173
Gabon	2019	*29,528	..	*9,965	*5,985	..	9,411
	2020	*29,225	..	*10,039	*6,100	..	9,853
	2021	*28,922	..	*10,327	*6,185	..	10,473
	2022	*28,620	..	10,539	*6,224	..	11,186
Gambia	2019	7,074	..	..	..	..	2,083
	2020	7,153	..	..	..	..	2,121
	2021	7,233	..	..	..	..	2,161
	2022	7,314	..	..	..	..	2,200
Ghana	2019	173,064	..	..	..	..	52,066
	2020	178,994	..	..	..	..	54,453
	2021	174,939	..	..	..	..	45,312
	2022	183,388	..	..	..	..	53,582
Guinea	2019	113,089	..	..	*647	..	12,377
	2020	113,461	..	..	*649	..	12,619
	2021	113,861	..	..	*653	..	12,863
	2022	114,275	..	..	*663	..	13,112
Guinea-Bissau	2019	13,230	..	..	..	..	2,271
	2020	13,633	..	..	..	..	2,374
	2021	14,994	..	..	..	..	2,429
	2022	15,120	..	..	..	..	2,484
Kenya	2019	688,304	..	30,731	1,775	..	79,052
	2020	700,623	..	31,144	2,624	..	77,483
	2021	711,577	..	31,535	2,999	..	79,003
	2022	723,166	..	31,914	3,172	..	80,525

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Non-biomass wastes		Liquid biofuels		Biogases	Total
Industrial waste	Municipal waste	Biogasoline	Biodiesel		
..	..	..	..	..	253,594
..	..	..	..	..	269,253
..	..	..	..	..	328,062
..	..	..	..	..	368,837
..	..	..	..	..	1,223,589
..	..	..	..	..	1,274,221
..	..	..	..	..	1,315,855
..	..	..	..	..	1,361,826
..	..	..	..	..	3,696
..	..	..	..	..	3,743
..	..	..	..	..	3,790
..	..	..	..	..	3,838
..	..	..	..	..	166,571
..	..	..	..	..	175,839
..	..	..	..	..	171,243
..	..	..	..	..	176,653
..	..	..	..	..	4,083
..	..	..	..	..	4,083
..	..	..	..	..	4,083
..	..	..	..	..	4,083
..	..	..	..	..	30,411
..	..	..	..	..	30,837
..	..	..	..	..	31,315
..	..	..	..	..	*32,019
..	..	..	..	..	27,240
..	..	..	..	..	28,018
..	..	..	..	..	26,212
..	..	2	..	..	25,847
..	..	302	..	..	1,631,371
..	..	303	..	..	1,667,186
..	..	336	..	..	1,669,072
..	..	357	..	..	1,737,991
..	..	..	..	..	*45,478
..	..	..	..	..	*45,365
..	..	..	..	..	*45,435
..	..	..	..	..	*45,383
..	..	..	..	..	7,074
..	..	..	..	..	7,153
..	..	..	..	..	7,233
..	..	..	..	..	7,314
..	..	..	..	..	173,064
..	..	..	..	..	178,994
..	..	..	..	..	174,939
..	..	..	..	..	183,388
..	..	..	..	..	113,736
..	..	..	..	..	114,110
..	..	..	..	..	114,514
..	..	..	..	..	114,939
..	..	..	..	..	13,230
..	..	..	..	..	13,633
..	..	..	..	..	14,994
..	..	..	..	..	15,120
..	..	..	..	4	720,814
..	..	..	..	2	734,393
..	..	..	..	6	746,117
..	..	..	..	4	758,256

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Country or area	Year	Solid biofuels					
		Fuelwood	Animal waste	Vegetal waste	Bagasse	Black liquor	Charcoal
Lesotho	2019	*9,793	*6,439	*85	..	..	0
	2020	*9,857	*6,292	*64	..	..	0
	2021	*9,884	*6,149	*49	..	..	0
	2022	9,087	6,010	37	..	..	1
Liberia	2019	86,462	..	..	..	..	9,513
	2020	89,276	..	..	..	..	9,853
	2021	92,181	..	..	..	..	*10,178
	2022	95,177	..	..	..	..	10,522
Libya	2019	25,222	..	..	..	..	3,405
	2020	25,497	..	..	..	..	3,439
	2021	25,768	..	..	..	..	3,474
	2022	26,037	..	..	..	..	3,508
Madagascar	2019	312,613	..	..	2,487	..	28,497
	2020	*325,117	..	..	*2,462	..	*29,636
	2021	*338,122	..	..	*2,511	..	*30,822
	2022	*338,122	..	..	*2,511	..	*30,822
Malawi	2019	133,563	..	..	*5,614	..	6,967
	2020	137,220	..	..	5,097	..	7,396
	2021	140,879	..	..	3,961	..	7,959
	2022	137,220	..	..	3,961	..	8,520
Mali	2019	*143,910	..	..	896	..	17,435
	2020	*143,838	..	..	896	..	18,054
	2021	143,675	..	..	896	..	18,703
	2022	148,846	..	..	896	..	19,382
Mauritania	2019	20,179	..	..	..	..	6,844
	2020	20,563	..	..	..	..	6,992
	2021	20,947	..	..	..	..	7,139
	2022	*21,330	..	..	..	..	*7,287
Mauritius	2019	162	..	..	8,541	..	12
	2020	145	..	..	7,087	..	12
	2021	139	..	..	6,716	..	9
	2022	140	..	..	5,690	..	8
Morocco	2019	61,315	..	..	1,122	..	616
	2020	60,685	..	..	1,714	..	622
	2021	59,916	..	..	1,326	..	638
	2022	59,504	..	..	1,236	..	653
Mozambique	2019	278,241	..	17,147	9,520	..	48,647
	2020	282,748	..	17,384	8,988	..	49,125
	2021	287,241	..	17,663	9,179	..	49,613
	2022	296,834	..	16,126	9,721	..	51,077
Namibia	2019	18,426	..	1,594	..	..	7,258
	2020	20,161	..	1,496	..	..	8,475
	2021	21,366	..	1,532	..	..	9,139
	2022	*26,656	..	*1,819	..	..	11,317
Niger	2019	*94,287	*876	*705	..	..	1,711
	2020	*95,389	*949	*763	..	..	1,800
	2021	*96,492	1,172	879	..	..	1,926
	2022	*97,595	*1,340	*1,086	..	..	*2,065
Nigeria	2019	736,099	..	266,381	*541	..	40,244
	2020	754,801	..	270,562	*548	..	41,584
	2021	775,602	..	271,257	*548	..	43,035
	2022	781,872	..	276,336	*556	..	43,756
Rwanda	2019	*84,526	..	..	248	..	*18,467
	2020	*84,800	..	..	*243	..	*18,556
	2021	*84,800	..	..	*243	..	*18,556
	2022	*89,888	..	..	*246	..	*19,576



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Non-biomass wastes		Liquid biofuels		Biogases	Total
Industrial waste	Municipal waste	Biogasoline	Biodiesel		
..	..	..	..	..	*16,316
..	..	..	..	..	*16,213
..	..	..	..	..	*16,082
..	..	..	..	..	15,134
..	..	..	..	..	86,462
..	..	..	..	..	89,276
..	..	..	..	..	92,181
..	..	..	..	..	95,177
..	..	..	..	..	25,222
..	..	..	..	..	25,497
..	..	..	..	..	25,768
..	..	..	..	..	26,037
..	..	..	..	..	315,100
..	..	..	..	..	*327,579
..	..	..	..	..	*340,634
..	..	..	..	..	*340,634
*98	..	371	..	..	139,645
45	..	307	..	..	142,669
46	..	316	..	..	145,203
48	..	152	..	..	141,382
..	..	..	..	..	*144,806
..	..	..	..	..	*144,734
..	..	..	..	..	144,571
..	..	..	..	..	149,741
..	..	..	..	..	20,179
..	..	..	..	..	20,563
..	..	..	..	..	20,947
..	..	..	..	..	*21,330
..	..	..	..	71	8,775
..	..	..	..	89	7,321
..	..	..	..	69	6,923
..	..	..	..	*65	5,895
3,008	..	..	..	..	65,445
2,783	..	..	..	..	65,182
3,044	..	..	..	..	64,286
2,827	..	..	..	..	63,567
..	..	..	..	..	304,908
..	..	..	..	..	309,120
..	..	..	..	..	314,083
..	..	..	..	..	322,681
..	..	..	..	..	20,020
..	..	..	..	..	21,657
..	..	..	..	..	22,898
..	..	..	..	..	*28,475
..	..	..	..	..	*95,868
..	..	..	..	..	*97,101
..	..	..	..	..	*98,543
..	..	..	..	..	*100,021
..	..	..	..	..	1,003,021
..	..	..	..	..	1,025,911
..	..	..	..	..	1,047,407
..	..	..	..	..	1,058,764
..	..	..	..	..	*84,774
..	..	..	..	..	*85,043
..	..	..	..	..	*85,043
..	..	..	..	..	*90,134

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Terajoules

Country or area	Year	Solid biofuels					
		Fuelwood	Animal waste	Vegetal waste	Bagasse	Black liquor	Charcoal
Sao Tome and Principe	2019	1,039	..	..	..	..	289
	2020	1,051	..	..	..	..	295
	2021	1,056	..	..	..	..	300
	2022	1,061	..	..	..	..	303
Senegal	2019	65,601	..	1,513	5,880	..	5,476
	2020	75,144	..	1,680	6,003	..	6,728
	2021	76,709	..	1,885	3,642	..	6,918
	2022	75,565	..	1,218	3,428	..	6,688
Seychelles	2019	29	..	..	..	..	..
	2020	29	..	..	..	..	..
	2021	29	..	..	..	..	..
	2022	29	..	..	..	..	..
Sierra Leone	2019	54,572	..	*72	*201	..	13,924
	2020	55,038	..	*72	*201	..	14,249
	2021	55,519	..	*72	*201	..	14,561
	2022	*56,024	..	*72	*201	..	14,886
Somalia	2019	146,278	..	..	503	..	40,235
	2020	150,132	..	..	460	..	41,704
	2021	154,103	..	..	461	..	43,230
	2022	*156,414	..	..	*464	..	*43,878
South Africa	2019	90,838	..	..	56,494	18,645	8,247
	2020	88,080	..	..	53,494	16,371	7,531
	2021	87,717	..	..	50,496	16,371	7,618
	2022	84,952	..	..	52,822	16,371	7,402
South Sudan	2019	8,449	..	..	..	..	347
	2020	8,570	..	..	..	..	352
	2021	8,679	..	..	..	..	357
	2022	8,348	..	..	..	..	362
St. Helena and Depend.	2019	5	..	..	..	..	..
	2020	5	..	..	..	..	..
	2021	5	..	..	..	..	..
	2022	5	..	..	..	..	..
Sudan	2019	*180,142	..	*9,588	*17,004	..	*29,500
	2020	*172,266	..	9,658	16,742	..	21,703
	2021	*168,541	..	*9,725	*16,757	..	21,703
	2022	*172,652	..	*9,800	*16,911	..	*22,125
Togo	2019	127,498	..	1,415	..	..	21,594
	2020	135,797	..	1,495	..	..	22,125
	2021	126,387	..	2,150	..	..	22,627
	2022	*127,839	..	*2,054	..	..	23,158
Tunisia	2019	39,946	5,919	..	..	..	6,873
	2020	40,193	5,870	..	..	..	7,028
	2021	40,477	5,744	..	..	..	7,139
	2022	40,720	5,705	..	..	..	7,291
Uganda	2019	550,564	..	193,277	11,892	..	76,954
	2020	631,742	..	215,136	11,589	..	84,054
	2021	651,340	..	219,859	11,609	..	94,571
	2022	672,274	..	223,859	*11,892	..	99,317
United Rep. of Tanzania	2019	569,782	..	239,151	7,761	..	50,367
	2020	578,493	..	240,519	7,822	..	51,784
	2021	587,518	..	234,223	7,599	..	53,237
	2022	598,752	..	233,664	7,644	..	54,732
Zambia	2019	274,789	..	46,914	*3,475	..	34,665
	2020	280,017	..	47,806	*3,475	..	35,324
	2021	*282,336	..	52,770	*3,500	..	*36,875
	2022	*298,619	..	53,683	*3,500	..	38,232

Table 13

## Production of biofuels and wastes

Terajoules

Non-biomass wastes		Liquid biofuels		Biogases	Total
Industrial waste	Municipal waste	Biogasoline	Biodiesel		
..	..	..	..	..	1,039
..	..	..	..	..	1,051
..	..	..	..	..	1,056
..	..	..	..	..	1,061
..	..	..	..	..	72,994
..	..	..	..	..	82,826
..	..	..	..	..	82,236
..	..	..	..	..	80,211
..	..	..	..	..	29
..	..	..	..	..	29
..	..	..	..	..	29
..	..	..	..	..	29
..	..	..	..	..	54,845
..	..	..	..	..	55,311
..	..	..	..	..	55,792
..	..	..	..	..	*56,296
..	..	..	..	..	146,782
..	..	..	..	..	150,592
..	..	..	..	..	154,564
..	..	..	..	..	*156,878
..	..	..	..	..	165,977
..	..	..	..	..	157,945
..	..	..	..	..	154,584
..	..	..	..	..	154,145
..	..	..	..	..	8,449
..	..	..	..	..	8,570
..	..	..	..	..	8,679
..	..	..	..	..	8,348
..	..	..	..	..	5
..	..	..	..	..	5
..	..	..	..	..	5
..	..	..	..	..	5
..	..	..	..	..	*206,733
..	..	..	..	..	*198,665
..	..	..	..	..	*195,023
..	..	..	..	..	*199,363
..	..	..	..	..	128,913
..	..	..	..	..	137,292
..	..	..	..	..	128,537
..	..	..	..	..	*129,892
..	..	..	..	..	45,864
..	..	..	..	..	46,063
..	..	..	..	..	46,220
..	..	..	..	..	46,425
..	..	..	..	..	755,734
..	..	..	..	..	858,467
..	..	..	..	..	882,809
..	..	..	..	..	908,026
..	..	..	..	..	816,694
..	..	..	..	..	826,835
..	..	..	..	..	829,339
..	..	..	..	..	840,060
..	..	..	..	..	325,178
..	..	..	..	..	331,299
..	..	..	..	..	*338,606
..	..	..	..	..	*355,801

Table 13

## Production of biofuels and wastes

Terajoules

Country or area	Year	Solid biofuels					
		Fuelwood	Animal waste	Vegetal waste	Bagasse	Black liquor	Charcoal
Zimbabwe	2019	202,127	..	123,687	2,741	..	*4,856
	2020	206,274	..	126,225	1,423	..	*4,621
	2021	*210,348	..	*128,718	*3	..	*4,428
	2022	213,167	..	*127,125	968	..	4,626
<b>Asia</b>	<b>2019</b>	<b>10,978,052</b>	<b>129,675</b>	<b>5,377,846</b>	<b>1,870,631</b>	<b>172,494</b>	<b>344,498</b>
	<b>2020</b>	<b>10,657,550</b>	<b>128,403</b>	<b>5,496,801</b>	<b>1,806,924</b>	<b>145,834</b>	<b>301,682</b>
	<b>2021</b>	<b>10,671,230</b>	<b>146,550</b>	<b>5,913,104</b>	<b>1,799,439</b>	<b>159,220</b>	<b>296,585</b>
	<b>2022</b>	<b>11,036,248</b>	<b>143,341</b>	<b>5,677,228</b>	<b>2,045,756</b>	<b>155,117</b>	<b>298,472</b>
Afghanistan	2019	17,578	..	..	..	..	4,265
	2020	17,898	..	..	..	..	4,384
	2021	18,225	..	..	..	..	4,508
	2022	18,559	..	..	..	..	4,633
Armenia	2019	4,976	2,762	..	..	..	..
	2020	5,339	2,863	..	..	..	..
	2021	4,581	2,770	..	..	..	..
	2022	5,036	2,527	..	..	..	..
Azerbaijan	2019	1,413	..	408	..	..	3
	2020	974	..	397	..	..	2
	2021	838	..	372	..	..	3
	2022	644	..	267	..	..	6
Bahrain	2019	66	..	..	..	..	35
	2020	64	..	..	..	..	35
	2021	68	..	..	..	..	36
	2022	69	..	..	..	..	36
Bangladesh	2019	286,779	101,766	193,698	*1,949	..	10,023
	2020	289,646	100,810	191,878	*1,977	..	10,048
	2021	290,862	118,887	226,286	*2,331	..	10,076
	2022	281,718	114,871	218,642	*2,252	..	10,103
Bhutan	2019	48,209	..	..	..	..	257
	2020	48,591	..	..	..	..	263
	2021	48,976	..	..	..	..	263
	2022	49,329	..	..	..	..	271
Brunei Darussalam	2019	106	..	..	..	..	10
	2020	106	..	..	..	..	10
	2021	106	..	..	..	..	10
	2022	106	..	..	..	..	10
Cambodia	2019	63,554	..	1,388	..	..	9,470
	2020	65,015	..	1,272	..	..	9,953
	2021	63,923	..	956	..	..	9,233
	2022	62,867	..	240	..	..	8,564
China	2019	1,460,521	..	2,760,247	261,810	..	47,510
	2020	1,433,306	..	2,830,491	*270,274	..	47,123
	2021	1,406,900	..	3,082,977	*270,274	..	46,727
	2022	1,380,987	..	3,165,215	*270,274	..	46,334
China, Macao SAR	2019	..	..	..	..	..	..
	2020	..	..	..	..	..	..
	2021	..	..	..	..	..	..
	2022	..	..	..	..	..	..
Cyprus	2019	798	..	246	..	..	40
	2020	761	..	217	..	..	34
	2021	748	..	257	..	..	39
	2022	966	..	322	..	..	61
Georgia	2019	8,625	137	32	..	..	..
	2020	8,072	43	31	..	..	..
	2021	8,368	31	19	..	..	..
	2022	7,416	37	13	..	..	..

Table 13

## Production of biofuels and wastes

Terajoules

Non-biomass wastes		Liquid biofuels		Biogases	Total
Industrial waste	Municipal waste	Biogasoline	Biodiesel		
..	..	1,908	..	..	330,463
..	..	1,893	..	..	335,815
..	..	1,937	..	..	*341,005
..	..	2,050	..	..	343,310
<b>555,157</b>	<b>189,722</b>	<b>202,375</b>	<b>762,507</b>	<b>102,571</b>	<b>20,341,031</b>
<b>540,561</b>	<b>186,482</b>	<b>182,696</b>	<b>735,472</b>	<b>104,693</b>	<b>19,985,418</b>
<b>537,729</b>	<b>193,838</b>	<b>201,285</b>	<b>778,701</b>	<b>115,933</b>	<b>20,517,029</b>
<b>546,760</b>	<b>244,746</b>	<b>216,842</b>	<b>817,574</b>	<b>123,592</b>	<b>21,007,205</b>
..	..	..	..	..	17,578
..	..	..	..	..	17,898
..	..	..	..	..	18,225
..	..	..	..	..	18,559
..	..	..	..	..	7,738
..	..	..	..	..	8,202
..	..	..	..	..	7,352
..	..	..	..	..	7,563
..	3,075	..	..	..	4,895
..	3,164	..	..	..	4,535
..	3,019	..	..	..	4,229
..	3,093	..	..	..	4,004
..	..	..	..	..	66
..	..	..	..	..	64
..	..	..	..	..	68
..	..	..	..	..	69
..	..	..	..	..	584,192
..	..	..	..	..	584,311
..	..	..	..	..	638,366
..	..	..	..	..	617,483
..	..	..	..	..	48,209
..	..	..	..	..	48,591
..	..	..	..	..	48,976
..	..	..	..	..	49,329
..	..	..	..	..	106
..	..	..	..	..	106
..	..	..	..	..	106
..	..	..	..	..	106
..	..	..	..	..	64,942
..	..	..	..	..	66,288
..	..	..	..	..	64,879
..	..	..	..	..	63,107
181,564	..	85,760	*323,840	..	5,073,742
163,570	..	81,027	*312,800	..	5,091,468
140,933	..	78,344	*323,840	..	5,303,267
146,252	..	80,507	*323,840	..	5,367,075
..	3,878	..	..	..	3,878
..	3,423	..	..	..	3,423
..	3,554	..	..	..	3,554
..	3,400	..	..	..	3,400
164	101	..	..	579	1,889
271	148	..	..	556	1,952
251	316	..	..	559	2,130
217	432	..	..	521	2,458
..	..	..	10	..	8,803
..	..	..	4	..	8,151
..	..	..	0	..	8,419
..	..	..	0	..	7,467

Table 13

## Production of biofuels and wastes

Terajoules

Country or area	Year	Solid biofuels					
		Fuelwood	Animal waste	Vegetal waste	Bagasse	Black liquor	Charcoal
India	2019	5,851,142	..	1,047,001	957,070	..	*80,535
	2020	5,998,430	..	1,092,146	954,022	..	*76,553
	2021	6,160,345	..	1,107,256	974,946	..	*74,724
	2022	6,226,970	..	1,111,833	1,186,068	..	*50,711
Indonesia	2019	947,857	..	419,574	*53,782	..	52,923
	2020	569,187	..	493,729	*63,800	..	23,866
	2021	460,937	..	543,435	*51,159	..	23,069
	2022	677,366	..	138,417	*47,483	..	41,770
Iran (Islamic Rep. of)	2019	*73,994	*1,175	8,205	..	..	5
	2020	*73,994	*1,175	8,579	..	..	7
	2021	*73,994	*1,175	8,629	..	..	7
	2022	*74,450	*1,180	9,298	..	..	7
Iraq	2019	2,008	..	..	..	..	574
	2020	2,039	..	..	..	..	583
	2021	2,190	..	..	..	..	626
	2022	2,220	..	..	..	..	635
Israel	2019	183	..	..	..	..	..
	2020	183	..	..	..	..	..
	2021	183	..	..	..	..	..
	2022	183	..	..	..	..	..
Japan	2019	79,194	..	102,947	..	144,794	235
	2020	89,763	..	89,951	..	120,939	217
	2021	92,238	..	117,225	..	133,195	197
	2022	97,358	..	85,732	..	132,948	185
Jordan	2019	3,397	..	..	..	..	1,473
	2020	3,469	..	..	..	..	1,506
	2021	3,540	..	..	..	..	1,537
	2022	3,613	..	..	..	..	1,572
Kazakhstan	2019	2,436	..	..	..	..	41
	2020	1,862	..	11	..	..	50
	2021	936	..	..	..	..	43
	2022	323	..	157	..	..	106
Korea, Dem.Ppl's.Rep.	2019	46,788	..	..	..	..	4,970
	2020	46,992	..	..	..	..	5,011
	2021	47,182	..	..	..	..	5,050
	2022	47,359	..	..	..	..	5,050
Korea, Republic of	2019	76,104	..	..	..	7,857	..
	2020	71,464	..	..	..	7,666	..
	2021	65,786	..	..	..	6,696	..
	2022	73,600	..	..	..	7,097	..
Kuwait	2019	189	..	..	..	..	93
	2020	190	..	..	..	..	94
	2021	193	..	..	..	..	95
	2022	195	..	..	..	..	95
Kyrgyzstan	2019	85	..	..	..	..	..
	2020	69	..	..	..	..	..
	2021	54	..	..	..	..	..
	2022	60	..	..	..	..	..
Lao People's Dem. Rep.	2019	52,363	..	..	4,031	..	*6,195
	2020	52,025	..	..	*3,830	..	6,048
	2021	*51,687	..	..	*4,015	..	*6,136
	2022	51,357	..	..	*4,031	..	6,195
Lebanon	2019	4,971	..	..	..	..	89
	2020	4,931	..	..	..	..	89
	2021	4,928	..	..	..	..	89
	2022	*5,024	..	..	..	..	89

Table 13

## Production of biofuels and wastes

Terajoules

Non-biomass wastes		Liquid biofuels		Biogases	Total
Industrial waste	Municipal waste	Biogasoline	Biodiesel		
..	..	41,513	6,550	..	7,903,277
..	..	36,823	5,888	..	8,087,310
..	..	62,900	6,072	..	8,311,518
..	..	73,700	6,550	..	8,605,122
..	..	..	271,993	526	1,693,731
..	..	..	278,282	*526	1,405,524
..	..	..	312,658	*526	1,368,714
..	..	..	356,856	*540	1,220,661
..	..	..	..	219	*83,592
..	..	..	..	278	*84,025
..	..	..	..	271	*84,068
..	..	..	..	271	*85,199
..	..	..	..	..	2,008
..	..	..	..	..	2,039
..	..	..	..	..	2,190
..	..	..	..	..	2,220
1,807	2,142	..	..	878	5,010
1,855	2,203	..	..	963	5,204
1,803	1,607	..	..	846	4,439
1,851	1,656	..	..	913	4,603
232,850	32,094	4	465	147	592,496
228,859	29,774	4	382	159	559,830
238,936	31,697	..	315	137	613,742
240,414	37,266	..	315	166	594,200
..	..	..	..	42	3,439
..	..	..	..	42	3,511
..	..	..	..	31	3,571
..	..	..	..	1	3,614
..	..	..	..	43	2,479
..	..	..	..	70	1,943
..	..	85	..	37	1,058
..	..	237	..	3	721
..	..	..	..	..	46,788
..	..	..	..	..	46,992
..	..	..	..	..	47,182
..	..	..	..	..	47,359
102,191	37,090	12,841	23,551	8,108	267,743
107,650	36,229	10,731	23,885	8,384	266,010
110,470	35,270	8,089	24,072	8,043	258,426
110,539	34,019	7,727	25,543	9,642	268,167
..	..	..	..	..	189
..	..	..	..	..	190
..	..	..	..	..	193
..	..	..	..	..	195
..	..	..	..	..	85
..	..	..	..	..	69
..	..	..	..	..	54
..	..	..	..	..	60
..	..	..	..	..	56,394
..	..	..	..	..	55,855
..	..	..	..	..	*55,702
..	..	..	..	..	55,388
..	3	..	..	415	5,389
..	2	..	..	257	5,190
..	..	..	..	..	4,928
..	..	..	..	..	*5,024

Table 13

## Production of biofuels and wastes

Terajoules

Country or area	Year	Solid biofuels					Charcoal
		Fuelwood	Animal waste	Vegetal waste	Bagasse	Black liquor	
Malaysia	2019	22,083	..	12,624	45	..	458
	2020	21,751	..	9,945	51	..	515
	2021	21,438	..	10,886	54	..	..
	2022	21,136	..	10,925	54	..	77
Maldives	2019	151	..	..	..	..	26
	2020	152	..	..	..	..	27
	2021	153	..	..	..	..	27
	2022	153	..	..	..	..	28
Mongolia	2019	5,481	..	..	..	..	515
	2020	5,772	..	..	..	..	519
	2021	6,686	..	..	..	..	523
	2022	6,697	..	..	..	..	523
Myanmar	2019	334,811	..	33,900	8,842	..	1,310
	2020	335,292	..	30,925	6,479	..	983
	2021	*338,317	..	28,750	6,508	..	*1,394
	2022	421,455	..	29,045	10,333	..	4,016
Nepal	2019	367,766	17,878	18,254	..	..	324
	2020	378,726	17,967	18,782	..	..	329
	2021	387,578	18,387	19,580	..	..	337
	2022	*379,482	*19,500	*21,400	..	..	271
Oman	2019	458	..	..	..	..	221
	2020	458	..	..	..	..	221
	2021	469	..	..	..	..	232
	2022	469	..	..	..	..	232
Other Asia	2019	6,780	..	..	..	..	..
	2020	6,572	..	..	..	..	..
	2021	7,143	..	..	..	..	..
	2022	7,170	..	..	..	..	..
Pakistan	2019	*306,579	*5,387	*252,769	*149,508	..	2,617
	2020	*303,604	*5,118	*250,317	*149,824	..	2,617
	2021	*298,916	*4,862	*246,452	*150,224	..	*2,614
	2022	*294,467	*4,789	*246,100	*149,886	..	*2,623
Philippines	2019	*279,500	569	38,065	32,768	..	65,372
	2020	*281,131	427	33,312	31,280	..	67,098
	2021	*286,417	437	33,398	30,342	..	69,856
	2022	*291,343	437	33,174	32,376	..	72,594
Qatar	2019	47	..	..	..	..	23
	2020	47	..	..	..	..	23
	2021	47	..	..	..	..	23
	2022	47	..	..	..	..	23
Singapore	2019	258	..	..	..	..	137
	2020	258	..	..	..	..	137
	2021	250	..	..	..	..	133
	2022	250	..	..	..	..	133
Sri Lanka	2019	128,649	..	..	1,651	..	..
	2020	131,422	..	..	1,545	..	..
	2021	132,686	..	..	2,030	..	..
	2022	*132,686	..	..	*2,317	..	..
State of Palestine	2019	3,541	..	1,190	..	..	..
	2020	3,582	..	510	..	..	..
	2021	3,668	..	453	..	..	..
	2022	3,760	..	1,376	..	..	..
Syrian Arab Republic	2019	330	..	..	..	..	80
	2020	333	..	..	..	..	80
	2021	335	..	..	..	..	80
	2022	339	..	..	..	..	80



Table 13

## Production of biofuels and wastes

Terajoules

Non-biomass wastes		Liquid biofuels		Biogases	Total
Industrial waste	Municipal waste	Biogasoline	Biodiesel		
..	..	..	56,557	4,425	95,733
..	..	..	38,182	6,025	75,954
..	..	..	41,910	5,795	80,084
..	..	..	41,910	5,835	79,860
..	..	..	..	..	151
..	..	..	..	..	152
..	..	..	..	..	153
..	..	..	..	..	153
..	..	..	..	..	5,481
..	..	..	..	..	5,772
..	..	..	..	..	6,686
..	..	..	..	..	6,697
..	3,172	..	..	1	380,726
..	2,572	..	..	*1	375,269
..	2,144	..	..	*1	*375,719
..	1,185	..	..	*1	462,019
..	..	..	..	10,141	414,039
..	..	..	..	9,757	425,233
..	..	..	..	10,488	436,034
..	..	..	..	10,668	*431,050
..	..	..	..	..	458
..	..	..	..	..	458
..	..	..	..	..	469
..	..	..	..	..	469
..	63,691	3	..	243	70,717
..	62,641	3	..	827	70,043
..	62,602	2	..	540	70,287
..	63,379	2	..	723	71,274
..	..	..	*110	..	*714,354
..	..	..	*258	..	*709,121
..	..	..	*331	..	*700,786
..	..	..	*184	..	*695,426
..	634	13,030	7,044	..	*371,611
..	467	10,141	5,195	..	*361,953
..	274	13,116	6,191	..	*370,174
..	609	13,488	7,437	..	*378,863
..	..	..	..	..	47
..	..	..	..	..	47
..	..	..	..	..	47
..	..	..	..	..	47
..	25,133	..	..	..	25,392
..	23,346	..	..	..	23,604
..	21,888	..	..	..	22,138
..	25,464	..	..	..	25,714
..	..	..	..	..	130,300
..	..	..	..	..	132,967
..	..	..	..	..	134,716
..	..	..	..	..	*135,003
..	..	..	..	..	4,731
..	..	..	..	..	4,092
..	..	..	..	..	4,120
..	..	..	..	..	5,136
..	..	..	..	..	330
..	..	..	..	..	333
..	..	..	..	..	335
..	..	..	..	..	339

Table 13

## Production of biofuels and wastes

Terajoules

Country or area	Year	Solid biofuels					
		Fuelwood	Animal waste	Vegetal waste	Bagasse	Black liquor	Charcoal
Tajikistan	2019	50,142	..	..	..	..	..
	2020	50,142	..	..	..	..	..
	2021	50,142	..	..	..	..	..
	2022	50,142	..	..	..	..	..
Thailand	2019	163,876	..	338,373	361,997	19,843	42,510
	2020	125,433	..	302,230	285,324	17,229	32,568
	2021	103,837	..	287,131	258,775	19,329	27,701
	2022	109,582	..	405,681	293,540	15,072	28,851
Timor-Leste	2019	742	..	..	..	..	..
	2020	709	..	..	..	..	..
	2021	677	..	..	..	..	..
	2022	647	..	..	..	..	..
Türkiye	2019	43,794	..	30,898	..	..	..
	2020	48,232	..	38,454	..	..	..
	2021	49,860	..	45,703	..	..	..
	2022	56,940	..	51,192	..	..	..
Turkmenistan	2019	77	..	..	..	..	..
	2020	77	..	..	..	..	..
	2021	78	..	..	..	..	..
	2022	79	..	..	..	..	..
United Arab Emirates	2019	..	..	..	..	..	..
	2020	..	..	..	..	..	..
	2021	..	..	..	..	..	..
	2022	..	..	..	..	..	..
Uzbekistan	2019	*929	..	..	..	..	..
	2020	*959	..	..	..	..	..
	2021	*1,005	..	..	..	..	..
	2022	*621	..	..	..	..	..
Viet Nam	2019	223,240	..	118,026	37,179	..	10,060
	2020	172,915	..	103,623	38,519	..	8,541
	2021	168,005	..	153,341	48,781	..	9,005
	2022	185,146	..	*148,198	*47,143	..	10,346
Yemen	2019	5,486	..	..	..	..	2,102
	2020	5,614	..	..	..	..	2,151
	2021	5,736	..	..	..	..	2,198
	2022	5,860	..	..	..	..	2,245
<b>Europe</b>	<b>2019</b>	<b>3,740,159</b>	<b>19,535</b>	<b>355,842</b>	<b>25,911</b>	<b>570,180</b>	<b>12,820</b>
	<b>2020</b>	<b>3,702,454</b>	<b>19,241</b>	<b>370,345</b>	<b>29,638</b>	<b>565,976</b>	<b>13,172</b>
	<b>2021</b>	<b>4,035,058</b>	<b>16,795</b>	<b>401,480</b>	<b>25,890</b>	<b>578,002</b>	<b>12,989</b>
	<b>2022</b>	<b>3,887,568</b>	<b>16,879</b>	<b>396,316</b>	<b>26,888</b>	<b>563,380</b>	<b>11,100</b>
Albania	2019	6,699	..	..	..	..	59
	2020	6,490	..	..	..	..	103
	2021	6,314	..	..	..	..	30
	2022	6,155	..	..	..	..	35
Andorra	2019	..	..	..	..	..	..
	2020	..	..	..	..	..	..
	2021	..	..	..	..	..	..
	2022	..	..	..	..	..	..
Austria	2019	154,653	..	7,107	..	33,643	42
	2020	160,363	..	7,245	..	33,170	43
	2021	*174,682	..	6,764	..	34,393	43
	2022	165,615	..	7,967	..	33,432	32
Belarus	2019	67,665	..	2,161	..	5,759	189
	2020	70,034	..	2,132	..	8,049	272
	2021	70,906	..	2,482	..	9,660	272
	2022	65,960	..	2,309	..	8,986	272

Table 13

## Production of biofuels and wastes

Terajoules

Non-biomass wastes		Liquid biofuels		Biogases	Total
Industrial waste	Municipal waste	Biogasoline	Biodiesel		
..	..	..	..	..	50,142
..	..	..	..	..	50,142
..	..	..	..	..	50,142
..	..	..	..	..	50,142
..	18,176	43,657	67,933	51,980	1,065,835
..	22,118	39,610	67,822	48,820	908,586
..	26,849	35,537	61,014	51,000	843,472
..	64,692	38,190	51,189	52,400	1,030,347
..	..	..	..	..	742
..	..	..	..	..	709
..	..	..	..	..	677
..	..	..	..	..	647
36,581	436	2,217	4,453	24,824	143,202
38,357	364	1,677	2,774	28,029	157,887
45,337	4,382	2,709	2,297	37,659	187,946
47,488	9,019	2,215	3,749	41,908	212,512
..	..	..	..	..	77
..	..	..	..	..	77
..	..	..	..	..	78
..	..	..	..	..	79
..	96	..	..	..	96
..	30	..	..	..	30
..	238	..	..	..	238
..	532	..	..	..	532
..	..	..	..	..	*929
..	..	..	..	..	*959
..	..	..	..	..	*1,005
..	..	..	..	..	*621
..	..	3,350	..	..	381,795
..	..	2,680	..	..	317,736
..	..	504	..	..	370,632
..	..	775	..	..	*381,262
..	..	..	..	..	5,486
..	..	..	..	..	5,614
..	..	..	..	..	5,736
..	..	..	..	..	5,860
<b>523,338</b>	<b>919,379</b>	<b>123,217</b>	<b>551,894</b>	<b>700,486</b>	<b>7,529,940</b>
<b>566,399</b>	<b>932,827</b>	<b>122,500</b>	<b>528,298</b>	<b>729,368</b>	<b>7,567,046</b>
<b>589,188</b>	<b>943,445</b>	<b>128,724</b>	<b>540,635</b>	<b>772,138</b>	<b>8,031,355</b>
<b>569,529</b>	<b>920,797</b>	<b>131,188</b>	<b>527,461</b>	<b>785,009</b>	<b>7,825,014</b>
..	..	..	..	..	6,699
..	..	..	..	..	6,490
..	..	..	..	..	6,314
..	..	..	..	..	6,155
..	291	..	..	..	291
..	270	..	..	..	270
..	241	..	..	..	241
..	268	..	..	..	268
14,476	19,796	5,492	10,969	8,983	255,120
14,420	21,576	4,365	9,647	8,787	259,574
14,653	21,543	5,915	9,531	6,743	*274,225
16,272	21,047	5,762	11,686	7,710	269,491
792	..	..	589	465	77,431
381	..	..	..	2,170	82,766
398	..	..	..	2,048	85,494
379	..	..	..	1,885	79,519

Table 13

## Production of biofuels and wastes

Terajoules

Country or area	Year	Solid biofuels					
		Fuelwood	Animal waste	Vegetal waste	Bagasse	Black liquor	Charcoal
Belgium	2019	40,749	818	6,909	..	1,548	..
	2020	40,756	639	6,783	..	1,308	..
	2021	45,846	324	7,587	..	1,507	..
	2022	45,108	315	7,621	..	1,460	..
Bosnia and Herzegovina	2019	60,775	..	..	..	..	944
	2020	62,209	..	..	..	..	885
	2021	62,218	..	..	..	..	944
	2022	63,433	..	..	..	..	885
Bulgaria	2019	52,470	..	11,043	..	4,331	62
	2020	53,551	..	12,944	..	3,839	68
	2021	48,511	..	24,544	..	3,202	86
	2022	42,260	..	18,866	..	5,398	68
Croatia	2019	62,228	23	7	..	..	416
	2020	63,166	43	54	..	..	390
	2021	69,720	30	132	..	..	420
	2022	66,525	31	127	..	..	339
Czechia	2019	116,959	..	5,331	..	18,803	..
	2020	122,005	..	5,667	..	19,783	..
	2021	138,192	..	5,974	..	19,670	..
	2022	131,799	..	4,855	..	19,372	..
Denmark	2019	44,503	..	17,984	..	..	..
	2020	41,317	..	18,934	..	..	..
	2021	42,336	..	21,582	..	..	..
	2022	43,884	..	21,186	..	..	..
Estonia	2019	58,683	..	13,906	..	1,229	..
	2020	58,757	..	11,405	..	1,285	..
	2021	63,504	..	10,854	..	1,422	..
	2022	62,268	..	10,506	..	1,162	..
Finland	2019	189,374	249	1,986	..	169,744	..
	2020	171,942	195	1,942	..	158,132	..
	2021	210,303	95	1,820	..	166,151	..
	2022	210,093	78	1,680	..	142,448	..
France	2019	393,664	2,806	6,952	6,262	33,969	782
	2020	357,788	2,543	8,180	6,457	33,068	813
	2021	405,290	2,163	6,914	4,876	32,419	728
	2022	375,463	1,968	6,277	7,130	32,868	728
Germany	2019	490,503	3,277	13,321	..	27,299	974
	2020	485,548	2,846	13,643	..	27,508	974
	2021	535,538	2,681	19,825	..	23,647	974
	2022	551,412	2,660	20,601	..	27,513	974
Greece	2019	25,746	..	6,532	..	..	30
	2020	24,110	..	6,918	..	..	30
	2021	27,510	..	5,434	..	..	18
	2022	27,925	..	5,431	..	..	6
Hungary	2019	73,931	379	11,253	..	377	..
	2020	73,063	229	11,563	..	385	..
	2021	79,172	464	11,805	..	405	..
	2022	75,325	406	11,401	..	402	..
Iceland	2019	..	..	..	..	..	..
	2020	..	..	..	..	..	..
	2021	..	..	..	..	..	..
	2022	..	..	..	..	..	..
Ireland	2019	8,913	1,022	..	..	..	..
	2020	7,973	1,429	..	..	..	..
	2021	9,612	110	..	..	..	..
	2022	10,440	87	..	..	..	..

Table 13

## Production of biofuels and wastes

Terajoules

Non-biomass wastes		Liquid biofuels		Biogases	Total
Industrial waste	Municipal waste	Biogasoline	Biodiesel		
12,705	30,138	8,513	9,358	9,698	120,436
11,755	30,586	9,624	7,846	10,261	119,558
11,805	32,504	9,134	7,051	10,292	126,049
10,978	29,548	9,790	5,704	10,807	121,331
..	..	..	..	67	60,842
..	..	..	..	104	62,313
..	..	..	..	98	62,316
..	..	..	..	91	63,524
2,785	2,472	439	6,299	2,133	81,973
2,770	1,755	411	5,046	2,232	82,549
3,107	1,779	590	7,445	2,499	91,677
3,246	1,777	782	9,830	2,098	84,258
1,129	..	..	10	3,442	66,838
1,630	..	..	6	3,481	68,380
1,892	..	..	14	4,154	75,942
1,935	..	..	15	3,799	72,432
12,499	6,376	2,493	9,142	24,332	195,934
12,753	6,688	2,028	9,518	24,889	203,332
12,561	6,694	2,204	9,008	24,737	219,041
12,105	6,641	2,226	8,907	25,054	210,959
..	35,707	105	..	16,482	114,781
..	35,531	58	..	21,152	116,991
..	35,084	126	..	26,166	125,295
..	34,281	65	..	28,848	128,265
614	1,791	..	..	592	76,815
14	2,217	..	..	784	74,462
9	2,289	..	..	762	78,841
11	2,370	..	..	761	77,077
1,818	25,214	2,090	12,188	7,851	410,514
2,025	24,105	2,953	10,920	7,080	379,294
2,213	26,626	4,577	21,592	8,138	441,515
2,115	25,727	7,810	17,500	7,387	414,838
20,753	104,340	25,978	76,237	40,722	711,682
16,986	102,929	22,394	73,599	45,642	669,586
20,144	104,046	22,122	57,376	57,648	712,998
20,593	109,221	24,728	53,170	68,747	700,165
48,440	258,838	17,090	131,854	317,935	1,308,557
45,628	260,696	17,944	115,074	325,115	1,294,002
46,897	263,802	17,937	124,310	343,375	1,378,012
43,663	253,186	18,153	122,765	340,167	1,380,119
1,758	..	253	7,206	5,233	46,726
405	..	629	6,633	5,665	44,359
329	..	434	6,119	5,326	45,152
423	..	434	6,119	6,083	46,414
3,339	4,445	13,588	6,182	3,785	117,279
3,857	4,820	13,320	5,336	3,748	116,321
3,847	4,771	14,016	6,587	3,545	124,613
3,239	4,902	13,373	6,955	4,053	120,057
..	..	..	..	78	78
..	..	..	..	78	78
..	..	..	..	80	80
..	..	..	..	85	85
..	11,812	180	1,714	2,120	25,762
..	12,215	137	2,242	2,105	26,101
..	12,007	135	2,956	2,179	26,997
..	12,566	208	3,500	2,218	29,019

Table 13

## Production of biofuels and wastes

Terajoules

Country or area	Year	Solid biofuels					
		Fuelwood	Animal waste	Vegetal waste	Bagasse	Black liquor	Charcoal
Isle of Man	2019	..	..	..	..	..	..
	2020	..	..	..	..	..	..
	2021	..	..	..	..	..	..
	2022	..	..	..	..	..	..
Italy	2019	291,986	..	12,043	..	..	295
	2020	285,298	..	12,958	..	..	295
	2021	302,775	..	15,016	..	..	295
	2022	290,138	..	14,036	..	..	295
Jersey	2019	..	..	..	..	..	..
	2020	..	..	..	..	..	..
	2021	..	..	..	..	..	..
	2022	..	..	..	..	..	..
Kosovo	2019	13,364	..	..	..	..	..
	2020	12,874	..	..	..	..	..
	2021	12,887	..	..	..	..	..
	2022	8,301	..	..	..	..	..
Latvia	2019	102,427	..	359	..	..	248
	2020	95,417	..	233	..	..	244
	2021	96,624	..	249	..	..	250
	2022	105,120	..	154	..	..	201
Liechtenstein	2019	161	..	..	..	..	..
	2020	124	..	..	..	..	..
	2021	117	..	..	..	..	..
	2022	119	..	..	..	..	..
Lithuania	2019	50,969	..	1,265	..	..	15
	2020	51,852	..	1,431	..	..	15
	2021	56,892	..	1,542	..	..	6
	2022	52,650	..	1,657	..	..	..
Luxembourg	2019	4,546	..	226	..	..	..
	2020	6,899	..	327	..	..	..
	2021	7,420	..	223	..	..	..
	2022	7,599	..	233	..	..	..
Malta	2019	..	..	..	..	..	..
	2020	..	..	..	..	..	..
	2021	..	..	..	..	..	..
	2022	..	..	..	..	..	..
Montenegro	2019	8,164	..	..	..	..	22
	2020	8,205	..	..	..	..	22
	2021	7,892	..	..	..	..	25
	2022	7,897	..	..	..	..	12
Netherlands (Kingd. of the)	2019	48,425	..	11,882	..	..	..
	2020	51,492	..	12,875	..	..	..
	2021	59,366	..	22,917	..	..	..
	2022	45,794	..	27,144	..	..	..
North Macedonia	2019	6,895	..	..	..	..	..
	2020	6,693	..	..	..	..	..
	2021	7,129	..	..	..	..	..
	2022	7,195	..	..	..	..	..
Norway	2019	37,527	..	..	..	408	..
	2020	40,574	..	..	..	334	..
	2021	47,608	..	..	..	339	..
	2022	48,187	..	..	..	360	..
Poland	2019	318,155	363	48,295	..	10,245	..
	2020	305,482	829	58,211	..	10,794	..
	2021	309,725	489	41,522	..	19,189	..
	2022	307,614	576	35,498	..	19,508	..

Table 13

## Production of biofuels and wastes

Terajoules

Non-biomass wastes		Liquid biofuels		Biogases	Total
Industrial waste	Municipal waste	Biogasoline	Biodiesel		
..	*542	..	..	..	*542
..	*543	..	..	..	*543
..	*526	..	..	..	*526
..	*542	..	..	..	*542
12,951	73,103	9,118	32,085	84,288	515,574
14,524	70,608	10,767	38,175	84,484	516,813
13,061	71,140	8,000	45,522	87,045	542,560
13,297	71,026	4,203	43,148	86,728	522,578
..	*764	..	..	..	*764
..	*760	..	..	..	*760
..	*760	..	..	..	*760
..	*760	..	..	..	*760
..	..	..	..	..	13,364
..	..	..	..	..	12,874
..	..	..	..	..	12,887
..	..	..	..	..	8,301
108	652	23	3,044	3,376	109,988
167	911	..	3,149	3,359	103,235
102	691	..	2,635	2,763	103,064
82	604	..	3,056	2,323	111,338
..	432	..	..	25	617
..	463	..	..	25	612
..	483	..	..	25	625
..	447	..	..	21	586
744	1,498	456	6,146	1,632	62,709
1,010	2,693	847	5,987	1,617	65,437
1,312	4,733	592	5,741	1,682	72,494
1,279	4,611	670	5,851	1,748	68,466
620	1,567	..	..	753	7,712
977	1,441	..	..	755	10,399
861	1,412	..	..	735	10,651
879	1,380	..	..	799	10,891
..	..	..	..	73	73
..	..	..	..	60	60
..	..	..	..	81	81
..	..	..	..	82	82
..	..	..	..	..	8,164
..	..	..	..	..	8,205
..	..	..	..	..	7,892
..	..	..	..	..	7,897
3,238	60,667	1,273	69,979	14,913	210,379
2,955	64,867	880	71,328	17,405	221,802
2,686	66,912	666	72,615	18,169	243,330
2,331	60,548	1,056	68,338	18,138	223,348
..	..	..	..	793	7,688
..	..	..	50	825	7,568
..	..	..	..	775	7,904
..	..	..	..	740	7,935
3,533	16,262	..	3,175	2,624	63,529
3,573	15,856	..	3,150	2,489	65,975
3,484	15,906	..	3,237	2,636	73,210
3,631	15,874	..	3,033	2,550	73,635
28,437	20,415	5,468	35,341	12,498	479,216
27,657	22,310	5,510	35,064	13,498	479,356
26,514	20,951	6,828	36,315	13,372	474,904
29,324	18,430	8,346	36,647	14,765	470,708

Table 13

## Production of biofuels and wastes

Terajoules

Country or area	Year	Solid biofuels					
		Fuelwood	Animal waste	Vegetal waste	Bagasse	Black liquor	Charcoal
Portugal	2019	67,503	..	7,024	489	43,452	266
	2020	71,972	..	5,741	445	43,435	266
	2021	71,068	..	8,785	191	42,299	295
	2022	70,409	..	9,712	215	44,047	260
Republic of Moldova	2019	*19,424	*101	*7,566	..	..	15
	2020	*22,421	*193	*5,032	..	..	30
	2021	24,653	165	5,918	..	..	30
	2022	15,663	81	4,804	..	..	30
Romania	2019	144,700	..	..	..	..	30
	2020	142,414	..	..	..	..	49
	2021	151,785	..	..	..	..	60
	2022	145,320	..	..	..	..	*10
Russian Federation	2019	126,553	..	..	..	..	1,963
	2020	119,561	..	..	..	..	1,665
	2021	128,998	..	..	..	..	1,696
	2022	111,798	..	..	..	..	1,698
Serbia	2019	49,145	..	99	..	..	347
	2020	67,289	..	93	..	..	442
	2021	67,007	..	103	..	..	227
	2022	67,642	..	99	..	..	195
Slovakia	2019	38,216	..	7,309	..	12,797	..
	2020	35,384	..	*6,631	..	13,297	..
	2021	38,318	..	8,664	..	15,652	..
	2022	30,716	..	11,133	..	16,057	..
Slovenia	2019	22,610	..	317	..	..	..
	2020	22,563	..	274	..	..	..
	2021	25,104	..	182	..	..	..
	2022	21,943	..	175	..	..	..
Spain	2019	118,607	2,033	39,590	19,160	31,331	433
	2020	127,534	1,861	34,569	22,736	24,695	433
	2021	137,345	1,852	36,623	20,823	24,356	433
	2022	135,401	2,195	39,386	19,543	25,269	433
Sweden	2019	220,661	64	..	..	175,245	..
	2020	210,846	84	..	..	186,893	..
	2021	245,938	123	..	..	183,690	..
	2022	236,944	80	..	..	185,097	..
Switzerland	2019	42,330	..	..	..	..	..
	2020	42,930	..	..	..	..	..
	2021	50,750	..	..	..	..	..
	2022	45,430	..	..	..	..	..
Ukraine	2019	133,765	..	..	..	..	5,691
	2020	147,860	..	..	..	..	6,136
	2021	*162,778	..	..	..	..	6,159
	2022	*150,660	..	..	..	..	4,628
United Kingdom	2019	26,512	8,400	115,375	..	..	..
	2020	27,698	8,350	124,561	..	..	..
	2021	33,228	8,300	134,017	..	..	..
	2022	31,364	8,402	133,458	..	..	..
Latin America & Carib.	2019	<b>2,571,394</b>	<b>13</b>	<b>519,393</b>	<b>1,767,355</b>	<b>151,574</b>	<b>266,184</b>
	2020	<b>2,557,805</b>	<b>5</b>	<b>544,447</b>	<b>1,904,817</b>	<b>155,274</b>	<b>266,887</b>
	2021	<b>2,594,509</b>	<b>24</b>	<b>760,131</b>	<b>1,760,997</b>	<b>156,794</b>	<b>255,620</b>
	2022	<b>2,659,052</b>	<b>66</b>	<b>592,999</b>	<b>1,705,368</b>	<b>146,421</b>	<b>278,032</b>
Anguilla	2019	*2	..	..	..	..	..
	2020	*2	..	..	..	..	..
	2021	*2	..	..	..	..	..
	2022	*2	..	..	..	..	..



Table 13

## Production of biofuels and wastes

Terajoules

Non-biomass wastes		Liquid biofuels		Biogases	Total
Industrial waste	Municipal waste	Biogasoline	Biodiesel		
2,684	8,666	..	14,455	3,355	147,628
2,157	8,341	..	12,292	3,464	147,849
2,871	8,867	..	11,870	3,652	149,604
2,716	8,513	..	11,405	3,626	150,643
..	..	..	..	292	*27,383
..	..	..	..	327	*27,973
..	..	..	..	381	31,117
..	..	..	..	394	20,942
6,140	188	1,447	7,726	794	160,995
11,665	188	1,190	10,759	772	166,988
13,204	193	1,368	8,508	970	176,028
13,720	236	1,145	8,438	1,100	169,958
305,868	..	..	..	..	432,421
311,158	..	..	..	..	430,719
330,687	..	..	..	..	459,685
321,634	..	..	..	..	433,432
51	..	..	..	1,190	50,485
57	..	..	..	1,624	69,064
58	..	..	..	2,220	69,388
58	..	..	..	2,214	70,013
7,311	2,386	3,564	4,011	5,984	81,579
8,289	2,523	3,538	4,306	5,479	79,446
7,894	3,003	3,511	4,306	5,472	86,819
8,141	2,576	3,484	4,306	4,305	80,718
2,597	..	..	..	930	26,453
2,395	..	..	..	1,129	26,361
2,292	..	..	..	1,044	28,622
2,253	..	..	..	1,025	25,397
11,308	21,412	11,504	73,065	12,184	340,194
12,713	19,769	11,420	67,909	13,539	336,745
11,732	21,785	11,719	65,111	13,644	344,990
11,599	21,865	10,585	65,467	13,955	345,265
744	62,211	6,694	11,850	7,600	485,069
4,132	67,825	7,543	11,482	7,780	496,585
3,888	59,363	11,265	14,462	8,154	526,884
3,948	59,894	8,907	13,506	8,204	516,579
11,820	49,050	..	501	5,564	109,265
11,920	48,960	..	491	5,742	110,042
12,380	47,900	..	475	5,888	117,393
12,280	45,990	..	488	6,127	110,315
..	..	1,874	..	2,028	137,667
34,090	..	..	..	3,862	185,812
34,227	..	..	..	3,862	*200,866
23,179	..	..	..	3,862	*177,701
4,077	98,345	5,574	18,768	95,670	372,721
4,336	101,381	6,941	18,290	97,840	389,397
4,080	107,435	7,584	17,848	101,778	414,270
4,218	105,968	9,460	17,627	102,509	413,007
<b>1,323</b>	<b>1,349</b>	<b>778,487</b>	<b>293,073</b>	<b>21,342</b>	<b>6,105,302</b>
<b>1,523</b>	<b>1,580</b>	<b>720,420</b>	<b>275,431</b>	<b>22,539</b>	<b>6,183,841</b>
<b>8,895</b>	<b>1,453</b>	<b>720,370</b>	<b>312,012</b>	<b>37,199</b>	<b>6,352,384</b>
<b>30,213</b>	<b>1,430</b>	<b>707,432</b>	<b>302,934</b>	<b>38,119</b>	<b>6,184,034</b>
..	..	..	..	..	*2
..	..	..	..	..	*2
..	..	..	..	..	*2
..	..	..	..	..	*2

Table 13

## Production of biofuels and wastes

Terajoules

Country or area	Year	Solid biofuels					
		Fuelwood	Animal waste	Vegetal waste	Bagasse	Black liquor	Charcoal
Argentina	2019	42,551	..	..	53,476	..	12,125
	2020	42,007	..	..	49,465	..	12,002
	2021	41,658	..	..	56,750	..	12,154
	2022	51,134	..	..	47,746	..	9,499
Aruba	2019	22	..	..	..	..	8
	2020	23	..	..	..	..	8
	2021	24	..	..	..	..	8
	2022	*25	..	..	..	..	*9
Bahamas	2019	309	..	..	..	..	34
	2020	310	..	..	..	..	34
	2021	310	..	..	..	..	34
	2022	311	..	..	..	..	34
Barbados	2019	43	..	..	342	..	9
	2020	43	..	..	391	..	9
	2021	42	..	..	396	..	9
	2022	42	..	..	416	..	*9
Belize	2019	1,048	..	..	4,416	..	91
	2020	679	..	..	3,862	..	91
	2021	1,054	..	..	4,958	..	91
	2022	671	..	..	4,874	..	120
Bolivia (Plur. State of)	2019	6,799	..	..	36,806	..	1,488
	2020	7,654	..	..	36,618	..	1,529
	2021	6,401	..	..	*38,269	..	1,489
	2022	6,743	..	..	*38,532	..	1,507
Brazil	2019	1,045,802	..	453,384	1,252,702	..	182,812
	2020	1,046,688	..	482,276	1,402,503	..	183,372
	2021	1,060,139	..	694,695	1,234,833	..	179,245
	2022	1,108,195	..	525,965	1,212,709	..	204,527
British Virgin Islands	2019	15	..	..	..	..	2
	2020	15	..	..	..	..	2
	2021	16	..	..	..	..	2
	2022	16	..	..	..	..	3
Chile	2019	237,692	..	..	..	98,853	3,704
	2020	*215,418	..	..	..	101,233	4,490
	2021	226,014	..	1,827	..	101,881	..
	2022	231,883	..	1,827	..	94,228	..
Colombia	2019	109,935	..	..	84,032	..	350
	2020	105,517	..	..	92,837	..	13
	2021	101,123	..	..	87,615	..	423
	2022	104,458	..	..	77,316	..	452
Costa Rica	2019	4,651	..	3,750	10,258	..	28
	2020	5,079	..	3,172	10,428	..	27
	2021	4,951	..	3,221	10,181	..	27
	2022	5,364	..	3,591	8,706	..	71
Cuba	2019	7,525	..	*88	40,119	..	2,245
	2020	7,417	..	*88	31,238	..	2,230
	2021	6,723	..	*88	27,857	..	1,746
	2022	6,021	..	*100	19,701	..	1,162
Dominica	2019	67	..	..	..	..	7
	2020	67	..	..	..	..	7
	2021	67	..	..	..	..	7
	2022	66	..	..	..	..	7
Dominican Republic	2019	20,722	..	*525	*10,800	..	3,624
	2020	21,160	..	*525	12,646	..	3,786
	2021	21,607	..	*530	13,194	..	3,954
	2022	*21,750	..	*530	10,406	..	3,987

Table 13

## Production of biofuels and wastes

Terajoules

Non-biomass wastes		Liquid biofuels		Biogases	Total
Industrial waste	Municipal waste	Biogasoline	Biodiesel		
..	..	22,780	79,010	..	197,816
..	..	30,238	43,130	..	164,840
..	..	12,943	63,443	..	174,794
..	..	14,868	70,251	..	183,999
..	..	..	..	..	22
..	..	..	..	..	23
..	..	..	..	..	24
..	..	..	..	..	*25
..	..	..	..	..	309
..	..	..	..	..	310
..	..	..	..	..	310
..	..	..	..	..	311
..	..	..	..	..	385
..	..	..	..	..	433
..	..	..	..	..	438
..	..	..	..	..	458
..	..	..	..	..	5,464
..	..	..	..	..	4,541
..	..	..	..	..	6,012
..	..	..	..	..	5,546
..	..	945	..	..	44,550
..	..	1,497	..	..	45,770
..	..	2,113	..	..	*46,783
..	..	2,897	..	..	*48,172
..	..	733,409	189,733	11,245	3,686,276
..	..	670,858	208,294	13,011	3,823,630
..	..	685,812	219,105	26,531	3,921,115
29,626	..	670,776	202,690	26,092	3,776,053
..	..	..	..	..	15
..	..	..	..	..	15
..	..	..	..	..	16
..	..	..	..	..	16
..	..	..	..	4,235	340,780
..	..	..	..	3,522	*320,173
..	..	..	..	3,513	333,235
..	..	..	..	4,844	332,781
..	489	8,122	19,497	5	222,080
..	714	7,056	18,998	1	225,124
..	764	7,416	23,998	20	220,937
..	764	6,780	25,226	17	214,561
..	..	670	..	18	19,348
..	..	659	..	17	19,356
..	..	634	..	17	19,004
..	..	598	..	20	18,278
..	..	373	..	*45	48,150
..	..	368	..	*286	39,396
..	..	318	..	*1,944	36,930
..	..	310	..	*2,083	28,215
..	..	..	..	..	67
..	..	..	..	..	67
..	..	..	..	..	67
..	..	..	..	..	66
..	..	..	..	*157	32,204
..	..	..	..	*157	34,489
..	..	..	..	*160	35,491
..	..	..	..	*160	*32,846

Table 13

## Production of biofuels and wastes

Terajoules

Country or area	Year	Solid biofuels					
		Fuelwood	Animal waste	Vegetal waste	Bagasse	Black liquor	Charcoal
Ecuador	2019	9,815	..	..	13,524	..	..
	2020	9,466	..	..	12,959	..	..
	2021	9,095	..	..	11,654	..	..
	2022	8,708	..	..	9,113	..	..
El Salvador	2019	5,710	13	..	14,927	..	3
	2020	5,011	5	..	15,321	..	10
	2021	4,888	24	..	15,050	..	7
	2022	4,094	66	..	14,837	..	7
Grenada	2019	340	..	..	22	..	72
	2020	293	..	..	19	..	62
	2021	304	..	..	20	..	65
	2022	308	..	..	22	..	71
Guatemala	2019	338,392	..	..	53,779	..	1,994
	2020	348,593	..	..	54,054	..	*2,065
	2021	359,101	..	..	88,131	..	..
	2022	369,927	..	..	75,648	..	..
Guyana	2019	1,100	..	..	2,408	..	40
	2020	928	..	..	2,750	..	40
	2021	932	..	..	3,141	..	40
	2022	823	..	..	1,810	..	25
Haiti	2019	145,267	..	..	1,013	..	39,152
	2020	140,474	..	..	979	..	37,860
	2021	142,558	..	..	962	..	37,178
	2022	140,459	..	..	994	..	37,207
Honduras	2019	53,793	..	10,858	15,940	..	5
	2020	54,700	..	7,833	11,102	..	3
	2021	53,032	..	8,109	9,770	..	25
	2022	51,262	..	8,322	11,217	..	4
Jamaica	2019	*8,681	..	..	1,988	..	753
	2020	*8,076	..	..	1,627	..	753
	2021	8,076	..	..	1,627	..	753
	2022	7,042	..	..	*1,956	..	721
Mexico	2019	247,919	..	0	113,249	0	..
	2020	249,125	..	..	113,800	4	..
	2021	244,418	..	..	103,954	4	..
	2022	242,124	..	..	112,610	3	..
Nicaragua	2019	46,373	..	1,641	16,287	..	297
	2020	46,737	..	1,616	14,177	..	309
	2021	46,700	..	1,838	15,022	..	293
	2022	*46,976	..	*2,021	*20,291	..	301
Panama	2019	6,972	..	..	4,660	..	23
	2020	6,929	..	..	4,599	..	28
	2021	6,888	..	..	4,344	..	18
	2022	6,861	..	..	4,226	..	40
Paraguay	2019	98,604	..	23,692	..	..	11,871
	2020	95,738	..	23,355	..	..	12,295
	2021	96,134	..	23,438	..	..	12,161
	2022	95,314	..	21,838	..	..	12,273
Peru	2019	98,203	..	4,374	29,068	..	5,182
	2020	109,722	..	4,654	25,258	..	5,624
	2021	120,796	..	4,405	*25,290	..	5,620
	2022	114,685	..	4,466	24,210	..	5,665
Puerto Rico	2019	..	..	..	..	..	..
	2020	..	..	..	..	..	..
	2021	..	..	..	..	..	..
	2022	..	..	..	..	..	..

Table 13

## Production of biofuels and wastes

Terajoules

Non-biomass wastes		Liquid biofuels		Biogases	Total
Industrial waste	Municipal waste	Biogasoline	Biodiesel		
..	..	1,581	..	867	25,787
..	..	801	..	929	24,156
..	..	1,297	..	885	22,931
..	..	1,520	..	873	20,213
..	557	..	..	570	21,777
..	419	..	..	423	21,179
..	358	..	..	382	20,702
..	340	..	..	406	19,743
..	..	..	..	..	362
..	..	..	..	..	312
..	..	..	..	..	324
..	..	..	..	..	331
..	..	..	..	308	392,479
..	..	..	..	281	402,928
..	..	..	..	472	447,704
..	..	..	..	290	445,864
..	..	..	..	..	3,508
..	..	..	..	..	3,678
..	..	..	..	..	4,073
..	..	..	..	..	2,633
..	..	241	..	..	146,521
..	..	241	..	..	141,694
..	..	233	..	..	143,752
..	..	236	..	..	141,689
..	..	..	..	..	80,592
..	..	..	..	..	73,635
..	..	..	..	..	70,911
..	..	..	..	..	70,801
..	..	..	..	..	*10,670
..	..	..	..	..	*9,703
..	..	..	..	..	9,703
..	..	..	..	..	8,998
1,067	..	..	..	2,799	365,034
1,200	..	..	..	3,000	367,129
8,602	..	..	..	2,437	359,415
285	..	..	..	2,403	357,425
..	..	..	..	75	64,376
..	..	..	..	71	62,601
..	..	..	..	92	63,652
..	..	..	..	88	*69,375
..	*302	..	..	..	11,934
..	*447	..	..	..	11,975
..	*331	..	..	..	11,563
..	*326	..	..	..	11,413
..	..	8,366	..	..	130,662
..	..	7,093	..	..	126,186
..	..	7,812	..	..	127,384
..	..	7,518	..	..	124,671
..	..	271	3,231	823	135,970
..	..	..	3,530	719	143,883
..	..	..	*4,111	572	155,174
..	..	..	4,285	667	148,312
..	..	..	..	*195	*195
..	..	..	..	*121	*121
..	..	..	..	*175	*175
..	..	..	..	*179	*179

Table 13

## Production of biofuels and wastes

Terajoules

Country or area	Year	Solid biofuels					
		Fuelwood	Animal waste	Vegetal waste	Bagasse	Black liquor	Charcoal
St. Kitts-Nevis	2019	*1	..	..	..	..	0
	2020	0	..	..	..	..	0
	2021	0	..	..	..	..	0
	2022	0	..	..	..	..	0
St. Lucia	2019	*595	..	..	..	..	*91
	2020	*575	..	..	..	..	*86
	2021	*603	..	..	..	..	*89
	2022	*608	..	..	..	..	*91
St. Vincent-Grenadines	2019	65	..	..	..	..	11
	2020	64	..	..	..	..	11
	2021	64	..	..	..	..	11
	2022	64	..	..	..	..	11
Suriname	2019	916	..	751	..	..	..
	2020	784	..	642	..	..	..
	2021	782	..	693	..	..	..
	2022	792	..	706	..	..	..
Trinidad and Tobago	2019	276	..	..	..	..	54
	2020	273	..	..	..	..	54
	2021	270	..	..	..	..	53
	2022	268	..	..	..	..	53
Turks and Caicos Islands	2019	11	..	..	..	..	4
	2020	11	..	..	..	..	5
	2021	11	..	..	..	..	5
	2022	*11	..	..	..	..	*5
United States Virgin Is.	2019	*30	..	..	..	..	*5
	2020	*31	..	..	..	..	*5
	2021	*31	..	..	..	..	*5
	2022	*31	..	..	..	..	*5
Uruguay	2019	24,286	..	*12,339	829	52,720	..
	2020	22,885	..	*14,689	969	54,037	..
	2021	23,079	..	*15,664	1,028	54,909	..
	2022	22,489	..	17,530	1,090	*52,191	..
Venezuela (Bolivar. Rep.)	2019	6,862	..	7,992	6,711	..	102
	2020	5,312	..	5,598	7,212	..	80
	2021	6,616	..	5,623	6,950	..	108
	2022	9,526	..	6,102	*6,938	..	166
<b>Northern America</b>	<b>2019</b>	<b>1,950,827</b>	<b>..</b>	<b>35,673</b>	<b>..</b>	<b>887,080</b>	<b>25,134</b>
	<b>2020</b>	<b>1,812,753</b>	<b>..</b>	<b>33,047</b>	<b>..</b>	<b>811,506</b>	<b>25,134</b>
	<b>2021</b>	<b>1,852,011</b>	<b>..</b>	<b>33,563</b>	<b>..</b>	<b>828,310</b>	<b>25,134</b>
	<b>2022</b>	<b>1,761,662</b>	<b>..</b>	<b>37,156</b>	<b>..</b>	<b>853,822</b>	<b>25,134</b>
Bermuda	2019	..	..	..	..	..	..
	2020	..	..	..	..	..	..
	2021	..	..	..	..	..	..
	2022	..	..	..	..	..	..
Canada	2019	294,008	..	..	..	179,153	..
	2020	274,502	..	..	..	159,109	..
	2021	289,719	..	..	..	165,717	..
	2022	298,028	..	..	..	157,845	..
Greenland	2019	..	..	..	..	..	..
	2020	..	..	..	..	..	..
	2021	..	..	..	..	..	..
	2022	..	..	..	..	..	..
St. Pierre-Miquelon	2019	5	..	..	..	..	..
	2020	5	..	..	..	..	..
	2021	5	..	..	..	..	..
	2022	5	..	..	..	..	..

Table 13

## Production of biofuels and wastes

Terajoules

Non-biomass wastes		Liquid biofuels		Biogases	Total
Industrial waste	Municipal waste	Biogasoline	Biodiesel		
..	..	..	..	..	*1
..	..	..	..	..	0
..	..	..	..	..	0
..	..	..	..	..	0
..	..	..	..	..	*595
..	..	..	..	..	*575
..	..	..	..	..	*603
..	..	..	..	..	*608
..	..	..	..	..	65
..	..	..	..	..	64
..	..	..	..	..	64
..	..	..	..	..	64
..	..	..	..	..	1,667
..	..	..	..	..	1,426
..	..	..	..	..	1,475
..	..	..	..	..	1,498
..	..	..	..	..	276
..	..	..	..	..	273
..	..	..	..	..	270
..	..	..	..	..	268
..	..	..	..	..	11
..	..	..	..	..	11
..	..	..	..	..	11
..	..	..	..	..	*11
..	..	..	..	..	*30
..	..	..	..	..	*31
..	..	..	..	..	*31
..	..	..	..	..	*31
*256	..	1,729	1,601	..	93,760
*323	..	1,608	1,479	..	95,989
*293	..	1,792	1,354	..	98,119
302	..	1,930	482	..	*96,012
..	..	..	..	..	21,564
..	..	..	..	..	18,122
..	..	..	..	..	19,189
..	..	..	..	..	22,566
<b>46,274</b>	<b>294,381</b>	<b>1,306,629</b>	<b>222,994</b>	<b>160,601</b>	<b>4,904,459</b>
<b>42,544</b>	<b>292,967</b>	<b>1,146,923</b>	<b>237,248</b>	<b>156,728</b>	<b>4,533,715</b>
<b>37,049</b>	<b>290,972</b>	<b>1,231,729</b>	<b>338,988</b>	<b>144,541</b>	<b>4,757,163</b>
<b>35,069</b>	<b>279,507</b>	<b>1,259,685</b>	<b>419,565</b>	<b>132,719</b>	<b>4,779,184</b>
..	*600	..	..	..	*600
..	*600	..	..	..	*600
..	*600	..	..	..	*600
..	*600	..	..	..	*600
6,491	9,858	41,084	11,666	14,713	556,973
6,668	9,943	34,143	14,867	14,275	513,507
6,845	9,861	34,384	14,205	14,273	535,004
7,022	9,861	35,269	12,181	14,273	534,479
..	110	..	..	..	110
..	103	..	..	..	103
..	102	..	..	..	102
..	88	..	..	..	88
..	..	..	..	..	5
..	..	..	..	..	5
..	..	..	..	..	5
..	..	..	..	..	5

Table 13

## Production of biofuels and wastes

Terajoules

Country or area	Year	Solid biofuels					
		Fuelwood	Animal waste	Vegetal waste	Bagasse	Black liquor	Charcoal
United States	2019	*1,656,814	..	*35,673	..	*707,927	25,134
	2020	*1,538,246	..	*33,047	..	*652,397	25,134
	2021	*1,562,287	..	*33,563	..	*662,593	25,134
	2022	*1,463,629	..	*37,156	..	*695,977	25,134
<b>Oceania</b>	<b>2019</b>	<b>155,162</b>	<b>..</b>	<b>18,151</b>	<b>96,517</b>	<b>28,832</b>	<b>425</b>
	<b>2020</b>	<b>149,482</b>	<b>..</b>	<b>20,246</b>	<b>88,629</b>	<b>28,087</b>	<b>433</b>
	<b>2021</b>	<b>150,921</b>	<b>..</b>	<b>21,590</b>	<b>92,818</b>	<b>25,783</b>	<b>439</b>
	<b>2022</b>	<b>154,899</b>	<b>..</b>	<b>21,267</b>	<b>89,714</b>	<b>15,947</b>	<b>445</b>
Australia	2019	72,141	..	2,665	91,324	15,438	..
	2020	69,643	..	4,634	83,844	14,777	..
	2021	69,262	..	5,455	87,968	12,791	..
	2022	69,320	..	4,647	84,442	15,947	..
Cook Islands	2019	..	..	*57	..	..	..
	2020	..	..	*57	..	..	..
	2021	..	..	*57	..	..	..
	2022	..	..	*57	..	..	..
Fiji	2019	338	..	..	4,255	..	74
	2020	338	..	..	3,830	..	74
	2021	338	..	..	*3,822	..	74
	2022	338	..	..	*4,193	..	75
French Polynesia	2019	43	..	..	..	..	16
	2020	43	..	..	..	..	16
	2021	43	..	..	..	..	16
	2022	43	..	..	..	..	16
Kiribati	2019	*70	..	*514	..	..	12
	2020	*70	..	*512	..	..	13
	2021	*69	..	*510	..	..	13
	2022	*70	..	*511	..	..	13
Marshall Islands	2019	..	..	*197	..	..	..
	2020	..	..	*192	..	..	..
	2021	..	..	*193	..	..	..
	2022	..	..	*195	..	..	..
Micronesia (Fed. States of)	2019	25	..	..	..	..	11
	2020	25	..	..	..	..	11
	2021	25	..	..	..	..	12
	2022	25	..	..	..	..	12
New Caledonia	2019	118	..	..	..	..	19
	2020	119	..	..	..	..	19
	2021	120	..	..	..	..	20
	2022	121	..	..	..	..	20
New Zealand	2019	28,807	..	..	..	13,394	..
	2020	25,620	..	..	..	13,310	..
	2021	27,574	..	..	..	12,992	..
	2022	31,472	..	..	..	..	..
Niue	2019	1	..	..	..	..	0
	2020	1	..	..	..	..	0
	2021	1	..	..	..	..	0
	2022	1	..	..	..	..	0
Papua New Guinea	2019	50,544	..	*12,300	938	..	204
	2020	50,544	..	*12,400	955	..	209
	2021	50,544	..	*13,000	*1,028	..	212
	2022	50,544	..	*13,500	*1,078	..	215
Samoa	2019	984	..	343	..	..	17
	2020	984	..	351	..	..	17
	2021	846	..	296	..	..	17
	2022	861	..	291	..	..	18



Table 13

## Production of biofuels and wastes

Terajoules

Non-biomass wastes		Liquid biofuels		Biogases	Total
Industrial waste	Municipal waste	Biogasoline	Biodiesel		
39,783	283,813	1,265,545	211,328	145,888	*4,346,770
35,876	282,321	1,112,780	222,381	142,453	*4,019,499
30,204	280,409	1,197,345	324,783	130,268	*4,221,451
28,047	268,958	1,224,416	407,384	118,446	*4,244,012
<b>3,609</b>	..	<b>5,462</b>	<b>75</b>	<b>19,951</b>	<b>327,758</b>
<b>3,685</b>	..	<b>4,422</b>	<b>105</b>	<b>20,347</b>	<b>315,002</b>
<b>3,764</b>	..	<b>3,705</b>	<b>106</b>	<b>21,616</b>	<b>320,304</b>
<b>3,619</b>	..	<b>3,998</b>	<b>39</b>	<b>22,233</b>	<b>311,716</b>
3,609	..	5,333	37	16,325	206,872
3,685	..	4,342	74	16,662	197,660
3,764	..	3,618	51	17,984	200,893
3,619	..	3,966	38	18,594	200,574
..	..	..	..	..	*57
..	..	..	..	..	*57
..	..	..	..	..	*57
..	..	..	..	..	*57
..	..	..	..	..	4,593
..	..	..	..	..	4,168
..	..	..	..	..	*4,160
..	..	..	..	..	*4,531
..	..	..	..	..	43
..	..	..	..	..	43
..	..	..	..	..	43
..	..	..	..	..	43
..	..	..	..	..	*584
..	..	..	..	..	*582
..	..	..	..	..	*579
..	..	..	..	..	*581
..	..	..	..	..	*197
..	..	..	..	..	*192
..	..	..	..	..	*193
..	..	..	..	..	*195
..	..	..	..	..	25
..	..	..	..	..	25
..	..	..	..	..	25
..	..	..	..	..	25
..	..	4	..	..	123
..	..	4	..	..	123
..	..	4	..	..	123
..	..	3	..	..	123
..	..	116	38	3,356	45,711
..	..	68	31	3,410	42,439
..	..	84	55	3,347	44,051
..	..	29	0	3,354	34,856
..	..	..	..	..	1
..	..	..	..	..	1
..	..	..	..	..	1
..	..	..	..	..	1
..	..	..	..	*270	64,052
..	..	..	..	*275	64,173
..	..	..	..	*285	64,857
..	..	..	..	*285	65,407
..	..	..	..	0	1,327
..	..	..	..	0	1,335
..	..	..	..	0	1,142
..	..	..	..	0	1,153

Table 13

## Production of biofuels and wastes

Terajoules

Country or area	Year	Solid biofuels					
		Fuelwood	Animal waste	Vegetal waste	Bagasse	Black liquor	Charcoal
Solomon Islands	2019	1,235	..	*2,075	..	..	45
	2020	1,239	..	*2,100	..	..	46
	2021	1,243	..	*2,080	..	..	47
	2022	1,246	..	*2,066	..	..	47
Tonga	2019	19	..	..	..	..	7
	2020	19	..	..	..	..	7
	2021	19	..	..	..	..	7
	2022	19	..	..	..	..	7
Vanuatu	2019	831	..	..	..	..	20
	2020	831	..	..	..	..	20
	2021	831	..	..	..	..	21
	2022	*831	..	..	..	..	*21
Wallis and Futuna Is.	2019	*7	..	..	..	..	..
	2020	*7	..	..	..	..	..
	2021	*7	..	..	..	..	..
	2022	*7	..	..	..	..	..

## Production of biofuels and wastes

Terajoules

Non-biomass wastes		Liquid biofuels		Biogases	Total
Industrial waste	Municipal waste	Biogasoline	Biodiesel		
..	..	..	..	..	*3,310
..	..	..	..	..	*3,339
..	..	..	..	..	*3,323
..	..	..	..	..	*3,312
..	..	..	..	..	19
..	..	..	..	..	19
..	..	..	..	..	19
..	..	..	..	..	19
..	..	8	..	..	840
..	..	8	..	..	840
..	..	0	..	..	831
..	..	0	..	..	*831
..	..	..	..	..	*7
..	..	..	..	..	*7
..	..	..	..	..	*7
..	..	..	..	..	*7