

ENERGY PRODUCTION

Energy production is a function of the natural resources of each country and of the economic incentives to exploit those resources. Countries will also take into consideration energy security and environmental protection when making decisions on how much and what type of energy to produce.

Definition

Production refers to the quantities of fuels extracted from the ground after the removal of inert matter or impurities (e.g. sulphur from natural gas). For non-combusted energy such as nuclear, hydro and solar, the primary energy equivalent is calculated using the physical energy content method, which expresses the energy content of each source in million tonnes of oil equivalent (Mtoe) energy.

Comparability

In general, data on energy production are of high quality. In some instances, information is based on secondary sources or estimated by the International Energy Agency.

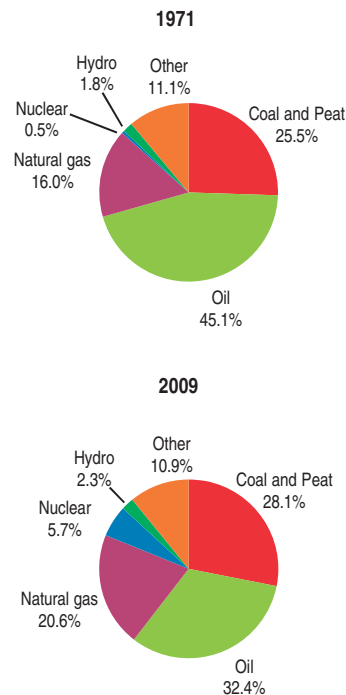
Overview

World energy production increased by 2.1% per year between 1971 and 2009, reaching 12 268 million tonnes of oil equivalent (Mtoe). The OECD, with a 31% share of world production, was the main energy producing region in 2009. China accounted for 17% of world energy production, the United States for 14%, the Middle East region for 13% and the Russian Federation for 10%. Since 1971, the shares of the OECD, Middle East and non-OECD Europe and Eurasia decreased, while those of Latin America and Africa remained stable. On the other hand, the share of energy production in China (as well as the rest of Asia) increased dramatically since 1971, with China overtaking the United States as the largest energy producer in 2006.

The energy mix has changed significantly between 1971 and 2009. Nuclear energy, which experienced an annual average growth of 8.8% since 1971, increased its share of production from 0.5% in 1971 to 6.8% in 1999 to 2002. However, the share of nuclear in production has been falling steadily since 2002 and was 5.7% in 2009. In absolute terms, renewable energy also experienced a high growth rate over the last 38 years, but its share of total production has remained low since it was starting from a very low base. The share of natural gas in total production increased from 16.0% in 1971 to 20.6% in 2009, while the share of oil fell from 45.1% to 32.4%. The share of coal and peat production increased slightly to 28.1%.

Total energy production by product

As a percentage of total energy production



StatLink <http://dx.doi.org/10.1787/888932505013>

Sources

- IEA (2011), *Energy Balances of Non-OECD Countries*, IEA, Paris.
- IEA (2011), *Energy Balances of OECD Countries*, IEA, Paris.

Further information

Analytical publications

- IEA (2011), *Energy Policies of IEA Countries*, series, IEA, Paris.
- IEA (2011), *Harnessing Variable Renewables: A Guide To The Balancing Challenge*, IEA, Paris.
- IEA (2011), *Medium-Term Oil and Gas Markets 2011*, IEA, Paris.

Online databases

- IEA World Energy Statistics and Balances.

Websites

- International Energy Agency, www.iea.org.



Total production of energy

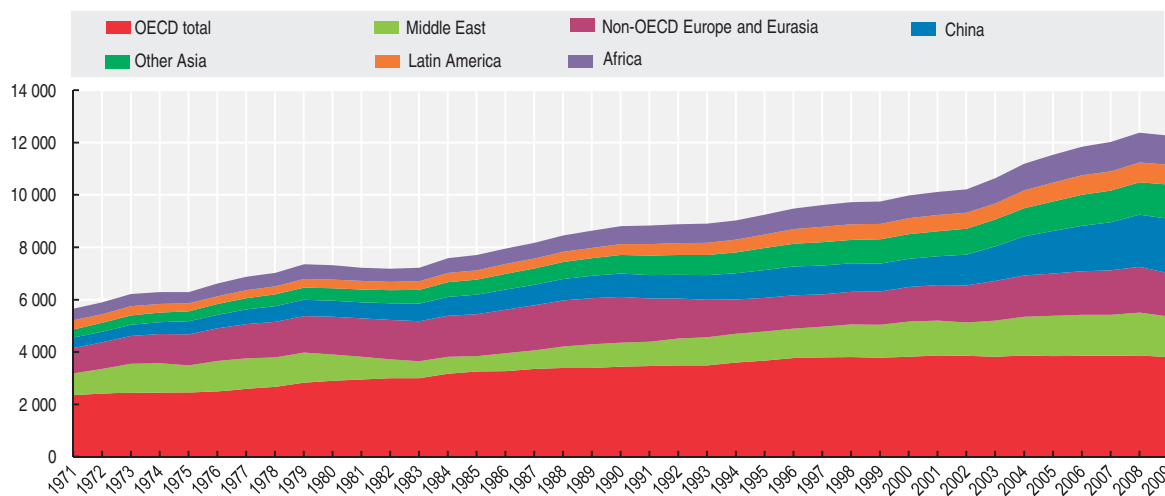
Million tonnes of oil equivalent (Mtoe)

	1971	1990	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Australia	53.9	157.5	213.5	233.6	253.8	263.5	263.6	269.3	280.1	281.5	298.6	301.0	310.7	324.0
Austria	7.4	8.1	9.7	9.8	9.8	9.8	9.6	9.9	10.1	10.1	10.9	11.2	11.4	11.2
Belgium	6.8	13.1	13.9	13.7	13.3	13.5	13.7	13.7	13.9	13.8	14.4	14.5	15.3	15.4
Canada	155.8	273.7	364.4	372.7	377.0	384.1	386.2	397.9	401.1	410.8	416.4	406.1	389.8	395.8
Chile	5.3	7.5	7.5	8.1	8.6	8.6	8.1	8.1	8.9	9.2	8.5	9.1	9.3	9.6
Czech Republic	39.9	40.9	28.8	30.7	31.4	31.4	33.5	34.5	32.9	33.6	33.8	32.8	31.2	31.4
Denmark	0.3	10.1	23.8	27.7	27.1	28.6	28.5	31.1	31.3	29.5	27.1	26.6	23.9	23.2
Estonia	..	5.4	3.0	3.2	3.2	3.4	3.9	3.7	3.9	3.7	4.4	4.2	4.2	4.9
Finland	5.0	12.1	15.4	15.1	15.1	16.1	16.0	15.8	16.7	18.2	16.1	16.5	16.6	17.2
France	47.6	111.9	127.1	130.8	132.1	134.2	135.8	137.0	137.0	137.2	135.3	137.3	129.5	135.8
Germany	175.2	186.2	137.2	135.3	134.7	134.5	135.9	138.0	135.4	136.4	137.5	133.5	127.1	129.2
Greece	2.1	9.2	9.5	10.0	10.0	10.2	9.9	10.3	10.3	10.1	10.2	9.9	10.1	9.2
Hungary	11.8	14.6	11.9	11.6	11.3	11.2	10.4	10.2	10.4	10.3	10.2	10.5	11.0	11.0
Iceland	0.4	1.4	2.2	2.3	2.5	2.5	2.5	2.5	2.6	3.3	4.0	4.4	4.4	4.6
Ireland	1.4	3.5	2.5	2.2	1.8	1.5	1.8	1.9	1.6	1.6	1.4	1.5	1.5	1.9
Israel	5.9	0.4	0.6	0.6	0.7	0.7	0.7	1.7	2.1	2.7	2.9	3.9	3.3	3.7
Italy	19.5	25.3	29.2	28.2	26.9	27.5	27.8	28.4	27.8	27.4	26.4	27.0	27.0	28.8
Japan	35.8	75.2	104.5	105.8	104.8	96.9	84.1	95.1	100.5	101.4	90.6	88.7	93.8	95.1
Korea	6.4	22.6	30.6	34.4	34.9	34.8	37.9	38.3	42.9	43.7	42.6	44.7	44.3	44.6
Luxembourg	-	-	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Mexico	43.4	194.7	220.6	222.3	225.8	225.5	236.7	246.9	254.0	250.6	244.1	233.3	220.0	217.7
Netherlands	37.3	60.5	59.5	57.6	61.5	60.7	58.7	68.0	62.2	61.1	61.2	66.6	63.0	69.7
New Zealand	3.4	11.5	13.7	14.1	14.2	14.6	13.4	13.0	12.6	13.1	14.0	15.0	15.2	16.6
Norway	6.0	119.1	209.4	227.0	225.9	234.8	234.4	228.4	223.7	215.0	214.9	219.0	213.6	205.1
Poland	99.2	103.9	83.9	79.6	80.3	80.2	79.9	78.8	78.6	77.6	72.5	71.4	67.5	67.8
Portugal	1.4	3.4	3.4	3.8	4.1	3.6	4.3	3.9	3.6	4.4	4.6	4.5	4.9	6.0
Slovak Republic	2.7	5.3	5.5	6.3	6.7	6.8	6.6	6.5	6.6	6.6	6.0	6.4	5.9	6.1
Slovenia	..	3.1	2.9	3.1	3.2	3.3	3.3	3.5	3.5	3.4	3.5	3.7	3.5	3.5
Spain	10.4	34.6	30.7	31.7	33.5	31.8	33.0	32.6	30.1	31.3	30.3	30.4	29.7	33.9
Sweden	7.4	29.7	33.2	30.5	33.9	31.8	30.9	34.3	34.7	32.8	33.6	33.2	30.3	32.5
Switzerland	2.9	10.3	12.1	12.0	12.6	12.2	12.3	12.1	11.0	12.2	12.7	12.8	12.8	12.7
Turkey	13.8	25.8	27.5	25.9	24.4	24.1	23.6	24.1	23.9	26.3	27.3	29.0	30.3	30.3
United Kingdom	109.8	208.0	281.6	272.5	262.3	258.4	246.6	225.7	205.3	186.9	176.6	166.8	158.9	149.7
United States	1 436.4	1 652.5	1 670.2	1 667.3	1 688.6	1 655.8	1 634.3	1 645.5	1 631.0	1 654.4	1 669.0	1 701.8	1 686.4	1 740.9
EU27 total	..	945.3	955.1	946.4	945.9	945.1	936.9	933.7	900.4	880.6	859.3	853.6	817.3	..
OECD total	2 355.0	3 440.9	3 789.7	3 829.4	3 875.7	3 856.7	3 827.9	3 870.9	3 850.6	3 860.4	3 861.4	3 877.5	3 806.7	3 889.1
Brazil	49.1	104.2	141.5	148.3	152.2	167.4	178.3	182.6	194.8	206.5	216.4	228.2	230.3	..
China	394.1	886.3	1 061.7	1 064.0	1 093.8	1 171.2	1 317.3	1 493.3	1 622.9	1 728.3	1 824.5	1 989.8	2 084.9	..
India	141.6	291.8	359.4	366.4	374.5	383.6	396.4	409.5	422.4	437.9	452.7	468.3	502.5	..
Indonesia	71.7	169.1	244.2	236.3	241.6	248.0	254.9	264.8	280.0	313.7	318.3	323.8	351.8	..
Russian Federation	..	1 293.1	962.1	978.0	1 008.2	1 046.3	1 119.5	1 172.3	1 203.2	1 227.0	1 239.1	1 253.9	1 181.6	..
South Africa	37.8	114.5	145.0	145.6	144.9	143.8	153.4	157.6	157.9	157.4	158.8	162.0	160.6	..
World	5 656.8	8 815.4	9 750.3	9 992.9	10 120.5	10 219.1	10 644.9	11 193.5	11 543.0	11 850.0	12 028.1	12 381.8	12 268.2	..

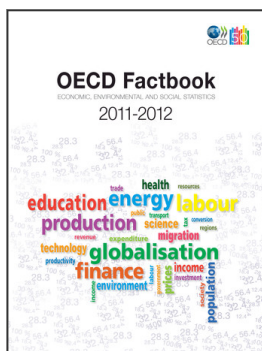
StatLink <http://dx.doi.org/10.1787/888932504975>

Total energy production by region

Million tonnes of oil equivalent (Mtoe)



StatLink <http://dx.doi.org/10.1787/888932504994>



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