Key world energy statistics

Also available on smartphones and tablets

International Energy Agency
Secure Sustainable Together

2018

Key world energy statistics

A wealth of
ENERGY STATS
at your fingertips

IEA ENERGY STATS:
download it for free on your iPhone, iPad, Android device or Windows Phone

Download on the App Store
Google play
Windows Phone

Foreword

The International Energy Agency (IEA) was established in 1974 to promote energy security and provide authoritative analysis on energy for its member countries and beyond. Energy statistics have always been and remain at the heart of the work of the IEA. They provide a comprehensive view on energy production, transformation and final use for all forms of energy as well as the factors that influence energy choices such as prices and RD&D and the wider impact of energy use on CO_2 emissions. Over the years with input from energy statisticians all around the world, the IEA has gained recognition as the world's most authoritative source for energy statistics.

Energy statistics are produced to be used: to monitor changes in energy production and use; inform debate; and provide a wider understanding of energy, including helping countries understand their energy transitions. In *Key World Energy Statistics (KWES)*, we look to highlight some of the key facts and trends from across the vast number of datasets the IEA produces to enable everyone to know more about energy. As part of the IEA modernisation programme, KWES now contains more information on energy efficiency and renewables, more geographic data – including on the "IEA Family", created through our "Open Doors" policy – and also more of the fundamental data required to fully understand energy security – the heart of our work.

Because energy plays such a vital role in our lives today, I hope that these statistics will not only inform but also help policy makers and others to make wise decisions so that energy is produced and consumed in a secure, affordable, efficient, and sustainable manner.

As I like to say, in the world of energy, data always wins. I would therefore like to thank Duncan Millard, the IEA Chief Statistician, and his excellent team for their work in ensuring we all have the data needed to gain a comprehensive understanding of energy.

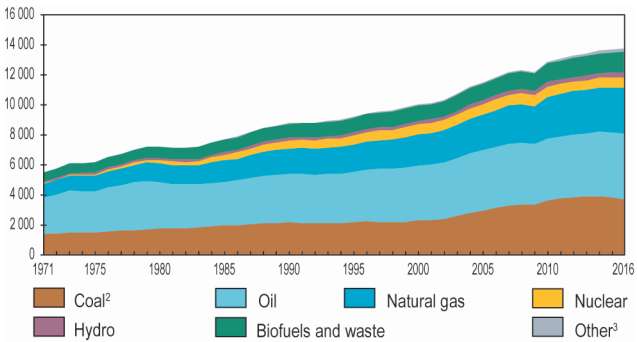
Dr. Fatih Birol
Executive Director, International Energy Agency

KWES is a summary of the comprehensive data made available by the IEA via its website: www.iea.org/statistics/. It is also available in app form for all major mobile devices.

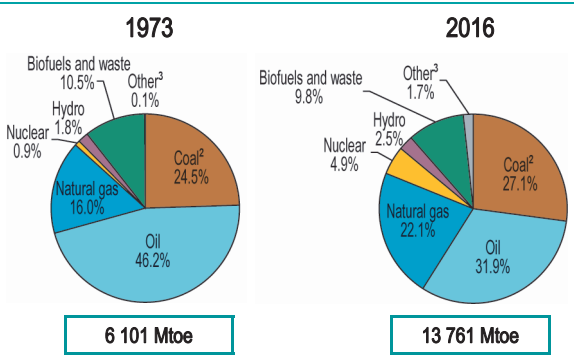
TABLE OF CONTENTS

World total primary energy supply (TPES) by fuel

World[1] TPES from 1971 to 2016 by fuel (Mtoe)



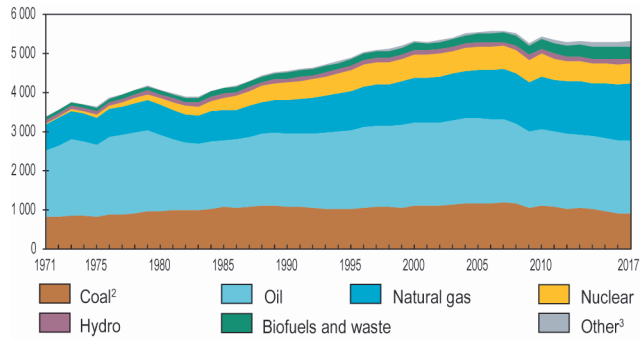
1973 and 2016 fuel shares of TPES



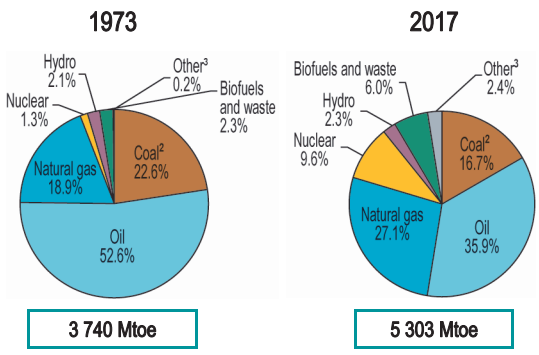
1. World includes international aviation and international marine bunkers.
2. In these graphs, peat and oil shale are aggregated with coal.
3. Includes geothermal, solar, wind, tide/wave/ocean, heat and other.

OECD total primary energy supply by fuel

OECD TPES[1] from 1971 to 2017 by fuel (Mtoe)



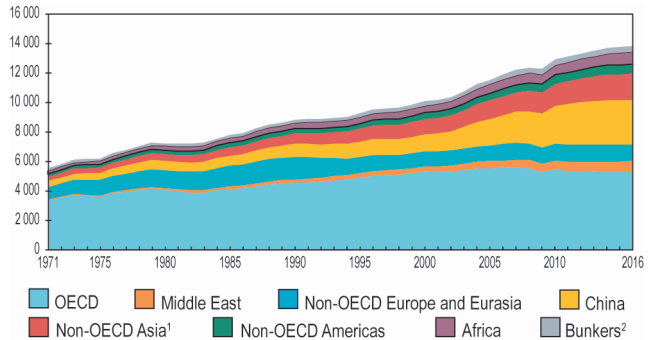
1973 and 2017 fuel shares of TPES[1]



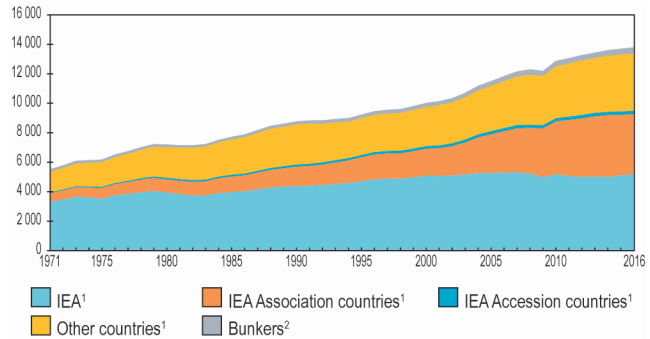
1. Excludes electricity trade.
2. In these graphs, peat and oil shale are aggregated with coal.
3. Includes geothermal, solar, wind, tide/wave/ocean, heat and other.

World total primary energy supply by region

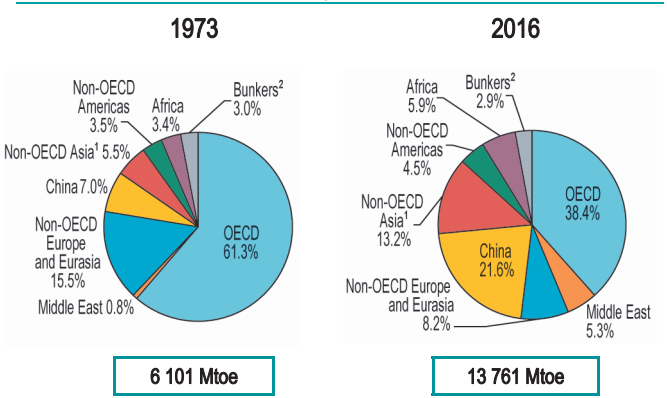
World TPES from 1971 to 2016 by region (Mtoe)



World TPES from 1971 to 2016 by region (Mtoe)

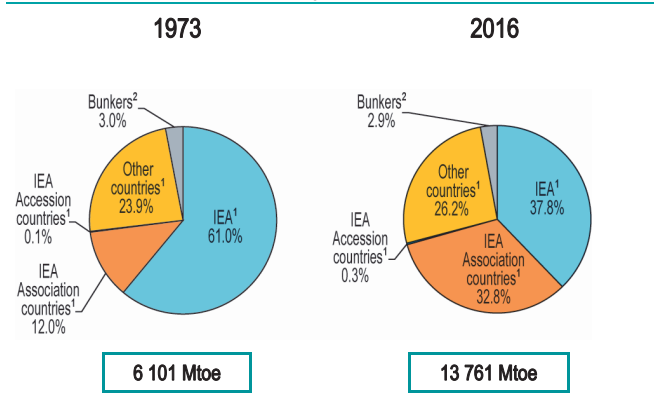


1973 and 2016 regional shares of TPES



1. Non-OECD Asia excludes China.
2. Includes international aviation and international marine bunkers.

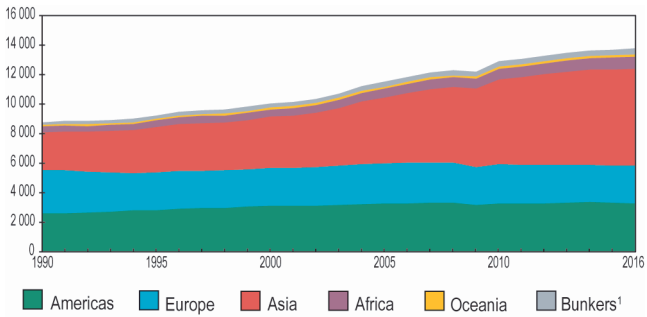
1973 and 2016 regional shares of TPES



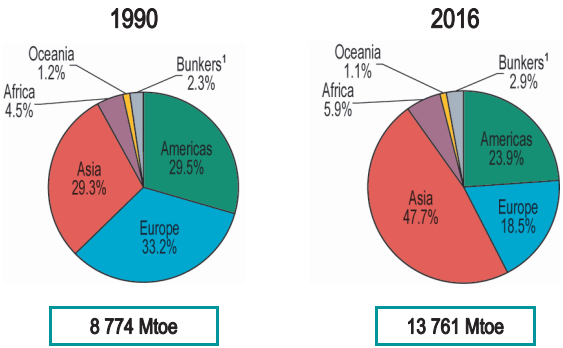
1. Please see geographical coverage for the list of IEA Accession, Association and other countries.
2. Includes international aviation and international marine bunkers.

World total primary energy supply by geographical region

World TPES from 1990 to 2016 by region (Mtoe)



1990 and 2016 regional shares of TPES

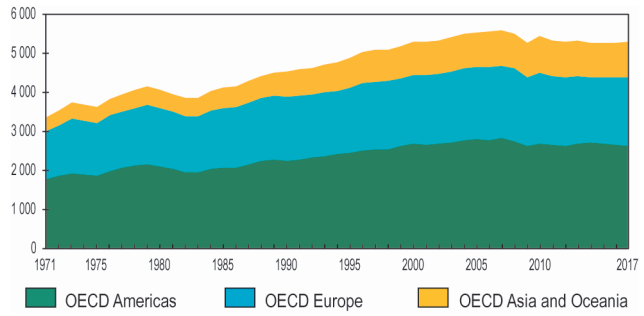


8 774 Mtoe | **13 761 Mtoe**

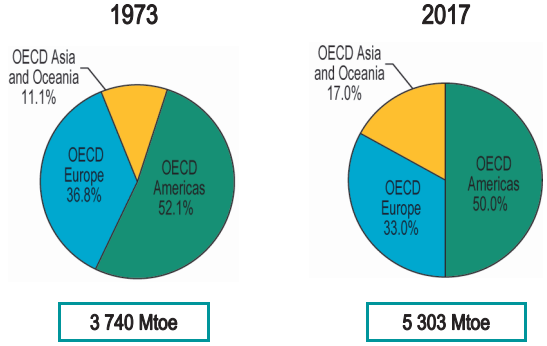
1. Includes international aviation and international marine bunkers.

OECD total primary energy supply by region

OECD TPES[1] from 1971 to 2017 by region (Mtoe)



1973 and 2017 regional shares of TPES[1]

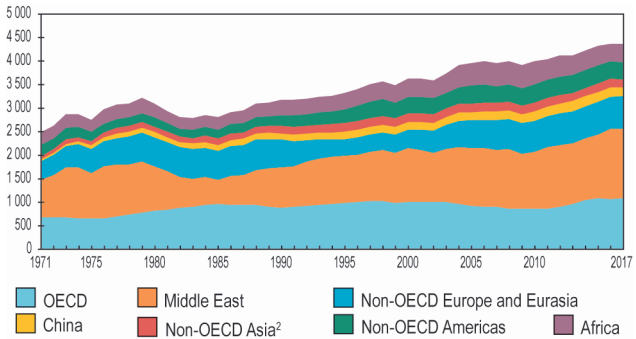


3 740 Mtoe | **5 303 Mtoe**

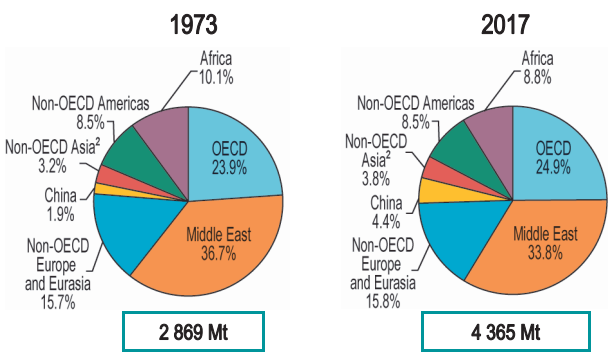
1. Excludes electricity trade.

Crude oil production

World crude oil[1] production from 1971 to 2017 by region (Mt)



1973 and 2017 regional shares of crude oil[1] production



1. Includes crude oil, NGL, feedstocks, additives and other hydrocarbons.
2. Non-OECD Asia excludes China.

Producers, net exporters and net importers of crude oil[1]

Producers	Mt	% of world total
United States	563	12.9
Saudi Arabia	560	12.8
Russian Federation	548	12.6
Canada	237	5.4
Islamic Rep. of Iran	229	5.2
Iraq	225	5.2
People's Rep. of China	192	4.4
United Arab Emirates	178	4.1
Kuwait	149	3.4
Brazil	137	3.1
Rest of the world	1 347	30.9
World	**4 365**	**100.0**

2017 provisional data

Net exporters	Mt
Saudi Arabia	373
Russian Federation	254
Iraq	187
United Arab Emirates	120
Islam Rep. of Iran	119
Canada	113
Kuwait	108
Venezuela	90
Nigeria	87
Angola	82
Others	548
Total	**2 081**

2016 data

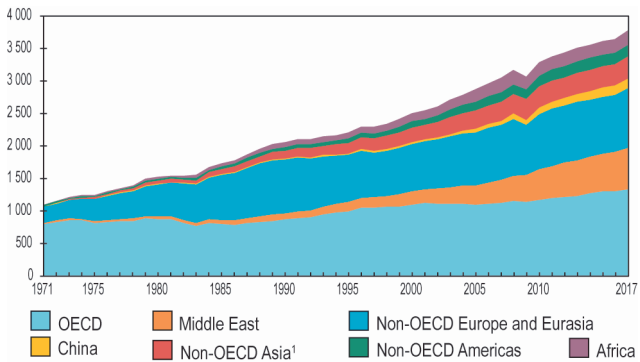
Net importers	Mt
People's Rep. of China	378
United States	371
India	214
Japan	162
Korea	146
Germany	91
Italy	65
Spain	64
Netherlands	61
France	55
Others	506
Total	**2 113**

2016 data

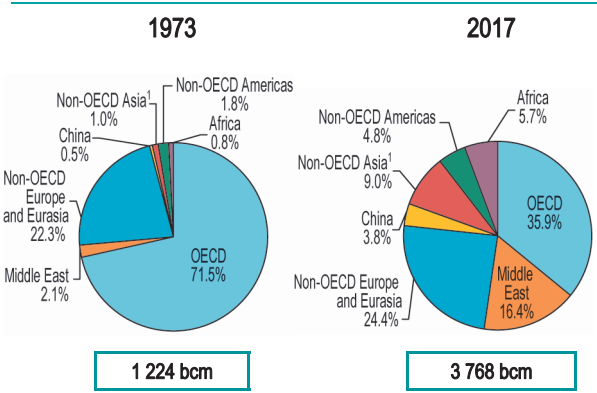
1. Includes production of crude oil, NGL, feedstocks, additives and other hydrocarbons. Excludes liquids from other fuel sources (renewable, coal and natural gas).

Natural gas production

World natural gas production from 1971 to 2017 by region (billion cubic metres, bcm)



1973 and 2017 regional shares of natural gas production



1. Non-OECD Asia excludes China.

Producers, net exporters and net importers[1] of natural gas

Producers	bcm	% of world total
United States	760	20.2
Russian Federation	694	18.4
Islamic Rep. of Iran	214	5.7
Canada	184	4.9
Qatar	169	4.5
People's Rep. of China	142	3.8
Norway	128	3.4
Australia	105	2.8
Algeria	94	2.5
Saudi Arabia	94	2.5
Rest of the world	1 184	31.3
World	**3 768**	**100.0**

2017 provisional data

Net exporters	bcm
Russian Federation	217
Norway	123
Qatar	121
Australia	62
Canada	61
Turkmenistan	55
Algeria	54
Indonesia	29
Malaysia	28
Nigeria	27
Others	151
Total	**928**

2017 provisional data

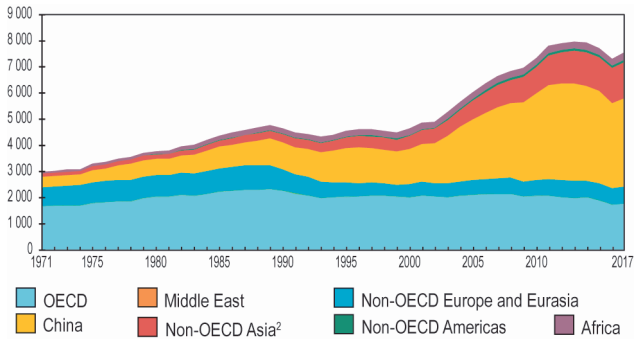
Net importers	bcm
Japan	115
People's Rep. of China	86
Germany	85
Italy	69
Turkey	54
Mexico	50
Korea	49
France	43
United Kingdom	37
Spain	32
Others	296
Total	**916**

2017 provisional data

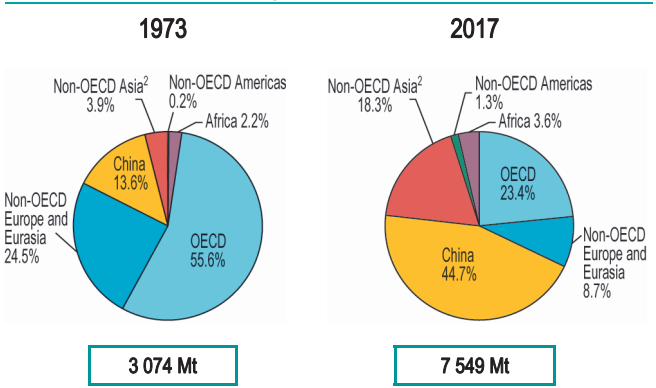
1. Net exports and net imports include pipeline gas and LNG.

Coal production

World coal[1] production from 1971 to 2017 by region (Mt)



1973 and 2017 regional shares of coal[1] production



1. Includes steam coal, coking coal, lignite and recovered coal.
2. Non-OECD Asia excludes China.

Producers, net exporters and net importers of coal[1]

Producers	Mt	% of world total
People's Rep. of China	3 376	44.7
India	730	9.7
United States	702	9.3
Australia	501	6.6
Indonesia	488	6.5
Russian Federation	387	5.1
South Africa	257	3.4
Germany	175	2.3
Poland	127	1.7
Kazakhstan	106	1.4
Rest of the world	700	9.3
World	**7 549**	**100.0**

2017 provisional data

Net exporters	Mt
Indonesia	387
Australia	379
Russian Federation	161
Colombia	86
United States	81
South Africa	71
Mongolia	33
Kazakhstan	27
Canada	24
Mozambique	12
Others	2
Total	**1 263**

2017 provisional data

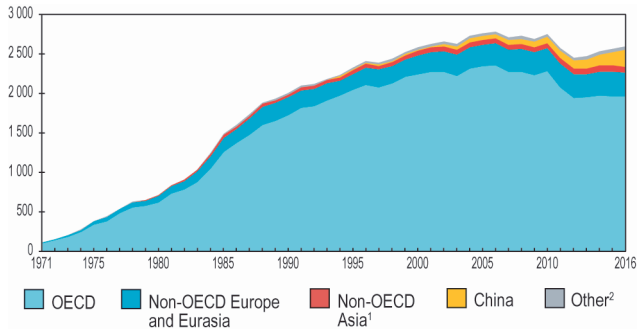
Net importers	Mt
People's Rep. of China	263
India	207
Japan	188
Korea	148
Chinese Taipei	68
Germany	48
Turkey	38
Malaysia	31
Thailand	24
Brazil	21
Others	244
Total	**1 280**

2017 provisional data

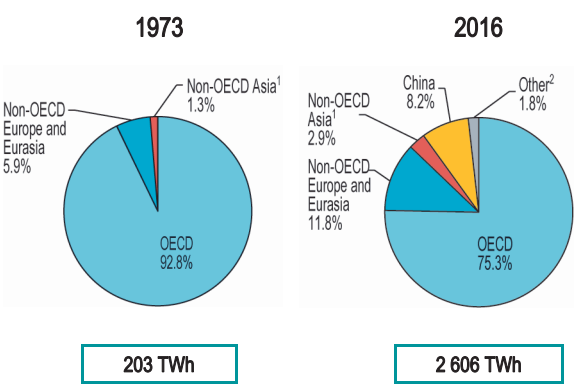
1. Includes steam coal, coking coal, lignite and recovered coal.

Nuclear electricity production

World nuclear electricity production from 1971 to 2016 by region (TWh)



1973 and 2016 regional shares of nuclear electricity production



1. Non-OECD Asia excludes China.
2. Other includes Africa, Non-OECD Americas and the Middle East.

Producers of nuclear electricity

Producers	TWh	% of world total
United States	840	32.2
France	403	15.5
People's Rep. of China	213	8.2
Russian Federation	197	7.6
Korea	162	6.2
Canada	101	3.9
Germany	85	3.3
Ukraine	81	3.1
United Kingdom	72	2.8
Sweden	63	2.4
Rest of the world	389	14.8
World	**2 606**	**100.0**

2016 data

Net installed capacity	GW
United States	100
France	63
Japan	40
People's Rep. of China	31
Russian Federation	26
Korea	23
Canada	14
Ukraine	13
Germany	11
Sweden	10
Rest of the world	60
World	**391**

2016 data
Sources:
International Energy Agency,
International Atomic
Energy Agency

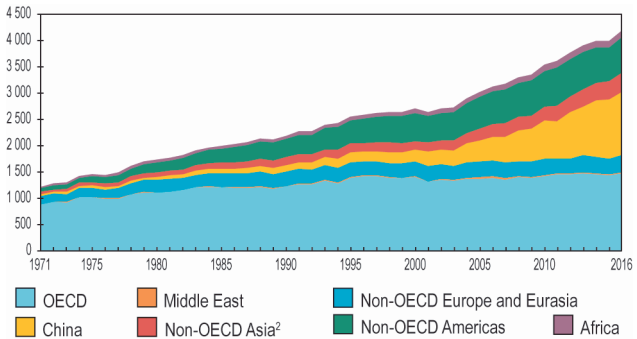
Country (top ten producers)	% of nuclear in total domestic electricity generation
France	73.1
Ukraine	49.7
Sweden	40.5
Korea	29.0
United Kingdom	21.3
United States	19.5
Russian Federation	18.1
Canada	15.2
Germany	13.2
People's Rep. of China	3.5
Rest of the world[1]	7.3
World	**10.4**

2016 data

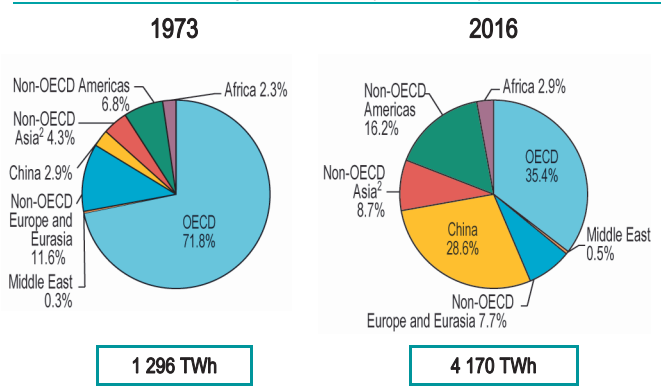
1. Excludes countries with no nuclear production.

Hydro electricity production

World hydro electricity production[1] from 1971 to 2016 by region (TWh)



1973 and 2016 regional shares of hydro electricity production[1]



1. Includes electricity production from pumped storage.
2. Non-OECD Asia excludes China.

Producers of hydro electricity[1]

Producers	TWh	% of world total
People's Rep. of China	1 193	28.6
Canada	387	9.3
Brazil	381	9.1
United States	292	7.0
Russian Federation	187	4.5
Norway	144	3.5
India	138	3.3
Japan	85	2.0
Venezuela	68	1.6
Turkey	67	1.6
Rest of the world	1 228	29.5
World	**4 170**	**100.0**

2016 data

Net installed capacity	GW
People's Rep. of China	344
United States	103
Brazil	97
Canada	80
Russian Federation	51
Japan	50
India	45
Norway	32
Turkey	27
France	26
Rest of the world	302
World	**1 157**

2016 data
Sources:
International Energy Agency,
United Nations

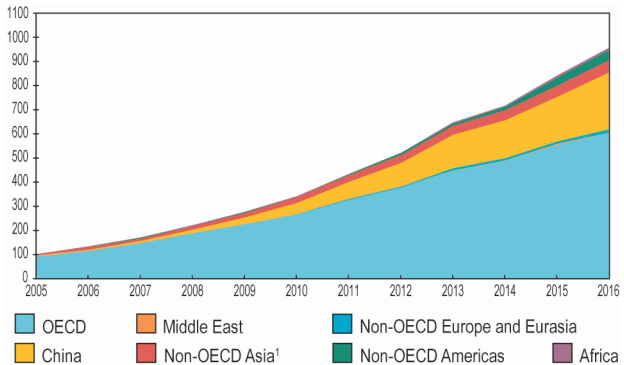
Country (top ten producers)	% of hydro in total domestic electricity generation
Norway	96.2
Brazil	65.8
Venezuela	60.1
Canada	58.0
Turkey	24.5
People's Rep. of China	19.2
Russian Federation	17.1
India	9.3
Japan	8.0
United States	6.8
Rest of the world[2]	14.9
World	**16.6**

2016 data

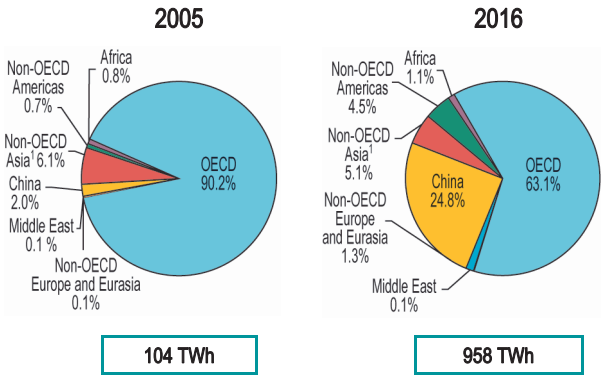
1. Includes electricity production from pumped storage.
2. Excludes countries with no hydro production.

Wind electricity production

World wind electricity production from 2005 to 2016 by region (TWh)



2005 and 2016 regional shares of wind electricity production



1. Non-OECD Asia excludes China.

Producers of wind electricity

Producers	TWh	% of world total
People's Rep. of China	237	24.8
United States	229	24.0
Germany	79	8.2
Spain	49	5.1
India	45	4.7
United Kingdom	37	3.9
Brazil	33	3.5
Canada	31	3.2
France	21	2.2
Italy	18	1.8
Rest of the world	178	18.6
World	**958**	**100.0**

2016 data

Net installed capacity	GW
People's Rep. of China	148.6
United States	81.4
Germany	49.6
India	28.7
Spain	23.0
United Kingdom	16.2
Canada	12.0
France	11.5
Brazil	10.1
Italy	9.4
Rest of the world	76.9
World	**467.4**

2016 data

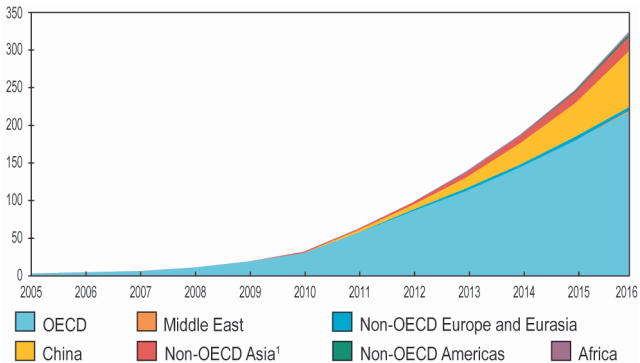
Country (top ten producers)	% of wind in total domestic electricity generation
Spain	17.8
Germany	12.1
United Kingdom	11. 0
Italy	6.1
Brazil	5.8
United States	5.3
Canada	4.6
France	3.9
People's Rep. of China	3.8
India	3.0
Rest of the world[1]	2.2
World	**3.8**

2016 data

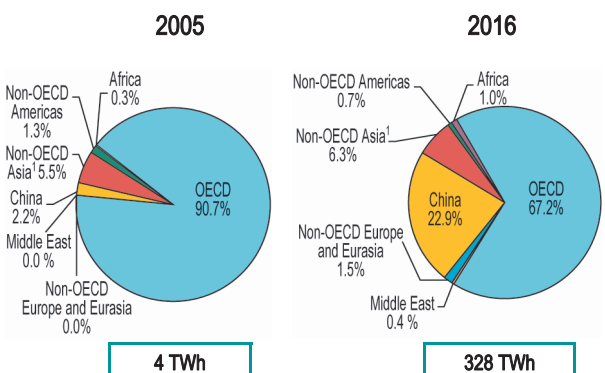
1. Excludes countries with no wind production.

Solar photovoltaic electricity production

World solar PV electricity production from 2005 to 2016 by region (TWh)



2005 and 2016 regional shares of solar PV electricity production



1. Non-OECD Asia excludes China.

Producers of solar PV electricity

Producers	TWh	% of world total
People's Rep. of China	75	22.9
Japan	51	15.5
United States	47	14.2
Germany	38	11.6
Italy	22	6.7
India	14	4.3
United Kingdom	10	3.2
France	8	2.5
Spain	8	2.5
Australia	6	1.9
Rest of the world	49	14.7
World	**328**	**100.0**

2016 data

Net installed capacity	GW
People's Rep. of China	77.5
Japan	42.0
United States	41.4
Germany	40.7
Italy	19.3
United Kingdom	11.9
India	9.4
France	7.3
Australia	5.6
Spain	5.0
Rest of the world	40.0
World	**300.1**

2016 data

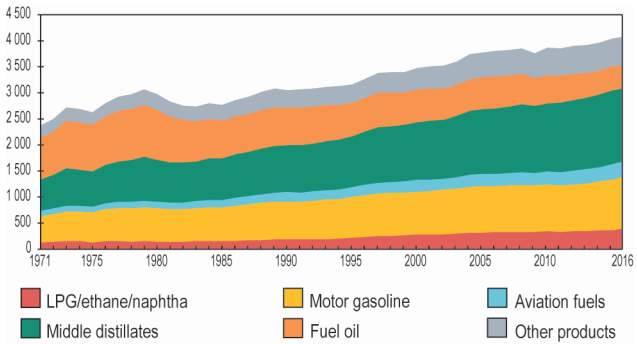
Country (top ten producers)	% of solar PV in total domestic electricity generation
Italy	7.6
Germany	5.9
Japan	4.8
United Kingdom	3.1
Spain	2.9
Australia	2.4
France	1.5
People's Rep. of China	1.2
United States	1.1
India	1.0
Rest of the world[1]	0.6
World	**1.3**

2016 data

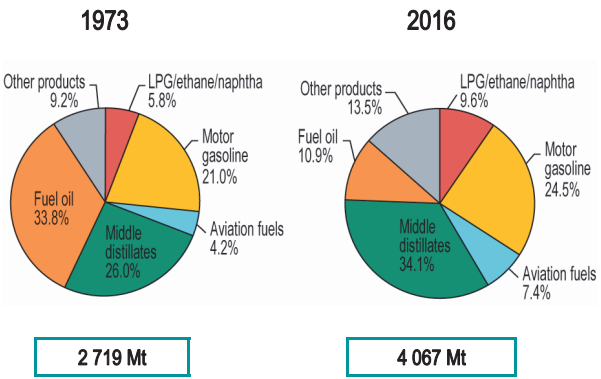
1. Excludes countries with no solar PV production.

Refining by product

World refinery output from 1971 to 2016 by product (Mt)



1973 and 2016 shares of refinery output by product



Producers, net exporters and net importers of oil products

Producers	Mt	% of world total
United States	827	20.3
People's Rep. of China	533	13.1
Russian Federation	270	6.6
India	253	6.2
Japan	163	4.0
Korea	146	3.6
Saudi Arabia	129	3.2
Germany	100	2.5
Brazil	99	2.4
Canada	89	2.2
Rest of the world	1 458	35.9
World	**4 067**	**100.0**

2016 data

Net exporters	Mt
United States	117
Russian Federation	106
Saudi Arabia	62
India	31
Kuwait	30
United Arab Emirates	24
Korea	23
Algeria	20
Netherlands	19
Qatar	19
Others	160
Total[1]	**611**

2016 data

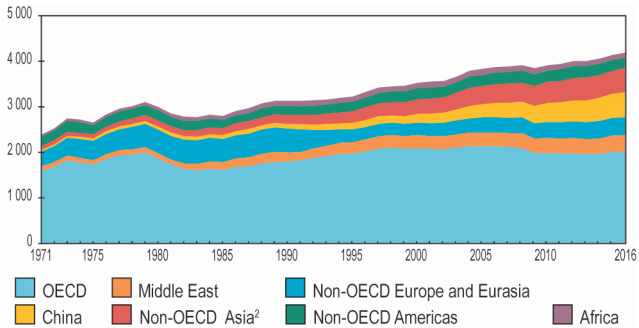
Net importers	Mt
Mexico	32
Singapore	26
Australia	25
Japan	21
Hong Kong, China	19
Turkey	19
Nigeria	19
France	19
Indonesia	18
Brazil	16
Others	311
Total[1]	**525**

2016 data

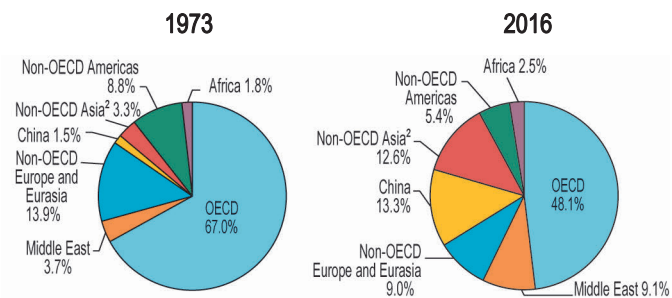
1. The discrepancy between total net exports and total net imports arises from different data sources and possible misallocation of bunkers into exports for some countries.

Refining by region

World refinery intake[1] from 1971 to 2016 by region (Mt)



1973 and 2016 regional shares of refinery intake[1]



1. Includes crude oil, NGL, refinery feedstocks, additives and other hydrocarbons.
2. Non-OECD Asia excludes China.

Refinery capacity, net exporters and net importers of oil[1]

Crude distillation capacity	kb/cd	% of world total
United States	18 915	19.2
People's Rep. of China	15 229	15.5
Russian Federation	6 558	6.7
India	4 833	4.9
Japan	3 558	3.6
Korea	3 168	3.2
Saudi Arabia	2 829	2.9
Brazil	2 175	2.2
Germany	2 022	2.1
Canada	1 931	2.0
Rest of the world	37 217	37.8
World	**98 435**	**100.0**

2017 data

Net exporters	Mt
Saudi Arabia	435
Russian Federation	360
Iraq	171
United Arab Emirates	144
Kuwait	138
Islamic Rep. of Iran	136
Canada	120
Venezuela	104
Norway	81
Angola	78
Others	502
Total	**2 269**

2016 data

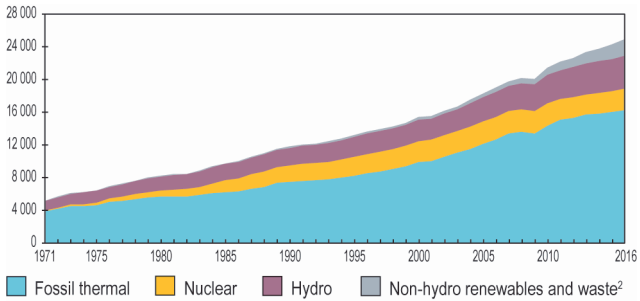
Net importers	Mt
People's Rep. of China	379
United States	253
Japan	184
India	183
Korea	123
Germany	107
France	74
Singapore	73
Spain	60
Italy	52
Others	727
Total	**2 215**

2016 data

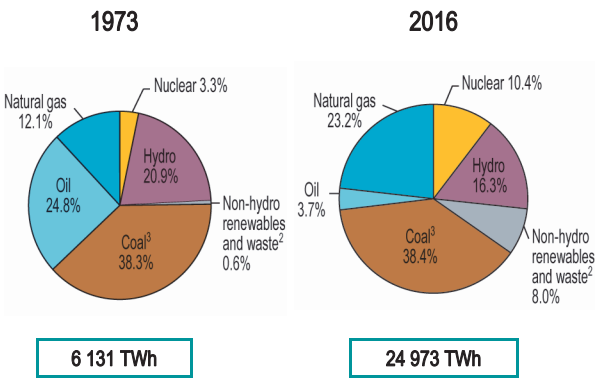
1. Includes crude oil and oil products.

Electricity generation by source

World electricity generation[1] from 1971 to 2016 by fuel (TWh)



1973 and 2016 source shares of electricity generation[1]



1. Excludes electricity generation from pumped storage.
2. Includes geothermal, solar, wind, tide/wave/ocean, biofuels, waste, heat and other.
3. In these graphs, peat and oil shale are aggregated with coal.

Producers of electricity by source

Coal[1]	TWh
People's Rep. of China	4 242
United States	1 354
India	1 105
Japan	349
Germany	273
Korea	235
South Africa	226
Russian Federation	171
Australia	163
Indonesia	135
Rest of the world	1 341
World	**9 594**

2016 data

Oil	TWh
Saudi Arabia	140
Japan	84
Iraq	56
Kuwait	45
Egypt	38
Pakistan	37
United States	35
Mexico	34
India	23
Argentina	21
Rest of the world	418
World	**931**

2016 data

Natural gas	TWh
United States	1 418
Russian Federation	522
Japan	406
Islamic Rep. of Iran	233
Saudi Arabia	205
Mexico	192
People's Rep. of China	170
United Kingdom	143
Egypt	140
United Arab Emirates	128
Rest of the world	2 237
World	**5 794**

2016 data

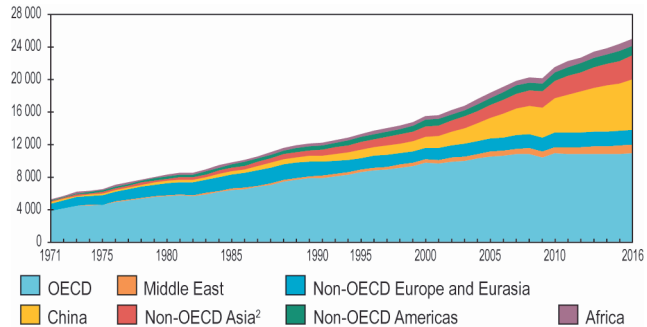
Renewables[2]	TWh
People's Rep. of China	1 540
United States	637
Brazil	465
Canada	434
India	239
Germany	188
Russian Federation	186
Japan	155
Norway	145
Italy	108
Rest of the world	1 842
World	**5 939**

2016 data

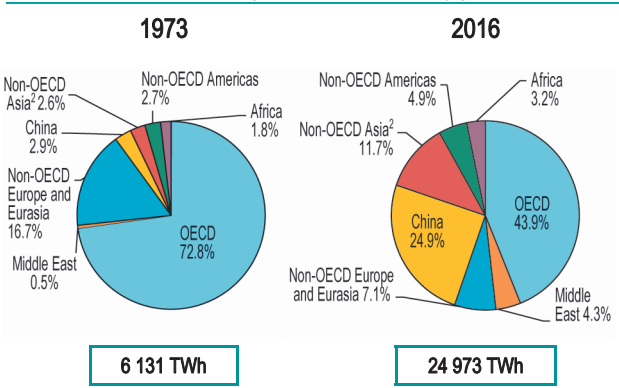
1. In this table, peat and oil shale are aggregated with coal.
2. Excludes electricity generation from pumped storage.

Electricity generation by region

World electricity generation[1] from 1971 to 2016 by region (TWh)



1973 and 2016 regional shares of electricity generation[1]



1. Excludes electricity generation from pumped storage.
2. Non-OECD Asia excludes China.

Producers, net exporters and net importers of electricity

Producers[1]	TWh	% of world total
People's Rep. of China	6 187	24.8
United States	4 300	17.2
India	1 478	5.9
Russian Federation	1 089	4.4
Japan	1 052	4.2
Canada	667	2.7
Germany	644	2.6
Brazil	579	2.3
Korea	559	2.2
France	551	2.2
Rest of the world	7 867	31.5
World	**24 973**	**100.0**

2016 data

Net exporters	TWh
Canada	64
Germany	51
Paraguay	48
France	42
Norway	16
Russian Federation	15
People's Rep. of China	13
Sweden	12
Czech Republic	11
Bulgaria	6
Others	73
Total	**351**

2016 data

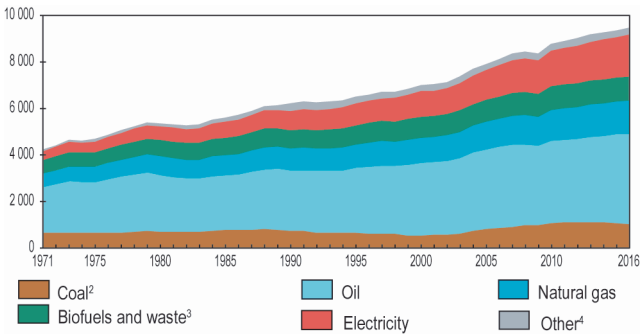
Net importers	TWh
United States	60
Brazil	41
Italy	37
Finland	19
Thailand	18
United Kingdom	18
Hungary	13
Iraq	12
Hong Kong,China	10
Argentina	10
Others	111
Total	**349**

2016 data

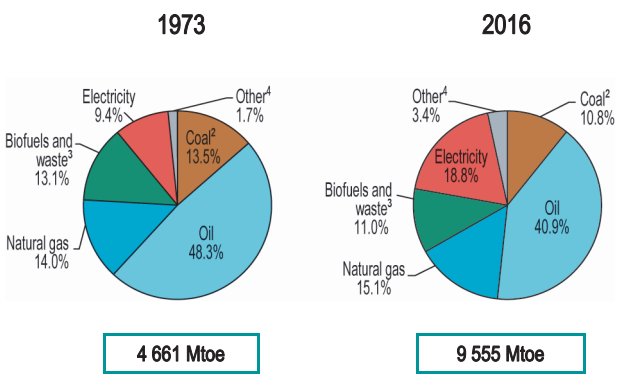
1. Gross production minus production from pumped storage plants.

World total final consumption (TFC) by fuel

World[1] TFC from 1971 to 2016 by fuel (Mtoe)



1973 and 2016 fuel shares of TFC

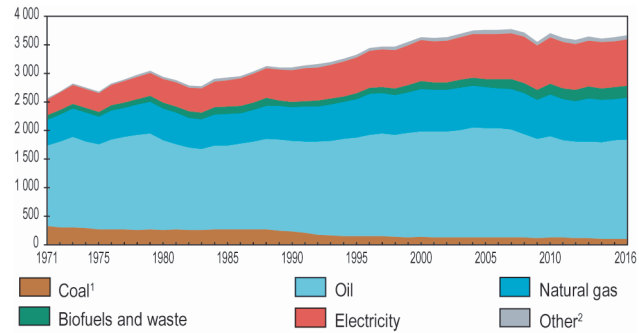


4 661 Mtoe **9 555 Mtoe**

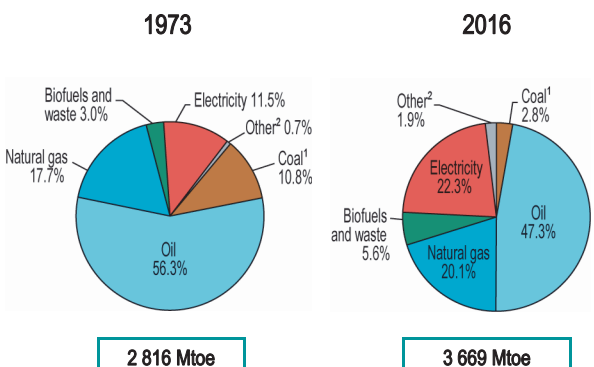
1. World includes international aviation and international marine bunkers.
2. In these graphs, peat and oil shale are aggregated with coal.
3. Data for biofuels and waste final consumption have been estimated for a number of countries.
4. Includes heat, solar thermal and geothermal.

OECD total final consumption by fuel

OECD TFC from 1971 to 2016 by fuel (Mtoe)



1973 and 2016 fuel shares of TFC

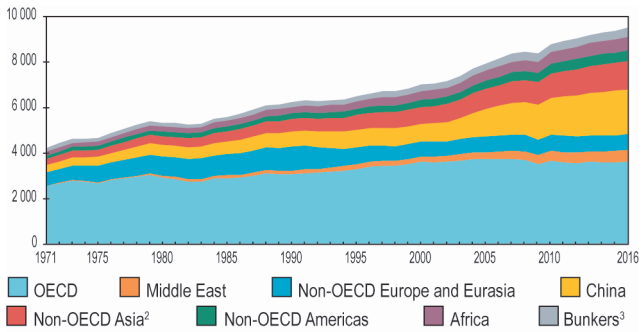


2 816 Mtoe **3 669 Mtoe**

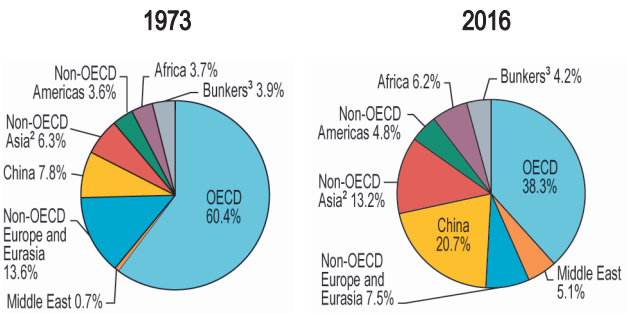
1. In these graphs, peat and oil shale are aggregated with coal.
2. Includes heat, solar thermal and geothermal.

World total final consumption by region

World TFC[1] from 1971 to 2016 by region (Mtoe)



1973 and 2016 regional shares of TFC[1]

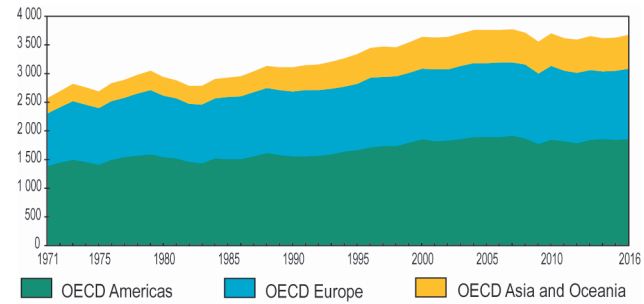


4 661 Mtoe | **9 555 Mtoe**

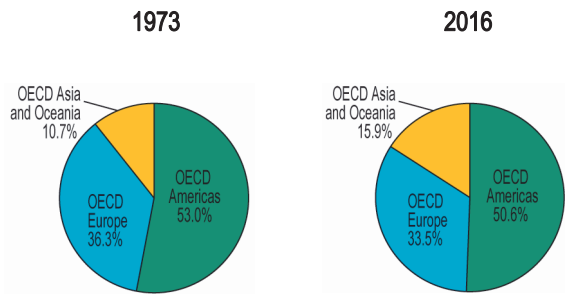
1. Data for biofuels and waste final consumption have been estimated for a number of countries.
2. Non-OECD Asia excludes China.
3. Includes international aviation and international marine bunkers.

OECD total final consumption by region

OECD TFC from 1971 to 2016 by region (Mtoe)



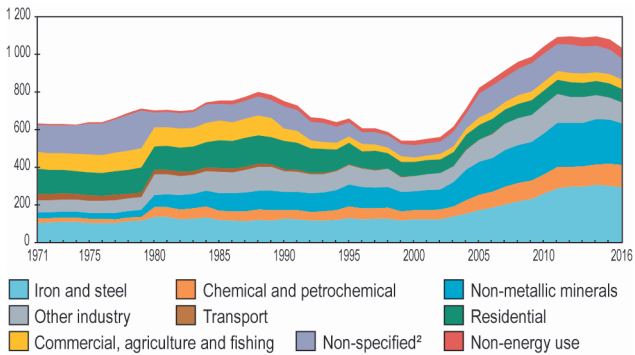
1973 and 2016 regional shares of TFC



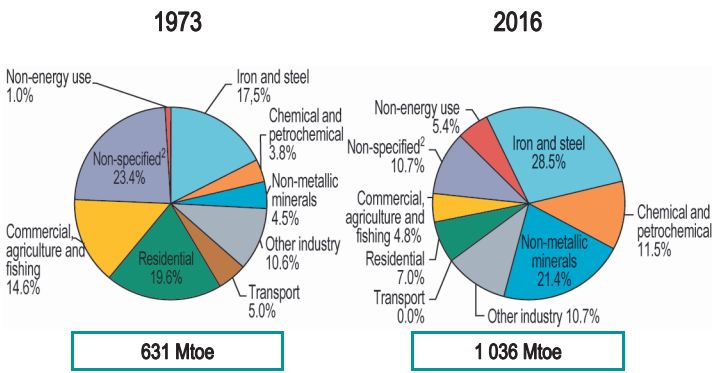
2 816 Mtoe | **3 669 Mtoe**

Total final consumption by sector: coal[1]

Coal TFC from 1971 to 2016 by sector (Mtoe)



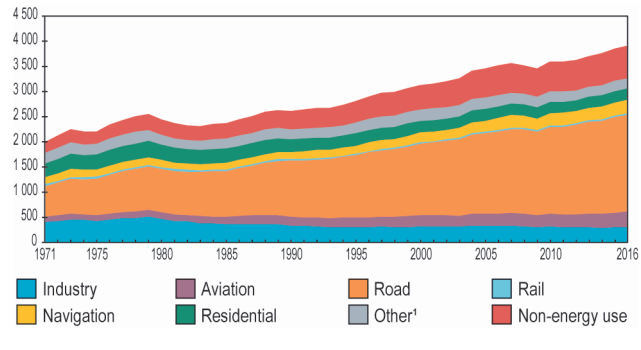
1973 and 2016 shares of world coal[1] consumption



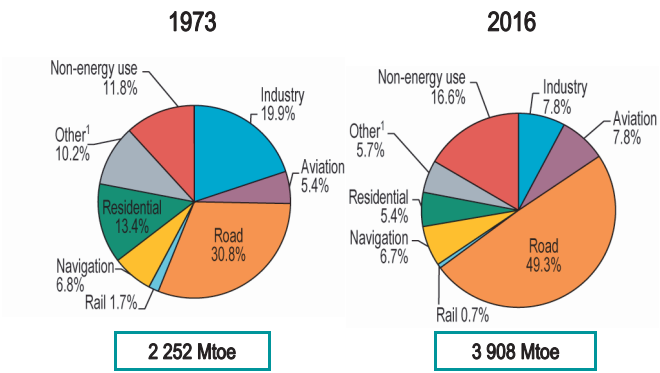
1. In these graphs, peat and oil shale are aggregated with coal.
2. Includes non-specified industry, transport and other.

Total final consumption by sector: oil

Oil TFC from 1971 to 2016 by sector (Mtoe)



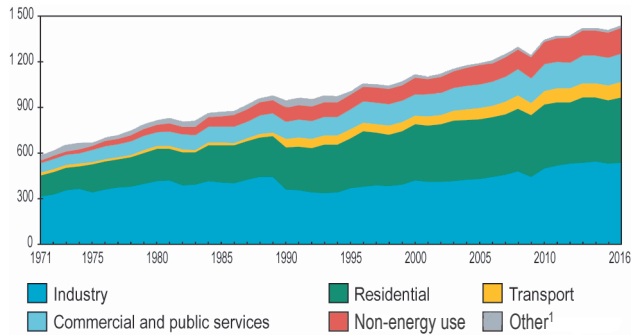
1973 and 2016 shares of world oil consumption



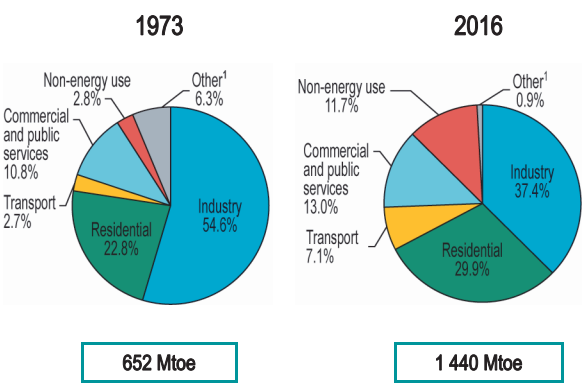
1. Includes agriculture, commercial and public services, non-specified other, pipeline and non-specified transport.

Total final consumption by sector: natural gas

Natural gas TFC from 1971 to 2016 by sector (Mtoe)



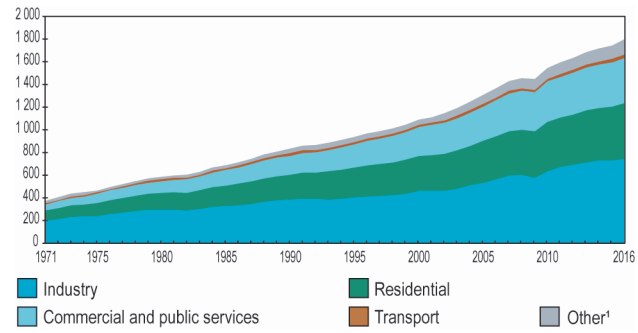
1973 and 2016 shares of world natural gas consumption



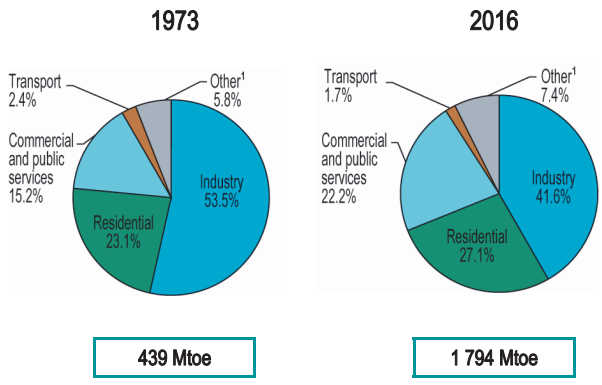
1. Includes agriculture, fishing and non-specified other.

Total final consumption by sector: electricity

Electricity TFC from 1971 to 2016 by sector (Mtoe)



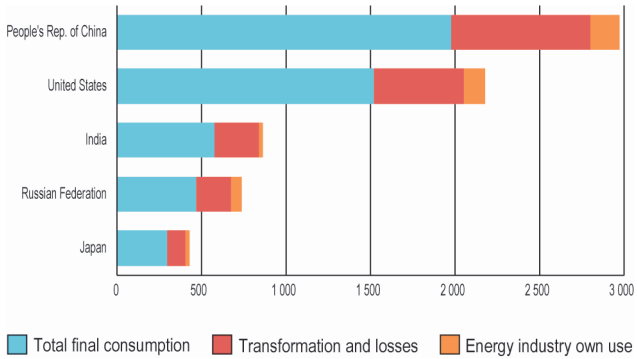
1973 and 2016 shares of world electricity consumption



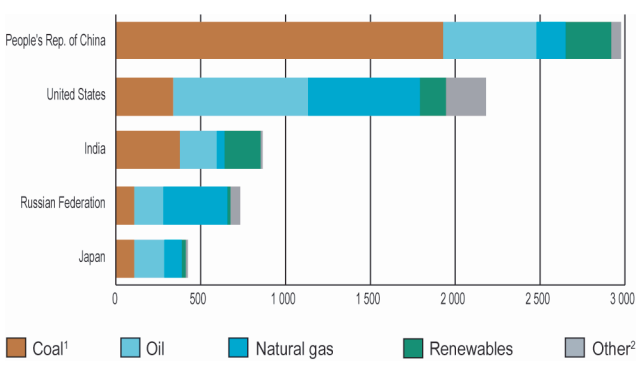
1. Includes agriculture, fishing and non-specified other.

Top five countries by total primary energy supply (TPES)

TPES by sector (Mtoe)



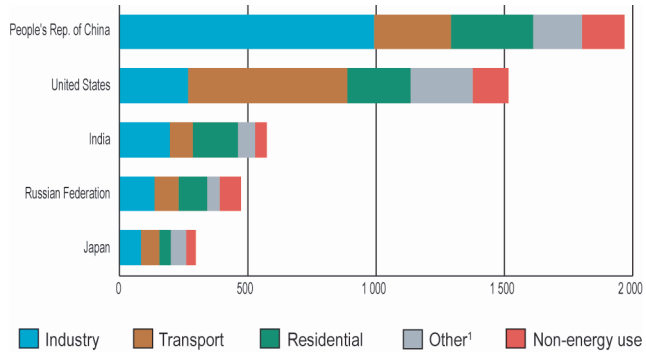
TPES by energy source (Mtoe)



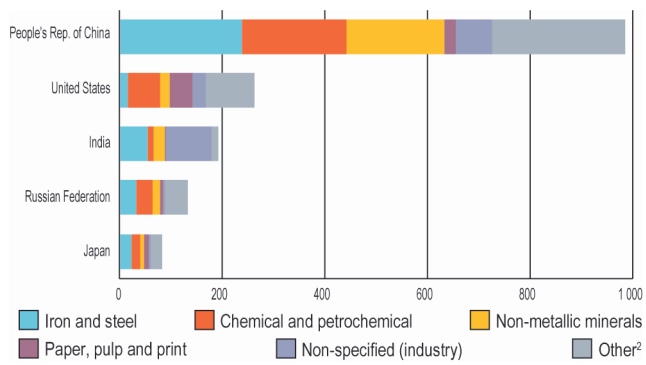
1. In this graph peat and oil shale are aggregated with coal.
2. Other includes nuclear, electricity trade, heat, non-renewable waste.

Top five countries by total final consumption (TFC)

TFC by sector (Mtoe)



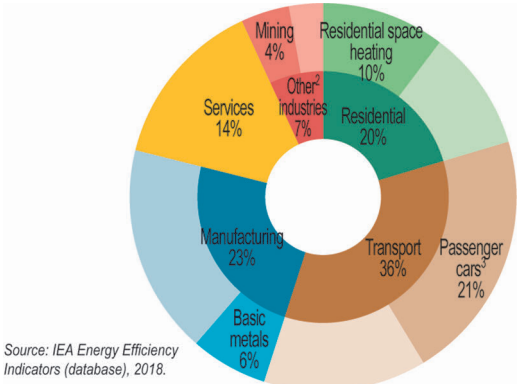
Industry consumption by sub-sector (Mtoe)



1. Other consumption includes commercial and public services, agriculture/forestry, fishing and non-specified.
2. Other includes non-ferrous metals, transport equipment, machinery, mining and quarrying, food and tobacco, wood and wood products, construction, textile and leather.

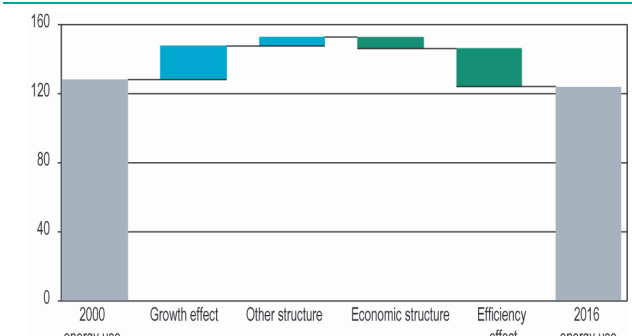
Energy efficiency indicators

Largest end uses of energy by sector in IEA[1], 2015



Source: IEA Energy Efficiency Indicators (database), 2018.

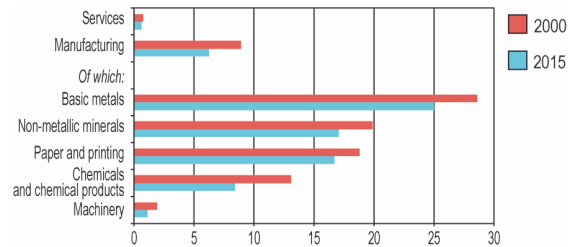
Drivers of final energy consumption in IEA (EJ)



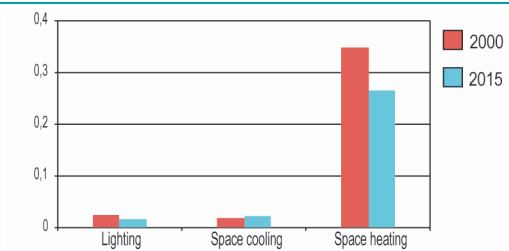
Source: Adapted from Energy Efficiency 2017, Market Report Series, based on IEA Energy Efficiency Indicators database, 2017.

1. Refers to the 19 IEA countries for which data are available for most end uses: Australia, Austria, Canada, Czech Republic, Finland, France, Germany, Greece, Ireland, Italy, Japan, Korea, New Zealand, the Netherlands, Spain, Sweden, Switzerland, the United Kingdom and the United States.
2. Other industries include agriculture, mining and construction.
3. Passenger cars include cars, sport utility vehicles and personal trucks.

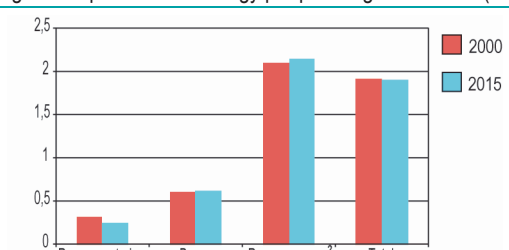
Services and manufacturing in IEA[1]: energy per value added (MJ/2010 USD PPP)



Residential in IEA[1]: energy per floor area (GJ/m^2)



Passenger transport in IEA[1]: energy per passenger-kilometre (MJ/pkm)



1. Refers to the 19 IEA countries for which data are available for most end-uses: Australia, Austria, Canada, Czech Republic, Finland, France, Germany, Greece, Ireland, Italy, Japan, Korea, New Zealand, the Netherlands, Spain, Sweden, Switzerland, the United Kingdom and the United States.
2. Passenger cars include cars, sport utility vehicles and personal trucks.
Source: IEA Energy Efficiency Indicators (database). 2018.

Simplified energy balance table

World energy balance, 1973

(Mtoe)

SUPPLY AND CONSUMPTION	Coal[1]	Crude oil	Oil products	Natural gas	Nuclear	Hydro	Biofuels and waste[2]	Other[3]	Total
Production	1 474.00	2 938.39	-	991.26	53.04	110.29	640.86	6.13	6 213.97
Imports	140.06	1 561.97	409.58	73.42	-	-	0.13	8.14	2 193.30
Exports	-130.35	-1 613.00	-443.04	-72.58	-	-	-0.19	-8.31	-2 267.47
Stock changes	12.49	-19.81	-16.39	-15.10	-	-	0.06	-	-38.75
TPES	**1 496.20**	**2 867.55**	**-49.85**	**977.01**	**53.04**	**110.29**	**640.86**	**5.96**	**6 101.05**
Transfers	-	-46.76	48.78	-	-	--	-	-	2.02
Statistical diff.	0.98	12.12	-6.03	4.78	-	-	-0.09	-0.49	11.28
Electricity plants	-555.56	-22.91	-318.13	-160.04	-52.94	-110.29	-2.21	503.65	-718.43
CHP plants	-86.40	-	-28.62	-50.85	-0.10	-	-1.11	100.97	-66.11
Heat plants	-7.81	-	-0.90	-0.68	-	-	-0.80	7.11	-3.08
Blast furnaces	-81.56	-	-2.72	-	-	-	-0.06	-	-84.34
Gas works	9.85	-0.60	-9.07	-6.18	-	-	-	-	-6.00
Coke ovens[4]	-99.53	-	-0.68	-0.19	-	-	-0.02	-	-100.42
Oil refineries	-	-2 782.93	2 762.10	-	-	-	-	-	-20.82
Petchem. plants	-	5.09	-5.37	-	-	-	-	-	-0.28
Liquefaction plants	-0.73	0.23	-	-	-	-	-	-	-0.50
Other transf.	-	-	-0.12	-0.03	-	-	-27.05	-	-27.20
Energy ind. own use	-34.93	-2.59	-158.81	-106.02	-	-	-0.20	-57.67	-360.21
Losses	-9.06	-7.07	-0.27	-6.04	-	-	-0.25	-43.14	-65.83
TFC	**631.45**	**22.14**	**2 230.31**	**651.75**	**-**	**-**	**609.08**	**516.40**	**4 661.14**
Industry	355.71	16.41	432.59	356.39	-	-	86.61	286.87	1 534.59
Transport[5]	31.88	-	1 020.85	17.72	-	-	0.24	10.59	1 081.29
Other	237.85	0.00	520.42	259.26	-	-	522.23	218.93	1 758.70
Non-energy use	6.01	5.73	256.45	18.37	-	-	-	-	286.56

1. In this table, peat and oil shale are aggregated with coal.
2. Data for biofuels and waste final consumption have been estimated for a number of countries.
3. Includes geothermal, solar, wind, heat and electricity.
4. Also includes patent fuel, BKB and peat briquette plants.
5. Includes international aviation and international marine bunkers.

World energy balance, 2016

(Mtoe)

SUPPLY AND CONSUMPTION	Coal[1]	Crude oil	Oil products	Natural gas	Nuclear	Hydro	Biofuels and waste[2]	Other[3]	Total
Production	3 657.19	4 473.27	-	3 032.41	679.65	349.22	1 344.87	227.39	13 763.99
Imports	795.23	2 379.32	1 329.40	915.52	-	-	23.92	62.11	5 505.50
Exports	-833.43	-2 354.63	-1 414.63	-932.53	-	-	-19.44	-62.25	- 5 616.91
Stock changes	111.90	-15.32	-7.21	19.55	-	-	-0.06	-	108.86
TPES	**3 730.89**	**4 482.63**	**-92.43**	**3 034.95**	**679.65**	**349.22**	**1 349.29**	**227.25**	**13 761.45**
Transfers	-1.36	-233.00	262.09	-	-	-	-	-	27.73
Statistical diff.	28.63	11.25	14.35	-11.26	-	-	0.84	-1.40	42.41
Electricity plants	-1 672.04	-40.48	-178.55	-868.18	-672.06	-349.22	-120.97	1 632.62	-2 268.88
CHP plants	-623.84	-0.01	-17.99	-314.57	-7.59	-	-60.58	572.73	-451.86
Heat plants	-23.38	-0.83	-10.95	-61.70	-	-	-13.13	100.61	-9.39
Blast furnaces	-207.69	-	-0.05	-0.01	-	-	-0.04	-	-207.78
Gas works	-13.32	-	-2.17	5.42	-	-	-0.27	-	-10.34
Coke ovens[4]	-89.82	-	-2.32	-0.03	-	-	-0.12	-	-92.29
Oil refineries	-	-4 246.76	4 165.65	-	-	-	-	-	-81.11
Petchem. plants	-	35.90	-35.37	-	-	-	-	-	0.53
Liquefaction plants	-12.08	15.16	-	-16.47	-	-	-	-	-13.40
Other transf.	-0.30	10.75	-0.54	-13.01	-	-	-90.54	-0.68	-94.32
Energy ind. own use	-75.28	-11.24	-208.00	-296.17	-	-	-13.46	-218.46	-822.61
Losses	-4.91	-8.69	-0.47	-18.71	-	-	-0.14	-191.93	-224.84
TFC	**1 035.50**	**14.68**	**3 893.25**	**1 440.26**	**-**	**-**	**1 050.88**	**2 120.75**	**9 555.32**
Industry	826.95	6.66	299.71	537.77	-	-	198.33	883.19	2 752.60
Transport[5]	0.07	0.01	2 533.20	101.89	-	-	81.97	30.73	2 747.87
Other	152.78	0.02	423.17	631.82	-	-	770.58	1 206.83	3 185.21
Non-energy use	55.70	8.00	637.17	168.78	-	-	-	-	869.64

1. In this table, peat and oil shale are aggregated with coal.
2. Data for biofuels and waste final consumption have been estimated for a number of countries.
3. Includes geothermal, solar, wind, heat and electricity.
4. Also includes patent fuel, BKB and peat briquette plants.
5. Includes international aviation and international marine bunkers.

Simplified energy balance table

OECD energy balance, 1973

(Mtoe)

SUPPLY AND CONSUMPTION	Coal[1]	Crude oil	Oil products	Natural gas	Nuclear	Hydro	Biofuels and waste[2]	Other[3]	Total
Production	819.10	710.51	-	706.42	49.21	78.93	87.30	6.13	2 457.60
Imports	121.92	1 277.50	336.20	62.57	-	-	0.03	7.54	1 805.77
Exports	-111.10	-63.59	-172.72	-50.39	-	-	-0.01	-7.01	-404.82
Intl. marine bunkers	-	-	-73.65	-	-	-	-	-	-73.65
Intl. aviation bunkers	-	-	-24.64	-	-	-	-	-	-24.64
Stock changes	14.55	-10.78	-11.36	-12.07	-	-	0.06	-	-19.61
TPES	**844.47**	**1 913.65**	**53.83**	**706.52**	**49.21**	**78.93**	**87.38**	**6.67**	**3 740.65**
Transfers	-	-41.28	42.49	-	-	-	-	-	1.22
Statistical diff.	14.79	11.29	2.56	-5.61	-	-	-0.00	0.00	23.03
Electricity plants	-387.59	-20.61	-228.38	-108.36	-49.11	-78.93	-1.43	364.63	-509.79
CHP plants	-52.07	-	-7.89	-11.64	-0.10	-	-0.75	30.94	-41.51
Heat plants	-7.81	-	-0.90	-0.68	-	-	-0.80	7.11	-3.08
Blast furnaces	-65.51	-	-2.72	-	-	-	-	-	-68.23
Gas works	11.03	-0.60	-8.72	-6.38	-	-	-	-	-4.67
Coke ovens[4]	-25.69	-	-0.68	-0.19	-	-	-0.02	-	-26.58
Oil refineries	-	-1 865.97	1 868.42	-	-	-	-	-	2.45
Petchem. plants	-	4.88	-5.16	-	-	-	-	-	-0.28
Liquefaction plants	-	0.02	-	-	-	-	-	-	0.02
Other transf.	-	-	-0.12	-0.03	-	-	-	-	-0.15
Energy ind. own use	-24.53	-0.99	-128.88	-72.38	-	-	-0.07	-33.37	-260.22
Losses	-3.80	-	-0.23	-2.63	-	-	-	-30.54	-37.20
TFC	**303.29**	**0.39**	**1 583.63**	**498.62**	**-**	**-**	**84.32**	**345.44**	**2 815.68**
Industry	182.80	0.39	312.91	250.51	-	-	42.26	169.38	958.24
Transport	7.34	-	665.68	17.00	-	-	0.00	5.30	695.32
Other	110.05	-	393.09	225.53	-	-	42.05	170.76	941.48
Non-energy use	3.10	-	211.95	5.58	-	-	-	-	220.63

1. In this table, peat and oil shale are aggregated with coal.
2. Data for biofuels and waste final consumption have been estimated for a number of countries.
3. Includes geothermal, solar, wind, heat and electricity.
4. Also includes patent fuel, BKB and peat briquette plants.

OECD energy balance, 2016

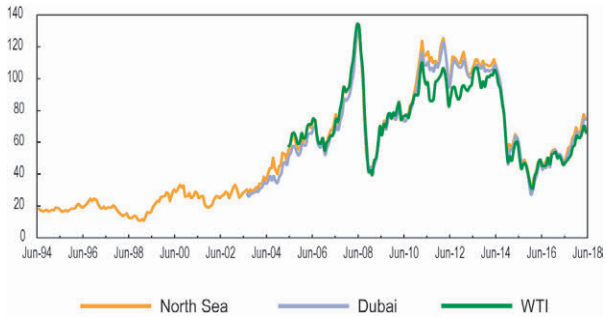
(Mtoe)

SUPPLY AND CONSUMPTION	Coal[1]	Crude oil	Oil products	Natural gas	Nuclear	Hydro	Biofuels and waste[2]	Other[3]	Total
Production	820.54	1 093.97	-	1 092.36	512.24	121.45	305.34	117.65	4 063.54
Imports	380.43	1 442.50	630.67	661.55	-	-	21.83	40.91	3 177.90
Exports	-347.32	-421.59	-672.12	-349.44	-	-	-14.06	-41.13	-1 845.67
Intl. marine bunkers	-	-	-77.13	-0.05	-	-	-	-	-77.18
Intl. aviation bunkers	-	-	-99.13	-	-	-	-	-	-99.13
Stock changes	39.26	-1.74	0.82	17.14	-	-	-0.17	-	55.31
TPES	**892.90**	**2 113.14**	**-216.89**	**1 421.57**	**512.24**	**121.45**	**312.93**	**117.44**	**5 274.78**
Transfers	-	-96.02	110.46	-	-	-	-	-	14.44
Statistical diff.	2.00	-1.91	17.76	-0.35	-	-	0.52	1.02	19.02
Electricity plants	-629.40	-2.40	-41.39	-424.01	-505.16	-121.45	-50.78	740.81	-1 033.77
CHP plants	-74.75	-	-11.93	-109.31	-7.07	-	-47.78	151.22	-99.62
Heat plants	-3.84	-	-1.08	-8.35	-	-	-7.65	16.71	-4.20
Blast furnaces	-52.61	-	-0.05	-0.01	-	-	-	-	-52.66
Gas works	-2.20	-	-1.85	3.20	-	-	-0.26	-	-1.11
Coke ovens[4]	-11.31	-	-0.93	-0.03	-	-	-0.12	-	-12.39
Oil refineries	-	-2 048.87	2 017.96	-	-	-	-	-	-30.91
Petchem. plants	-	32.13	-32.23	-	-	-	-	-	-0.10
Liquefaction plants	-1.15	0.68	-	-	-	-	-	-	-0.47
Other transf.	-0.16	9.18	-0.00	-9.33	-	-	-0.22	-0.68	-1.22
Energy ind. own use	-15.53	-0.11	-108.39	-135.72	-	-	-1.01	-74.95	-335.72
Losses	-1.34	-	-0.05	-1.74	-	-	-0.05	-63.94	-67.12
TFC	**102.59**	**5.81**	**1 731.38**	**735.92**	**-**	**-**	**205.60**	**887.62**	**3 668.93**
Industry	81.45	0.03	89.13	264.25	-	-	74.15	286.09	795.10
Transport	0.01	-	1 146.52	26.10	-	-	55.41	9.77	1 237.81
Other	18.21	-	175.77	407.93	-	-	76.05	591.76	1 269.72
Non-energy use	2.93	5.78	319.97	37.63	-	-	-	-	366.30

1. In this table, peat and oil shale are aggregated with coal.
2. Data for biofuels and waste final consumption have been estimated for a number of countries.
3. Includes geothermal, solar, wind, heat and electricity.
4. Also includes patent fuel, BKB and peat briquette plants.

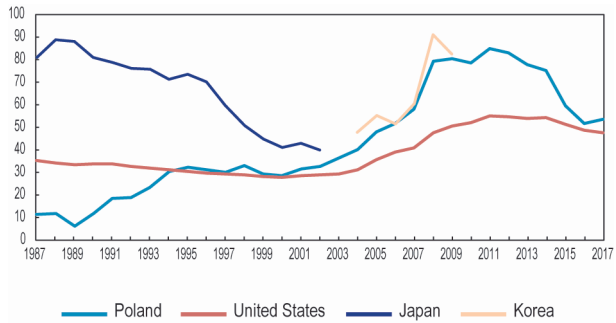
Crude oil

Average key crude oil spot prices in USD/barrel



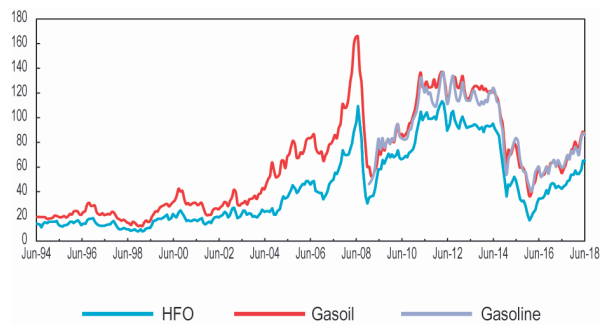
Coal

Average steam coal prices for electricity generation in USD/tonne



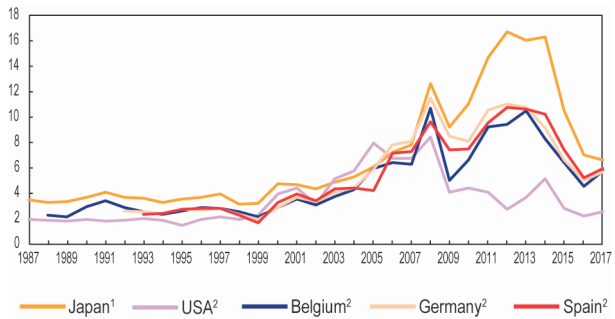
Oil products

Average Rotterdam oil product spot prices in USD/barrel



Natural gas

Average natural gas import prices in USD/MBtu



1. LNG.
2. Pipeline.

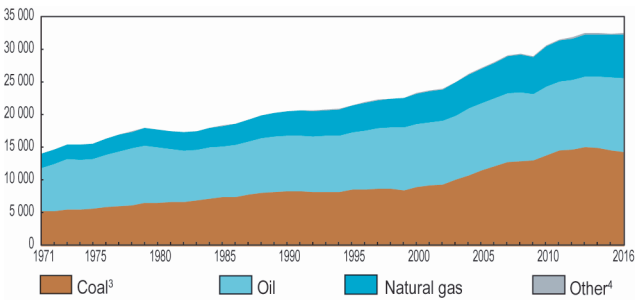
Energy prices[1] in selected OECD countries in USD/unit

	Heavy fuel oil for industry[2] (tonne)	Light fuel oil for households (1 000 litres)	Automotive diesel oil[3] (litre)	Unleaded premium[4] (litre)	Nat. gas for industry (MWh GCV[5])	Nat. gas for households (MWh GCV[5])	Steam coal for industry[6] (tonne)	Electricity for industry (MWh)	Electricity for households (MWh)
Australia	..	..	..	1.169	..	..	..	..	237.08
Austria	498.02	897.56	1.157	1.465	34.76	78.50	217.32	103.04	221.90
Belgium	428.93	756.30	1.419	1.761	27.46	61.43	140.53	136.23	319.83
Canada	420.51	892.84	0.816	1.093	..	..	..	83.76	108.98
Chile	..	1 018.71	..	1.273	c	101.87	..	140.38	199.33
Czech Republic	405.43	853.13	1.190	1.476	29.56	65.43	c	88.48	163.26
Denmark	679.75	1520.93	1.267	1.873	34.86	94.74	..	91.77	325.43
Estonia	..	937.47	1.301	1.588	30.67	46.25	..	94.01	136.29
Finland	..	1 150.64	1.320	1.779	46.14	..	314.96	72.78	182.59
France	628.27	1 051.61	1.407	1.796	39.27	80.42	..	110.64	188.53
Germany	313.97	748.12	1.258	1.650	26.90	74.82	..	142.94	343.59
Greece	523.99	1 219.09	1.291	1.876	..	..	x	107.15	200.43
Hungary	621.92	x	1.143	1.426	26.14	40.82	x	88.65	128.86
Iceland	..	832.23	..	..	..	..	..	..	..
Ireland	880.07	827.39	1.288	1.703	36.16	78.32	..	123.94	240.07
Israel	c	1 786.85	c	1.830	c	x	x	..	..
Italy	490.75	1 494.19	1.443	1.916	..	..	..	..	..
Japan	684.08	807.66	0.993	1.329	..	..	120.48	..	..
Korea	601.62	843.33	..	1.736	43.65	58.16	..	98.51	109.11
Latvia	..	868.75	1.147	1.508	28.64	54.48	..	124.56	182.84
Luxembourg	..	718.67	1.086	1.435	28.89	45.73	x	76.88	173.37
Mexico	259.21	x	0.821	1.006	..	..	x	88.92	63.76
Netherlands	805.57	1 275.23	1.288	1.925	27.22	85.15	..	86.35	170.86
New Zealand	455.52	..	0.711	1.557	17.85	90.85	c	..	..
Norway	..	1 140.37	1.461	1.921	x	x	..	45.53	112.78
Poland	498.80	896.81	1.090	1.371	25.26	50.69	75.81	87.56	164.01
Portugal	812.29	1 352.41	1.444	1.838	30.96	88.58	c	123.32	254.42
Slovak Republic	428.96	..	1.224	1.637	32.48	50.81	..	128.84	166.44
Slovenia	684.63	1 076.77	1.245	1.593	31.18	60.73	c	82.22	178.24
Spain	468.18	859.03	1.164	1.523	26.85	93.67	..	115.51	292.97
Sweden	1 025.06	..	1.487	1.802	40.77	131.77	..	62.51	178.34
Switzerland	..	931.47	1.602	1.647	60.65	94.87	96.55	123.79	204.14
Turkey	665.58	1 152.86	1.354	1.503	22.01	29.97	70.24	87.51	109.71
United Kingdom	c	741.89	1.438	1.678	25.18	55.62	102.58	124.52	202.41
United States	423.72	796.55	0.797	0.755	13.66	36.08	70.25	69.08	129.00

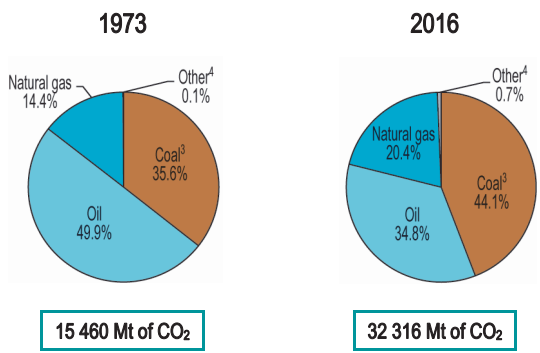
1. Prices are for 1st quarter 2018 or latest available quarter for oil products, and annual 2017 for other products.
2. Low sulphur fuel oil; high sulphur fuel oil for Canada, Ireland, Mexico, New Zealand, Turkey and the United States.
3. For commercial purposes.
4. Unleaded premium gasoline (95 RON); unleaded regular for Japan.
5. Gross calorific value.
6. Brown coal for Turkey.
Note: .. not available x not applicable c confidential

CO_2 emissions by fuel

World[1] CO_2 emissions from fuel combustion[2] from 1971 to 2016 by fuel (Mt of CO_2)



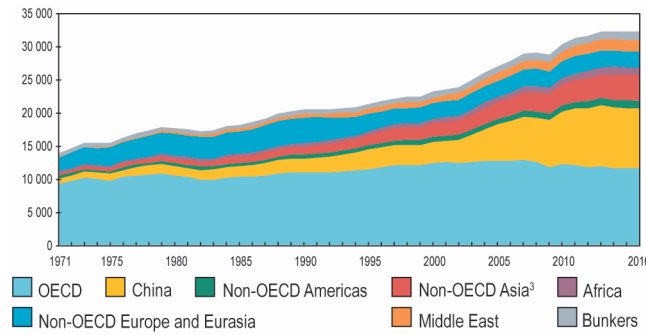
1973 and 2016 fuel shares of CO_2 emissions from fuel combustion[2]



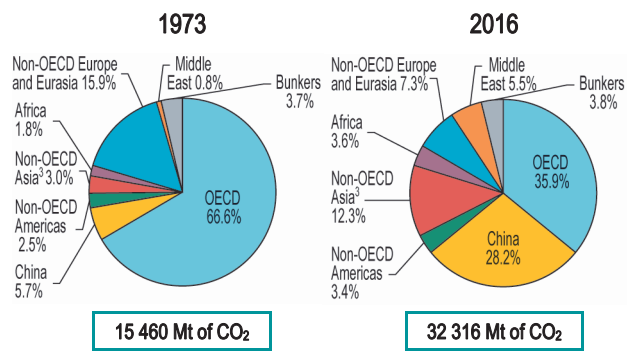
1. World includes international aviation and international marine bunkers.
2. CO_2 emissions from fuel combustion are based on the IEA Energy Balances and on the 2006 IPCC Guidelines, and exclude emissions from non-energy.
3. In these graphs, peat and oil shale are aggregated with coal.
4. Includes industrial waste and non-renewable municipal waste.

CO_2 emissions by region

World[1] CO_2 emissions from fuel combustion[2] from 1971 to 2016 by region (Mt of CO_2)



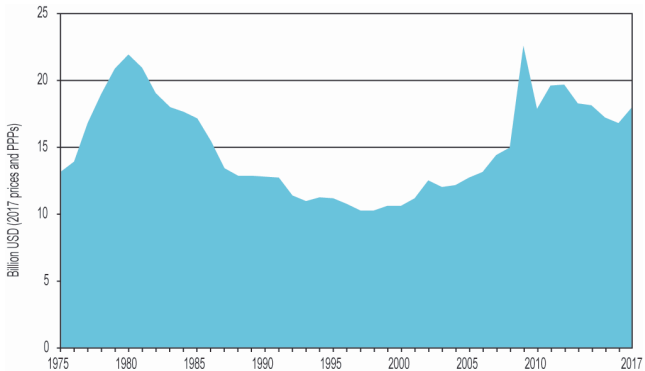
1973 and 2016 regional shares of CO_2 emissions from fuel combustion[2]



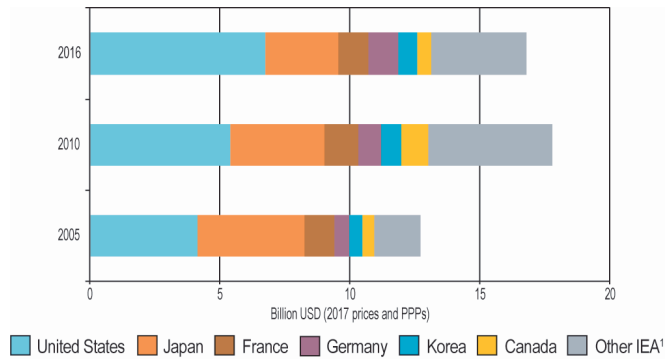
1. World includes international aviation and marine bunkers, which are shown together as Bunkers.
2. CO_2 emissions from fuel combustion are based on the IEA Energy Balances and on the 2006 IPCC Guidelines, and exclude emissions from non-energy.
3. Non-OECD Asia excludes China.

Research, development and demonstration (RD&D)

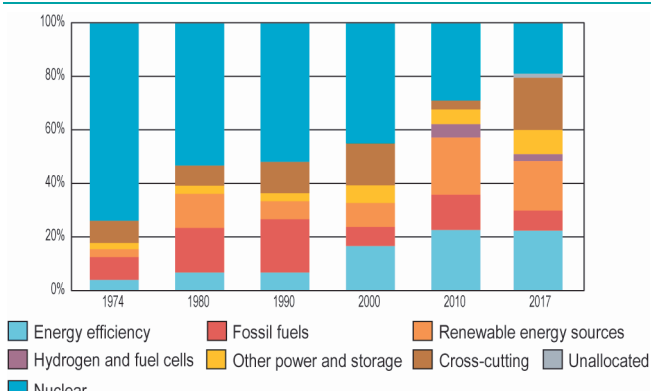
IEA total[1] public energy technology RD&D budget



Total public energy RD&D for selected countries in 2005, 2010 and 2016

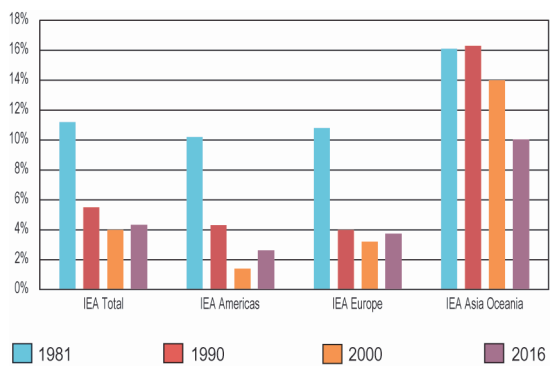


IEA total public energy RD&D budget by technology[2]



1. Data refer to total public energy RD&D expenditures, converted from current prices in national currencies. All IEA member countries are included, based on available or estimated data. The 2009 peak is mainly the result of the American Recovery and Reinvestment Act (stimulus) spending.
2. For more information and documentation please see: www.iea.org/statistics/RDD.
Source: Energy Technology RD&D Budgets Overview 2018, based on IEA Energy Technology RD&D Budgets database, 2018.

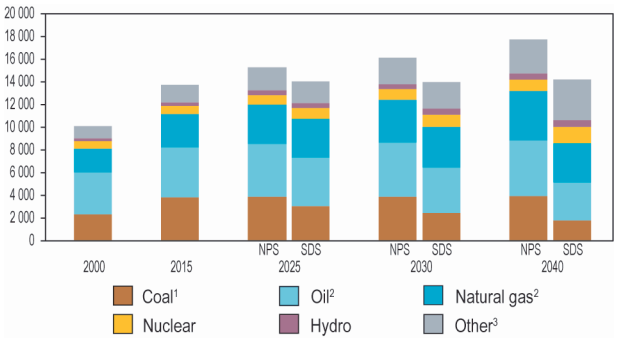
Share of energy in total R&D[2] by region



1. All other IEA member countries are included, based on available or estimated data.
2. Includes energy R&D budgets and excludes demonstration.
Source: Energy Technology RD&D Budgets Overview 2018, based on IEA Energy Technology RD&D Budgets database, 2018.

Outlook for world total primary energy supply (TPES) to 2040

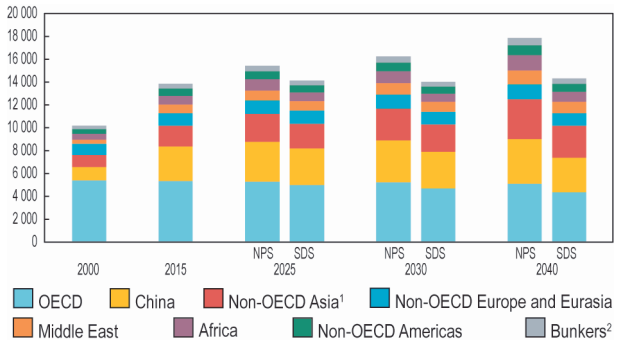
TPES outlook by fuel and scenario to 2040 (Mtoe)



NPS: New Policies Scenario
Incorporates existing energy policies as well as an assessment of the results likely to stem from the implementation of announced policy intentions.

SDS: Sustainable Development Scenario[4]
Outlines an integrated approach to achieving internationally agreed objectives on climate change, air quality and universal access to modern energy.

TPES outlook by region and scenario to 2040 (Mtoe)

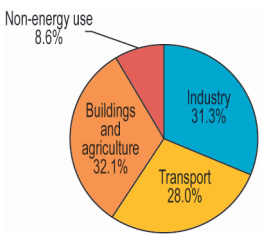


NPS: New Policies Scenario
Incorporates existing energy policies as well as an assessment of the results likely to stem from the implementation of announced policy intentions.

SDS: Sustainable Development Scenario[3]
Outlines an integrated approach to achieving internationally agreed objectives on climate change, air quality and universal access to modern energy.

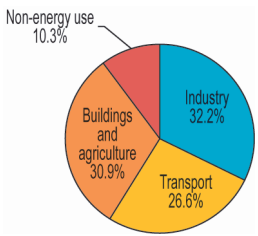
Total final consumption by sector and scenario in 2040

New Policies Scenario



12 461 Mtoe

Sustainable Development Scenario

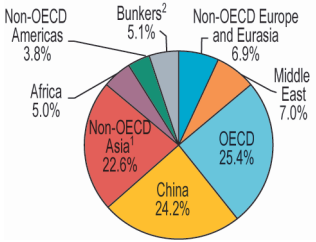


10 174 Mtoe

1. In these graphs, peat and oil shale are aggregated with coal.
2. Includes international aviation and international marine bunkers.
3. Includes biofuels and waste, geothermal, solar, wind, tide, etc.
4. For more information: http://www.iea.org/weo/weomodel/sds/.
Source: IEA, World Energy Outlook 2017.

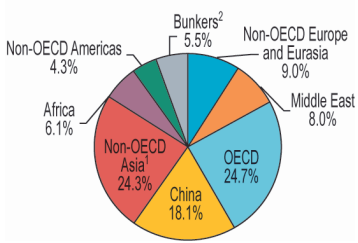
CO_2 emissions[4] by region and scenario in 2040

New Policies Scenario



35 692 Mt of CO_2

Sustainable Development Scenario



18 310 Mt of CO_2

1. Non-OECD Asia excludes China.
2. Includes international aviation and international marine bunkers.
3. For more information: http://www.iea.org/weo/weomodel/sds/.
4. CO_2 emissions are from fossil fuel combustion only.
Source: IEA, World Energy Outlook 2017.

Selected indicators for 2016

Region / Country / Economy	Population (million)	GDP (billion 2010 USD)	GDP (PPP) (billion 2010 USD)	Energy prod. (Mtoe)	Net imports (Mtoe)	TPES (Mtoe)	Elec. cons.[1] (TWh)	CO_2 emissions[2] (Mt of CO_2)	TPES/ pop (toe/capita)	TPES/ GDP (toe/000 2010 USD)	TPES/ GDP(PPP) (toe/000 2010 USD)	Elec. cons./pop. (kWh/ capita)	CO_2/ TPES (tCO_2/ toe)	CO_2/ pop. (tCO_2/ capita)	CO_2/ GDP ($kgCO_2$/ 2010 USD)	CO_2/ GDP (PPP) ($kgCO_2$/ 2010 USD)
World	7 429	77 362	109 231	13 764	-	13 761 [3]	23 107	32 316 [4]	1.85	0.18	0.13	3 110	2.35	4.35	0.42	0.3
OECD	1 284	49 787	49 034	4 064	1 332	5 275	10 338	11 591	4.11	0.11	0.11	8 048	2.2	9.02	0.23	0.24
Middle East	233	2 294	5 301	2 043	-1 254	734	948	1 767	3.15	0.32	0.14	4 070	2.41	7.58	0.77	0.33
Non-OECD Europe and Eurasia	342	2 701	5 562	1 862	-709	1 130	1 571	2 373	3.3	0.42	0.2	4 592	2.1	6.94	0.88	0.43
China	1 386	9 775	19 841	2 361	589	2 973	5 946	9 102	2.14	0.3	0.15	4 290	3.06	6.57	0.93	0.46
Non-OECD Asia	2 470	6 254	17 696	1 520	379	1 816	2 568	3 987	0.74	0.29	0.1	1 040	2.2	1.61	0.64	0.23
Non-OECD Americas	489	4 206	6 321	806	-169	617	1 031	1 099	1.26	0.15	0.1	2 106	1.78	2.24	0.26	0.17
Africa	1 225	2 345	5 475	1 108	-280	818	705	1 158	0.67	0.35	0.15	576	1.42	0.95	0.49	0.21
Albania	2.9	13.6	31.7	2.0	0.4	2.3	6.3	3.7	0.78	0.17	0.07	2 197	1.63	1.28	0.27	0.12
Algeria	40.6	196.8	553.8	153.3	-98.9	53.7	60.1	127.6	1.32	0.27	0.10	1 479	2.37	3.14	0.65	0.23
Angola	28.8	103.9	169.0	97.1	-80.5	16.3	9.2	19.6	0.57	0.16	0.10	319	1.20	0.68	0.19	0.12
Argentina	43.8	445.0	794.3	75.8	12.2	86.3	136.3	190.6	1.97	0.19	0.11	3 109	2.21	4.35	0.43	0.24
Armenia	2.9	11.5	23.5	1.0	2.1	3.0	5.7	4.9	1.03	0.26	0.13	1 933	1.61	1.67	0.42	0.21
Australia	24.5	1 522.4	1 105.4	390.5	-259.7	129.8	243.0	392.4	5.29	0.09	0.12	9 911	3.02	16.00	0.26	0.35
Austria	8.7	420.0	376.9	12.4	21.3	33.3	72.2	62.9	3.81	0.08	0.09	8 258	1.89	7.19	0.15	0.17
Azerbaijan	9.8	57.2	153.0	57.3	-43.1	14.2	21.6	31.4	1.46	0.25	0.09	2 215	2.21	3.22	0.55	0.21
Bahrain	1.4	31.7	60.8	22.7	-8.2	14.2	27.8	29.6	10.00	0.45	0.23	19 514	2.08	20.80	0.94	0.49
Bangladesh	163.0	167.8	530.0	33.4	6.4	39.6	57.5	73.3	0.24	0.24	0.07	353	1.85	0.45	0.44	0.14
Belarus	9.5	59.1	156.0	3.6	20.9	25.0	33.7	53.1	2.63	0.42	0.16	3 546	2.12	5.59	0.90	0.34
Belgium	11.3	515.1	465.3	15.3	48.9	56.5	87.9	91.6	5.00	0.11	0.12	7 778	1.62	8.11	0.18	0.20
Benin	10.9	9.1	21.4	2.5	2.0	4.5	1.2	5.7	0.41	0.49	0.21	107	1.28	0.52	0.63	0.27
Bolivia	10.9	26.8	71.6	21.9	-13.0	8.8	8.2	20.2	0.81	0.33	0.12	757	2.29	1.85	0.75	0.28
Bosnia and Herzegovina	3.5	18.7	38.2	4.7	2.1	6.8	12.7	22.0	1.92	0.36	0.18	3 597	3.25	6.24	1.18	0.58
Botswana	2.3	16.6	34.7	1.6	1.0	2.6	3.8	7.0	1.16	0.16	0.08	1 688	2.67	3.09	0.42	0.20
Brazil	207.7	2 248.1	2 853.2	283.3	7.6	284.5	520.0	416.7	1.37	0.13	0.10	2 504	1.46	2.01	0.19	0.15
Brunei Darussalam	0.4	13.3	29.8	15.1	-12.1	3.0	4.0	6.3	7.00	0.22	0.10	9 520	2.14	14.94	0.48	0.21

1. Gross production + imports – exports – losses.
2. CO_2 emissions from fuel combustion only. Emissions are calculated using the IEA's energy balances and the Revised 2006 IPCC Guidelines, and exclude emissions from non-energy.
3. TPES for world includes international aviation and international marine bunkers as well as electricity and heat trade.
4. CO_2 emissions for world include emissions from international aviation and international marine bunkers.
Sources : Energy data: International Energy Agency. Population: OECD/World Bank/Base CHELEM-PIB, CEPII Bureau van Dijk – Editions Electroniques, [2018]. GDP and GDP(PPP) (in 2010 USD): OECD/World Bank/Base CHELEM-PIB, CEPII Bureau van Dijk – Editions Electroniques, [2018].

Selected indicators for 2016

Region / Country / Economy	Population (million)	GDP (billion 2010 USD)	GDP (PPP) (billion 2010 USD)	Energy prod. (Mtoe)	Net imports (Mtoe)	TPES (Mtoe)	Elec. cons.[1] (TWh)	CO_2 emissions[2] (Mt of CO_2)	TPES/ pop (toe/capita)	TPES/ GDP (toe/000 2010 USD)	TPES/ GDP(PPP) (toe/000 2010 USD)	Elec. cons./pop. (kWh/ capita)	CO_2/ TPES (tCO_2/ toe)	CO_2/ pop. (tCO_2/ capita)	CO_2/ GDP ($kgCO_2$/ 2010 USD)	CO_2/ GDP (PPP) ($kgCO_2$/ 2010 USD)
Bulgaria	7.1	56.5	124.1	11.3	7.2	18.2	35.3	40.5	2.55	0.32	0.15	4 956	2.23	5.68	0.72	0.33
Cambodia	15.8	17.0	53.5	4.6	3.1	7.6	6.2	9.3	0.48	0.45	0.14	396	1.23	0.59	0.55	0.17
Cameroon	23.4	31.8	76.9	12.0	-2.6	9.3	6.7	6.1	0.40	0.29	0.12	285	0.66	0.26	0.19	0.08
Canada	36.3	1 828.0	1 542.1	475.7	-196.2	280.1	538.3	540.8	7.72	0.15	0.18	14 844	1.93	14.91	0.30	0.35
Chile	18.3	267.9	380.5	12.5	26.1	37.8	76.4	85.3	2.07	0.14	0.10	4 182	2.26	4.67	0.32	0.22
China (People's Rep. of)	1 378.7	9 505.2	19 450.4	2 360.5	559.3	2 958.0	5 898.9	9 056.8	2.15	0.31	0.15	4 279	3.06	6.57	0.95	0.47
Colombia	48.7	366.2	625.6	124.5	-86.3	40.0	70.2	85.9	0.82	0.11	0.06	1 444	2.14	1.77	0.23	0.14
Republic of the Congo	5.1	14.3	26.6	15.0	-12.2	2.7	1.0	2.6	0.53	0.19	0.10	189	0.98	0.52	0.18	0.10
Costa Rica	4.9	47.2	73.3	2.6	2.7	5.1	9.9	7.5	1.05	0.11	0.07	2 039	1.47	1.54	0.16	0.10
Côte d'Ivoire	23.7	37.0	79.5	13.4	-0.7	12.5	6.8	10.3	0.53	0.34	0.16	286	0.82	0.43	0.28	0.13
Croatia	4.2	59.9	85.7	4.4	4.2	8.5	16.5	15.9	2.03	0.14	0.10	3 967	1.87	3.80	0.26	0.19
Cuba	11.5	77.1	239.4	5.0	5.4	9.6	17.3	23.3	0.84	0.12	0.04	1 511	2.42	2.03	0.30	0.10
Curaçao[3]	0.2	1.9	1.7	0.0	3.4	1.8	0.7	4.1	10.98	0.95	1.06	4 644	2.36	25.92	2.24	2.50
Cyprus[3]	0.8	24.0	26.1	0.1	2.6	2.2	4.6	6.3	2.54	0.09	0.08	5 453	2.92	7.39	0.26	0.24
Czech Republic	10.6	231.3	323.8	27.4	13.7	41.5	68.3	101.4	3.93	0.18	0.13	6 460	2.44	9.60	0.44	0.31
DPR Korea	25.4	27.1	101.9	21.3	-12.5	8.8	14.3	25.4	0.35	0.33	0.09	562	2.88	1.00	0.94	0.25
Dem. Rep. of the Congo	78.7	30.5	57.4	30.0	-0.3	29.6	7.5	2.0	0.38	0.97	0.52	95	0.07	0.03	0.06	0.03
Denmark	5.7	347.5	258.0	15.0	2.5	16.5	33.7	33.5	2.89	0.05	0.06	5 882	2.02	5.84	0.10	0.13
Dominican Republic	10.6	73.6	147.1	1.1	8.2	8.8	17.0	22.4	0.82	0.12	0.06	1 599	2.56	2.10	0.30	0.15
Ecuador	16.4	85.4	167.3	30.8	-15.9	14.3	23.5	35.0	0.87	0.17	0.09	1 434	2.45	2.14	0.41	0.21
Egypt	95.7	260.7	967.5	67.6	19.3	86.2	170.6	204.8	0.90	0.33	0.09	1 783	2.38	2.14	0.79	0.21
El Salvador	6.3	24.1	49.7	2.0	2.5	4.4	6.1	6.8	0.69	0.18	0.09	959	1.54	1.07	0.28	0.14
Eritrea	5.5	2.9	8.3	0.7	0.2	0.9	0.4	0.6	0.17	0.32	0.11	66	0.68	0.12	0.22	0.08
Estonia	1.3	23.8	35.2	4.7	0.5	5.5	9.4	16.4	4.19	0.23	0.16	7 155	2.97	12.44	0.69	0.47
Ethiopia	102.4	52.3	161.4	48.0	4.0	51.5	9.1	10.9	0.50	0.98	0.32	89	0.21	0.11	0.21	0.07
Finland	5.5	252.7	212.1	17.8	15.8	34.0	85.0	45.5	6.19	0.13	0.16	15 468	1.34	8.28	0.18	0.21

1. Gross production + imports – exports – losses.

2. CO_2 emissions from fuel combustion only. Emissions are calculated using the IEA's energy balances and the Revised 2006 IPCC Guidelines, and exclude emissions from non-energy.

3. Please refer to geographical coverage section for more details.

Sources : Energy data: International Energy Agency. Population: OECD/World Bank/Base CHELEM-PIB, CEPII Bureau van Dijk – Editions Electroniques, [2018]. GDP and GDP(PPP) (in 2010 USD): OECD/World Bank/Base CHELEM-PIB, CEPII Bureau van Dijk – Editions Electroniques, [2018].

Selected indicators for 2016

Region / Country / Economy	Population (million)	GDP (billion 2010 USD)	GDP (PPP) (billion 2010 USD)	Energy prod. (Mtoe)	Net imports (Mtoe)	TPES (Mtoe)	Elec. cons.[1] (TWh)	CO_2 emissions[2] (Mt of CO_2)	TPES/ pop (toe/capita)	TPES/ GDP (toe/000 2010 USD)	TPES/ GDP(PPP) (toe/000 2010 USD)	Elec. cons./pop. (kWh/ capita)	CO_2/ TPES (tCO_2/ toe)	CO_2/ pop. (tCO_2/ capita)	CO_2/ GDP ($kgCO_2$/ 2010 USD)	CO_2/ GDP (PPP) ($kgCO_2$/ 2010 USD)
FYR of Macedonia	2.1	10.9	27.0	1.1	1.6	2.7	6.7	6.9	1.28	0.24	0.10	3 197	2.60	3.32	0.64	0.26
France	66.9	2 810.5	2 487.6	131.6	118.2	244.3	477.9	292.9	3.65	0.09	0.10	7 148	1.20	4.38	0.10	0.12
Gabon	2.0	18.9	32.6	16.0	-10.4	5.3	2.2	3.4	2.69	0.28	0.16	1 092	0.63	1.69	0.18	0.10
Georgia	3.7	15.2	33.8	1.4	3.5	4.8	10.7	8.8	1.29	0.32	0.14	2 880	1.84	2.37	0.58	0.26
Germany	82.3	3 781.7	3 553.4	115.9	204.9	310.1	572.8	731.6	3.77	0.08	0.09	6 956	2.36	8.88	0.19	0.21
Ghana	28.2	48.2	110.0	9.3	0.2	9.4	10.2	12.8	0.33	0.19	0.09	360	1.36	0.45	0.27	0.12
Gibraltar	0.0	1.3	1.1	0.0	3.9	0.2	0.2	0.6	6.82	0.19	0.21	7 235	2.78	18.99	0.52	0.60
Greece	10.8	244.5	256.2	6.7	18.5	22.7	59.3	63.1	2.10	0.09	0.09	5 501	2.78	5.85	0.26	0.25
Guatemala	16.6	51.4	119.7	9.6	5.1	14.1	10.4	16.3	0.85	0.27	0.12	629	1.15	0.98	0.32	0.14
Haiti	10.8	7.9	17.6	3.4	1.0	4.3	0.5	3.3	0.40	0.55	0.25	43	0.75	0.30	0.41	0.18
Honduras	9.1	19.5	39.2	2.9	2.9	5.8	7.5	9.1	0.64	0.30	0.15	823	1.56	1.00	0.47	0.23
Hong Kong, China	7.3	269.8	390.7	0.1	29.9	14.5	46.9	44.7	1.98	0.05	0.04	6 382	3.08	6.09	0.17	0.11
Hungary	9.8	147.2	242.6	11.5	14.3	25.6	41.0	43.9	2.61	0.17	0.11	4 178	1.71	4.48	0.30	0.18
Iceland	0.3	16.4	15.1	4.6	1.1	5.3	18.1	2.1	15.78	0.32	0.35	53 913	0.39	6.16	0.13	0.14
India	1 324.2	2 464.9	7 904.5	557.5	314.6	862.4	1 216.1	2 076.8	0.65	0.35	0.11	918	2.41	1.57	0.84	0.26
Indonesia	261.1	1 037.7	2 753.9	434.3	-203.3	230.2	225.9	454.9	0.88	0.22	0.08	865	1.98	1.74	0.44	0.17
Islamic Rep. of Iran	80.3	486.8	1 454.9	391.1	-140.7	247.7	253.1	563.4	3.09	0.51	0.17	3 153	2.27	7.02	1.16	0.39
Iraq	37.2	211.9	586.4	233.6	-173.9	55.6	43.0	139.9	1.49	0.26	0.09	1 157	2.52	3.76	0.66	0.24
Ireland	4.7	332.4	295.7	4.2	10.3	13.9	27.6	36.9	2.97	0.04	0.05	5 887	2.65	7.87	0.11	0.12
Israel[3]	8.5	289.0	272.0	8.3	15.1	22.9	58.9	63.7	2.69	0.08	0.08	6 893	2.78	7.46	0.22	0.23
Italy	60.6	2 080.6	2 033.8	33.8	121.3	151.0	308.0	325.7	2.49	0.07	0.07	5 081	2.16	5.37	0.16	0.16
Jamaica	2.9	13.8	23.1	0.3	3.0	2.9	3.1	7.2	1.01	0.21	0.13	1 066	2.48	2.51	0.52	0.31
Japan	127.0	6 052.7	4 759.8	35.4	399.7	425.6	1 012.3	1 147.1	3.35	0.07	0.09	7 974	2.70	9.04	0.19	0.24
Jordan	9.5	30.8	77.7	0.4	9.0	9.0	17.9	23.9	0.95	0.29	0.12	1 898	2.66	2.52	0.77	0.31
Kazakhstan	17.8	188.1	408.8	162.7	-82.2	81.6	100.0	230.0	4.59	0.43	0.20	5 620	2.82	12.92	1.22	0.56
Kenya	48.5	55.4	138.9	20.8	5.9	26.0	8.0	15.7	0.54	0.47	0.19	165	0.60	0.32	0.28	0.11

1. Gross production + imports – exports – losses.
2. CO_2 emissions from fuel combustion only. Emissions are calculated using the IEA's energy balances and the Revised 2006 IPCC Guidelines, and exclude emissions from non-energy.
3. Please refer to geographical coverage section for more details.
Sources : Energy data: International Energy Agency. Population: OECD/World Bank/Base CHELEM-PIB, CEPII Bureau van Dijk – Editions Electroniques, [2018]. GDP and GDP(PPP) (in 2010 USD): OECD/World Bank/Base CHELEM-PIB, CEPII Bureau van Dijk – Editions Electroniques, [2018].

Selected indicators for 2016

Region / Country / Economy	Population (million)	GDP (billion 2010 USD)	GDP (PPP) (billion 2010 USD)	Energy prod. (Mtoe)	Net imports (Mtoe)	TPES (Mtoe)	Elec. cons.[1] (TWh)	CO_2 emissions[2] (Mt of CO_2)	TPES/ pop (toe/capita)	TPES/ GDP (toe/000 2010 USD)	TPES/ GDP(PPP) (toe/000 2010 USD)	Elec. cons./pop. (kWh/ capita)	CO_2/ TPES (tCO_2/ toe)	CO_2/ pop. (tCO_2/ capita)	CO_2/ GDP ($kgCO_2$/ 2010 USD)	CO_2/ GDP (PPP) ($kgCO_2$/ 2010 USD)
Korea	51.2	1 305.9	1 796.1	51.4	246.5	282.4	544.1	589.2	5.51	0.22	0.16	10 618	2.09	11.50	0.45	0.33
Kosovo[3]	1.8	7.1	16.6	2.0	0.6	2.7	4.3	9.1	1.48	0.38	0.16	2368	3.37	5.00	1.29	0.55
Kuwait	4.1	143.1	273.4	174.5	-137.4	35.8	61.9	90.2	8.84	0.25	0.13	15279	2.52	22.25	0.63	0.33
Kyrgyzstan	6.1	6.3	19.6	1.8	2.0	3.9	10.7	9.3	0.63	0.61	0.20	1765	2.41	1.53	1.47	0.47
Latvia[3]	2.0	28.9	44.8	2.4	2.2	4.3	7.0	6.8	2.17	0.15	0.09	3 564	1.60	3.47	0.24	0.15
Lebanon	6.0	41.9	78.1	0.2	7.9	7.8	16.8	23.2	1.29	0.19	0.10	2 797	2.98	3.86	0.55	0.30
Libya	6.3	18.8	45.0	29.1	-14.5	15.1	29.5	43.3	2.39	0.80	0.34	4 685	2.87	6.88	2.31	0.96
Lithuania[3]	2.9	45.6	76.5	1.8	5.7	7.2	11.6	10.8	2.52	0.16	0.09	4 051	1.49	3.75	0.24	0.14
Luxembourg	0.6	63.2	51.7	0.2	4.0	3.7	8.3	8.5	6.32	0.06	0.07	14 274	2.30	14.51	0.13	0.16
Malaysia	31.2	343.9	784.3	97.7	-7.1	88.9	145.2	216.2	2.85	0.26	0.11	4 656	2.43	6.93	0.63	0.28
Malta	0.4	11.6	15.3	0.0	2.5	0.6	2.2	1.4	1.38	0.05	0.04	4 954	2.25	3.10	0.12	0.09
Mauritius	1.3	12.4	24.2	0.2	1.9	1.5	2.9	4.0	1.22	0.12	0.06	2 272	2.62	3.20	0.33	0.17
Mexico	122.3	1 259.0	2 074.8	180.5	9.5	185.2	280.6	445.5	1.51	0.15	0.09	2 295	2.41	3.64	0.35	0.21
Moldova	3.6	7.3	17.2	0.7	3.1	3.8	4.7	7.7	1.07	0.52	0.22	1 334	2.03	2.17	1.05	0.45
Mongolia	3.0	11.8	33.7	20.8	-16.1	5.0	6.3	18.0	1.64	0.42	0.15	2 068	3.62	5.93	1.52	0.53
Montenegro	0.6	4.6	9.5	0.7	0.3	1.0	2.9	2.1	1.56	0.21	0.10	4 661	2.18	3.39	0.46	0.22
Morocco	35.3	114.5	255.7	1.8	18.6	19.5	31.6	55.3	0.55	0.17	0.08	897	2.84	1.57	0.48	0.22
Mozambique	28.8	14.9	31.9	19.1	-7.7	13.2	11.9	7.2	0.46	0.89	0.41	413	0.55	0.25	0.49	0.23
Myanmar	52.9	75.1	274.9	27.9	-8.7	19.3	15.5	21.1	0.37	0.26	0.07	293	1.09	0.40	0.28	0.08
Namibia	2.5	14.9	23.9	0.5	1.6	2.0	3.9	4.1	0.81	0.14	0.08	1 576	2.01	1.64	0.27	0.17
Nepal	29.0	19.8	65.2	10.0	3.0	12.8	5.0	8.5	0.44	0.65	0.20	172	0.66	0.29	0.43	0.13
Netherlands	17.0	890.1	788.4	46.1	41.8	74.5	114.7	157.1	4.38	0.08	0.09	6 734	2.11	9.23	0.18	0.20
New Zealand	4.7	176.1	163.4	16.5	5.8	21.0	40.0	30.5	4.45	0.12	0.13	8 474	1.45	6.45	0.17	0.19
Nicaragua	6.2	12.0	31.0	2.2	1.7	3.9	3.7	5.3	0.64	0.33	0.13	606	1.35	0.86	0.44	0.17
Niger	20.7	8.0	18.5	3.1	-0.1	2.9	1.1	1.9	0.14	0.36	0.16	53	0.67	0.09	0.24	0.11
Nigeria	186.0	457.1	990.4	239.8	-88.3	150.0	26.3	86.0	0.81	0.33	0.15	141	0.57	0.46	0.19	0.09

1. Gross production + imports – exports – losses.
2. CO_2 emissions from fuel combustion only. Emissions are calculated using the IEA's energy balances and the Revised 2006 IPCC Guidelines, and exclude emissions from non-energy.
3. Please refer to geographical coverage section for more details.
Sources : Energy data: International Energy Agency. Population: OECD/World Bank/Base CHELEM-PIB, CEPII Bureau van Dijk – Editions Electroniques, [2018]. GDP and GDP(PPP) (in 2010 USD): OECD/World Bank/Base CHELEM-PIB, CEPII Bureau van Dijk – Editions Electroniques, [2018].

Selected indicators for 2016

Region / Country / Economy	Population (million)	GDP (billion 2010 USD)	GDP (PPP) (billion 2010 USD)	Energy prod. (Mtoe)	Net imports (Mtoe)	TPES (Mtoe)	Elec. cons.[1] (TWh)	CO_2 emissions[2] (Mt of CO_2)	TPES/ pop (toe/capita)	TPES/ GDP (toe/000 2010 USD)	TPES/ GDP(PPP) (toe/000 2010 USD)	Elec. cons./pop. (kWh/ capita)	CO_2/ TPES (tCO_2/ toe)	CO_2/ pop. (tCO_2/ capita)	CO_2/ GDP ($kgCO_2$/ 2010 USD)	CO_2/ GDP (PPP) ($kgCO_2$/ 2010 USD)
Norway	5.2	472.8	312.8	208.0	-179.9	27.2	124.0	35.5	5.20	0.06	0.09	23 692	1.30	6.78	0.08	0.11
Oman	4.4	73.9	170.2	79.5	-53.1	24.1	31.0	63.1	5.45	0.33	0.14	6 998	2.62	14.27	0.85	0.37
Pakistan	193.2	228.3	919.0	69.7	26.9	95.7	96.6	155.3	0.50	0.42	0.10	500	1.62	0.80	0.68	0.17
Panama	4.0	44.3	84.3	0.9	7.8	4.5	9.0	10.2	1.11	0.10	0.05	2 229	2.27	2.52	0.23	0.12
Paraguay	6.7	26.4	58.5	8.0	-2.1	5.9	11.5	6.4	0.88	0.22	0.10	1 715	1.08	0.95	0.24	0.11
Peru	31.8	193.5	375.8	25.4	0.1	24.1	46.4	51.3	0.76	0.12	0.06	1 460	2.13	1.62	0.27	0.14
Philippines	103.3	284.5	732.5	28.5	27.8	54.8	82.5	114.8	0.53	0.19	0.07	799	2.09	1.11	0.40	0.16
Poland	38.4	572.7	957.7	66.7	30.9	99.3	159.1	293.1	2.58	0.17	0.10	4 141	2.95	7.63	0.51	0.31
Portugal	10.3	231.7	281.1	6.0	17.8	22.1	50.3	47.4	2.14	0.10	0.08	4 873	2.14	4.59	0.20	0.17
Qatar	2.6	170.7	297.6	228.4	-181.4	42.3	39.8	79.1	16.46	0.25	0.14	15 477	1.87	30.77	0.46	0.27
Romania	19.7	198.6	410.2	24.9	7.1	31.7	53.0	67.9	1.61	0.16	0.08	2 688	2.14	3.45	0.34	0.17
Russian Federation	144.3	1 628.0	3 176.8	1 373.7	-624.4	732.4	969.2	1 438.6	5.07	0.45	0.23	6 715	1.96	9.97	0.88	0.45
Saudi Arabia	32.3	690.6	1 595.6	670.6	-446.9	210.4	316.9	527.2	6.52	0.30	0.13	9 818	2.51	16.34	0.76	0.33
Senegal	15.4	16.9	35.9	1.6	2.9	4.3	3.8	8.2	0.28	0.26	0.12	246	1.89	0.53	0.48	0.23
Serbia	7.1	41.3	92.3	10.7	4.6	15.3	32.6	45.6	2.16	0.37	0.17	4 621	2.98	6.46	1.10	0.49
Singapore	5.6	294.9	447.4	0.7	81.2	27.4	50.7	45.3	4.88	0.09	0.06	9 041	1.65	8.07	0.15	0.10
Slovak Republic	5.4	104.7	157.7	6.5	9.9	16.5	28.4	30.2	3.04	0.16	0.10	5 226	1.83	5.56	0.29	0.19
Slovenia	2.1	50.5	59.9	3.6	3.3	6.8	14.4	13.6	3.29	0.13	0.11	6 997	2.00	6.58	0.27	0.23
South Africa	55.9	419.6	671.6	162.9	-18.1	140.4	225.4	414.4	2.51	0.33	0.21	4 031	2.95	7.41	0.99	0.62
South Sudan	12.2	9.3	22.0	6.2	-5.3	0.8	0.4	1.8	0.06	0.08	0.04	34	2.27	0.14	0.19	0.08
Spain	46.5	1 464.5	1 524.0	34.1	94.5	119.8	255.7	238.6	2.58	0.08	0.08	5 505	1.99	5.14	0.16	0.16
Sri Lanka	21.2	79.7	237.2	5.1	7.2	11.7	13.3	20.9	0.55	0.15	0.05	627	1.79	0.99	0.26	0.09
Sudan	39.6	76.1	170.1	17.4	1.4	18.5	12.6	18.9	0.47	0.24	0.11	318	1.02	0.48	0.25	0.11
Suriname	0.6	4.3	7.6	0.9	-0.3	0.6	1.8	1.9	1.05	0.14	0.08	3 234.77	3.24	3.42	0.45	0.25
Sweden	9.9	560.4	448.4	34.9	16.9	49.2	136.7	38.0	4.96	0.09	0.11	13 755.79	0.77	3.83	0.07	0.08
Switzerland	8.4	642.1	457.6	11.6	14.1	23.9	62.6	37.9	2.86	0.04	0.05	7 480.89	1.59	4.53	0.06	0.08

1. Gross production + imports – exports – losses.

2. CO_2 emissions from fuel combustion only. Emissions are calculated using the IEA's energy balances and the Revised 2006 IPCC Guidelines, and exclude emissions from non-energy.

Sources : Energy data: International Energy Agency. Population: OECD/World Bank/Base CHELEM-PIB, CEPII Bureau van Dijk – Editions Electroniques, [2018]. GDP and GDP(PPP) (in 2010 USD): OECD/World Bank/Base CHELEM-PIB, CEPII Bureau van Dijk – Editions Electroniques, [2018].

Selected indicators for 2016

Region / Country / Economy	Population (million)	GDP (billion 2010 USD)	GDP (PPP) (billion 2010 USD)	Energy prod. (Mtoe)	Net imports (Mtoe)	TPES (Mtoe)	Elec. cons.[1] (TWh)	CO_2 emissions[2] (Mt of CO_2)	TPES/ pop (toe/capita)	TPES/ GDP (toe/000 2010 USD)	TPES/ GDP(PPP) (toe/000 2010 USD)	Elec. cons./pop. (kWh/ capita)	CO_2/ TPES (tCO_2/ toe)	CO_2/ pop. (tCO_2/ capita)	CO_2/ GDP ($kgCO_2$/ 2010 USD)	CO_2/ GDP (PPP) ($kgCO_2$/ 2010 USD)
Syrian Arab Republic	18.4	15.3	33.9	4.2	5.9	9.9	15.2	26.1	0.54	0.65	0.29	824.91	2.63	1.42	1.70	0.77
Chinese Taipei	23.5	513.2	1 000.8	10.9	103.2	109.7	255.5	257.8	4.67	0.21	0.11	10 880.44	2.35	10.98	0.50	0.26
Tajikistan	8.7	8.5	23.6	2.1	0.9	2.9	13.2	4.8	0.33	0.34	0.12	1 506.7	1.66	0.55	0.56	0.20
Tanzania	55.6	46.8	136.6	23.7	3.0	26.5	6.0	10.6	0.48	0.57	0.19	107.63	0.40	0.19	0.23	0.08
Thailand	68.9	406.4	1 058.1	78.8	65.8	138.5	197.5	244.6	2.01	0.34	0.13	2 868.49	1.77	3.55	0.60	0.23
Togo	7.6	4.2	10.3	2.8	0.8	3.5	1.3	2.0	0.46	0.83	0.34	165.66	0.56	0.26	0.46	0.19
Trinidad and Tobago	1.4	21.5	40.7	33.6	-14.3	18.3	10.5	21.1	13.37	0.85	0.45	7 696.7	1.16	15.46	0.98	0.52
Tunisia	11.4	48.6	120.1	6.0	5.2	11.0	16.6	25.2	0.96	0.23	0.09	1 458.83	2.29	2.21	0.52	0.21
Turkey	78.2	1 122.5	1 836.4	36.1	105.7	136.7	243.7	338.8	1.75	0.12	0.07	3 114.18	2.48	4.33	0.30	0.18
Turkmenistan	5.7	39.6	86.8	77.0	-49.0	27.6	16.4	69.0	4.87	0.70	0.32	2 902.7	2.50	12.18	1.74	0.79
Ukraine	45.0	124.0	320.6	66.3	27.7	94.4	144.2	197.7	2.10	0.76	0.29	3 203.96	2.09	4.39	1.59	0.62
United Arab Emirates	9.3	378.8	609.7	236.7	-136.8	74.3	120.9	191.8	8.01	0.20	0.12	13 045.31	2.58	20.69	0.51	0.31
United Kingdom	65.6	2 757.6	2 543.7	120.1	67.8	178.9	330.4	371.1	2.73	0.06	0.07	5 033.33	2.07	5.65	0.13	0.15
United States	323.4	16 920.3	16 920.3	1 915.7	265.0	2 166.6	4 147.5	4 833.1	6.70	0.13	0.13	12 825.04	2.23	14.95	0.29	0.29
Uruguay	3.4	48.3	67.6	3.1	2.3	5.2	10.9	6.3	1.52	0.11	0.08	3 157.67	1.21	1.84	0.13	0.09
Uzbekistan	31.8	62.5	188.4	51.0	-13.4	37.6	51.8	85.3	1.18	0.60	0.20	1 627.64	2.27	2.68	1.37	0.45
Venezuela	31.6	324.0	387.8	168.4	-111.0	56.2	75.2	127.4	1.78	0.17	0.14	2 383.24	2.27	4.03	0.39	0.33
Viet Nam	92.7	164.1	540.9	68.6	14.2	81.0	149.8	187.1	0.87	0.49	0.15	1 616.11	2.31	2.02	1.14	0.35
Yemen	27.6	18.7	62.8	1.6	1.6	2.9	3.9	9.2	0.11	0.16	0.05	142.91	3.13	0.33	0.49	0.15
Zambia	16.6	26.9	59.3	10.0	1.2	11.1	11.2	3.6	0.67	0.41	0.19	674.04	0.33	0.22	0.14	0.06
Zimbabwe	16.2	14.7	29.7	9.1	1.2	11.1	7.4	10.3	0.69	0.76	0.37	456.53	0.93	0.64	0.70	0.35

1. Gross production + imports – exports – losses.

2. CO_2 emissions from fuel combustion only. Emissions are calculated using the IEA's energy balances and the Revised 2006 IPCC Guidelines, and exclude emissions from non-energy.

Sources : Energy data: International Energy Agency. Population: OECD/World Bank/Base CHELEM-PIB, CEPII Bureau van Dijk – Editions Electroniques, [2018]. GDP and GDP(PPP) (in 2010 USD): OECD/World Bank/Base CHELEM-PIB, CEPII Bureau van Dijk – Editions Electroniques, [2018].

Conversion factors and unit abbreviations

General conversion factors for energy

To:	TJ	Gcal	Mtoe	MBtu	GWh
From:	multiply by:				
TJ	1	2.388×10^{2}	2.388×10^{-5}	9.478×10^{2}	2.778×10^{-1}
Gcal	4.187×10^{-3}	1	1.000×10^{-7}	3.968	1.163×10^{-3}
Mtoe	4.187×10^{4}	1.000×10^{7}	1	3.968×10^{7}	1.163×10^{4}
MBtu	1.055×10^{-3}	2.520×10^{-1}	2.520×10^{-8}	1	2.931×10^{-4}
GWh	3.600	8.598×10^{2}	8.598×10^{-5}	3.412×10^{3}	1

Conversion factors for mass

To:	kg	t	lt	st	lb
From:	multiply by:				
kilogramme (kg)	1	1.000×10^{3}	9.842×10^{-4}	1.102×10^{-3}	2.205
tonne (t)	1.000×10^{3}	1	9.842×10^{-1}	1.102	2.205×10^{3}
long ton (lt)	1.016×10^{3}	1.016	1	1.120	2.240×10^{3}
short ton (st)	9.072×10^{2}	9.072×10^{-1}	8.929×10^{-1}	1	2.000×10^{3}
pound (lb)	4.536×10^{-1}	4.536×10^{-4}	4.464×10^{-4}	5.000×10^{-4}	1

Conversion factors for volume

To:	gal U.S.	gal U.K.	bbl	ft³	l	m³
From:	multiply by:					
U.S. gallon (gal)	1	8.327×10^{-1}	2.381×10^{-2}	1.337×10^{-1}	3.785	3.785×10^{-3}
U.K. gallon (gal)	1.201	1	2.859×10^{-2}	1.605×10^{-1}	4.546	4.546×10^{-3}
barrel (bbl)	4.200×10^{1}	3.497×10^{1}	1	5.615	1.590×10^{2}	1.590×10^{-1}
cubic foot (ft³)	7.481	6.229	1.781×10^{-1}	1	2.832×10^{1}	2.832×10^{-2}
litre (l)	2.642×10^{-1}	2.200×10^{-1}	6.290×10^{-3}	3.531×10^{-2}	1	1.000×10^{-3}
cubic metre (m³)	2.642×10^{2}	2.200×10^{2}	6.290	3.531×10^{1}	1.000×10^{3}	1

Selected country-specific net calorific values

Steam coal

Top-ten producers in 2017	toe/tonne
People's Rep. of China	0.503
India	0.383
United States	0.535
Indonesia	0.537
Australia	0.596
South Africa	0.564
Russian Federation	0.603
Kazakhstan	0.444
Colombia	0.650
Poland	0.543

Crude oil[1]

Top-ten producers in 2017	toe/tonne
Russian Federation	1.005
Saudi Arabia	1.016
United States	1.019
Iraq	1.023
Islamic Republic of Iran	1.019
People's Rep. of China	1.000
Canada	1.022
United Arab Emirates	1.018
Kuwait	1.016
Brazil	1.020

Default net calorific values

Oil products

	OECD Europe[2]	OECD Americas	OECD Asia Oceania	Non-OECD
	toe/tonne			
Refinery gas	1.182	1.149	1.149	1.149
Ethane	1.182	1.180	1.180	1.180
Liquefied petroleum gases	1.099	1.130	1.139	1.130
Motor gasoline excl. biofuels	1.051	1.070	1.065	1.070
Aviation gasoline	1.051	1.070	1.065	1.070
Gasoline type jet fuel	1.027	1.070	1.065	1.070
Kerosene type jet fuel	1.027	1.065	1.063	1.065
Kerosene	1.027	1.046	1.025	1.046
Gas/diesel oil excl. biofuels	1.017	1.017	1.017	1.034
Fuel oil	0.955	0.960	1.017	0.960
Naphtha	1.051	1.075	1.032	1.075
White spirit	1.041	1.027	1.027	1.027
Lubricants	1.003	1.003	1.025	1.003
Bitumen	0.931	0.955	0.927	0.931
Paraffin waxes	0.955	0.955	0.955	0.955
Petroleum coke	0.764	0.764	0.807	0.764
Non-specified oil products	0.955	0.955	0.955	0.955

1. Excludes NGL, feedstocks, additives and other hydrocarbons.
2. Defaults for OECD Europe were also applied to non-OECD Europe and Eurasia countries.

Conversion factors and unit abbreviations

Selected country-specific gross calorific values

Natural gas

Top-ten producers in 2017	kJ/m³
United States	38 639
Russian Federation	38 879
Islamic Rep. of Iran	39 356
Canada	39 030
Qatar	41 400
People's Rep. of China	38 931
Norway	39 263
Australia	38 825
Algeria	39 565
Saudi Arabia	38 000

Note: To calculate the net calorific value, the gross calorific value is multiplied by 0.9.

Conventions for electricity

Figures for electricity production, trade, and final consumption are calculated using the energy content of the electricity (i.e. at a rate of 1 TWh = 0.086 Mtoe). Hydro-electricity production (excluding pumped storage) and electricity produced by other non-thermal means (wind, tide/wave/ocean, photovoltaic, etc.) are accounted for similarly using 1 TWh = 0.086 Mtoe. However, the primary energy equivalent of nuclear electricity is calculated from the gross generation by assuming a 33% conversion efficiency, i.e. 1 TWh = (0.086 ÷ 0.33) Mtoe. For geothermal and solar thermal, if no country-specific information is reported, the primary energy equivalent is calculated as follows:

- 10 % for geothermal electricity
- 50 % for geothermal heat
- 33 % for solar thermal electricity
- 100 % for solar thermal heat.

Unit abbreviations

bcm	billion cubic metres	**MBtu**	million British thermal units
Gcal	gigacalorie	**Mt**	million tonnes
GCV	gross calorific value	**Mtoe**	million tonnes of oil equivalent
GW	gigawatt	**MWh**	megawatt hour
GWh	gigawatt hour	**PPP**	purchasing power parity
kb/cd	thousand barrels per calendar day	**t**	metric ton = tonne = 1 000 kg
kcal	kilocalorie	**TJ**	terajoule
kg	kilogramme	**toe**	tonne of oil equivalent = 10^7 kcal
kJ	kilojoule	**TWh**	terawatt hour
kWh	kilowatt hour	**USD**	United States dollar

Definitions

Coal

Coal includes all coal, both primary (including coking coal, steam coal and lignite) and derived fuels (including patent fuel, coke oven coke, gas coke, BKB, gas works gas, coke oven gas, blast furnace gas and other recovered gases). For presentational purposes, peat (including peat products) and oil shale are also included in this category where applicable.

Steam coal

Steam coal comprises anthracite, other bituminous coal and sub-bituminous coal.

Crude oil

Crude oil comprises crude oil, natural gas liquids, refinery feedstocks and additives as well as other hydrocarbons.

Oil products

Oil products comprises refinery gas, ethane, LPG, aviation gasoline, motor gasoline, jet fuels, kerosene, gas/diesel oil, fuel oil, naphtha, white spirit, lubricants, bitumen, paraffin waxes, petroleum coke and other oil products.

Natural gas

Natural gas includes both "associated" and "non-associated" gas.

Nuclear

Nuclear shows the primary heat equivalent of the electricity produced by a nuclear power plant with an average thermal efficiency of 33%.

Renewables

Renewables includes hydro, geothermal, solar PV, solar thermal, tide/wave/ocean, wind, municipal waste (renewable), primary solid biofuels, biogases, biogasoline, biodiesel, other liquid biofuels, non-specified primary biofuels and waste and charcoal.

Hydro

Hydro shows the energy content of the electricity produced in hydro power plants. Hydro output excludes output from pumped storage plants.

Solar photovoltaic (PV)

Solar PV electricity refers to electricity produced from solar photovoltaics, i.e. by the direct conversion of solar radiation through photovoltaic processes in semiconductor devices (solar cells), including concentrating photovoltaic systems.

Wind

Wind electricity refers to electricity produced from devices driven by wind.

Biofuels and waste

Biofuels and waste comprises solid biofuels, liquid biofuels, biogases, industrial waste and municipal waste. Biofuels are defined as any plant matter used directly as fuel or converted into fuels (e.g. charcoal) or electricity and/or heat. Included here are wood, vegetal waste (including wood waste and crops used for energy production), ethanol, animal materials/wastes and sulphite lyes. Municipal waste comprises wastes produced by residential, commercial and public services, that are collected by local authorities for disposal in a central location for the production of heat and/or power.

Other

Other includes geothermal, solar, wind, tide/wave/ocean energy, electricity and heat. Unless the actual efficiency of geothermal and solar thermal is known, the quantity of geothermal and solar energy entering electricity generation is inferred from the electricity/heat production at geothermal and solar plants assuming an average thermal efficiency of:

- 10% for geothermal electricity
- 50% for geothermal heat
- 33% for solar thermal electricity
- 100% for solar thermal heat.

For solar PV, wind and tide/wave/ocean energy, the quantities entering electricity generation are equal to the electrical energy generated. Direct use of geothermal and solar heat is also included here. Electricity is accounted for at the same heat value as electricity in final consumption (i.e. 1 GWh = 0.000086 Mtoe). Heat includes heat that is produced for sale and is accounted for in the transformation sector.

Production

Production is the production of primary energy, i.e. coking coal, steam coal, lignite, peat, oil shale, crude oil, NGLs, natural gas, biofuels and waste, nuclear, hydro, geothermal, solar and the heat from heat pumps that is extracted from the ambient environment. Production is calculated after removal of impurities (e.g. sulphur from natural gas).

Imports and exports

Imports and exports comprise amounts having crossed the national territorial boundaries of the country, whether or not customs clearance has taken place.

a) Oil and natural gas

Quantities of crude oil and oil products imported or exported under processing agreements (i.e. refining on account) are included. Quantities of oil in transit are excluded. Crude oil, NGL and natural gas are reported as coming from the country of origin; refinery feedstocks and oil products are reported as coming from the country of last consignment. Re-exports of oil imported for processing within bonded areas are shown as exports of product from the processing country to the final destination.

b) Coal

Imports and exports comprise the amount of fuels obtained from or supplied to other countries, whether or not there is an economic or customs union between the relevant countries. Coal in transit is not included.

c) Electricity

Amounts are considered as imported or exported when they have crossed the national territorial boundaries of the country.

International marine bunkers

International marine bunkers covers those quantities delivered to ships of all flags that are engaged in international navigation. The international navigation may take place at sea, on inland lakes and waterways, and in coastal waters. Consumption by ships engaged in domestic navigation is excluded. The domestic/international split is determined on the basis of port of departure and port of arrival, and not by the flag or nationality of the ship. Consumption by fishing vessels and by military forces is also excluded.

International aviation bunkers

International aviation bunkers covers deliveries of aviation fuels to aircraft for international aviation. Fuels used by airlines for their road vehicles are excluded. The domestic/international split should be determined on the basis of departure and landing locations and not by the nationality of the airline. For many countries this incorrectly excludes fuel used by domestically owned carriers for their international departures.

Stock changes

Stock changes reflects the difference between opening stock levels on the first day of the year and closing levels on the last day of the year of stocks on national territory held by producers, importers, energy transformation industries and large consumers. A stock build is shown as a negative number, and a stock draw as a positive number.

Total primary energy supply (TPES)

Total primary energy supply (TPES) is made up of production + imports – exports – international marine bunkers – international aviation bunkers ± stock changes. For the world total, international marine bunkers and international aviation bunkers are not subtracted from TPES.

Transfers

Transfers includes both interproduct transfers, products transferred and recycled products..

Statistical differences

Statistical differences includes the sum of the unexplained statistical differences for individual fuels, as they appear in the basic energy statistics. It also includes the statistical differences that arise because of the variety of conversion factors in the coal and oil columns.

Electricity plants

Electricity plants refers to plants which are designed to produce electricity only. If one or more units of the plant is a CHP unit (and the inputs and outputs cannot be distinguished on a unit basis) then the whole plant is designated as a CHP plant. Both main activity producers and autoproducer plants are included here.

Oil refineries

Oil refineries shows the use of primary energy for the manufacture of finished oil products and the corresponding output. Thus, the total reflects transformation losses. In certain cases the data in the total column are positive numbers. This can be due to either problems in the primary refinery balance or to the fact that the IEA uses regional net calorific values for oil products.

Other transformation

Other transformation covers non-specified transformation not shown elsewhere, such as the transformation of primary solid biofuels into charcoal.

Energy industry own use

Energy industry own use contains the primary and secondary energy consumed by transformation industries for heating, pumping, traction and lighting purposes [ISIC 05, 06, 19 and 35, Group 091 and Classes 0892 and 0721].

Losses

Losses includes losses in energy distribution, transmission and transport.

Total final consumption (TFC)

Total final consumption (TFC) is the sum of consumption by the different end-use sectors also includes non-energy use. Backflows from the petrochemical industry are not included in final consumption.

Industry

Industry consumption is specified by sub-sector as listed below. Energy used for transport by industry is not included here but is reported under transport. *Non-energy use* in industry is excluded from *industry* and reported separately:

- *Iron and steel industry* [ISIC Group 241 and Class 2431]
- *Chemical and petrochemical industry* [ISIC Divisions 20 and 21] excluding petrochemical feedstocks
- Non-ferrous metals basic industries [ISIC Group 242 and Class 2432]
- *Non-metallic* minerals such as glass. ceramic. cement. etc. [ISIC Division 23]
- Transport equipment [ISIC Divisions 29 and 30]
- *Machinery* comprises fabricated metal products. machinery and equipment other than transport equipment [ISIC Divisions 25 to 28]
- *Mining (excluding fuels)* and quarrying [ISIC Divisions 07 and 08 and Group 099]
- *Food and tobacco* [ISIC Divisions 10 to 12]
- *Paper. pulp and printing* [ISIC Divisions 17 and 18]
- *Wood and wood products* (other than pulp and paper) [ISIC Division 16]
- *Construction* [ISIC Divisions 41 to 43]
- *Textile and leather* [ISIC Divisions 13 to 15]
- *Non-specified* (any manufacturing industry not included above) [ISIC Divisions 22. 31 and 32].

Transport

Transport includes all fuels used for transport [ISIC Divisions 49 to 51]. It includes transport in industry and covers domestic aviation, road, rail, pipeline transport, domestic navigation and non-specified transport. Fuel used for ocean, coastal and inland fishing (included under fishing) and military consumption (included in other non-specified) are excluded from transport. Please note that international marine and international aviation bunkers are also included here for world total. *Non-energy use* in transport is excluded from *transport* and reported separately.

Other

Other covers residential, commercial and public services [ISIC Divisions 33, 36-39, 45-47, 52, 53, 55, 56, 58-66, 68-75, 77-82, 84 (excluding Class 8422), 85-88, 90-99], agriculture/forestry [ISIC Divisions 01 and 02], fishing [ISIC Division 03] and non-specified consumption.

Non-energy use

Non-energy use covers those fuels that are used as raw materials in the different sectors and are not consumed as a fuel or transformed into another fuel. Non-energy use also includes petrochemical feedstocks. Non-energy use is shown separately in final consumption under the heading non-energy use.

Geographical coverage

World

OECD[1] Total, Africa, Non-OECD Americas, Non-OECD Asia (excluding China), China (People's Republic of China and Hong Kong, China), Non-OECD Europe and Eurasia, Middle East, World aviation bunkers and World marine bunkers. It is also the sum of Africa, Americas, Asia, Europe, Oceania, World aviation bunkers and World marine bunkers.

Africa

Algeria, Angola, Benin, Botswana, Burkina Faso, Burundi, Cabo Verde, Cameroon, Central African Republic, Chad, Comoros, the Republic of the Congo (Congo), Côte d'Ivoire, the Democratic Republic of the Congo, Djibouti, Egypt, Equatorial Guinea, Eritrea, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Lesotho, Liberia, Libya, Madagascar, Malawi, Mali, Mauritania, Mauritius, Morocco, Mozambique, Namibia, Niger, Nigeria, Réunion, Rwanda, Sao Tome and Principe, Senegal, the Seychelles, Sierra Leone, Somalia, South Africa, South Sudan (from 2012), Sudan, Swaziland, the United Republic of Tanzania (Tanzania), Togo, Tunisia, Uganda, Zambia, Zimbabwe.

Americas

Antigua and Barbuda, Argentina, Aruba, the Bahamas, Barbados, Belize, Bermuda, the Plurinational State of Bolivia (Bolivia), Bonaire (from 2012), the British Virgin Islands, Brazil, Canada, the Cayman Islands, Chile, Colombia, Costa Rica, Cuba, Curaçao[2], Dominica, the Dominican Republic, Ecuador, El Salvador, the Falkland Islands (Malvinas), Guatemala, French Guiana, Grenada, Guadeloupe, Guyana, Haiti, Honduras, Jamaica, Martinique, Mexico, Montserrat, Nicaragua, Panama, Paraguay, Peru, Puerto Rico, Saba (from 2012), Saint Kitts and Nevis, Saint Lucia, Saint Pierre and Miquelon, Saint Vincent and the Grenadines, Sint Eustatius (from 2012), Sint Maarten (from 2012), Suriname, Trinidad and Tobago, the Turks and Caicos Islands, the United States, Uruguay, the Bolivarian Republic of Venezuela (Venezuela).

Asia (from 1990)

Afghanistan, Armenia, Azerbaijan, Bahrain, Bangladesh, Bhutan, Brunei Darussalam, Cambodia, the People's Republic of China, Cyprus[3] , Georgia, Hong Kong, China, India, Indonesia, the Islamic Republic of Iran, Iraq, Israel[4] , Japan, Jordan, the Democratic People's Republic of Korea, Korea, Kazakhstan, Kuwait, Kyrgyzstan, Lao People's Democratic Republic, Lebanon, Macau, China, Malaysia, the Maldives, Mongolia, Myanmar, Nepal, Oman, Pakistan, the Philippines, Qatar, Saudi Arabia, Singapore, Sri Lanka, the Syrian Arab Republic, Tajikistan, Chinese Taipei, Thailand, Timor-Leste, Turkey, Turkmenistan, the United Arab Emirates, Uzbekistan, Viet Nam, and Yemen.

Europe (from 1990)

Albania, Austria, Belarus, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, the Czech Republic, Denmark, Estonia, Finland, the Former Yugoslav Republic of Macedonia, France, Germany, Gibraltar, Greece, Hungary, Iceland, Ireland, Italy, Kosovo[5], Latvia[6], Lithuania, Luxembourg, Malta, the Republic of Moldova (Moldova), Montenegro, the Netherlands, Norway, Poland, Portugal, Romania, the Russian Federation, Serbia[7], the Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Ukraine, the United Kingdom.

Oceania

Australia, New Zealand, Cook Islands, Fiji, French Polynesia, Kiribati, New Caledonia, Palau, Papua New Guinea, Samoa, the Solomon Islands, Tonga, Vanuatu.

OECD[1]

Australia, Austria, Belgium, Canada, Chile, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel[4], Italy, Japan, Korea, Latvia[6], Luxembourg, Mexico, the Netherlands, New Zealand, Norway, Poland, Portugal, the Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey, the United Kingdom, the United States.

OECD Americas

Canada, Chile, Mexico, the United States.

OECD Asia Oceania

Australia, Israel[4], Japan, Korea, New Zealand.

OECD Europe

Austria, Belgium, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia[6], Luxembourg, the Netherlands, Norway, Poland, Portugal, the Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey, the United Kingdom.

Geographical coverage

The IEA and Accession/Association countries

IEA member countries: Australia, Austria, Belgium, Canada, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Japan, Korea, Luxembourg, Mexico, the Netherlands, New Zealand, Norway, Poland, Portugal, the Slovak Republic, Spain, Sweden, Switzerland, Turkey, the United Kingdom and the United States, Accession countries: Chile, Association countries: Brazil, the People's Republic of China, India, Indonesia, Morocco, Singapore, Thailand.

Middle East

Bahrain, Islamic Republic of Iran, Iraq, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, Syrian Arab Republic, United Arab Emirates and Yemen.

Non-OECD Europe and Eurasia

Albania, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus[3], Former Yugoslav Republic of Macedonia, Georgia, Gibraltar, Kazakhstan, Kosovo[5], Kyrgyzstan, Lithuania[8], Malta, Moldova, Montenegro, Romania, Russian Federation, Serbia[7], Tajikistan, Turkmenistan, Ukraine and Uzbekistan, the Former Soviet Union and the Former Yugoslavia.

China

People's Republic of China and Hong Kong (China).

Non-OECD Asia

Bangladesh, Brunei Darussalam, Cambodia (from 1995), India, Indonesia, Democratic People's Republic of Korea, Malaysia, Mongolia (from 1985), Myanmar, Nepal, Pakistan, Philippines, Singapore, Sri Lanka, Chinese Taipei, Thailand, Viet Nam and Other Asia.

Non-OECD Americas

Argentina, the Plurinational State of Bolivia (Bolivia), Brazil, Colombia, Costa Rica, Cuba, Curaçao[2], Dominican Republic, Ecuador, El Salvador, Guatemala, Haiti, Honduras, Jamaica, Nicaragua, Panama, Paraguay, Peru, Suriname (from 2000), Trinidad and Tobago, Uruguay, the Bolivarian Republic of Venezuela (Venezuela) and Other non-OECD Americas.

---

1. OECD includes Estonia, Latvia and Slovenia starting in 1990. Prior to 1990, data for these three countries are included in Non-OECD Europe and Eurasia.

2. The Netherlands Antilles was dissolved on 10 October 2010, resulting in two new constituent countries, Curaçao and Sint Maarten, with the other islands joining the Netherlands. However, due to a lack of detailed data, the IEA Secretariat's data and estimates under the Netherlands Antilles still refer to the whole territory of the Netherlands Antilles as it was known prior to 10 October 2010 up to the end of 2011. Data refer only to the island of Curaçao from 2012. The other islands of the former Netherlands Antilles are added to Other Non-OECD Americas from 2012.

3. Note by Turkey: The information in this document with reference to "Cyprus" relates to the southern part of the Island. There is no single authority representing both Turkish and Greek Cypriot people on the Island. Turkey recognises the Turkish Republic of Northern Cyprus (TRNC). Until a lasting and equitable solution is found within the context of United Nations, Turkey shall preserve its position concerning the "Cyprus issue".
Note by all the European Union member states of the OECD and the European Union:
The Republic of Cyprus is recognised by all members of the United Nations with the exception of Turkey. The information in this document relates to the area under the effective control of the Government of the Republic of Cyprus.

4. The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

5. This designation is without prejudice to positions on status, and is in line with United Nations Security Council Resolution 1244/99 and the Advisory Opinion of the International Court of Justice on Kosovo's declaration of independence.

6. Latvia is included in the OECD zone aggregates starting in 1990. Prior to 1990, data for Latvia are included in Former Soviet Union.

7. Serbia includes Montenegro until 2004 and Kosovo until 1999.

8. Lithuania was not an OECD Member at the time of preparation of this publication. Accordingly, Lithuania does not appear in the list of OECD Members and is still included in the non-OECD aggregates.

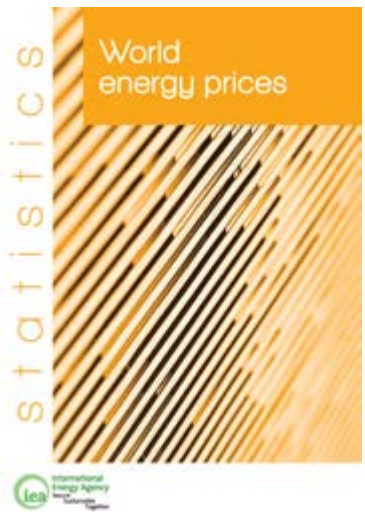
Note: The countries listed above are those for which the IEA Secretariat has direct statistics contacts. This document is without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries and to the name of any territory, city or area. In this publication 'country' refers to country or territory, as the case may be.

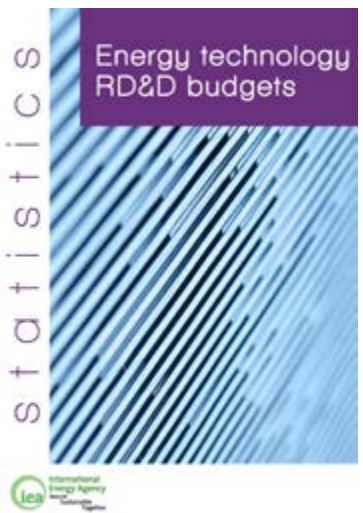
More than 40 years of detailed energy statistics on all sources and their impact for OECD countries and more than 100 other countries and regions

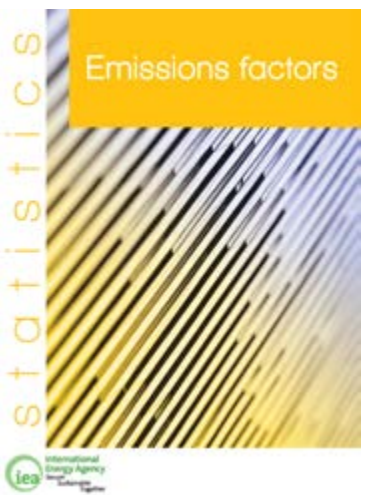
Online data services

All annual and quarterly publications are available as online databases and contain **full time series**. Most of this data can also be accessed on a **pay-per-view** basis.

Additional databases







www.iea.org/statistics

Monthly data services

Also on our website

Energy atlas, Sankey flows, and free headline data: a set of more than 200 000 data points on energy balances, electricity outputs and CO_2 emissions

www.iea.org/statistics

Oil Market Report series

The primary source of data on supply, demand, stocks prices and refining

To subscribe electronically, please see the IEA webstore at ***https://webstore.iea.org/oil-market-report***

World Energy Outlook 2018

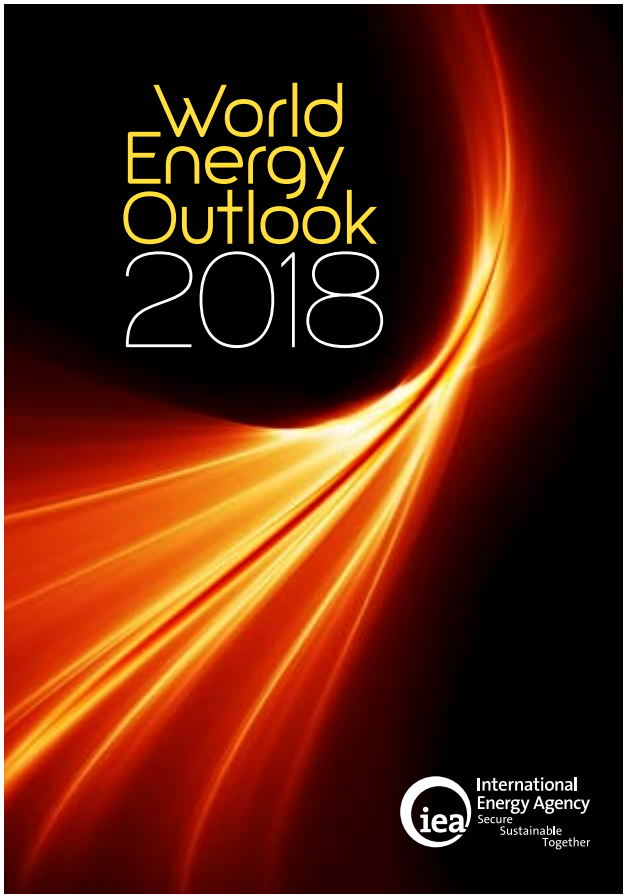
The ***World Energy Outlook*** is the gold standard of long-term energy analysis. The 2018 edition provides updated analysis to show what the latest data, technology trends and policy announcements might mean for the energy sector to 2040. It also outlines an integrated way to meet multiple sustainable development goals: limiting the global temperature rise in line with the Paris Agreement, addressing air pollution, and ensuring universal access to energy.

These points of orientation allow for rigorous thinking about the future against a backdrop of cost reductions in key clean energy technologies, the continued vitality of shale in the United States, and the fast-changing dynamics of energy investment.

This year's *Outlook* includes a special focus on two critical areas:

- **Electricity**: The future is electrifying, with low-carbon technologies on the rise and electricity demand set to grow at twice the pace of energy demand as a whole. But what will tomorrow's power sector look like? How will it incentivise investment and ensure reliable supply, and what share of our total energy needs can ultimately be met by electricity?
- **Producer economies**: How are traditional oil and gas-exporting countries adapting to a new price and policy environment, and what might be the implications for these economies of longer-term structural changes in demand?

The 2018 ***World Energy Outlook*** also examines the emissions intensities of different sources of oil and gas as well as what can be done to reduce them, and extends our ground-breaking Sustainable Development Scenario to include the linkages between energy and water.



For more information please visit our website: ***www.iea.org/weo/***

Order now at ***https://webstore.iea.org*** or by emailing ***books@iea.org***


Online bookshop
webstore.iea.org
International Energy Agency
iea
Secure Sustainable Together
E-mail: books@iea.org
PDF versions at 20% discount
Energy Technology Perspectives series
Market Report Series
Energy Policies Beyond IEA Countries series
World Energy Investment series
Energy Statistics series
Global Gas Security series
World Energy Outlook series
Energy Policies of IEA Countries series

International Energy Agency

www.iea.org/about/contact

www.iea.org

Printed in France by IEA, September 2018
Cover design: IEA, Photo credits: © Image 100
Inside photos: © Photodisc
© Brand X
© Digital Stock

IEA/OECD possible corrigenda on:
www.oecd.org/about/publishing/corrigenda.htm

International Energy Agency

iea online free STATISTICS

www.iea.org/statistics

Key information

25 years of free statistics and historic data on oil, natural gas, coal, electricity, renewables, energy-related CO_2 emissions and more – for over 150 countries and regions.

Energy balance flows

Interactive features to explore the shifts in a country's energy balance – from production through to transformation – over up to 40 years, showing important changes in supply mix or share of consumption.

Energy atlas

Interactive maps and customisable charts that offer panoramas on every aspect of energy for 150 countries and regions.

More information by e-mail: stats@iea.org

online services

The Monthly Oil Data Service

This service provides the detailed databases of historical and projected information which is used in preparing the IEA monthly Oil Market Report (OMR). The IEA Monthly Oil Data Service comprises three packages available separately or combined as a subscriber service on the internet. The data are available at the same time as the official release of the Oil Market Report.

The packages include:

- Supply, Demand, Balances and Stocks: €6 150
- Trade: €2 050
- Field-by-Field Supply: €3 080
- Complete Service: €9 200

A description of this service is available on our website:
wwwiea.org/statistics/mods

The Monthly Gas Data Service

This service provides monthly natural gas data for OECD countries:

- Supply balances in terajoules and cubic metres;
- Production, trade, stock changes and levels where available, gross inland deliveries, own use and losses;
- Highly detailed trade data with about 50 import origins and export destinations;
- LNG trade detail available from January 2002;
- From 2011 onwards, transit volumes are included and trade data corresponds to entries/exits.

The databases cover the time period January 1984 to current month with a time lag of two months for the most recent data.

- Monthly Gas Data Service:
  Historical plus 12 monthly updates: €800

A description of this service is available on our website:
wwwiea.org/statistics/mgds

The prices quoted above are for single-user licences;
consult our website for information on multi-user licence prices.