

Coal: Prices

US dollars per tonne	Northwest Europe marker price†	US Central Appalachian coal spot price index‡	Japan steam spot CIF price†	China Qinhuangdao spot price†
1999	28.79	31.29	–	–
2000	35.99	29.90	–	27.52
2001	39.03	50.15	37.69	31.78
2002	31.65	33.20	31.47	33.19
2003	43.60	38.52	39.61	31.74
2004	72.13	64.90	74.22	42.76
2005	60.54	70.12	64.62	51.34
2006	64.11	57.82	65.22	53.53
2007	88.79	49.73	95.59	61.23
2008	147.67	117.42	157.88	104.97
2009	70.39	60.73	83.59	87.86
2010	92.35	67.87	108.47	110.08
2011	121.48	84.75	126.13	127.27
2012	92.50	67.28	100.30	111.89
2013	81.69	69.72	90.07	95.42
2014	75.38	67.08	76.13	84.12
2015	56.79	51.57	60.10	67.53
2016	59.87	51.45	71.66	71.35
2017	84.51	63.83	95.57	94.72
2018	91.83	72.84	112.73	99.45
2019	60.86	57.16	77.63	85.89

†Source: IHS Northwest Europe prices for 1999-2000 are the average of the monthly marker, 2001-2019 the average of weekly prices. IHS Japan prices basis = 6,000 kilocalories per kilogram NAR CIF. Chinese prices are the average monthly price for 2000-2005, weekly prices 2006-2019, 5,500 kilocalories per kilogram NAR, including cost and freight (CFR).

‡Source: S&P Global Platts ©2020, S&P Global Inc. Prices are for Central Appalachian 12,500 BTU, 1.2 SO₂ coal, FOB. Prices for 1999-2000 are by coal price publication date, 2001-2005 by coal price assessment date, 2006-2019 weekly CAPP 12,500 BTU, 1.6 SO₂ coal, FOB.

Note: CIF = cost+insurance+freight (average prices); FOB = free on board.

Coal: Trade movements

Exajoules												Growth rate per annum		Share 2019
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2019	2008-18	
Imports														
Canada	0.36	0.36	0.24	0.23	0.22	0.26	0.22	0.19	0.22	0.23	0.21	-11.7%	-10.0%	0.6%
Mexico	0.18	0.22	0.21	0.22	0.20	0.22	0.23	0.21	0.34	0.34	0.24	-27.9%	9.9%	0.7%
US	0.57	0.51	0.36	0.27	0.24	0.28	0.28	0.25	0.19	0.15	0.17	11.5%	-16.7%	0.5%
S. & Cent. America	0.67	0.85	0.99	0.88	1.06	1.06	1.00	1.06	1.21	1.19	1.12	-6.2%	1.8%	3.2%
Europe	5.01	4.82	5.64	6.09	5.85	6.09	6.03	5.40	5.86	6.44	5.25	-18.4%	0.4%	14.9%
CIS	0.52	0.37	0.59	0.53	0.56	0.56	0.53	0.48	0.56	0.61	0.65	7.9%	-1.2%	1.9%
Middle East	0.40	0.35	0.43	0.49	0.44	0.49	0.38	0.34	0.35	0.35	0.32	-7.1%	-4.2%	0.9%
Africa	0.27	0.32	0.35	0.31	0.83	0.39	0.47	0.51	0.60	0.73	0.64	-12.0%	7.8%	1.8%
China	3.28	4.45	5.20	6.71	7.63	6.62	4.69	5.65	5.87	6.13	6.40	4.3%	19.4%	18.1%
India	1.80	2.00	2.37	3.09	3.66	4.65	4.92	6.46	5.15	5.28	5.69	7.9%	14.1%	16.1%
Japan	4.22	4.84	4.61	4.87	5.06	5.00	5.05	5.01	5.06	5.01	4.90	-2.2%	♦	13.9%
South Korea	2.69	3.11	3.38	3.30	3.32	3.43	3.54	3.89	3.92	3.92	3.73	-4.7%	4.0%	10.6%
Other Asia Pacific	2.79	3.18	3.29	3.65	3.61	2.73	3.96	4.60	5.00	5.37	5.96	10.9%	6.0%	16.9%
Total World	22.75	25.39	27.66	30.62	32.66	31.78	31.29	33.70	34.29	35.74	35.28	-1.3%	4.2%	100.0%
Exports														
Canada	0.72	0.92	1.03	0.99	1.13	1.00	0.86	0.78	0.94	1.04	1.03	-0.3%	2.9%	2.9%
US	1.46	2.02	2.51	3.02	2.89	2.38	1.90	1.53	2.40	2.89	2.39	-17.5%	3.4%	6.8%
Colombia	1.63	1.78	2.02	2.25	2.05	2.27	2.19	2.33	2.48	2.43	2.10	-13.5%	2.1%	5.9%
Europe	0.23	0.12	0.16	0.20	0.68	0.13	0.10	0.13	0.19	0.25	0.23	-8.3%	0.1%	0.7%
Russia	2.45	2.50	2.86	3.23	3.55	3.78	4.11	4.47	5.09	5.78	5.87	1.5%	9.4%	16.6%
Other CIS	0.50	0.35	0.58	0.50	0.51	0.51	0.48	0.45	0.47	0.51	0.54	5.9%	-2.3%	1.5%
South Africa	1.93	1.98	2.04	2.22	2.10	2.18	2.30	2.16	2.52	2.33	2.20	-5.8%	2.9%	6.2%
Other Africa	0.03	0.11	0.04	0.13	0.12	0.19	0.28	2.02	0.65	0.22	0.28	27.7%	21.5%	0.8%
Australia	6.99	7.46	7.04	7.96	9.19	9.12	9.95	9.87	9.70	9.78	9.69	-0.9%	4.1%	27.5%
China	0.59	0.59	0.44	0.28	0.28	0.36	0.45	0.51	0.42	0.42	0.34	-18.0%	-12.3%	1.0%
Indonesia	5.07	6.20	7.18	8.16	8.57	8.42	7.48	7.73	8.08	8.56	9.18	7.2%	6.4%	26.0%
Mongolia	0.17	0.48	0.58	0.63	0.49	0.53	0.41	0.73	0.95	0.99	1.02	3.2%	24.0%	2.9%
Other Asia Pacific	0.82	0.76	1.01	0.90	0.92	0.77	0.65	0.77	0.30	0.39	0.29	-26.3%	-5.0%	0.8%
Rest of World	0.15	0.13	0.16	0.15	0.19	0.14	0.14	0.22	0.12	0.15	0.13	-13.9%	-3.6%	0.4%
Total World	22.75	25.39	27.66	30.62	32.66	31.78	31.29	33.70	34.29	35.74	35.28	-1.3%	4.2%	100.0%

♦Less than 0.05%.

Note: Commercial solid fuels only, i.e. bituminous coal and anthracite (hard coal), and lignite and brown (sub-bituminous) coal, and other commercial solid fuels. Intra-area movements (for example between countries in Europe, Other CIS, Other Africa, Other Asia Pacific) are excluded.

Coal: Inter-area movements 2019

Exajoules	To													Total
	Canada	Mexico	US	S. & Cent. America	Europe	CIS	Middle East	Africa	China	India	Japan	South Korea	Other Asia Pacific	
Canada	–	†	0.02	0.03	0.11	–	†	†	0.10	0.08	0.26	0.33	0.11	1.03
US	0.15	0.07	–	0.28	0.85	†	†	0.23	0.03	0.32	0.36	0.10	†	2.39
Colombia	0.05	0.13	0.12	0.54	0.84	†	0.13	0.01	0.05	0.03	0.03	0.14	0.03	2.10
Europe	†	†	†	†	–	0.08	†	0.03	†	0.08	†	0.01	0.01	0.23
Russia	†	0.04	†	0.07	2.41	0.17	0.10	0.14	0.82	0.22	0.54	0.78	0.58	5.87
Other CIS	–	–	–	–	0.13	0.41	†	–	0.01	†	†	–	†	0.54
South Africa	–	–	†	0.02	0.09	–	0.07	0.15	†	1.20	0.01	0.11	0.54	2.20
Other Africa	–	–	†	0.01	0.07	–	†	0.02	†	0.12	0.03	0.03	†	0.28
Australia	–	†	–	0.15	0.65	–	†	0.05	2.06	0.83	2.88	1.36	1.71	9.69
China	†	†	†	0.01	0.02	†	0.01	0.01	–	0.03	0.07	0.06	0.14	0.34
Indonesia	–	–	0.02	†	0.07	–	0.01	†	2.19	2.61	0.70	0.80	2.78	9.18
Mongolia	–	–	–	–	–	†	–	–	1.02	–	–	†	–	1.02
Other Asia Pacific	†	†	†	†	0.02	†	†	†	0.13	0.13	0.02	0.02	0.04	0.35
Rest of World	†	†	†	†	0.02	†	†	†	†	0.04	†	†	†	0.07
Total imports	0.21	0.24	0.17	1.12	5.25	0.65	0.32	0.64	6.40	5.69	4.90	3.73	5.96	35.28

†Less than 0.005.

Note: Commercial solid fuels only, i.e. bituminous coal and anthracite (hard coal), and lignite and brown (sub-bituminous) coal, and other commercial solid fuels. Intra-area movements (for example, between countries in Europe, Other CIS, Other Africa, Other Asia Pacific) are excluded.

Consumption*

Exajoules (input-equivalent)	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Growth rate per annum		Share 2019
												2019	2008-18	
Canada	0.84	0.85	0.87	0.87	0.95	0.98	0.92	0.91	0.91	0.90	0.90	0.1%	-0.1%	3.6%
Mexico	0.10	0.06	0.09	0.08	0.11	0.09	0.11	0.10	0.10	0.12	0.10	-17.9%	2.7%	0.4%
US	7.94	7.97	7.76	7.51	7.66	7.69	7.64	7.68	7.63	7.60	7.60	-0.1%	-0.6%	30.5%
Total North America	8.89	8.87	8.72	8.46	8.71	8.75	8.67	8.69	8.63	8.62	8.59	-0.3%	-0.5%	34.5%
Argentina	0.08	0.07	0.06	0.06	0.06	0.05	0.06	0.08	0.05	0.06	0.08	22.4%	-1.3%	0.3%
Brazil	0.12	0.14	0.15	0.15	0.14	0.14	0.13	0.14	0.14	0.14	0.14	2.8%	0.6%	0.6%
Chile	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Colombia	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ecuador	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Peru	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trinidad & Tobago	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Venezuela	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other S. & Cent. America	-	-	-	-	-	-	-	-	-	-	-	n/a	n/a	-
Total S. & Cent. America	0.20	0.20	0.21	0.21	0.20	0.19	0.20	0.22	0.20	0.20	0.22	8.7%	-0.1%	0.9%
Austria	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Belgium	0.45	0.45	0.45	0.37	0.39	0.31	0.24	0.39	0.38	0.26	0.39	52.4%	-5.1%	1.6%
Czech Republic	0.26	0.26	0.26	0.28	0.28	0.28	0.24	0.22	0.26	0.27	0.27	0.7%	0.6%	1.1%
Finland	0.22	0.22	0.22	0.22	0.22	0.22	0.21	0.21	0.20	0.20	0.20	4.4%	-1.2%	0.8%
France	3.87	4.02	4.13	3.94	3.91	4.00	3.98	3.65	3.59	3.70	3.56	-3.8%	-1.2%	14.3%
Germany	1.27	1.32	1.01	0.92	0.90	0.89	0.84	0.77	0.69	0.68	0.67	-1.6%	-7.1%	2.7%
Greece	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hungary	0.15	0.15	0.15	0.15	0.14	0.14	0.14	0.15	0.14	0.14	0.15	3.2%	♦	0.6%
Italy	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Netherlands	0.04	0.04	0.04	0.04	0.03	0.04	0.04	0.04	0.03	0.03	0.03	10.8%	-2.3%	0.1%
Norway	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Poland	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Portugal	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Romania	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.10	0.10	0.10	0.10	-1.2%	-0.5%	0.4%
Spain	0.50	0.58	0.54	0.57	0.52	0.53	0.52	0.53	0.52	0.50	0.52	4.4%	-1.2%	2.1%
Sweden	0.49	0.54	0.56	0.59	0.61	0.59	0.51	0.57	0.59	0.61	0.60	-2.6%	0.1%	2.4%
Switzerland	0.26	0.25	0.25	0.24	0.24	0.25	0.21	0.19	0.18	0.22	0.21	-6.0%	-1.8%	0.8%
Turkey	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ukraine	0.78	0.84	0.84	0.84	0.77	0.81	0.80	0.73	0.77	0.76	0.74	-2.0%	-1.2%	3.0%
United Kingdom	0.65	0.58	0.64	0.65	0.65	0.58	0.64	0.65	0.63	0.58	0.50	-14.0%	1.6%	2.0%
Other Europe	0.43	0.33	0.35	0.34	0.32	0.35	0.33	0.33	0.33	0.33	0.34	2.7%	-3.3%	1.4%
Total Europe	9.49	9.69	9.55	9.26	9.09	9.09	8.82	8.53	8.43	8.37	8.28	-1.2%	-1.8%	33.2%
Azerbaijan	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Belarus	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Kazakhstan	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Russian Federation	1.54	1.60	1.61	1.65	1.59	1.66	1.78	1.78	1.83	1.83	1.86	1.8%	1.7%	7.5%
Turkmenistan	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Uzbekistan	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other CIS	0.02	0.02	0.02	0.02	0.02	0.02	0.03	0.02	0.02	0.02	0.02	5.5%	-2.3%	0.1%
Total CIS	1.57	1.62	1.64	1.67	1.61	1.68	1.81	1.80	1.85	1.85	1.88	1.8%	1.6%	7.6%
Iran	-	-	†	0.01	0.04	0.04	0.03	0.06	0.06	0.06	0.06	-7.2%	-	0.2%
Iraq	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Israel	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Kuwait	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oman	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Qatar	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Saudi Arabia	-	-	-	-	-	-	-	-	-	-	-	-	-	-
United Arab Emirates	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Middle East	-	-	-	-	-	-	-	-	-	-	-	n/a	n/a	-
Total Middle East	-	-	†	0.01	0.04	0.04	0.03	0.06	0.06	0.06	0.06	-7.2%	n/a	0.2%
Algeria	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Egypt	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Morocco	-	-	-	-	-	-	-	-	-	-	-	-	-	-
South Africa	0.12	0.13	0.12	0.12	0.13	0.13	0.11	0.14	0.14	0.10	0.13	27.7%	-2.2%	0.5%
Other Africa	-	-	-	-	-	-	-	-	-	-	-	n/a	n/a	-
Total Africa	0.12	0.13	0.12	0.12	0.13	0.13	0.11	0.14	0.14	0.10	0.13	27.7%	-2.2%	0.5%
Australia	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bangladesh	-	-	-	-	-	-	-	-	-	-	-	-	-	-
China	0.66	0.70	0.81	0.91	1.03	1.22	1.56	1.93	2.23	2.64	3.11	17.8%	15.0%	12.5%
China Hong Kong SAR	-	-	-	-	-	-	-	-	-	-	-	-	-	-
India	0.16	0.22	0.30	0.31	0.31	0.32	0.35	0.34	0.34	0.35	0.40	15.2%	9.2%	1.6%
Indonesia	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Japan	2.59	2.74	1.52	0.17	0.13	-	0.04	0.16	0.26	0.44	0.59	33.2%	-15.6%	2.3%
Malaysia	-	-	-	-	-	-	-	-	-	-	-	-	-	-
New Zealand	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pakistan	0.02	0.02	0.04	0.03	0.07	0.04	0.04	0.05	0.07	0.09	0.08	-3.2%	18.1%	0.3%
Philippines	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Singapore	-	-	-	-	-	-	-	-	-	-	-	-	-	-
South Korea	1.40	1.39	1.44	1.39	1.28	1.43	1.50	1.47	1.34	1.19	1.30	8.9%	-1.8%	5.2%
Sri Lanka	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Taiwan	0.39	0.39	0.39	0.37	0.38	0.39	0.33	0.29	0.20	0.25	0.29	16.3%	-4.4%	1.2%
Thailand	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vietnam	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Asia Pacific	-	-	-	-	-	-	-	-	-	-	-	n/a	n/a	-
Total Asia Pacific	5.23	5.47	4.51	3.18	3.20	3.40	3.82	4.24	4.44	4.96	5.77	16.4%	-0.1%	23.2%
Total World	25.49	25.99	24.75	22.91	22.98	23.28	23.46	23.67	23.75	24.16	24.92	3.2%	-0.7%	100.0%
of which: OECD	21.33	21.61	20.14	18.19	18.21	18.22	17.98	17.86	17.64	17.62	17.77	0.8%	-2.1%	71.3%
Non-OECD	4.16	4.38	4.61	4.72	4.77	5.06	5.47	5.81	6.11	6.54	7.16	9.5%	4.5%	28.7%
European Union	8.45	8.60	8.46	8.18	8.08	8.03	7.81	7.60	7.47	7.40	7.33	-0.9%	-1.8%	29.4%

*Based on gross generation and not accounting for cross-border electricity supply. †Input-equivalent energy is the amount of fuel that would be required by thermal power stations to generate the reported electricity output. Details on thermal efficiency assumptions are available in the appendices and definitions page and at bp.com/statisticalreview.

† Less than 0.005.

♦ Less than 0.05%.

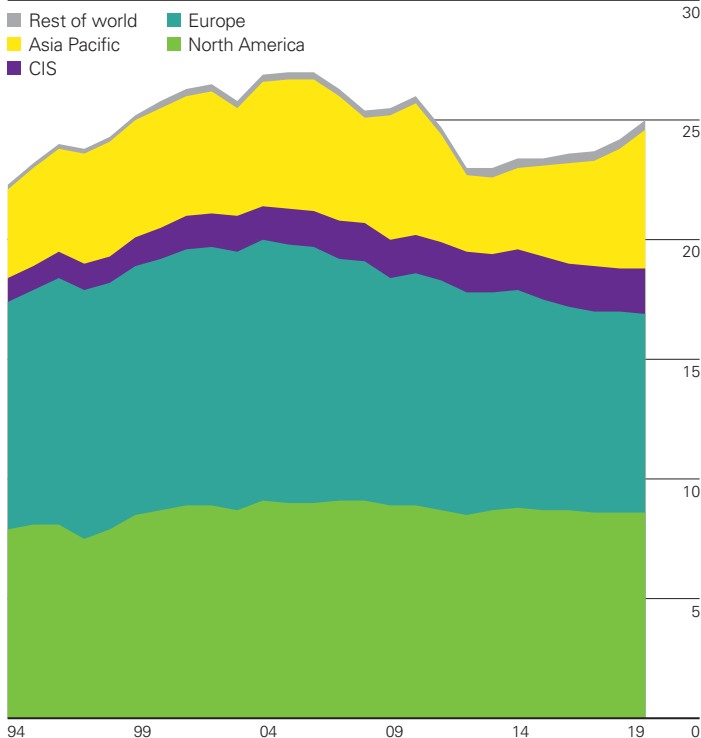
Nuclear data expressed in terawatt-hours is available at bp.com/statisticalreview.

Consumption*

Exajoules (input-equivalent)												Growth rate per annum		Share 2019
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2019	2008-18	
Canada	3.48	3.30	3.51	3.53	3.61	3.50	3.48	3.49	3.55	3.45	3.41	-1.4%	-0.4%	9.0%
Mexico	0.25	0.35	0.34	0.30	0.26	0.36	0.28	0.28	0.29	0.29	0.21	-27.0%	-2.5%	0.6%
US	2.56	2.41	2.95	2.54	2.46	2.34	2.24	2.39	2.67	2.59	2.42	-6.7%	0.8%	6.4%
Total North America	6.30	6.06	6.79	6.36	6.33	6.20	6.01	6.16	6.51	6.33	6.03	-4.7%	♦	16.0%
Argentina	0.39	0.38	0.37	0.34	0.38	0.37	0.38	0.35	0.37	0.37	0.33	-11.3%	0.5%	0.9%
Brazil	3.69	3.79	4.00	3.85	3.60	3.42	3.28	3.45	3.34	3.48	3.56	2.3%	-0.1%	9.5%
Chile	0.24	0.20	0.19	0.19	0.18	0.21	0.22	0.18	0.19	0.21	0.19	-11.1%	-1.0%	0.5%
Colombia	0.39	0.38	0.45	0.44	0.41	0.41	0.41	0.42	0.52	0.51	0.46	-9.3%	1.5%	1.2%
Ecuador	0.09	0.08	0.10	0.11	0.10	0.10	0.12	0.14	0.18	0.19	0.22	18.8%	5.6%	0.6%
Peru	0.19	0.19	0.20	0.20	0.21	0.20	0.22	0.22	0.26	0.28	0.28	2.4%	4.3%	0.7%
Trinidad & Tobago	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Venezuela	0.81	0.72	0.78	0.76	0.77	0.72	0.67	0.56	0.53	0.51	0.56	10.6%	-4.7%	1.5%
Other S. & Cent. America	0.80	0.84	0.85	0.87	0.90	0.84	0.83	0.90	0.91	0.89	0.77	-13.2%	0.8%	2.0%
Total S. & Cent. America	6.59	6.58	6.94	6.77	6.54	6.29	6.12	6.21	6.30	6.43	6.37	-0.9%	-0.1%	16.9%
Austria	0.39	0.36	0.32	0.41	0.39	0.38	0.34	0.36	0.34	0.34	0.36	7.8%	-0.8%	1.0%
Belgium	†	†	†	†	†	†	†	†	†	†	†	-5.8%	-3.2%	♦
Czech Republic	0.02	0.03	0.02	0.02	0.03	0.02	0.02	0.02	0.02	0.01	0.02	22.8%	-2.7%	♦
Finland	0.12	0.12	0.12	0.16	0.12	0.12	0.15	0.14	0.13	0.12	0.11	-6.8%	-3.2%	0.3%
France	0.54	0.59	0.42	0.54	0.65	0.58	0.50	0.54	0.44	0.57	0.52	-8.8%	-0.6%	1.4%
Germany	0.18	0.20	0.16	0.20	0.21	0.18	0.17	0.19	0.18	0.16	0.18	11.9%	-1.9%	0.5%
Greece	0.05	0.07	0.04	0.04	0.06	0.04	0.06	0.05	0.04	0.05	0.04	-30.5%	5.0%	0.1%
Hungary	†	†	†	†	†	†	†	†	†	†	†	-1.3%	-0.2%	♦
Italy	0.46	0.48	0.43	0.39	0.49	0.54	0.40	0.37	0.31	0.42	0.40	-4.5%	0.6%	1.1%
Netherlands	†	†	†	†	†	†	†	†	†	†	†	2.2%	-3.8%	♦
Norway	1.18	1.10	1.12	1.31	1.18	1.24	1.25	1.29	1.28	1.24	1.12	-10.2%	-0.6%	3.0%
Poland	0.02	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	-1.2%	-1.5%	-
Portugal	0.08	0.15	0.11	0.05	0.13	0.14	0.08	0.14	0.05	0.11	0.08	-29.7%	5.5%	0.2%
Romania	0.15	0.19	0.14	0.11	0.14	0.17	0.15	0.16	0.13	0.16	0.14	-13.0%	-0.3%	0.4%
Spain	0.25	0.39	0.29	0.19	0.34	0.36	0.26	0.33	0.17	0.31	0.22	-27.7%	3.4%	0.6%
Sweden	0.62	0.62	0.63	0.73	0.57	0.68	0.69	0.56	0.58	0.56	0.59	5.5%	-1.7%	1.6%
Switzerland	0.34	0.34	0.30	0.36	0.35	0.35	0.35	0.31	0.31	0.31	0.31	-0.1%	-1.0%	0.8%
Turkey	0.34	0.49	0.49	0.54	0.55	0.37	0.61	0.61	0.52	0.54	0.79	48.2%	5.4%	2.1%
Ukraine	0.11	0.12	0.10	0.10	0.13	0.08	0.05	0.07	0.08	0.09	0.06	-34.7%	-1.6%	0.2%
United Kingdom	0.05	0.03	0.05	0.05	0.04	0.05	0.06	0.05	0.05	0.05	0.05	8.6%	♦	0.1%
Other Europe	0.67	0.79	0.56	0.58	0.71	0.68	0.65	0.67	0.59	0.71	0.62	-11.9%	1.8%	1.7%
Total Europe	5.57	6.10	5.31	5.80	6.10	5.90	5.79	5.90	5.26	5.77	5.64	-2.3%	0.2%	15.0%
Azerbaijan	0.02	0.03	0.02	0.02	0.01	0.01	0.01	0.02	0.02	0.02	0.01	-11.8%	-2.9%	♦
Belarus	†	†	†	†	†	†	†	†	†	†	†	-0.4%	22.8%	♦
Kazakhstan	0.06	0.08	0.07	0.07	0.07	0.08	0.08	0.11	0.10	0.09	0.09	-4.1%	2.7%	0.2%
Russian Federation	1.65	1.56	1.52	1.52	1.67	1.59	1.53	1.67	1.67	1.71	1.73	1.6%	0.9%	4.6%
Turkmenistan	†	†	†	†	†	†	†	†	†	†	†	-0.4%	-0.6%	♦
Uzbekistan	0.06	0.08	0.05	0.06	0.06	0.06	0.05	0.07	0.08	0.05	0.06	9.8%	2.4%	0.2%
Other CIS	0.27	0.29	0.31	0.31	0.30	0.29	0.28	0.28	0.31	0.32	0.32	0.5%	1.5%	0.8%
Total CIS	2.06	2.04	1.98	1.98	2.11	2.03	1.96	2.14	2.17	2.19	2.21	1.3%	1.0%	5.9%
Iran	0.06	0.10	0.10	0.12	0.13	0.13	0.12	0.14	0.16	0.10	0.26	153.3%	3.7%	0.7%
Iraq	0.03	0.03	0.03	0.04	0.04	0.03	0.02	0.03	0.02	0.02	0.02	35.8%	-5.2%	0.1%
Israel	†	†	†	†	†	†	†	†	†	†	†	-0.4%	3.1%	♦
Kuwait	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oman	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Qatar	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Saudi Arabia	-	-	-	-	-	-	-	-	-	-	-	-	-	-
United Arab Emirates	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Middle East	0.02	0.03	0.04	0.04	0.04	0.02	0.01	0.01	0.01	0.01	0.02	43.4%	-9.6%	♦
Total Middle East	0.11	0.16	0.17	0.20	0.22	0.18	0.15	0.18	0.19	0.13	0.30	128.7%	♦	0.8%
Algeria	†	†	†	†	†	†	†	†	†	†	†	29.0%	-9.0%	♦
Egypt	0.13	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	-0.2%	-1.8%	0.3%
Morocco	0.02	0.03	0.02	0.02	0.03	0.02	0.02	0.01	0.01	0.02	0.01	-25.7%	5.7%	♦
South Africa	0.01	0.01	0.03	0.01	0.01	0.02	0.01	0.01	0.01	0.01	0.01	-0.4%	-5.5%	♦
Other Africa	0.77	0.84	0.86	0.88	0.93	0.98	0.94	0.91	0.98	1.02	1.04	2.0%	3.1%	2.8%
Total Africa	0.94	1.01	1.03	1.03	1.08	1.13	1.09	1.05	1.11	1.17	1.18	1.4%	2.4%	3.1%
Australia	0.12	0.13	0.18	0.16	0.18	0.13	0.13	0.16	0.12	0.16	0.13	-17.9%	3.3%	0.3%
Bangladesh	†	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	-5.2%	-1.5%	♦
China	5.81	6.68	6.42	8.00	8.38	9.71	10.15	10.44	10.49	10.73	11.32	5.5%	5.9%	30.1%
China Hong Kong SAR	-	-	-	-	-	-	-	-	-	-	-	-	-	-
India	1.00	1.02	1.23	1.07	1.22	1.27	1.21	1.16	1.22	1.25	1.44	15.5%	1.3%	3.8%
Indonesia	0.11	0.16	0.12	0.12	0.16	0.14	0.13	0.17	0.17	0.15	0.15	0.6%	3.2%	0.4%
Japan	0.67	0.83	0.77	0.71	0.73	0.75	0.78	0.67	0.71	0.72	0.66	-9.1%	0.1%	1.8%
Malaysia	0.07	0.06	0.08	0.09	0.11	0.12	0.13	0.18	0.24	0.24	0.24	1.8%	12.3%	0.6%
New Zealand	0.23	0.23	0.23	0.21	0.21	0.22	0.22	0.23	0.23	0.24	0.23	-3.0%	1.0%	0.6%
Pakistan	0.27	0.28	0.29	0.10	0.46	0.30	0.30	0.31	0.28	0.26	0.32	21.8%	♦	0.8%
Philippines	0.09	0.07	0.09	0.10	0.09	0.08	0.08	0.07	0.09	0.08	0.09	2.5%	-1.1%	0.2%
Singapore	-	-	-	-	-	-	-	-	-	-	-	-	-	-
South Korea	0.03	0.03	0.04	0.04	0.04	0.03	0.02	0.03	0.03	0.03	0.02	-17.7%	0.3%	0.1%
Sri Lanka	0.04	0.05	0.04	0.03	0.06	0.04	0.05	0.04	0.04	0.06	0.04	-25.1%	3.9%	0.1%
Taiwan	0.04	0.04	0.04	0.05	0.05	0.04	0.04	0.06	0.05	0.04	0.05	23.6%	-0.2%	0.1%
Thailand	0.07	0.05	0.07	0.08	0.05	0.05	0.03	0.03	0.04	0.07	0.06	-17.2%	0.3%	0.1%
Vietnam	0.28	0.27	0.38	0.49	0.53	0.57	0.52	0.60	0.80	0.76	0.58	-22.7%	11.8%	1.6%
Other Asia Pacific	0.32	0.39	0.44	0.44	0.49	0.49	0.45	0.53	0.55	0.53	0.56	7.2%	4.9%	1.5%
Total Asia Pacific	9.14	10.30	10.43	11.70	12.77	13.94	14.26	14.69	15.05	15.31	15.90	3.9%	4.9%	42.2%
Total World	30.72	32.25												

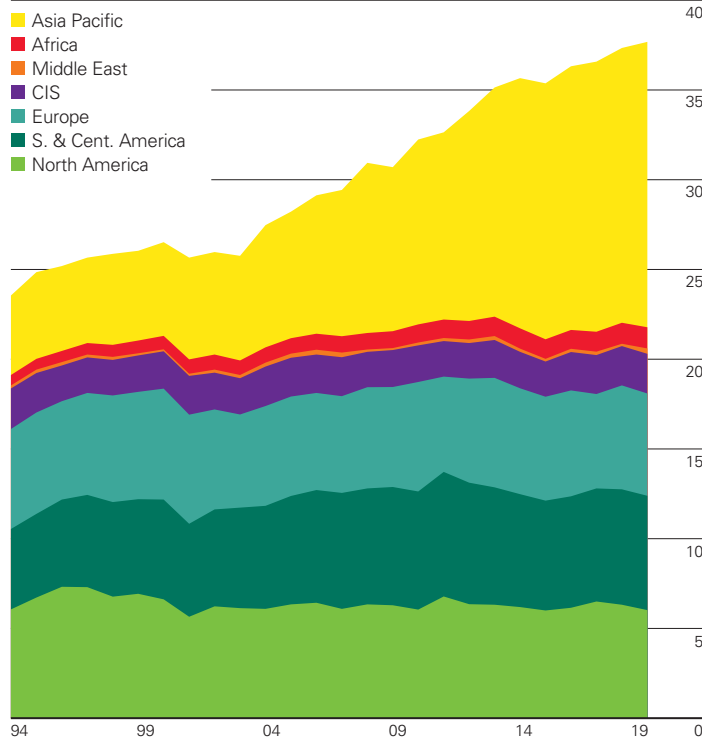
Nuclear energy consumption by region

Exajoules



Hydroelectricity consumption by region

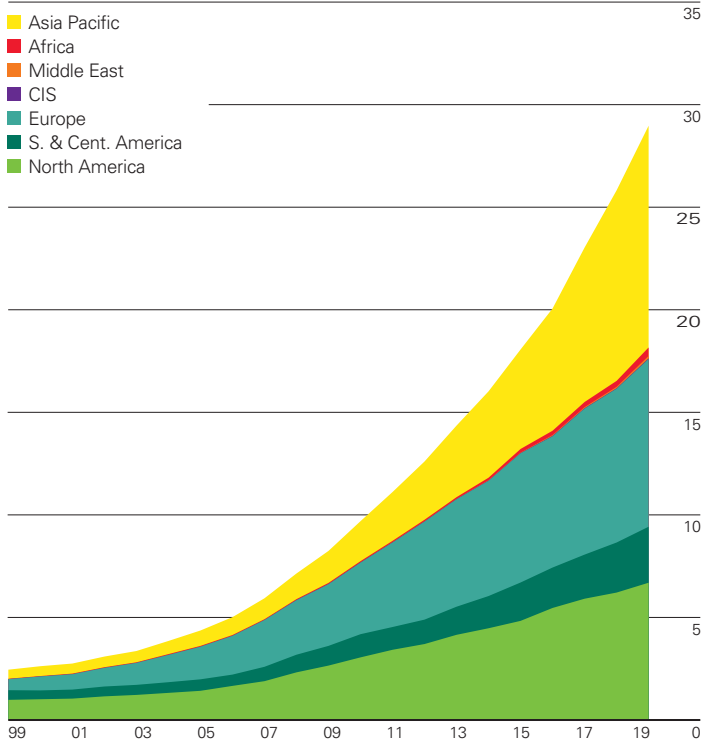
Exajoules



Nuclear consumption increased by 3.2% (on an input-equivalent basis), its fastest growth since 2004 and well above the 10-year average of -0.7%. As in 2018, China recorded the largest increment of any country, and last year's increase was China's largest ever (0.5 EJ). Japan also posted notable growth of 0.15 EJ, or 33% as it continued to recover from the complete shutdown of generation in 2014. Hydroelectric consumption rose by 0.8%, below the 10-year average of 1.9%. Growth was led by China (0.6 EJ), Turkey (0.3 EJ) and India (0.2 EJ). The US and Vietnam saw the biggest declines (both -0.2 EJ).

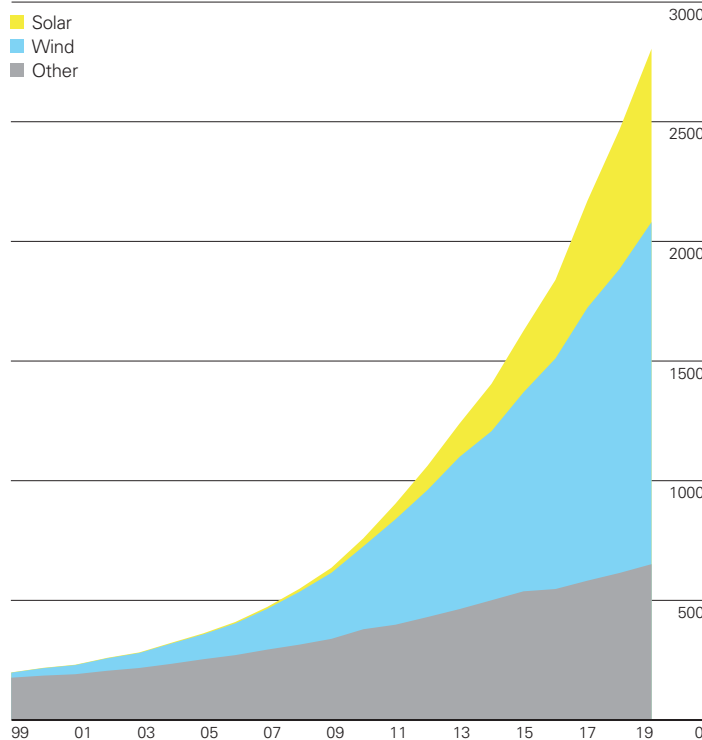
Renewables consumption by region

Exajoules



Renewables generation by source

Terawatt-hours



Renewable energy consumption (including biofuels but excluding hydro) grew by 12.1%, below its historical average, although its increase in energy terms (3.2 EJ) was the highest on record and the largest for any fuel in 2019. By country, China was the largest contributor to renewables growth (0.8 EJ), followed by the US (0.3 EJ) and Japan (0.2 EJ). Wind provided the largest contribution to the growth of renewables electricity generation (160 TWh) followed closely by solar (140 TWh). Solar has constantly increased its share of renewable generation and now makes up 26% compared with only 14% five years earlier.

Renewables consumption*

Exajoules (input-equivalent)	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Growth rate per annum		Share 2019	
												2019	2008-18		
Total North America	2.66	3.06	3.43	3.71	4.16	4.48	4.84	5.47	5.92	6.22	6.70	7.6%	10.3%	23.1%	
Canada	0.18	0.22	0.25	0.28	0.29	0.30	0.44	0.49	0.49	0.50	0.52	4.0%	13.5%	1.8%	
Mexico	0.08	0.09	0.09	0.10	0.11	0.13	0.16	0.17	0.18	0.22	0.35	59.5%	10.3%	1.2%	
US	2.39	2.76	3.09	3.33	3.76	4.04	4.25	4.81	5.24	5.50	5.83	5.9%	10.1%	20.1%	
Argentina	0.02	0.04	0.05	0.07	0.07	0.08	0.08	0.08	0.09	0.10	0.14	38.3%	19.8%	0.5%	
Brazil	0.79	0.92	0.88	0.90	1.05	1.22	1.45	1.49	1.63	1.83	2.02	10.4%	9.9%	7.0%	
Chile	0.03	0.04	0.04	0.06	0.07	0.06	0.08	0.11	0.13	0.16	0.19	20.4%	16.6%	0.7%	
Colombia	0.01	0.01	0.01	0.02	0.01	0.02	0.02	0.02	0.02	0.02	0.02	1.7%	13.7%	0.1%	
Ecuador	†	†	†	†	†	†	0.01	0.01	0.01	0.01	0.01	26.9%	11.1%	♦	
Peru	0.01	0.01	0.02	0.02	0.03	0.03	0.03	0.03	0.04	0.05	0.05	10.6%	18.6%	0.2%	
Trinidad & Tobago	†	†	†	†	†	†	†	†	†	†	†	-0.4%	-15.3%	♦	
Venezuela	-	†	†	†	†	†	†	†	†	†	†	1688.5%	-	♦	
Other S. & Cent. America	0.09	0.10	0.11	0.13	0.14	0.16	0.20	0.23	0.24	0.27	0.29	7.1%	12.6%	1.0%	
Total S. & Cent. America	0.96	1.13	1.11	1.19	1.37	1.57	1.87	1.97	2.15	2.44	2.73	11.9%	10.9%	9.4%	
Austria	0.08	0.08	0.08	0.09	0.10	0.11	0.12	0.12	0.14	0.13	0.14	8.4%	5.4%	0.5%	
Belgium	0.05	0.07	0.09	0.11	0.12	0.13	0.14	0.14	0.16	0.17	0.19	8.9%	16.2%	0.6%	
Czech Republic	0.03	0.04	0.06	0.07	0.07	0.08	0.08	0.08	0.08	0.08	0.08	2.7%	14.7%	0.3%	
Finland	0.09	0.11	0.12	0.12	0.13	0.14	0.14	0.14	0.16	0.18	0.18	0.8%	5.4%	0.6%	
France	0.22	0.24	0.28	0.33	0.35	0.38	0.44	0.46	0.49	0.54	0.61	13.9%	10.9%	2.1%	
Germany	0.83	0.91	1.11	1.25	1.31	1.43	1.66	1.64	1.88	1.97	2.12	7.5%	9.3%	7.3%	
Greece	0.03	0.03	0.04	0.06	0.08	0.08	0.09	0.09	0.10	0.10	0.11	10.0%	14.4%	0.4%	
Hungary	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.05	14.4%	3.8%	0.2%	
Italy	0.24	0.30	0.40	0.53	0.60	0.61	0.63	0.65	0.67	0.64	0.64	-1.4%	13.2%	2.2%	
Netherlands	0.12	0.11	0.13	0.13	0.13	0.12	0.14	0.14	0.17	0.19	0.23	17.7%	6.7%	0.8%	
Norway	0.02	0.02	0.02	0.02	0.03	0.03	0.03	0.04	0.05	0.05	0.07	27.6%	13.0%	0.2%	
Poland	0.09	0.10	0.13	0.17	0.17	0.19	0.22	0.21	0.22	0.21	0.25	15.2%	13.4%	0.9%	
Portugal	0.10	0.13	0.13	0.14	0.16	0.16	0.16	0.16	0.16	0.16	0.18	8.0%	7.4%	0.6%	
Romania	0.01	0.01	0.02	0.03	0.05	0.07	0.09	0.09	0.10	0.09	0.10	8.2%	34.1%	0.3%	
Spain	0.46	0.57	0.59	0.70	0.72	0.69	0.67	0.66	0.68	0.70	0.75	7.3%	6.3%	2.6%	
Sweden	0.14	0.17	0.19	0.21	0.22	0.24	0.29	0.30	0.33	0.32	0.36	13.4%	9.3%	1.2%	
Switzerland	0.01	0.01	0.02	0.02	0.02	0.02	0.03	0.03	0.04	0.04	0.04	7.0%	12.9%	0.2%	
Turkey	0.02	0.04	0.05	0.07	0.11	0.12	0.15	0.21	0.27	0.34	0.41	19.3%	40.4%	1.4%	
Ukraine	†	†	†	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.05	92.4%	23.5%	0.2%	
United Kingdom	0.23	0.26	0.32	0.37	0.49	0.59	0.74	0.74	0.88	0.99	1.08	9.1%	17.8%	3.7%	
Other Europe	0.20	0.24	0.29	0.33	0.36	0.39	0.43	0.43	0.49	0.51	0.56	9.7%	10.6%	1.9%	
Total Europe	3.01	3.49	4.12	4.78	5.24	5.62	6.30	6.40	7.12	7.50	8.18	9.2%	10.9%	28.2%	
Azerbaijan	†	†	-	-	†	†	†	†	†	†	†	27.7%	-	♦	
Belarus	†	†	†	†	†	†	†	†	†	†	†	3.2%	19.6%	♦	
Kazakhstan	-	-	†	†	†	†	†	†	†	†	0.01	47.3%	-	♦	
Russian Federation	†	0.01	0.01	†	†	0.01	0.01	0.01	0.01	0.01	0.02	31.0%	10.2%	0.1%	
Turkmenistan	-	†	†	†	†	†	†	†	†	†	†	-0.4%	-	♦	
Uzbekistan	-	-	-	-	-	-	-	-	†	†	†	132.5%	-	♦	
Other CIS	†	†	†	†	†	†	†	†	†	†	†	16.5%	39.8%	♦	
Total CIS	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.03	29.4%	15.9%	0.1%	
Iran	†	†	†	†	†	†	†	†	†	†	†	12.1%	9.0%	♦	
Iraq	-	-	-	-	†	†	†	†	†	†	†	-0.4%	-	♦	
Israel	†	†	†	†	0.01	0.01	0.01	0.02	0.02	0.02	0.03	64.3%	40.9%	0.1%	
Kuwait	-	-	-	-	†	†	†	†	†	†	†	91.4%	-	♦	
Oman	-	-	-	-	†	†	†	†	†	†	†	-0.4%	-	♦	
Qatar	-	-	†	†	†	†	†	†	†	†	†	-0.4%	-	♦	
Saudi Arabia	†	†	†	†	†	†	†	†	†	†	†	0.02	365.6%	89.2%	0.1%
United Arab Emirates	†	†	†	†	†	†	†	†	0.01	0.01	0.04	214.8%	-	0.1%	
Other Middle East	†	†	†	†	†	†	†	0.01	0.02	0.03	0.03	8.9%	68.3%	0.1%	
Total Middle East	†	†	0.01	0.01	0.01	0.02	0.02	0.04	0.05	0.07	0.12	77.1%	38.8%	0.4%	
Algeria	-	†	†	†	†	†	†	†	†	0.01	0.01	1.6%	-	♦	
Egypt	0.01	0.01	0.02	0.02	0.01	0.01	0.02	0.02	0.02	0.03	0.06	82.0%	13.6%	0.2%	
Morocco	†	0.01	0.01	0.01	0.01	0.02	0.02	0.03	0.03	0.04	0.06	30.6%	31.2%	0.2%	
South Africa	†	†	†	0.01	0.01	0.02	0.06	0.07	0.10	0.11	0.12	3.1%	37.2%	0.4%	
Other Africa	0.03	0.04	0.04	0.04	0.05	0.06	0.08	0.08	0.09	0.10	0.17	72.6%	13.5%	0.6%	
Total Africa	0.05	0.06	0.06	0.07	0.08	0.12	0.18	0.21	0.25	0.29	0.41	39.3%	20.7%	1.4%	
Australia	0.12	0.15	0.18	0.19	0.21	0.23	0.25	0.26	0.28	0.35	0.42	22.0%	13.1%	1.5%	
Bangladesh	†	†	†	†	†	†	†	†	†	†	†	39.0%	32.1%	♦	
China	0.52	0.77	1.05	1.36	1.80	2.24	2.62	3.44	4.61	5.81	6.63	14.2%	33.4%	22.9%	
China Hong Kong SAR	†	†	†	†	†	†	†	†	†	†	†	13.4%	64.1%	♦	
India	0.27	0.32	0.39	0.46	0.52	0.58	0.60	0.73	0.90	1.10	1.21	9.4%	17.1%	4.2%	
Indonesia	0.09	0.10	0.10	0.11	0.12	0.15	0.12	0.20	0.20	0.25	0.39	54.2%	12.2%	1.4%	
Japan	0.25	0.29	0.30	0.33	0.39	0.49	0.64	0.63	0.76	0.89	1.10	24.1%	13.3%	3.8%	
Malaysia	0.01	0.01	0.02	0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.03	12.5%	11.5%	0.1%	
New Zealand	0.07	0.08	0.08	0.08	0.08	0.09	0.10	0.10	0.10	0.09	0.10	2.4%	5.5%	0.3%	
Pakistan	†	†	†	†	†	0.01	0.02	0.03	0.04	0.05	0.06	33.0%	123.2%	0.2%	
Philippines	0.11	0.10	0.10	0.11	0.11	0.11	0.13	0.15	0.14	0.15	0.15	2.7%	3.4%	0.5%	
Singapore	†	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	5.5%	5.0%	♦	
South Korea	0.03	0.05	0.05	0.05	0.07	0.09	0.12	0.15	0.19	0.24	0.29	19.3%	27.2%	1.0%	
Sri Lanka	†	†	†	†	†	†	†	†	0.01	0.01	0.01	7.0%	47.0%	♦	
Taiwan	0.02	0.03	0.03	0.03	0.04	0.04	0.04	0.04	0.05	0.06	0.07	24.9%	9.6%	0.2%	
Thailand	0.05	0.06	0.07	0.09	0.12	0.15	0.16	0.18	0.21	0.24	0.29	18.8%	19.5%	1.0%	
Vietnam	†	†	†	†	†	†	†	†	†	†	†	0.04	845.8%	23.6%	0.1%
Other Asia Pacific	†	†	†	†	†	†	0.01	0.01	0.01	0.01	0.01	30.6%	25.3%	♦	
Total Asia Pacific	1.56	1.95	2.38	2.84	3.49	4.21	4.85	5.96	7.53	9.29	10.81	16.5%	22.2%	37.3%	
Total World	8.24	9.70	11.12	12.60	14.36	16.03									

Renewables: Renewable power generation*

Terawatt-hours	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Growth rate per annum		Share 2019
												2019	2008-18	
Canada	15.7	19.3	21.0	23.1	23.7	24.7	39.8	45.6	45.9	47.1	49.3	4.7%	14.8%	1.8%
Mexico	8.2	8.7	9.1	10.5	11.6	13.8	16.4	18.0	19.5	23.3	37.8	62.4%	11.0%	1.3%
US	149.9	173.7	201.9	228.3	266.2	296.8	315.8	367.4	417.7	451.6	489.8	8.5%	13.2%	17.5%
Total North America	173.7	201.7	231.9	261.9	301.5	335.3	372.1	431.0	483.2	522.0	576.9	10.5%	13.2%	20.6%
Argentina	1.8	2.0	2.2	2.8	2.9	2.9	3.0	2.5	3.0	4.0	8.2	104.2%	8.7%	0.3%
Brazil	24.1	34.1	35.3	40.8	47.6	59.3	71.6	84.9	96.1	106.3	117.7	10.7%	17.6%	4.2%
Chile	3.5	3.7	4.7	6.4	7.4	6.9	9.0	11.7	15.0	17.9	21.6	20.9%	17.3%	0.8%
Colombia	1.1	1.1	1.4	1.5	1.4	1.8	1.9	2.0	2.0	2.2	2.2	2.0%	14.5%	0.1%
Ecuador	0.2	0.2	0.3	0.3	0.4	0.5	0.5	0.6	0.5	0.5	0.7	29.4%	10.0%	♦
Peru	0.5	0.7	0.7	0.7	1.2	1.7	1.7	1.9	2.4	3.5	4.0	15.2%	22.4%	0.1%
Trinidad & Tobago	†	†	†	†	†	†	†	†	†	†	†	-	-14.8%	♦
Venezuela	-	†	†	†	†	†	†	†	†	†	0.2	1695.2%	-	♦
Other S. & Cent. America	8.1	9.1	9.6	11.7	13.1	15.7	19.7	22.4	23.8	27.5	29.6	7.7%	14.2%	1.1%
Total S. & Cent. America	39.2	51.0	54.2	64.3	74.0	88.9	107.5	126.2	142.8	161.9	184.1	13.7%	16.6%	6.6%
Austria	6.3	6.6	6.6	7.4	8.4	9.0	10.3	11.0	12.8	12.3	13.6	10.2%	6.9%	0.5%
Belgium	5.1	6.2	8.2	10.1	11.3	12.0	14.2	14.0	15.6	16.8	18.6	10.5%	15.4%	0.7%
Czech Republic	2.2	3.1	5.2	6.0	6.5	7.3	7.6	7.4	7.7	7.8	7.9	1.7%	16.3%	0.3%
Finland	9.0	11.3	11.7	11.6	12.7	12.8	13.7	14.5	16.1	18.1	18.4	1.4%	5.4%	0.7%
France	12.7	15.5	19.6	24.3	26.2	29.0	35.0	37.2	41.5	46.9	54.9	17.0%	16.5%	2.0%
Germany	76.1	84.2	106.4	121.3	129.3	142.9	169.8	169.1	196.2	206.8	224.1	8.4%	11.0%	8.0%
Greece	2.8	3.1	4.1	5.7	8.0	7.7	8.8	9.4	9.8	10.4	11.6	11.1%	15.6%	0.4%
Hungary	2.7	2.8	2.5	2.4	2.6	2.8	3.0	3.0	3.3	3.5	4.3	20.9%	5.1%	0.2%
Italy	20.1	25.8	37.1	50.3	59.2	62.1	63.4	65.6	67.7	65.6	67.6	3.0%	14.8%	2.4%
Netherlands	10.7	11.1	12.3	12.4	12.1	11.6	13.6	14.6	17.4	18.8	22.3	18.4%	7.2%	0.8%
Norway	1.2	1.2	1.6	1.9	2.3	2.5	2.8	2.4	3.1	4.2	5.9	41.9%	12.2%	0.2%
Poland	6.3	8.0	10.8	14.8	14.6	17.7	20.9	20.7	21.6	19.6	23.1	17.6%	16.0%	0.8%
Portugal	10.0	12.2	12.6	13.8	15.7	16.0	15.7	16.5	16.7	17.0	18.6	9.1%	8.0%	0.7%
Romania	†	0.4	1.6	2.9	5.2	6.5	9.6	8.9	9.8	8.5	9.0	5.8%	76.5%	0.3%
Spain	47.4	54.6	55.6	66.4	74.2	71.1	68.9	68.2	69.5	69.8	77.5	11.0%	6.1%	2.8%
Sweden	14.0	15.7	17.6	19.4	21.3	22.0	27.1	27.1	29.9	28.9	33.6	16.1%	8.9%	1.2%
Switzerland	1.3	1.4	1.6	1.9	2.2	2.6	2.8	3.2	3.7	3.9	4.1	6.9%	11.7%	0.1%
Turkey	2.2	3.9	5.8	7.4	9.8	12.0	16.5	23.0	29.0	37.8	45.3	19.8%	41.8%	1.6%
Ukraine	0.2	0.2	0.3	0.8	1.3	1.7	1.7	1.6	1.9	2.5	5.0	100.2%	23.3%	0.2%
United Kingdom	20.0	22.6	29.5	35.9	48.5	58.6	77.1	77.6	92.9	104.5	113.4	8.5%	20.1%	4.0%
Other Europe	20.0	23.6	28.8	32.0	35.3	39.3	43.0	43.4	50.6	52.4	57.9	10.5%	11.0%	2.1%
Total Europe	270.3	313.6	379.5	448.7	506.8	547.2	625.3	638.4	716.7	756.3	836.6	10.6%	12.2%	29.8%
Azerbaijan	†	†	-	-	0.1	0.1	0.1	0.1	0.1	0.2	0.3	28.1%	-	♦
Belarus	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.3	0.3	0.3	4.3%	25.4%	♦
Kazakhstan	-	-	†	†	†	†	0.2	0.4	0.4	0.5	0.8	49.6%	-	♦
Russian Federation	0.5	0.5	0.6	0.5	0.5	0.8	1.0	1.1	1.2	1.4	1.8	31.5%	10.9%	0.1%
Turkmenistan	-	†	†	†	†	†	†	†	†	†	†	-	-	♦
Uzbekistan	-	-	-	-	-	-	-	†	†	†	†	133.3%	-	♦
Other CIS	†	†	†	†	†	†	†	†	†	0.1	0.1	16.9%	40.6%	♦
Total CIS	0.6	0.6	0.7	0.6	0.7	1.0	1.4	1.8	2.1	2.5	3.3	31.1%	16.8%	0.1%
Iran	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.4	0.5	0.6	12.5%	9.6%	♦
Iraq	-	-	-	-	†	0.1	0.1	0.1	0.1	0.1	0.1	-	-	♦
Israel	0.1	0.1	0.3	0.5	0.5	0.9	1.2	1.7	1.7	1.7	2.9	65.9%	59.8%	0.1%
Kuwait	-	-	-	-	†	†	†	†	0.1	0.1	0.2	92.2%	-	♦
Oman	-	-	-	-	†	†	†	†	†	†	†	-	-	♦
Qatar	-	-	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	-	-	♦
Saudi Arabia	†	†	†	†	†	†	0.1	0.1	0.2	0.4	1.8	367.4%	90.4%	0.1%
United Arab Emirates	†	†	†	†	0.1	0.3	0.3	0.3	0.8	1.3	4.2	216.0%	-	0.1%
Other Middle East	†	†	†	†	†	0.1	0.3	1.5	2.2	3.3	3.6	9.3%	69.3%	0.1%
Total Middle East	0.3	0.4	0.7	0.9	1.1	1.8	2.5	4.1	5.5	7.5	13.3	78.0%	41.7%	0.5%
Algeria	-	†	†	†	†	0.1	0.1	0.3	0.5	0.6	0.6	2.0%	-	♦
Egypt	1.0	1.4	1.7	1.8	1.6	1.2	1.9	2.6	2.7	3.5	6.5	82.7%	14.3%	0.2%
Morocco	0.4	0.7	0.7	0.7	1.2	1.9	2.5	3.4	3.5	4.8	6.3	31.1%	32.0%	0.2%
South Africa	0.5	0.5	0.5	0.5	0.8	2.6	6.2	7.9	10.6	12.3	12.6	3.0%	37.7%	0.5%
Other Africa	3.3	3.8	3.9	4.5	5.2	6.8	8.8	9.2	9.7	11.0	19.1	73.4%	14.1%	0.7%
Total Africa	5.3	6.3	6.9	7.6	8.8	12.5	19.6	23.5	27.0	32.2	45.1	40.0%	21.3%	1.6%
Australia	7.5	8.4	11.1	13.2	16.4	18.3	21.7	24.2	25.7	32.2	41.1	27.3%	16.0%	1.5%
Bangladesh	†	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.4	39.5%	32.9%	♦
China	48.8	75.0	104.3	136.8	183.8	229.5	279.1	369.5	502.0	636.4	732.3	15.1%	36.6%	26.1%
China Hong Kong SAR	†	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	10.8%	62.0%	♦
India	28.0	33.9	41.9	49.5	55.9	63.0	65.1	79.8	99.2	122.8	134.9	9.8%	17.9%	4.8%
Indonesia	9.3	9.4	9.5	9.6	9.5	10.2	10.3	11.0	13.1	14.6	16.0	9.4%	5.7%	0.6%
Japan	26.8	29.7	31.0	34.2	41.2	52.2	68.2	68.1	81.9	96.8	121.2	25.2%	13.7%	4.3%
Malaysia	1.4	1.3	1.5	1.5	1.2	0.9	1.0	1.1	1.1	1.3	1.7	29.3%	5.0%	0.1%
New Zealand	6.9	8.1	8.6	8.8	9.0	10.1	10.8	10.8	10.6	10.5	10.8	2.7%	6.2%	0.4%
Pakistan	†	†	†	0.1	0.5	1.0	1.7	2.8	4.0	5.2	6.9	33.5%	124.5%	0.2%
Philippines	10.4	10.0	10.1	10.5	9.9	10.7	12.3	13.9	13.6	13.9	14.3	2.4%	2.6%	0.5%
Singapore	0.5	0.6	0.6	0.6	0.7	0.8	0.9	0.9	0.9	0.9	1.0	5.9%	5.6%	♦
South Korea	2.6	3.3	3.7	4.2	5.7	7.7	11.0	14.0	19.0	23.9	29.2	22.2%	31.7%	1.0%
Sri Lanka	†	0.1	0.1	0.2	0.3	0.3	0.4	0.5	0.7	0.8	0.8	7.4%	47.9%	♦
Taiwan	2.5	2.9	3.4	3.4	3.8	4.0	4.3	4.5	5.3	6.4	8.0	25.3%	10.2%	0.3%
Thailand	2.3	3.4	4.1	5.2	7.2	9.0	10.0	12.5	14.9	17.8	21.4	20.2%	23.4%	0.8%
Vietnam	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.3	0.4	0.5	4.7	849.3%	24.3%	0.2%
Other Asia Pacific	0.1	0.2	0.2	0.2	0.3	0.4	0.6	0.7	0.9	1.1	1.4	31.1%	26.1%	0.1%
Total Asia Pacific	147.3	186.4	230.5	278.4	346.0	418.6	498.2	614.9	793.5	985.5	1146.2	16.3%	23.6%	40.9%
Total World	636.7	760.1	904.5	1062.										

Renewable energy: Generation by source*

Terawatt-hours									2019 Growth rate			
	Wind	Solar	Other renewables†	2018 Total	Wind	Solar	Other renewables‡	2019 Total	Wind	Solar	Other renewables‡	Total
Canada	33.2	3.9	10.0	47.1	34.2	4.3	10.8	49.3	3.0%	11.9%	7.7%	4.7%
Mexico	13.1	3.2	7.0	23.3	17.6	12.4	7.8	37.8	34.5%	291.2%	10.8%	62.4%
US	275.4	94.3	81.9	451.6	303.1	108.4	78.3	489.8	10.1%	14.9%	-4.4%	8.5%
Total North America	321.7	101.3	98.9	522.0	354.9	125.1	96.9	576.9	10.3%	23.5%	-2.1%	10.5%
Argentina	1.4	0.1	2.5	4.0	5.0	0.8	2.4	8.2	253.6%	639.6%	-3.8%	104.2%
Brazil	48.5	3.5	54.4	106.3	55.8	5.6	56.3	117.7	15.2%	60.7%	3.4%	10.7%
Chile	3.6	5.1	9.2	17.9	5.3	6.3	10.0	21.6	47.7%	23.1%	9.1%	20.9%
Colombia	0.1	†	2.1	2.2	0.1	0.1	2.0	2.2	7.4%	925.6%	-3.4%	2.0%
Ecuador	0.1	†	0.4	0.5	0.1	0.2	0.5	0.7	6.6%	337.1%	6.3%	29.4%
Peru	1.5	0.7	1.2	3.5	1.6	0.8	1.6	4.0	9.6%	2.2%	29.7%	15.2%
Trinidad & Tobago	-	†	-	†	-	†	-	†	-	-	-	-
Venezuela	-	†	-	†	0.1	†	-	0.2	-	33.0%	-	1695.2%
Other S. & Cent. America	10.6	3.2	13.6	27.5	11.1	3.9	14.6	29.6	4.2%	19.9%	7.4%	7.7%
Total S. & Cent. America	65.8	12.7	83.4	161.9	79.2	17.6	87.4	184.1	20.4%	38.3%	4.7%	13.7%
Austria	6.0	1.4	4.9	12.3	7.4	1.4	4.8	13.6	23.3%	-6.0%	-1.4%	10.2%
Belgium	7.5	3.9	5.5	16.8	9.5	3.9	5.1	18.6	27.7%	1.1%	-6.3%	10.5%
Czech Republic	0.6	2.3	4.8	7.8	0.7	2.3	4.9	7.9	14.9%	-2.5%	2.0%	1.7%
Finland	5.8	0.1	12.2	18.1	6.0	0.2	12.2	18.4	2.5%	97.5%	0.1%	1.4%
France	28.1	10.3	8.5	46.9	34.5	11.7	8.7	54.9	22.8%	13.7%	2.1%	17.0%
Germany	110.0	45.8	51.0	206.8	126.0	47.5	50.6	224.1	14.6%	3.8%	-0.9%	8.4%
Greece	6.3	3.8	0.3	10.4	7.3	4.0	0.3	11.6	15.5%	4.5%	2.2%	11.1%
Hungary	0.6	0.6	2.3	3.5	0.7	1.4	2.1	4.3	19.6%	123.2%	-6.4%	20.9%
Italy	17.7	22.7	25.3	65.6	20.1	24.3	23.2	67.6	13.2%	7.4%	-8.0%	3.0%
Netherlands	10.6	3.7	4.6	18.8	11.5	5.2	5.6	22.3	8.5%	40.5%	23.7%	18.4%
Norway	3.9	0.1	0.2	4.2	5.5	0.1	0.3	5.9	42.8%	32.2%	27.6%	41.9%
Poland	12.8	0.3	6.5	19.6	15.0	0.7	7.3	23.1	17.5%	137.7%	12.2%	17.6%
Portugal	12.6	1.0	3.4	17.0	13.7	1.3	3.5	18.6	8.9%	26.9%	4.8%	9.1%
Romania	6.3	1.8	0.4	8.5	6.7	1.7	0.5	9.0	6.7%	-2.1%	24.6%	5.8%
Spain	50.9	12.7	6.2	69.8	56.2	15.0	6.3	77.5	10.4%	18.0%	1.7%	11.0%
Sweden	16.6	0.4	11.9	28.9	19.9	0.6	13.1	33.6	19.6%	50.1%	10.1%	16.1%
Switzerland	0.1	1.9	1.8	3.9	0.1	2.3	1.8	4.1	-	16.3%	-2.7%	6.9%
Turkey	19.9	7.8	10.1	37.8	21.7	10.9	12.7	45.3	8.8%	40.0%	26.1%	19.8%
Ukraine	1.2	1.1	0.2	2.5	1.9	2.9	0.2	5.0	58.6%	162.8%	9.5%	100.2%
United Kingdom	56.9	12.9	34.8	104.5	64.1	12.7	36.6	113.4	12.7%	-1.4%	5.1%	8.5%
Other Europe	0.6	0.3	0.2	1.1	1.5	0.3	0.2	2.0	138.7%	13.9%	16.1%	86.6%
Total Europe	402.8	138.6	215.0	756.3	461.6	154.7	220.3	836.6	14.6%	11.6%	2.5%	10.6%
Azerbaijan	0.1	†	0.1	0.2	0.1	†	0.1	0.3	63.8%	11.6%	-	28.1%
Belarus	0.1	0.1	0.1	0.3	0.1	0.1	0.1	0.3	7.4%	1.5%	4.5%	4.3%
Kazakhstan	0.4	0.1	†	0.5	0.5	0.3	†	0.8	28.7%	105.8%	110.6%	49.6%
Russian Federation	0.2	0.6	0.5	1.4	0.3	1.0	0.5	1.8	32.7%	57.7%	-0.5%	31.5%
Turkmenistan	-	†	-	†	-	†	-	†	-	-	-	-
Uzbekistan	-	†	-	†	-	†	-	†	-	133.3%	-	133.3%
Other CIS	†	†	†	0.1	†	†	†	0.1	5.6%	64.6%	-	16.9%
Total CIS	0.8	0.9	0.7	2.5	1.1	1.5	0.7	3.3	30.1%	55.8%	0.7%	31.1%
Iran	0.3	0.1	†	0.5	0.4	0.2	†	0.6	7.2%	28.2%	-	12.5%
Iraq	-	0.1	-	0.1	-	0.1	-	0.1	-	-	-	-
Israel	0.1	1.6	0.1	1.7	0.1	2.7	0.1	2.9	-	72.8%	-	65.9%
Kuwait	†	0.1	-	0.1	†	0.1	-	0.2	-	116.7%	-	92.2%
Oman	-	†	-	†	-	†	-	†	-	-	-	-
Qatar	-	†	0.1	0.1	-	†	0.1	0.1	-	-	-	-
Saudi Arabia	-	0.4	-	0.4	-	1.8	-	1.8	-	367.4%	-	367.4%
United Arab Emirates	†	1.3	†	1.3	†	4.2	†	4.2	-	217.2%	-	216.0%
Other Middle East	0.7	2.6	†	3.3	0.7	2.9	†	3.6	-	11.9%	-	9.3%
Total Middle East	1.1	6.1	0.3	7.5	1.2	11.9	0.3	13.3	2.1%	95.4%	-	78.0%
Algeria	†	0.6	-	0.6	†	0.6	-	0.6	-	2.0%	-	2.0%
Egypt	2.0	1.5	-	3.5	2.8	3.7	-	6.5	37.5%	143.4%	-	82.7%
Morocco	3.8	1.0	-	4.8	4.7	1.6	-	6.3	22.4%	66.4%	-	31.1%
South Africa	6.9	4.9	0.4	12.3	6.9	5.3	0.4	12.6	0.7%	6.6%	-	3.0%
Other Africa	1.5	1.9	7.6	11.0	3.1	8.2	7.8	19.1	102.5%	345.3%	1.6%	73.4%
Total Africa	14.3	9.9	8.1	32.2	17.5	19.4	8.2	45.1	22.5%	96.7%	1.5%	40.0%
Australia	16.4	12.3	3.6	32.2	19.5	18.0	3.6	41.1	19.0%	46.2%	0.6%	27.3%
Bangladesh	†	0.3	†	0.3	†	0.4	†	0.4	-	41.2%	-	39.5%
China	365.8	176.9	93.7	636.4	405.7	223.8	102.8	732.3	10.9%	26.5%	9.7%	15.1%
China Hong Kong SAR	†	†	0.1	0.1	†	†	0.1	0.1	-3.4%	-3.4%	11.2%	10.8%
India	60.3	36.3	26.2	122.8	63.3	46.3	25.4	134.9	5.0%	27.3%	-3.2%	9.8%
Indonesia	0.2	†	14.4	14.6	0.2	0.1	15.7	16.0	-	218.1%	9.3%	9.4%
Japan	7.4	66.1	23.4	96.8	8.6	75.3	37.3	121.2	17.2%	14.0%	59.5%	25.2%
Malaysia	-	0.5	0.8	1.3	-	0.8	0.9	1.7	-	64.6%	8.5%	29.3%
New Zealand	2.1	0.1	8.4	10.5	2.3	0.1	8.4	10.8	9.1%	27.7%	0.9%	2.7%
Pakistan	3.1	1.0	1.0	5.2	4.8	1.2	0.9	6.9	52.3%	13.7%	-5.2%	33.5%
Philippines	1.2	1.2	11.5	13.9	1.2	1.3	11.8	14.3	1.9%	6.6%	2.0%	2.4%
Singapore	-	0.1	0.8	0.9	-	0.2	0.8	1.0	-	44.0%	-0.8%	5.9%
South Korea	2.6	9.7	11.7	23.9	2.8	12.1	14.3	29.2	6.6%	25.6%	22.9%	22.2%
Sri Lanka	0.4	0.3	0.1	0.8	0.4	0.4	0.1	0.8	-	16.2%	6.5%	7.4%
Taiwan	1.7	2.7	2.0	6.4	1.9	4.1	2.0	8.0	11.0%	51.3%	1.3%	25.3%
Thailand	1.9	5.0	10.9	17.8	2.7	5.0	13.7	21.4	36.6%	0.5%	26.4%	20.2%
Vietnam	0.3	0.1	0.1	0.5	0.5	4.2	0.1	4.7	58.2%	3583.7%	-	849.3%
Other Asia Pacific	0.4	0.5	0.2	1.1	0.5	0.7	0.2	1.4	43.5%	32.0%	-	31.1%
Total Asia Pacific	463.7	313.2	208.6	985.5	514.3	393.9	238.0	1146.2	10.9%	25.8%	14.1%	16.3%
Total World	1270.2	582.8	615.0	2468.0	1429.6	724.1	651.8	2805.5	12.6%	24.3%	6.0%	13.7%
of which: OECD	745.4	329.9	367.0	1442.4	841.8	387.2	387.8	1616.8	12.9%	17.4%	5.7%	12.1%
Non-OECD	524.7	252.8	248.0	1025.6	587.9	336.9	264.0	1188.8	12.0%	33.2%	6.5%	15.9%
European Union	376.9	127.5	196.4	700.9	430.7	138.4	199.1	768.2	14.3%	8.5%	1.3%	9.6%

*Based on gross generation and not accounting for cross-border electricity supply.

†Includes electricity generated from: geothermal, biomass and other sources of renewable energy (not already itemized).

‡Less than 0.05%.

•Less than 0.05%.

A more extensive time series of renewables by source is available at [bp.com/statisticalreview](https://www.bp.com/statisticalreview).

Renewables: Biofuels production*

Thousand barrels of oil equivalent per day	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Growth rate per annum		Share 2019
												2019	2008-18	
Canada	14	16	19	20	19	21	22	23	25	25	29	14.4%	9.4%	1.6%
Mexico	–	†	†	†	†	†	†	†	†	†	†	–	–	♦
US	445	526	585	557	582	617	634	673	696	717	697	-2.7%	6.2%	37.9%
Total North America	460	542	604	577	601	638	656	696	722	742	726	-2.1%	6.3%	39.4%
Argentina	19	32	42	43	38	49	38	53	58	51	46	-9.9%	16.1%	2.5%
Brazil	286	316	270	276	321	337	362	340	342	413	444	7.6%	3.6%	24.1%
Colombia	5	8	10	11	12	12	12	12	11	14	13	-4.6%	18.7%	0.7%
Other S. & Cent. America	4	4	5	5	7	8	8	10	10	11	12	7.2%	2.1%	0.7%
Total S. & Cent. America	315	360	327	335	378	406	421	415	422	489	516	5.4%	4.6%	28.0%
Austria	7	7	7	7	7	6	7	8	7	7	7	-1.7%	3.7%	0.4%
Belgium	3	7	8	8	8	11	7	7	8	8	9	7.9%	–	0.5%
Finland	4	6	4	5	6	7	8	2	6	5	6	4.9%	12.8%	0.3%
France	44	43	42	49	48	51	53	49	52	58	51	-13.1%	4.1%	2.7%
Germany	47	59	58	54	58	65	60	60	62	64	64	0.6%	3.1%	3.5%
Italy	14	15	11	6	9	10	10	10	12	13	14	12.2%	0.8%	0.8%
Netherlands	5	7	13	24	28	34	36	29	37	36	35	-1.8%	37.8%	1.9%
Poland	8	8	8	12	13	14	15	17	17	17	18	5.5%	12.1%	1.0%
Portugal	4	5	6	5	5	6	6	6	6	6	7	20.2%	8.2%	0.4%
Spain	17	19	16	12	14	19	21	22	29	34	30	-13.4%	17.0%	1.6%
Sweden	3	4	4	4	4	4	4	4	3	4	4	26.3%	3.6%	0.2%
United Kingdom	4	5	3	6	9	7	6	10	14	13	11	-14.9%	9.2%	0.6%
Other Europe	20	20	22	26	28	28	32	33	35	39	40	2.5%	8.9%	2.2%
Total Europe	180	205	201	218	237	262	265	257	289	304	296	-2.6%	7.6%	16.1%
Total CIS	†	1	1	1	†	†	†	†	†	†	†	–	12.1%	♦
Total Middle East	†	†	†	†	†	†	†	†	†	†	†	–	–	♦
Total Africa	5	6	6	4	4	5	7	7	8	9	9	6.6%	25.5%	0.5%
Australia	4	3	4	4	5	5	4	4	2	3	3	6.3%	-0.7%	0.2%
China	31	30	37	39	44	49	42	40	49	47	50	6.6%	5.3%	2.7%
India	2	4	5	5	5	5	10	12	11	19	24	24.9%	20.9%	1.3%
Indonesia	3	4	27	33	41	59	24	54	50	91	123	35.7%	27.1%	6.7%
South Korea	4	6	5	7	7	7	8	8	8	8	8	-3.2%	11.3%	0.4%
Thailand	12	16	17	24	30	34	36	31	37	40	43	8.1%	14.9%	2.3%
Other Asia Pacific	8	8	16	22	28	34	36	34	33	35	43	21.6%	17.0%	2.3%
Total Asia Pacific	65	69	111	133	160	193	161	183	191	243	294	21.0%	14.6%	15.9%
Total World	1025	1183	1250	1268	1381	1505	1511	1560	1631	1787	1842	3.0%	6.8%	100.0%
of which: OECD	646	755	811	803	846	908	929	961	1016	1052	1027	-2.3%	6.7%	55.8%
Non-OECD	378	428	439	465	535	597	581	599	615	736	814	10.6%	7.1%	44.2%
European Union	179	204	199	216	235	260	262	254	285	299	291	-2.8%	7.6%	15.8%
Biofuels production by fuel type														
Biogasoline														
Canada & Mexico	13	15	17	17	17	17	17	17	18	19	22	11.9%	8.2%	1.9%
US	417	507	531	502	506	545	564	585	607	613	601	-2.0%	5.7%	52.6%
Brazil	263	281	231	236	278	287	304	284	279	334	357	6.9%	2.1%	31.3%
Other S. & Cent. America	6	7	9	10	13	16	18	21	22	24	24	1.0%	8.0%	2.1%
Europe	31	36	41	47	53	53	58	54	57	59	57	-3.7%	8.7%	4.9%
CIS	–	–	–	–	†	†	†	†	†	†	†	–	–	♦
Middle East	†	†	†	†	†	†	†	†	†	†	†	–	–	♦
Africa	5	6	6	4	4	5	6	6	5	6	6	0.5%	20.8%	0.5%
Asia Pacific	31	32	40	42	48	55	59	54	61	67	76	13.3%	8.8%	6.6%
Total World	765	883	875	858	921	978	1027	1021	1050	1122	1143	1.8%	4.8%	100.0%
of which: OECD	463	560	591	569	579	617	641	657	683	692	681	-1.7%	5.9%	59.6%
Non-OECD	302	323	283	290	342	361	386	363	367	430	462	7.5%	3.3%	40.4%
European Union	30	36	41	47	51	52	57	53	56	57	55	-3.8%	8.6%	4.8%
Biodiesel														
Canada & Mexico	2	2	2	2	2	4	5	6	7	6	7	22.0%	15.7%	1.0%
US	29	19	54	55	76	71	70	87	89	104	96	-7.2%	10.6%	13.8%
Brazil	24	35	39	40	43	50	58	56	63	79	87	10.3%	16.5%	12.4%
Other S. & Cent. America	22	37	48	49	43	53	40	54	57	52	47	-9.8%	15.8%	6.8%
Europe	149	168	160	171	184	209	207	204	232	246	240	-2.4%	7.4%	34.3%
CIS	†	1	1	1	†	†	†	†	†	†	†	–	12.1%	0.1%
Middle East	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Africa	–	–	–	†	†	†	1	2	2	3	3	19.5%	–	0.5%
Asia Pacific	34	37	71	91	111	138	102	130	130	176	218	24.0%	18.0%	31.2%
Total World	260	300	375	409	460	526	483	539	581	665	699	5.1%	11.6%	100.0%
of which: OECD	183	195	220	234	267	291	288	304	333	359	347	-3.4%	8.3%	49.6%
Non-OECD	77	105	155	175	193	236	195	235	248	306	352	15.0%	17.6%	50.4%
European Union	148	168	159	169	183	209	205	202	229	242	236	-2.6%	7.3%	33.7%

Source: includes data from F.O. Licht; US Energy Information Administration (March 2020).

*Includes biogasoline (such as ethanol) and biodiesel. Volumes have been adjusted for energy content.

†Less than 0.5.

♦Less than 0.05%.

Annual changes and shares of total are calculated using thousand barrels a day oil equivalent figures.

Renewables: Biofuels consumption*

Thousand barrels of oil equivalent per day	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Growth rate per annum		Share 2019
												2019	2008-18	
Canada	15	16	25	29	33	34	34	34	35	37	38	2.1%	10.5%	2.1%
Mexico	2	2	2	2	2	3	3	4	4	4	4	1.4%	8.4%	0.2%
US	438	504	541	539	583	591	615	661	662	655	655	-0.1%	5.5%	36.9%
Total North America	456	522	567	570	618	629	651	699	701	696	696	0.1%	5.7%	39.2%
Argentina	-	10	14	17	19	23	25	26	30	29	30	2.1%	n/a	1.7%
Brazil	253	269	246	232	273	301	357	324	341	395	437	10.6%	5.6%	24.6%
Colombia	†	†	1	1	1	1	1	1	1	1	1	2.8%	11.5%	♦
Other S. & Cent. America	9	11	12	14	15	16	17	17	18	18	19	4.7%	8.8%	1.1%
Total S. & Cent. America	262	290	272	264	308	340	399	368	389	443	486	9.8%	6.4%	27.4%
Austria	10	10	10	10	8	10	12	10	9	9	10	1.4%	1.9%	0.5%
Belgium	2	7	7	7	6	8	5	8	9	9	9	♦	n/a	0.5%
Finland	2	2	4	4	4	8	8	3	7	6	6	-1.4%	15.8%	0.3%
France	45	44	44	48	49	53	53	53	54	53	56	4.5%	2.3%	3.1%
Germany	51	52	54	57	51	54	50	50	51	54	54	0.1%	0.4%	3.0%
Italy	21	26	25	28	24	20	25	25	25	26	15	-42.6%	7.2%	0.8%
Netherlands	7	4	6	6	6	7	6	5	8	12	14	15.8%	8.0%	0.8%
Poland	12	12	13	14	14	13	12	8	11	17	18	6.7%	7.6%	1.0%
Portugal	4	6	6	5	5	5	7	5	5	5	5	-1.4%	7.5%	0.3%
Spain	6	27	32	39	17	18	19	21	25	32	25	-22.1%	23.6%	1.4%
Sweden	6	9	11	12	12	16	19	25	28	27	28	3.3%	15.8%	1.6%
United Kingdom	19	22	20	17	20	22	18	18	18	24	31	27.4%	5.0%	1.8%
Other Europe	19	23	27	31	38	37	37	43	50	53	56	6.1%	12.8%	3.1%
Total Europe	205	244	258	279	255	272	272	276	300	327	325	-0.5%	6.6%	18.3%
Total CIS	†	1	1	1	†	†	†	†	†	†	†	0.5%	12.7%	♦
Total Middle East	†	†	†	†	†	†	†	†	†	†	†	1.7%	-4.0%	♦
Total Africa	†	†	†	†	†	†	1	1	1	1	2	19.1%	59.1%	0.1%
Australia	20	31	33	29	28	26	24	20	23	26	25	-2.3%	6.3%	1.4%
China	29	29	34	39	46	61	36	42	43	50	44	-10.4%	6.5%	2.5%
India	†	†	1	1	1	1	2	3	2	2	2	-0.5%	6.6%	0.1%
Indonesia	3	3	5	10	15	27	13	44	38	55	111	102.0%	57.1%	6.3%
South Korea	5	7	6	7	7	7	8	8	8	13	13	0.7%	14.4%	0.7%
Thailand	12	13	14	18	23	28	31	32	35	38	45	16.9%	15.4%	2.5%
Other Asia Pacific	4	9	10	12	15	19	23	25	26	26	26	1.7%	29.1%	1.5%
Total Asia Pacific	74	91	103	116	135	170	138	174	175	209	267	27.5%	14.0%	15.0%
Total World	997	1148	1201	1229	1317	1412	1463	1518	1567	1676	1776	6.0%	6.8%	100.0%
of which: OECD	683	805	864	883	905	934	957	1003	1032	1060	1056	-0.4%	6.1%	59.4%
Non-OECD	314	343	337	346	412	477	506	515	535	617	720	16.8%	8.2%	40.6%
European Union	203	241	255	274	244	266	266	265	284	313	311	-0.7%	6.2%	17.5%
Biofuels consumption by fuel type														
Biogasoline														
US	420	490	491	489	503	512	531	545	552	549	554	0.8%	4.1%	49.4%
Canada & Mexico	16	16	22	26	29	32	32	33	33	35	36	3.3%	9.0%	3.2%
Brazil	230	234	208	191	230	251	299	268	277	316	349	10.5%	4.0%	31.1%
Other S. & Cent. America	7	9	10	12	15	17	19	21	23	24	24	3.3%	14.4%	2.2%
Europe	45	56	58	58	55	55	56	54	57	59	64	8.8%	4.7%	5.7%
CIS	-	-	-	-	-	-	-	-	-	-	-	n/a	n/a	-
Middle East	†	†	†	†	†	†	†	†	†	†	†	1.7%	-4.0%	♦
Africa	†	†	†	†	†	†	†	†	†	†	†	4.3%	19.2%	♦
Asia Pacific	48	61	66	66	73	77	77	86	95	94	94	-0.2%	9.8%	8.4%
Total World	766	867	857	843	905	945	1015	1007	1037	1077	1122	4.1%	4.8%	100.0%
of which: OECD	502	596	606	604	616	627	646	657	670	673	682	1.3%	4.5%	60.8%
Non-OECD	264	271	250	240	289	318	369	350	367	404	439	8.8%	5.2%	39.2%
European Union	45	56	58	58	53	53	54	51	54	56	61	9.2%	4.2%	5.4%
Biodiesel														
US	18	15	49	50	80	79	83	116	111	106	101	-4.5%	20.1%	15.4%
Canada & Mexico	1	2	4	5	5	6	4	5	6	6	5	-5.7%	27.7%	0.8%
Brazil	23	35	38	40	43	50	58	56	63	79	87	11.0%	16.9%	13.3%
Other S. & Cent. America	3	12	16	20	20	22	23	23	25	24	25	2.9%	29.1%	3.8%
Europe	160	187	200	220	200	217	217	222	243	268	261	-2.6%	7.0%	39.9%
CIS	†	1	1	1	†	†	†	†	†	†	†	0.5%	12.7%	0.1%
Middle East	-	-	-	-	-	-	-	-	-	-	-	n/a	n/a	-
Africa	-	-	-	-	-	†	1	1	1	1	1	20.0%	n/a	0.2%
Asia Pacific	26	30	36	49	63	93	61	89	80	115	173	50.1%	19.4%	26.4%
Total World	231	281	344	386	412	467	448	511	530	599	655	9.2%	12.1%	100.0%
of which: OECD	181	210	258	280	289	307	311	346	362	386	374	-3.3%	9.6%	57.1%
Non-OECD	50	72	86	106	122	159	137	165	168	213	281	31.9%	19.3%	42.9%
European Union	158	185	197	216	191	213	212	214	230	257	250	-2.8%	6.7%	38.1%

*Includes biogasoline (such as ethanol) and biodiesel. Volumes have been adjusted for energy content.

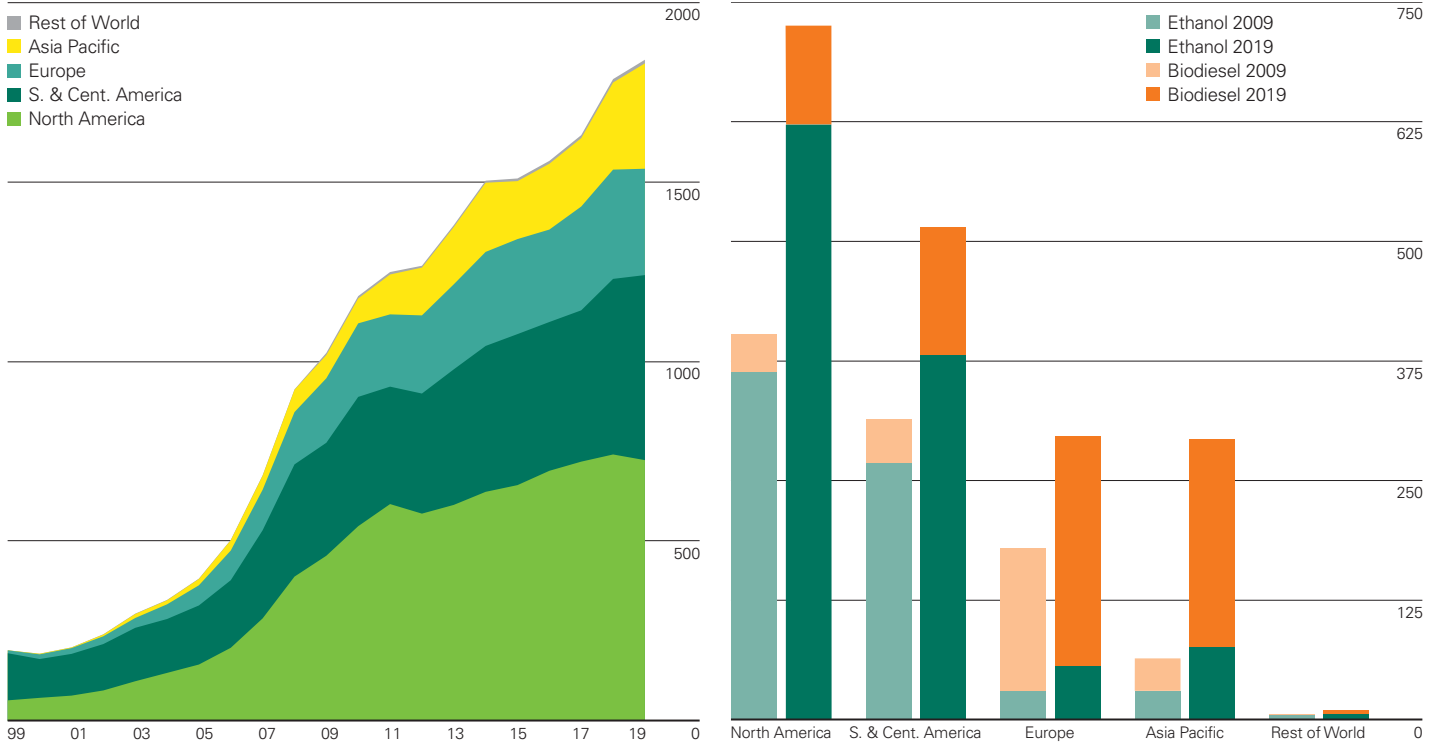
†Less than 0.5.

♦Less than 0.05%.

Annual changes and shares of total are calculated using thousand barrels of oil equivalent per day figures.

World biofuels production

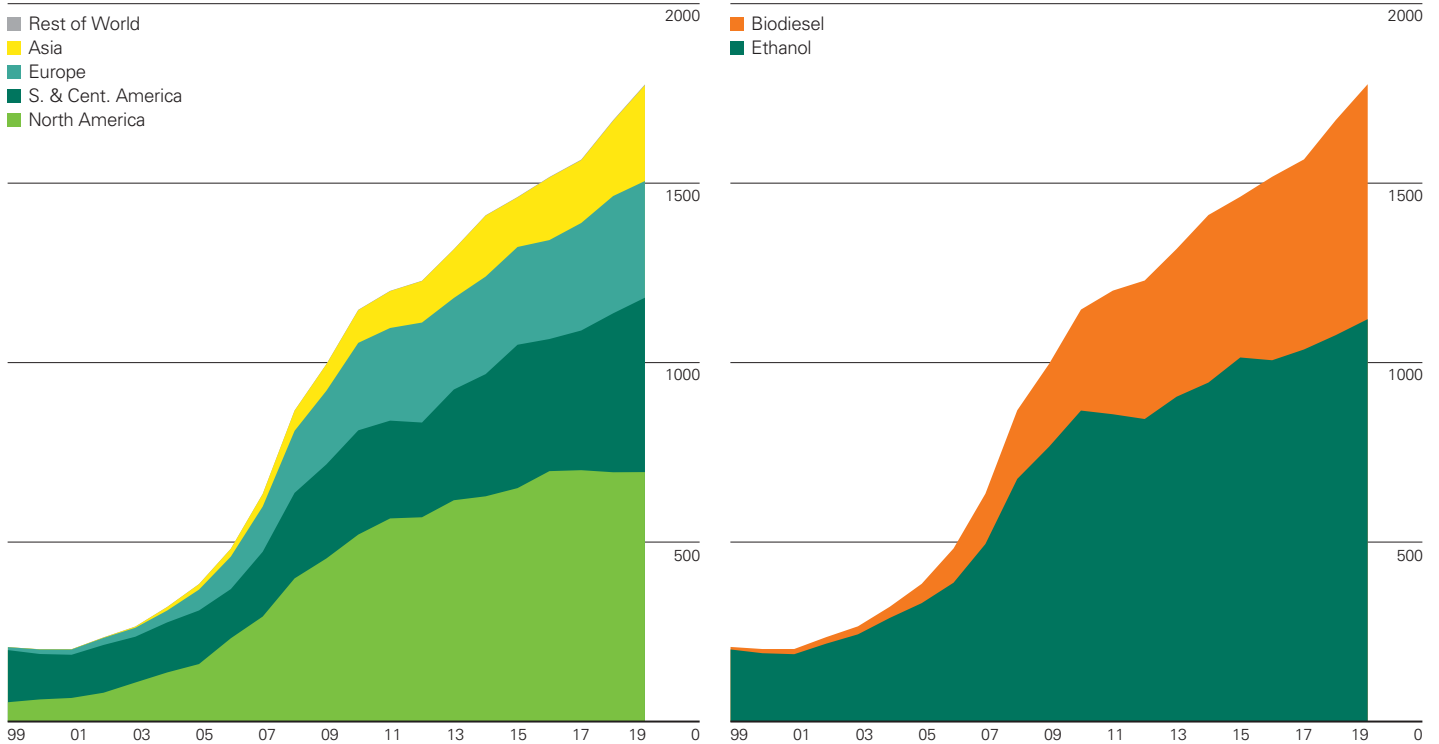
Thousand barrels of oil equivalent per day



Biofuels production growth averaged 3% (54,000 barrels of oil equivalent per day or boe/d, less than half the 10-year average). Growth was led by Brazil (31,000 boe/d) and Indonesia (32,000 boe/d) but US output declined by 19,000 boe/d. Growth was weighted towards biodiesel, which grew by 34,000 boe/d driven largely by Indonesia. Biodiesel is the dominant fuel in Europe and Asia Pacific (making up 81% and 74% of biofuels respectively in 2019), while ethanol is the main fuel in North America (86% of total) and S&C America (74%).

World biofuels consumption

Thousand barrels of oil equivalent per day



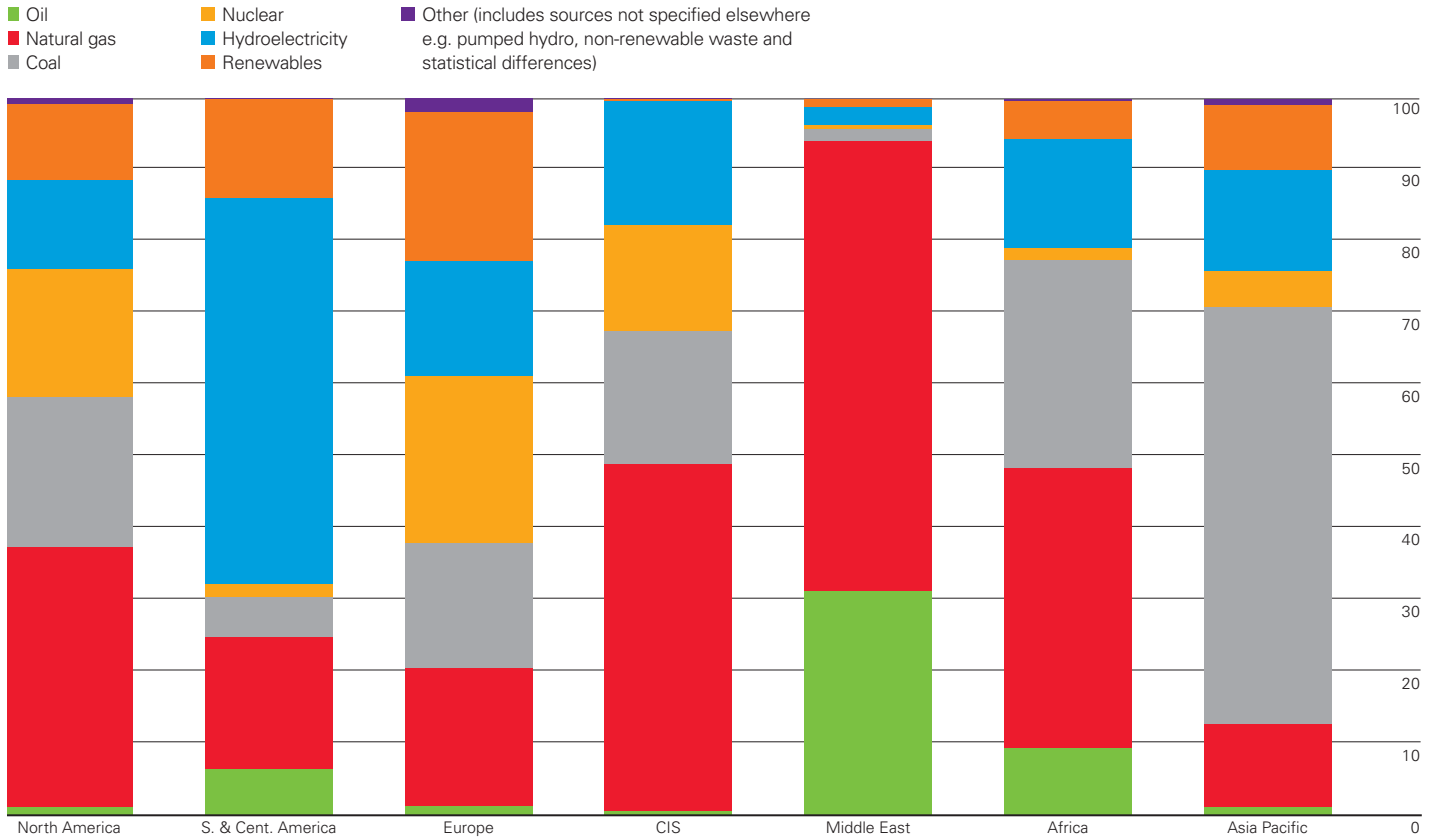
Biofuels consumption rose by 6% (100,000 boe/d). As with production, growth was driven mainly by Brazil (42,000 boe/d), most of which was ethanol and Indonesia (56,000 boe/d), which was largely biodiesel. At the global level, ethanol made up 63% of biofuels in 2019, but the share of biodiesel has risen continually. For example, biodiesel's share was 23% in 2009 but rose to 37% last year.

Electricity generation*

Terawatt-hours												Growth rate per annum		Share 2019
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2019	2008-18	
Canada	613.9	607.0	638.3	636.5	655.7	647.6	659.3	663.0	664.5	652.3	660.4	1.2%	0.3%	2.4%
Mexico	267.8	275.6	292.1	296.4	297.1	303.3	310.3	320.3	329.1	349.3	364.0	4.2%	2.6%	1.3%
US	4206.5	4394.3	4363.4	4310.6	4330.3	4363.3	4348.7	4347.9	4302.5	4457.4	4401.3	-1.3%	0.2%	16.3%
Total North America	5088.2	5276.8	5293.8	5243.5	5283.1	5314.2	5318.4	5331.2	5296.1	5459.0	5425.7	-0.6%	0.3%	20.1%
Argentina	122.3	126.0	129.5	136.0	139.4	138.6	145.4	147.2	145.6	146.8	139.9	-4.7%	1.9%	0.5%
Brazil	466.2	515.8	531.8	552.5	570.8	590.5	581.2	578.9	589.3	601.4	625.6	4.0%	2.7%	2.3%
Chile	59.7	61.3	65.2	69.7	73.0	71.6	74.5	77.7	78.6	82.3	83.9	1.9%	3.3%	0.3%
Colombia	63.2	64.7	66.2	67.7	69.8	72.7	75.0	74.4	75.1	78.3	75.2	-3.9%	2.5%	0.3%
Ecuador	18.3	19.5	20.5	22.8	23.3	24.3	26.0	27.3	28.0	29.7	32.9	10.7%	4.8%	0.1%
Peru	32.9	35.9	38.8	41.0	43.3	45.5	48.3	51.7	52.7	54.9	57.3	4.4%	5.4%	0.2%
Trinidad & Tobago	7.8	8.5	8.8	9.1	9.5	9.9	10.3	10.7	11.0	10.6	11.1	5.1%	3.2%	♦
Venezuela	124.8	116.7	122.9	127.9	130.0	128.3	123.8	113.8	109.4	105.1	84.9	-19.3%	-1.3%	0.3%
Other S. & Cent. America	187.7	192.0	197.4	204.6	208.5	205.9	212.4	224.8	218.2	222.0	218.6	-1.5%	1.7%	0.8%
Total S. & Cent. America	1082.9	1140.4	1181.1	1231.4	1267.7	1287.5	1296.9	1306.6	1308.0	1331.0	1329.3	-0.1%	2.2%	4.9%
Austria	69.1	71.1	65.9	72.4	68.0	65.1	64.9	67.9	70.7	68.0	73.4	8.0%	0.2%	0.3%
Belgium	91.2	95.2	90.2	82.9	83.5	72.6	69.8	85.7	86.6	74.9	93.6	24.9%	-1.2%	0.3%
Czech Republic	82.3	85.9	87.6	87.6	87.1	86.0	83.9	83.3	87.0	88.0	87.0	-1.2%	0.5%	0.3%
Finland	72.5	81.1	73.7	70.5	71.4	68.2	68.8	68.8	67.1	70.2	68.7	-2.1%	-1.0%	0.3%
France	535.9	569.3	565.0	564.5	573.8	564.2	570.3	556.2	554.1	574.2	555.4	-3.3%	♦	2.1%
Germany	595.6	633.1	613.1	630.1	638.7	627.8	648.1	650.7	653.7	643.5	612.4	-4.8%	♦	2.3%
Greece	61.4	57.4	59.4	61.0	57.2	50.5	51.9	54.4	55.3	53.3	50.2	-5.8%	-1.8%	0.2%
Hungary	35.9	37.4	36.0	34.6	30.3	29.4	30.4	31.9	32.9	32.0	33.9	6.0%	-2.2%	0.1%
Italy	292.6	302.1	302.6	299.3	289.8	279.8	283.0	289.8	295.8	289.7	283.8	-2.0%	-1.0%	1.1%
Netherlands	113.5	118.1	113.0	102.5	100.9	103.4	110.1	115.2	117.3	114.5	121.0	5.7%	0.6%	0.4%
Norway	131.8	123.6	127.6	147.7	134.0	142.0	144.5	149.0	149.4	147.1	134.8	-8.3%	0.3%	0.5%
Poland	151.7	157.7	163.5	162.1	164.6	159.1	164.9	166.6	170.5	170.0	163.9	-3.6%	0.9%	0.6%
Portugal	50.2	54.1	52.5	46.6	51.7	52.8	52.4	60.3	59.4	59.6	53.7	-10.0%	2.6%	0.2%
Romania	58.0	61.0	62.2	59.0	58.9	63.3	66.3	65.1	64.3	64.8	59.5	-8.2%	♦	0.2%
Spain	296.3	300.4	291.8	297.6	285.3	278.8	281.0	274.6	275.6	274.5	275.8	0.5%	-1.3%	1.0%
Sweden	136.7	148.3	151.2	166.3	153.2	153.7	162.1	156.1	164.3	163.4	169.8	3.9%	0.9%	0.6%
Switzerland	68.3	68.0	64.8	70.0	70.4	72.0	67.9	63.3	63.3	69.4	68.3	-1.6%	0.1%	0.3%
Turkey	194.8	211.2	229.4	239.5	240.2	252.0	261.8	274.4	297.3	304.8	308.5	1.2%	4.4%	1.1%
Ukraine	173.6	188.8	194.9	198.9	194.4	182.8	163.7	164.6	156.0	159.9	154.5	-3.4%	-1.8%	0.6%
United Kingdom	376.8	382.1	368.0	363.9	358.3	338.1	338.9	339.2	338.2	332.9	323.7	-2.8%	-1.5%	1.2%
Other Europe	306.5	320.0	307.1	295.4	309.2	297.2	298.2	305.9	303.5	312.7	301.5	-3.6%	0.1%	1.1%
Total Europe	3894.7	4065.8	4019.4	4052.4	4020.6	3938.5	3982.9	4023.1	4062.2	4067.2	3993.3	-1.8%	-0.1%	14.8%
Azerbaijan	18.9	18.7	20.3	23.0	23.4	24.7	24.7	25.0	24.3	25.2	26.3	4.4%	1.5%	0.1%
Belarus	30.4	34.9	32.2	30.8	31.5	34.7	34.2	33.6	34.5	38.9	40.4	3.8%	1.1%	0.1%
Kazakhstan	78.7	82.6	86.6	90.6	92.6	94.6	91.6	94.6	103.1	107.3	108.4	1.0%	2.9%	0.4%
Russian Federation	993.1	1038.0	1054.9	1069.3	1059.1	1064.2	1067.5	1091.0	1091.2	1109.2	1118.1	0.8%	0.6%	4.1%
Turkmenistan	16.0	16.7	17.2	17.8	18.9	20.1	21.5	22.6	22.8	24.2	25.7	6.3%	4.9%	0.1%
Uzbekistan	50.1	51.9	52.8	53.0	54.9	55.4	57.3	59.1	60.8	62.9	62.9	♦	2.3%	0.2%
Other CIS	39.1	41.1	44.6	46.0	43.3	44.1	44.0	43.5	46.3	48.6	49.2	1.1%	2.0%	0.2%
Total CIS	1226.2	1284.0	1308.5	1330.4	1323.7	1337.9	1340.9	1369.3	1383.0	1416.3	1431.0	1.0%	1.0%	5.3%
Iran	221.8	235.7	235.6	248.8	258.9	273.5	279.5	286.1	305.2	314.4	318.7	1.4%	4.1%	1.2%
Iraq	41.3	41.7	42.2	47.8	62.1	71.2	75.3	86.3	93.6	99.9	131.5	31.6%	11.0%	0.5%
Israel	55.3	58.5	59.3	63.0	61.4	61.3	64.3	67.3	67.6	69.0	71.8	4.1%	2.1%	0.3%
Kuwait	53.2	57.1	57.5	62.7	61.0	65.1	68.3	70.1	72.9	74.2	75.0	1.1%	3.7%	0.3%
Oman	18.4	19.8	21.9	25.0	26.2	29.1	32.8	34.2	36.1	37.7	37.4	-0.7%	8.9%	0.1%
Qatar	24.2	28.1	30.7	34.8	34.7	38.7	41.5	42.3	45.6	47.9	48.6	1.4%	8.3%	0.2%
Saudi Arabia	217.3	240.1	250.1	271.7	284.1	311.8	338.5	345.6	355.2	359.2	357.4	-0.5%	5.8%	1.3%
United Arab Emirates	85.7	93.9	99.1	106.2	110.0	116.5	127.4	129.6	134.6	136.0	138.1	1.5%	5.4%	0.5%
Other Middle East	90.7	98.7	93.4	88.3	83.7	83.5	81.6	82.0	86.4	85.8	86.1	0.4%	-0.1%	0.3%
Total Middle East	807.9	873.7	889.7	948.2	982.0	1050.9	1109.0	1143.6	1197.0	1224.1	1264.7	3.3%	4.8%	4.7%
Algeria	43.1	45.7	53.1	57.4	59.9	64.2	68.8	71.0	76.0	76.7	81.3	6.0%	6.7%	0.3%
Egypt	134.3	144.4	149.6	162.8	165.1	171.2	181.8	188.2	193.2	199.4	200.6	0.6%	4.5%	0.7%
Morocco	21.7	23.7	25.4	27.7	28.1	29.3	30.3	30.7	31.6	34.4	40.1	16.6%	5.1%	0.1%
South Africa	249.6	259.6	262.5	257.9	256.1	254.8	250.1	252.7	255.1	256.3	252.6	-1.5%	-0.1%	0.9%
Other Africa	178.5	198.1	198.5	214.8	234.2	247.9	256.3	259.8	272.1	279.0	295.6	6.0%	5.0%	1.1%
Total Africa	627.1	671.6	689.0	720.6	743.4	767.4	787.4	802.5	828.1	845.8	870.1	2.9%	3.2%	3.2%
Australia	249.9	251.0	256.3	250.7	249.6	247.6	255.2	258.5	259.1	263.1	265.1	0.8%	0.7%	1.0%
Bangladesh	37.2	40.8	44.2	48.7	54.4	57.4	61.8	70.0	73.4	81.1	89.7	10.6%	9.0%	0.3%
China	3714.7	4207.2	4713.0	4987.6	5431.6	5794.5	5814.6	6133.2	6604.4	7166.1	7503.4	4.7%	7.4%	27.8%
China Hong Kong SAR	38.7	38.4	39.1	38.8	39.2	39.9	38.0	38.3	37.0	36.6	36.9	0.9%	-0.4%	0.1%
India	879.7	937.5	1034.0	1091.8	1146.1	1262.2	1317.3	1401.7	1473.8	1551.4	1558.7	0.5%	6.5%	5.8%
Indonesia	156.8	169.8	183.4	200.3	216.2	228.6	234.0	247.9	254.6	267.1	279.1	4.5%	6.0%	1.0%
Japan	1114.0	1156.0	1104.2	1106.9	1087.8	1062.7	1030.1	1030.3	1042.6	1056.2	1036.3	-1.9%	-1.1%	3.8%
Malaysia	116.1	125.0	127.1	134.1	141.0	147.5	150.1	156.7	160.6	167.3	171.0	2.2%	3.9%	0.6%
New Zealand	43.4	44.9	44.4	44.2	43.3	43.5	44.2	43.7	44.2	44.2	44.6	0.8%	0.1%	0.2%
Pakistan	98.8	99.4	100.6	99.5	101.8	106.2	106.7	120.0	122.5	136.0	136.3	0.2%	3.9%	0.5%
Philippines	61.9	67.7	69.2	72.9	75.3	77.3	82.4	90.8	94.4	99.8	105.8	6.1%	5.1%	0.4%
Singapore	41.8	45.4	46.0	46.9	48.0	49.3	50.3	51.6	52.2					

Regional electricity generation by fuel 2019

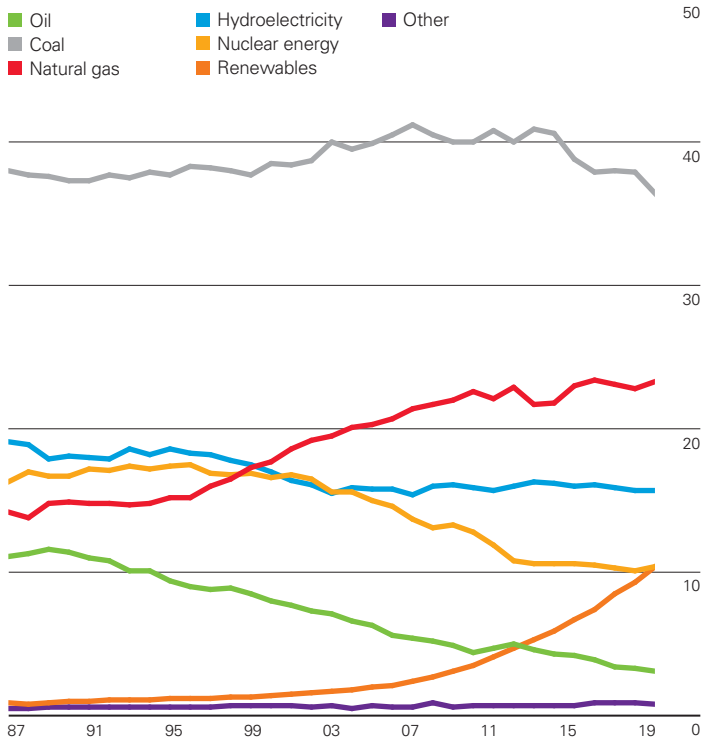
Percentage



Natural gas is the dominant fuel used for power generation in North America, CIS, the Middle East and Africa. South and Central America gets more than half of its power from hydroelectricity, with a share far higher than any other region. In Asia, coal is the dominant fuel. In Europe, nuclear energy is the top source of electricity, but only just, as generation is spread fairly evenly between five different fuels: the shares of nuclear, coal, natural gas, renewables and hydro are all in a narrow range of 16-23%.

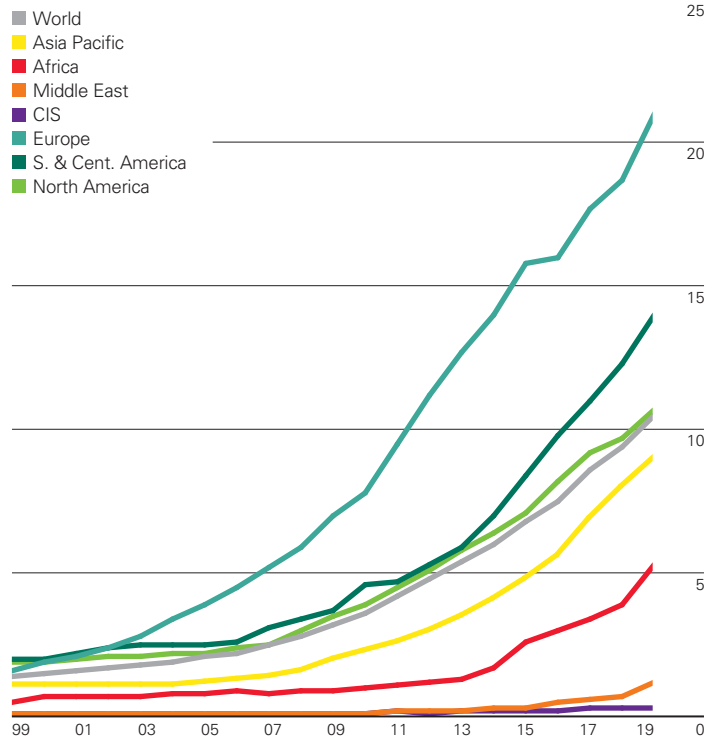
Share of global electricity generation by fuel

Percentage



Renewables share of power generation by region

Percentage



At the global level, coal is the dominant fuel for power generation, however its share fell 1.5 percentage points to 36.4% in 2019, the lowest level in our data series. The shares of both natural gas and renewables rose to record levels last year (to 23.3% and 10.4% respectively) and renewables generation surpassed nuclear for the first time. Regionally, there is significant variation in the penetration of renewables: Europe has the highest penetration at 20.9% – twice the global average, followed by South & Central America at 13.9%.

Electricity generation by fuel*

Terawatt-hours	2018								2019							
	Oil	Natural Gas	Coal	Nuclear energy	Hydro electric	Renewables	Other†	Total	Oil	Natural Gas	Coal	Nuclear energy	Hydro electric	Renewables	Other†	Total
Canada	3.8	64.1	50.6	100.0	385.9	47.1	0.7	652.3	4.1	69.3	54.6	100.5	382.0	49.3	0.7	660.4
Mexico	35.7	194.6	29.0	13.6	32.5	23.3	20.6	349.3	37.7	205.6	26.3	11.3	23.8	37.8	21.6	364.0
US	27.1	1579.3	1246.7	849.6	289.5	451.6	13.6	4457.4	20.0	1700.9	1053.5	852.0	271.2	489.8	14.0	4401.3
Total North America	66.7	1838.0	1326.3	963.2	707.9	522.0	34.9	5459.0	61.8	1975.8	1134.4	963.7	676.9	576.9	36.2	5425.7
Argentina	6.7	84.9	2.1	6.9	41.6	4.0	0.5	146.8	2.8	82.3	0.7	8.4	37.1	8.2	0.5	139.9
Brazil	12.2	54.6	23.7	15.7	389.0	106.3	-	601.4	7.9	58.9	25.7	16.2	399.3	117.7	-	625.6
Other S. & C. America	95.1	104.0	44.6	-	287.6	51.6	-0.1	582.8	75.6	103.8	47.8	-	278.3	58.3	-0.1	563.8
Total S. & C. America	113.9	243.5	70.4	22.5	718.2	161.9	0.5	1331.0	86.3	245.0	74.3	24.6	714.7	184.1	0.4	1329.3
Germany	5.2	82.5	228.2	76.0	18.0	206.8	26.8	643.5	5.1	91.0	171.2	75.1	20.2	224.1	25.7	612.4
Italy	11.0	128.5	31.0	-	47.1	65.6	6.5	289.7	10.2	126.5	29.7	-	45.1	67.6	4.7	283.8
Netherlands	1.3	57.7	27.5	3.5	0.1	18.8	5.6	114.5	1.4	71.0	17.4	3.9	0.1	22.3	5.0	121.0
Poland	1.8	12.6	133.3	-	2.0	19.6	0.7	170.0	1.2	14.8	121.9	-	2.0	23.1	1.0	163.9
Spain	14.5	58.0	38.7	55.8	34.8	69.8	2.9	274.5	13.4	86.0	13.1	58.4	25.2	77.5	2.1	275.8
Turkey	0.3	92.5	113.2	-	59.9	37.8	1.0	304.8	0.2	58.1	114.6	-	89.2	45.3	1.1	308.5
Ukraine	0.7	9.0	52.1	84.4	10.4	2.5	0.7	159.9	0.2	9.2	48.3	83.0	6.8	5.0	1.9	154.5
United Kingdom	1.7	131.5	16.8	65.1	5.5	104.5	7.8	332.9	1.0	132.5	6.9	56.2	6.0	113.4	7.8	323.7
Other Europe	19.5	157.5	215.8	651.1	467.5	230.8	35.2	1777.5	19.0	179.1	175.6	651.9	438.0	258.3	27.9	1749.7
Total Europe	56.1	729.9	856.6	935.8	645.3	756.3	87.1	4067.2	51.8	768.1	698.6	928.5	632.5	836.6	77.2	3993.3
Kazakhstan	0.8	20.7	79.6	-	10.4	0.5	-4.7	107.3	0.8	20.8	78.1	-	10.0	0.8	-2.1	108.4
Russian Federation	6.8	511.1	190.3	204.6	190.6	1.4	4.4	1109.2	6.9	519.5	182.2	209.0	194.4	1.8	4.3	1118.1
Other CIS	0.9	148.6	4.1	2.1	43.3	0.6	0.3	199.9	0.9	152.7	4.0	2.2	44.0	0.7	0.1	204.5
Total CIS	8.5	680.4	274.0	206.7	244.3	2.5	†	1416.3	8.6	693.0	264.2	211.2	248.4	3.3	2.3	1431.0
Iran	86.0	209.0	0.6	6.9	11.4	0.5	-	314.4	82.6	199.5	0.6	6.4	29.0	0.6	-	318.7
Saudi Arabia	158.8	200.0	-	-	-	0.4	-	359.2	149.6	206.0	-	-	-	1.8	-	357.4
United Arab Emirates	†	134.7	-	-	-	1.3	-	136.0	†	133.9	-	-	-	4.2	-	138.1
Other Middle East	147.5	238.0	20.6	-	3.1	5.3	-	414.5	163.9	253.5	21.9	-	4.3	6.8	-	450.5
Total Middle East	392.3	781.6	21.3	6.9	14.5	7.5	-	1224.1	396.1	792.9	22.6	6.4	33.3	13.3	-	1264.7
Egypt	28.8	153.7	-	-	13.4	3.5	-	199.4	28.2	152.5	-	-	13.4	6.5	-	200.6
South Africa	1.2	1.9	224.6	11.1	0.8	12.3	4.6	256.3	1.2	1.9	217.3	14.2	0.8	12.6	4.6	252.6
Other Africa	49.3	175.8	32.0	-	116.3	16.4	0.3	390.1	51.9	186.1	36.2	-	118.6	26.0	-1.8	417.0
Total Africa	79.3	331.3	256.6	11.1	130.4	32.2	4.9	845.8	81.3	340.5	253.6	14.2	132.7	45.1	2.8	870.1
Australia	5.4	51.4	156.5	-	17.4	32.2	0.1	263.1	5.8	54.4	149.5	-	14.3	41.1	0.1	265.1
China	5.5	215.5	4765.0	295.0	1198.9	636.4	49.8	7166.1	6.0	236.5	4853.7	348.7	1269.7	732.3	56.5	7503.4
India	8.5	73.9	1167.3	39.1	139.6	122.8	0.2	1551.4	8.2	71.0	1137.4	45.2	161.8	134.9	0.2	1558.7
Indonesia	18.1	57.3	160.0	-	16.8	14.6	0.3	267.1	17.3	51.6	177.0	-	17.0	16.0	0.3	279.1
Japan	66.2	386.9	323.0	49.1	81.0	96.8	53.3	1056.2	44.7	362.4	326.2	65.6	73.9	121.2	42.3	1036.3
Malaysia	1.3	64.8	73.5	-	26.5	1.3	-	167.3	2.6	68.6	71.1	-	27.0	1.7	-	171.0
South Korea	10.1	160.9	250.9	133.5	3.4	23.9	10.7	593.4	7.4	150.8	238.7	146.0	2.8	29.2	9.7	584.7
Taiwan	8.2	92.4	131.2	27.7	4.5	6.4	5.2	275.6	5.8	91.1	126.4	32.3	5.5	8.0	5.0	274.2
Thailand	0.2	116.3	35.8	-	7.6	17.8	†	177.6	1.1	121.8	35.8	-	6.3	21.4	†	186.5
Vietnam	0.2	40.1	83.9	-	84.5	0.5	-	209.2	1.4	43.1	112.5	-	65.6	4.7	-	227.4
Other Asia Pacific	49.9	218.2	138.9	9.8	130.8	32.8	1.9	582.2	39.1	231.4	148.0	9.5	139.7	35.7	0.5	604.0
Total Asia Pacific	173.5	1477.7	7286.1	554.1	1710.9	985.5	121.5	12309.3	139.5	1482.6	7376.4	647.3	1783.7	1146.2	114.8	12690.5
Total World	890.4	6082.5	10091.3	2700.4	4171.4	2468.0	248.9	26652.7	825.3	6297.9	9824.1	2796.0	4222.2	2805.5	233.6	27004.7
of which: OECD	196.4	3201.2	2829.6	1969.8	1423.0	1442.4	183.9	11246.1	164.9	3347.5	2471.0	1993.0	1380.2	1616.8	162.6	11136.0
Non-OECD	694.0	2881.3	7261.7	730.6	2748.4	1025.6	65.0	15406.6	660.4	2950.4	7353.1	803.0	2842.1	1188.8	71.0	15868.7
EU	52.6	621.2	643.6	827.0	346.9	700.9	77.9	3270.1	49.1	692.2	488.4	822.4	327.9	768.2	67.2	3215.3

*Based on gross output.

†Includes sources not specified elsewhere e.g. pumped hydro, non-renewable waste and statistical discrepancies (which can be positive or negative).

‡Less than 0.05.

Key minerals for the energy transition

Cobalt production

Mine production

Thousand tonnes	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Growth rate per annum		Share 2019
												2019	2008-18	
Australia	4.6	3.9	3.9	5.9	6.4	6.2	6.0	5.5	5.8	4.9	5.1	4.5%	0.2%	4.2%
Canada	3.9	4.6	6.8	3.7	4.0	3.9	4.3	4.2	3.7	3.5	3.3	-5.3%	-8.9%	2.7%
Democratic Republic of Congo	56.1	84.0	99.5	86.4	76.6	76.5	84.4	69.0	90.3	109.4	78.0	-28.7%	9.9%	64.0%
Cuba	4.6	4.8	5.1	4.7	4.0	3.7	4.3	5.1	5.0	4.5	4.7	4.4%	1.2%	3.8%
Madagascar	–	0.2	0.5	0.6	2.4	3.4	4.0	3.8	3.4	3.3	3.4	1.8%	n/a	2.8%
Morocco	2.6	3.1	2.2	2.0	2.0	2.2	2.3	2.7	2.5	2.1	2.1	–	2.1%	1.7%
New Caledonia	2.0	2.9	3.1	2.7	3.2	4.0	3.7	3.4	2.8	1.7	1.2	-25.3%	-2.4%	1.0%
Papua New Guinea	–	–	n/a	0.5	1.0	2.1	2.5	2.2	3.3	3.3	3.1	-5.5%	n/a	2.5%
Philippines	1.4	2.1	2.0	2.7	2.8	4.6	4.3	4.1	4.6	4.4	4.6	4.3%	14.0%	3.8%
Russian Federation	6.1	6.2	6.1	6.3	6.3	6.3	6.2	5.5	5.9	6.1	6.1	–	-0.2%	5.0%
South Africa	0.6	1.8	1.6	2.5	3.0	3.0	2.9	2.3	2.3	2.3	2.4	4.3%	14.6%	2.0%
Zambia	5.9	8.6	7.7	5.4	5.9	4.6	3.0	5.0	2.6	1.6	1.3	-20.0%	-10.1%	1.0%
Rest of World	5.7	7.3	9.8	11.4	12.9	9.0	8.6	6.3	5.5	7.5	6.5	-13.9%	1.7%	5.3%
Total World	93.5	129.5	148.2	134.7	130.5	129.4	136.5	119.1	137.8	154.6	121.8	-21.2%	6.4%	100.0%

Sources: includes data from US Geological Survey, British Geological Survey © UKRI and World Mining Data.

Lithium production

Mine production

Thousand tonnes of lithium content	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Growth rate per annum		Share 2019
												2019	2008-18	
Argentina	2.2	3.0	3.0	2.7	2.5	3.2	3.6	5.8	5.7	6.4	6.4	–	7.3%	8.3%
Australia	5.5	8.5	11.7	12.7	10.1	12.4	11.9	14.0	21.3	57.0	40.7	-28.6%	23.9%	52.9%
Brazil	0.2	0.2	0.3	0.2	0.4	0.2	0.2	0.2	0.2	0.3	0.3	–	6.5%	0.4%
Chile	6.0	10.4	13.6	13.9	11.7	12.0	10.9	15.2	15.8	18.8	16.6	-12.0%	5.5%	21.5%
China	3.8	4.0	4.1	4.5	4.7	2.3	2.0	2.3	6.8	7.1	7.5	5.6%	8.0%	9.7%
Portugal	–	0.8	0.8	0.6	0.6	0.3	0.2	0.4	0.8	0.8	1.2	50.0%	1.3%	1.6%
US	1.5	1.0	1.0	1.0	0.9	0.9	0.9	0.9	0.9	0.9	0.9	–	-5.0%	1.2%
Zimbabwe	0.4	0.5	0.5	1.1	1.0	0.9	0.9	1.0	0.8	1.6	1.6	–	12.3%	2.1%
Rest of World	0.3	n/a	n/a	–	–	–	–	0.2	1.1	2.3	1.8	-21.8%	12.8%	2.3%
Total World	19.8	28.2	35.0	36.6	31.9	32.2	30.7	40.0	53.3	95.2	77.0	-19.2%	13.2%	100.0%

Sources: includes data from US Geological Survey, British Geological Survey © UKRI and World Mining Data.

Natural graphite production

Mine production

Thousand tonnes	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Growth rate per annum		Share 2019
												2019	2008-18	
Brazil ¹	59.4	92.4	105.2	88.1	91.9	87.0	75.1	85.0	85.0	95.0	96.0	1.1%	1.7%	8.3%
Canada	15.0	20.0	25.0	24.0	20.0	30.0	30.0	30.0	40.0	40.0	40.0	–	4.0%	3.4%
China	450.0	700.0	800.0	820.0	750.0	780.0	780.0	780.0	625.0	630.0	700.0	11.1%	-0.3%	60.2%
India ²	124.6	115.7	153.3	134.7	146.4	116.7	134.6	122.4	35.0	35.0	35.0	–	-11.4%	3.0%
Madagascar	3.4	3.8	3.6	2.9	4.3	5.3	8.1	9.2	13.3	48.1	48.1	–	25.6%	4.1%
Mexico	5.1	6.6	7.3	7.5	7.0	9.2	6.5	3.8	1.7	4.2	4.2	–	-5.3%	0.4%
Mozambique	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0	104.0	153.0	47.1%	n/a	13.2%
Russian Federation	14.0	7.7	20.7	14.3	20.2	17.6	15.9	19.4	25.2	17.8	16.6	-6.7%	2.4%	1.4%
Sri Lanka	3.2	3.4	3.4	4.2	3.1	4.0	4.2	4.0	3.5	4.0	4.0	–	-4.9%	0.3%
Ukraine	4.3	2.8	0.6	4.6	6.9	13.8	14.5	14.6	14.9	15.0	15.0	–	2.9%	1.3%
Zimbabwe	2.5	4.0	7.0	6.0	4.0	7.0	7.0	6.0	1.6	2.0	2.0	♦	-9.0%	0.2%
Rest of World	58.5	24.7	25.2	49.7	51.6	37.1	22.8	21.6	22.9	44.4	48.4	9.1%	0.9%	4.2%
Total World	740.0	981.1	1151.3	1156.1	1105.5	1107.7	1098.7	1096.1	868.4	1039.5	1162.3	11.8%	0.7%	100.0%

¹Including beneficiated and directly shipped material.

²Run of the mine.

♦Less than 0.05%.

Sources: includes data from US Geological Survey, British Geological Survey © UKRI and World Mining Data.

Rare earth metals production

Mine production

Thousand tonnes ¹	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Growth rate per annum		Share 2019
												2019	2008-18	
Australia	–	–	2.2	3.2	1.3	6.2	11.9	13.9	17.3	18.6	17.6	-5.1%	n/a	8.4%
Brazil	0.2	0.1	0.1	1.6	0.3	–	0.9	2.2	1.7	1.1	1.0	-9.1%	9.1%	0.5%
China	129.0	89.2	93.8	93.8	93.8	105.0	105.0	105.0	105.0	120.0	132.0	10.0%	-0.4%	63.0%
India	†	n/a	n/a	n/a	0.3	1.7	1.0	1.5	1.5	2.9	3.0	3.4%	62.9%	1.4%
Malaysia	†	0.4	0.4	0.1	0.2	0.2	0.3	1.9	0.3	0.1	0.1	–	-3.3%	♦
Russian Federation	1.9	1.5	1.4	2.1	1.4	2.1	2.3	3.1	2.5	2.6	2.6	–	0.5%	1.2%
Thailand	4.0	5.6	3.1	0.1	0.1	1.9	0.8	1.6	1.3	–	–	n/a	n/a	–
US	–	–	–	3.0	5.5	5.4	5.9	–	–	18.0	26.0	44.4%	n/a	12.4%
Rest of World	–	0.2	0.2	0.2	0.1	–	0.3	0.2	0.3	23.9	27.3	14.1%	n/a	13.0%
Total World	135.1	97.0	101.3	104.2	103.0	122.6	128.3	129.4	129.8	187.2	209.6	12.0%	3.9%	100.0%

¹Thousand tonnes of rare earth oxide equivalent.

†Less than 0.05%.

♦Less than 0.05%.

n/a not available.

Sources: includes data from US Geological Survey, British Geological Survey © UKRI and World Mining Data.

Reserves of key minerals

Cobalt reserves

Thousand tonnes	At end of 2019	Share	R/P ratio
Australia	1200	17.8%	234
Canada	230	3.4%	69
Democratic Republic of Congo	3600	53.3%	46
Cuba	500	7.4%	107
Madagascar	120	1.8%	36
Morocco	18	0.3%	9
New Caledonia	64	0.9%	52
Papua New Guinea	56	0.8%	18
Philippines	260	3.9%	56
Russian Federation	250	3.7%	41
South Africa	50	0.7%	21
Zambia	270	4.0%	213
Rest of World*	135	2.0%	21
Total World	6753	100.0%	55

Natural graphite reserves

Thousand tonnes	At end of 2019	Share	R/P ratio
Brazil	72000	22.8%	750
Canada	n/a	n/a	n/a
China	73000	23.1%	104
India	8000	2.5%	229
Madagascar	1600	0.5%	33
Mexico	3100	1.0%	738
Mozambique	25000	7.9%	163
Russian Federation	14800	4.7%	892
Sri Lanka	n/a	n/a	n/a
Ukraine	n/a	n/a	n/a
Zimbabwe	n/a	n/a	n/a
Rest of World*	118200	37.4%	2440
Total World	315700	100.0%	272

Lithium reserves

Thousand tonnes	At end of 2019	Share	R/P ratio
Argentina	1700	11.0%	266
Australia	2800	18.1%	69
Brazil	95	0.6%	317
Chile	8600	55.5%	519
China	1000	6.5%	133
Portugal	60	0.4%	50
US	630	4.1%	700
Zimbabwe	230	1.5%	144
Rest of World*	370	2.4%	206
Total World	15485	100%	201

Rare earth metals reserves

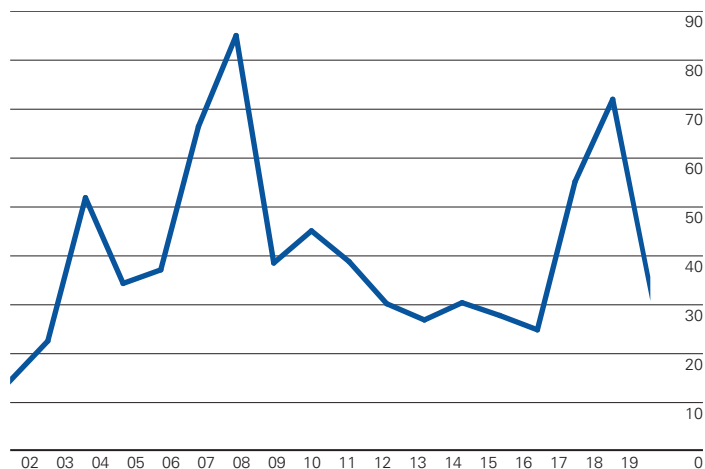
Thousand tonnes	At end of 2019	Share	R/P ratio
Australia	3300	2.7%	187
Brazil	22000	17.7%	22000
China	44000	35.4%	333
India	6900	5.5%	2300
Malaysia	30	♦	349
Russian Federation	20695	16.6%	7960
Thailand	890	0.7%	n/a
US	1400	1.1%	54
Rest of World*	25120	20.2%	920
Total World	124335	100.0%	593

*Rest of World is the sum of only recorded reserves.
 ♦Less than 0.05%.
 n/a not available.

Source (for all tables): includes data from US Geological Survey.

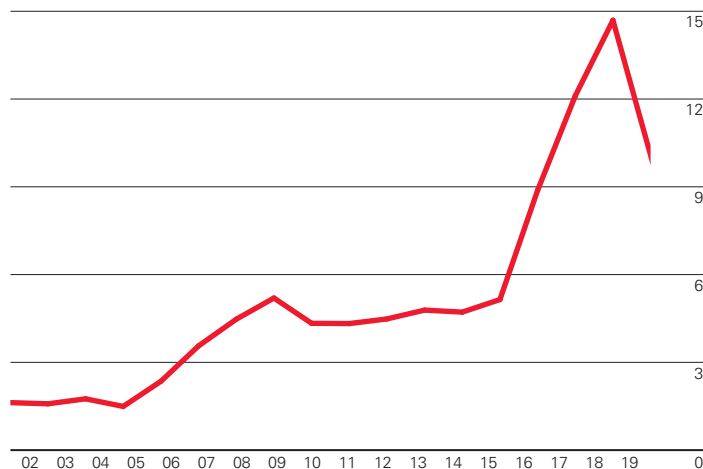
Cobalt prices

Thousands of US dollars per tonne*



Lithium carbonate prices

Thousands of US dollars per tonne†



*2000-2012 spot grade for cathodes, source US Geological Survey. Data from 2013 onwards: min purity 99.8%, source London Metal Exchange.

†2000-2008 unit value, data series 140, source US Geological Survey. Data from 2009 onwards: FOB South America, source Benchmark Mineral Intelligence.

Appendices

Approximate conversion factors

Crude oil*

From	To				
	tonnes (metric)	kilolitres	barrels	US gallons	tonnes per year
	Multiply by				
Tonnes (metric)	1	1.165	7.33	307.86	–
Kilolitres	0.8581	1	6.2898	264.17	–
Barrels	0.1364	0.159	1	42	–
US gallons	0.00325	0.0038	0.0238	1	–
Barrels per day	–	–	–	–	49.8

*Based on worldwide average gravity.

Products

	To convert					
	barrels to tonnes	tonnes to barrels	kilolitres to tonnes	tonnes to kilolitres	tonnes to gigajoules	tonnes to barrels oil equivalent
	Multiply by					
Ethane	0.059	16.850	0.373	2.679	49.400	8.073
Liquefied petroleum gas (LPG)	0.086	11.600	0.541	1.849	46.150	7.542
Gasoline	0.120	8.350	0.753	1.328	44.750	7.313
Kerosene	0.127	7.880	0.798	1.253	43.920	7.177
Gas oil/diesel	0.134	7.460	0.843	1.186	43.380	7.089
Residual fuel oil	0.157	6.350	0.991	1.010	41.570	6.793
Product basket	0.124	8.058	0.781	1.281	43.076	7.039

Natural gas (NG) and liquefied natural gas (LNG)

From	To						
	billion cubic metres NG	billion cubic feet NG	petajoules NG	million toe	million tonnes LNG	trillion Btu	million boe
	Multiply by						
1 billion m ³ NG	1.000	35.315	36.000	0.860	0.735	34.121	5.883
1 billion ft ³ NG	0.028	1.000	1.019	0.024	0.021	0.966	0.167
1 petajoule NG	0.028	0.981	1.000	0.024	0.021	0.952	0.164
1 million toe	1.163	41.071	41.868	1.000	0.855	39.683	6.842
1 million tonnes LNG	1.360	48.028	48.747	1.169	1.000	46.405	8.001
1 trillion Btu	0.029	1.035	1.050	0.025	0.022	1.000	0.172
1 million boe	0.170	6.003	6.093	0.146	0.125	5.800	1.000

Methodology

Methodology for converting non-fossil electricity generation to primary energy

Primary energy consumption numbers for non-fossil based electricity (nuclear, hydro, wind, solar, geothermal, biomass in power and other renewables sources) are calculated on an 'input-equivalent' basis – i.e. based on the equivalent amount of fossil fuel input required to generate that amount of electricity in a standard thermal power plant.

From this review onwards, the thermal efficiency assumption for the standard power plant is time varying, based on a simplified representation of measured average efficiency levels:

1965-2000: assumed constant efficiency of 36%

2000-2017: a linear increase from 36% to 40% based on observed data

2018 onwards: the annual rate of efficiency improvement is based on the simplified assumption that efficiency will increase linearly to 45% by 2050.

The table below quantifies these assumptions:

Thermal equivalent efficiency factors used to convert non-fossil electricity to primary energy

Year(s)	Efficiency factor	Year(s)	Efficiency factor
1965-2000	36%	2010	38.4%
2001	36.2%	2011	38.6%
2002	36.5%	2012	38.8%
2003	36.7%	2013	39.1%
2004	36.9%	2014	39.3%
2005	37.2%	2015	39.5%
2006	37.4%	2016	39.8%
2007	37.6%	2017	40.0%
2008	37.9%	2018	40.2%
2009	38.1%	2019	40.4%

For more details on the change in methodology please go to using the review at bp.com/statisticalreview.

Units

1 metric tonne	= 2204.62lb = 1.1023 short tons
1 kilolitre	= 6.2898 barrels = 1 cubic metre
1 kilocalorie (kcal)	= 4.1868kJ = 3.968Btu
1 kilojoule (kJ)	= 1,000 joules = 0.239 kcal = 0.948 Btu
1 petajoule (PJ)	= 1 quadrillion joules (1 x 10 ¹⁵)
1 exajoule (EJ)	= 1 quintillion joules (1 x 10 ¹⁸)
1 British thermal unit (Btu)	= 0.252kcal = 1.055kJ
1 tonne of oil equivalent (toe)	= 39.683 million Btu = 41.868 million kJ
1 barrel of oil equivalent (boe)	= 5.8 million Btu = 6.119 million kJ
1 kilowatt-hour (kWh)	= 860kcal = 3600kJ = 3412Btu

Calorific equivalents

One exajoule equals approximately:

Heat units	239 trillion kilocalories 948 trillion Btu
Solid fuels	40 tonnes of hard coal 95 tonnes of lignite and sub-bituminous coal
Gaseous fuels	See Natural gas and LNG table
Electricity	278 terawatt-hours

All fuel energy content is net or lower heating value (i.e., net of heat of vaporisation of water generated from combustion).

1 barrel of ethanol = 0.58 barrels of oil equivalent
1 barrel of biodiesel = 0.86 barrels of oil equivalent
1 tonne of ethanol = 0.68 tonnes of oil equivalent
1 tonne of biodiesel = 0.88 tonnes of oil equivalent

Primary energy consumption is reported in net terms. The gross calorific value to net calorific value adjustment is fuel specific.

Fuels used as inputs for conversion technologies (gas-to-liquids, coal-to-liquids and coal-to-gas) are counted as production for the source fuel and the outputs are counted as consumption for the converted fuel.

Percentages

Calculated before rounding of actuals.

Rounding differences

Because of rounding, some totals may not agree exactly with the sum of their component parts.

Tonnes

Metric equivalent of tons.

Definitions

Statistics published in this review are taken from government sources and published data. No use is made of confidential information obtained by bp in the course of its business.

Country, regions and geographic groupings

Country and geographic groupings are made purely for statistical purposes and are not intended to imply any judgement about political or economic standings.

North America

US (excluding US territories), Canada, Mexico.

South & Central America

Caribbean (including Puerto Rico and US Virgin Islands), Bermuda, Central and South America.

Europe

European members of the OECD plus Albania, Bosnia-Herzegovina, Bulgaria, Croatia, Cyprus, Georgia, Gibraltar, Latvia, Lithuania, Malta, Montenegro, North Macedonia, Romania, Serbia and Ukraine.

Commonwealth of Independent States (CIS)

Armenia, Azerbaijan, Belarus, Kazakhstan, Kyrgyzstan, Moldova, Russian Federation, Tajikistan, Turkmenistan, Uzbekistan.

Middle East

Arabian Peninsula, Iran, Iraq, Israel, Jordan, Lebanon, Syria.

North Africa

Territories on the north coast of Africa from Egypt to Western Sahara.

West Africa

Territories on the west coast of Africa from Mauritania to Angola, including Cape Verde, Chad.

East and Southern Africa

Territories on the east coast of Africa from Sudan to Republic of South Africa. Also Botswana, Madagascar, Malawi, Namibia, Uganda, Zambia, Zimbabwe.

Asia Pacific

Brunei, Cambodia, China[†], China Hong Kong SAR*, China Macau SAR*, Indonesia, Japan, Laos, Malaysia, Mongolia, North Korea, Philippines, Singapore, South Asia (Afghanistan, Bangladesh, India, Myanmar, Nepal, Pakistan, Sri Lanka), South Korea, Taiwan, Thailand, Vietnam, Australia, New Zealand, Papua New Guinea, Oceania.

[†]Mainland China.

*Special Administrative Region.

Australasia

Australia, New Zealand.

OECD members

Europe: Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, UK.

Other member countries: Australia, Canada, Chile, Israel, Japan, Mexico, New Zealand, South Korea, US.

OPEC members

Middle East: Iran, Iraq, Kuwait, Saudi Arabia, United Arab Emirates.

North Africa: Algeria, Libya.

West Africa: Angola, Equatorial Guinea, Gabon, Nigeria, Republic of Congo.

South America: Ecuador, Venezuela.

European Union members

Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, UK.

Non-OECD

All countries that are not members of the OECD.

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Acknowledgements

Data compilation: Centre for Energy Economics Research and Policy, Heriot-Watt University, ceerp.hw.ac.uk

Design and typesetting: Whitehouse Associates, London

