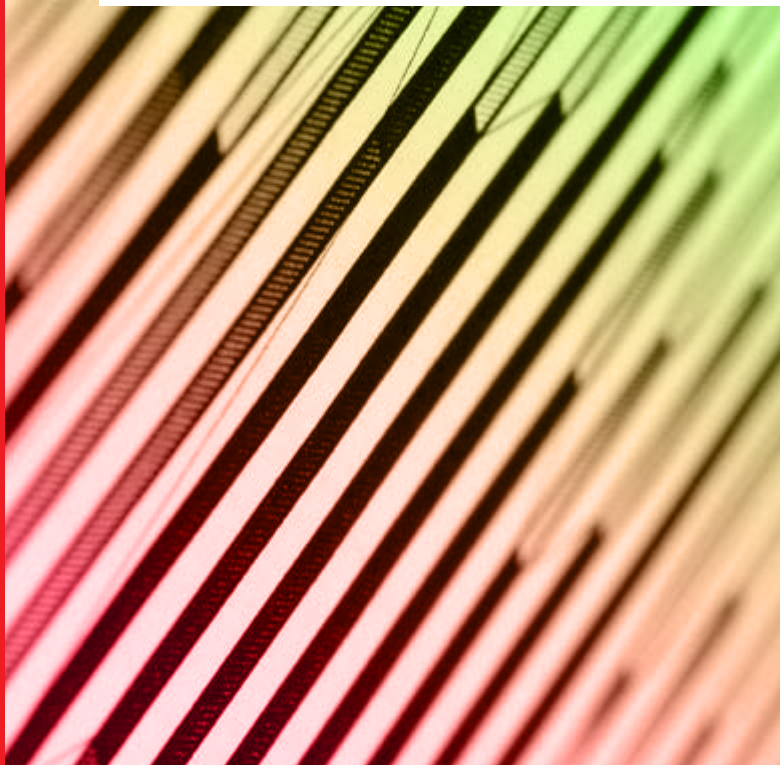
Key world energy statistics

Also available on smartphones and tablets



International Energy Agency
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2017

KEY WORLD ENERGY STATISTICS

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Netherlands
New Zealand
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Switzerland
Turkey
United Kingdom
United States

The European Commission
also participates in
the work of the IEA.

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, 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. 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, this year's edition of *KWES* has been updated. It 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: http://www.iea.org/statistics/. It is also available in app form for all major mobile devices.

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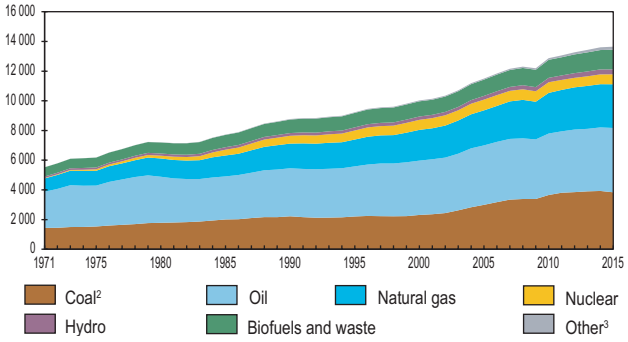
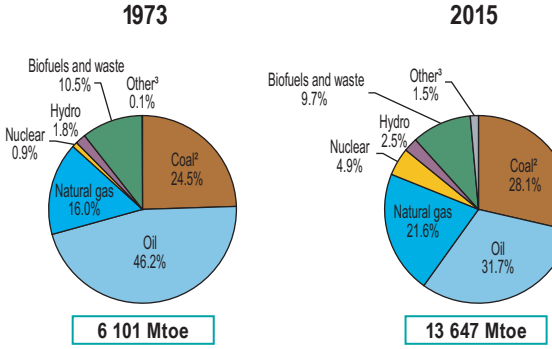
World total primary energy supply (TPES) by fuel

World[1] TPES from 1971 to 2015 by fuel (Mtoe)



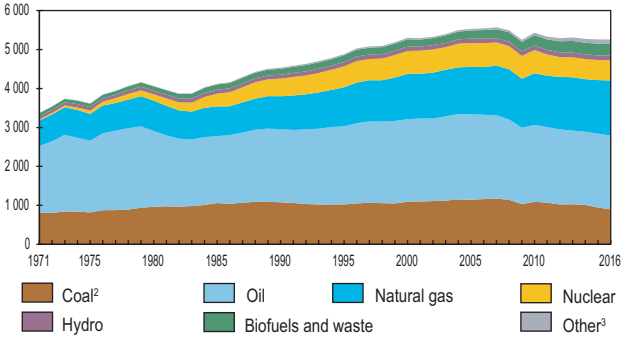
1973 and 2015 fuel shares of TPES



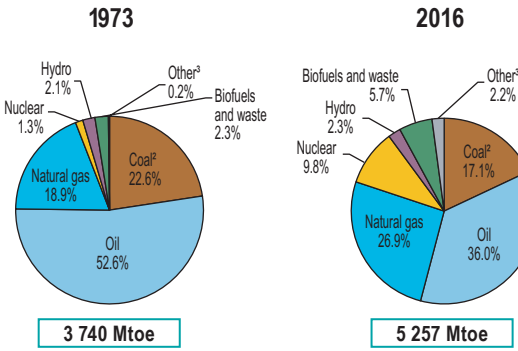
1. World includes international aviation and international marine bunkers.
2. In these graphs, peat and oil shale are aggregated with coal.
3. Includes geothermal, solar, wind, tide/wave/ocean, heat and other.

OECD total primary energy supply by fuel

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



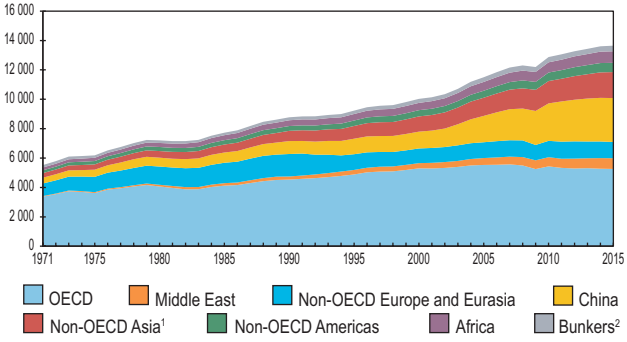
1973 and 2016 fuel shares of TPES[1]



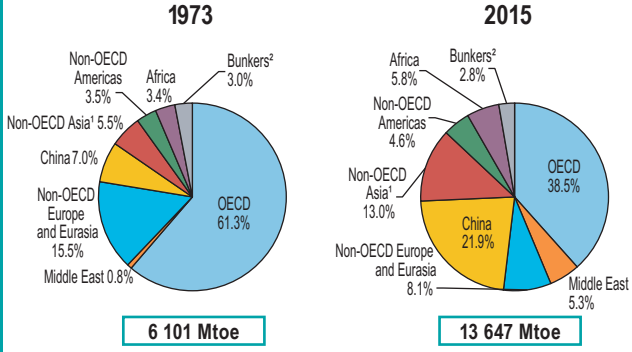
1. *Excludes electricity trade.*
2. *In these graphs, peat and oil shale are aggregated with coal.*
3. *Includes geothermal, solar, wind, tide/wave/ocean, heat and other.*

World total primary energy supply by region

World TPES from 1971 to 2015 by region (Mtoe)



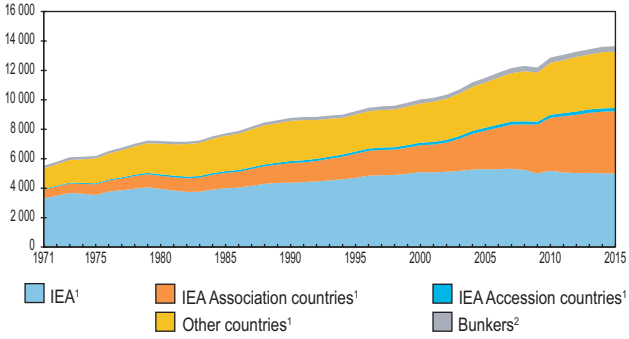
1973 and 2015 regional shares of TPES



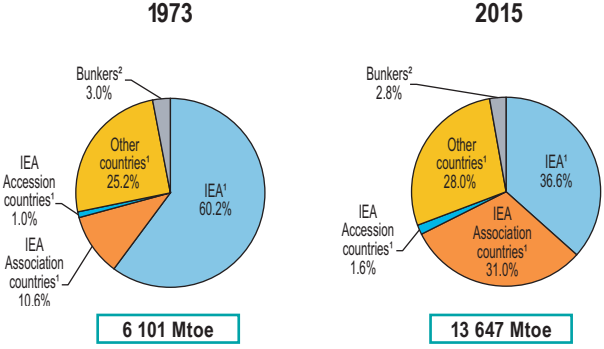
1. Non-OECD Asia excludes China.
2. Includes international aviation and international marine bunkers.

World total primary energy supply by region

World TPES from 1971 to 2015 (Mtoe)



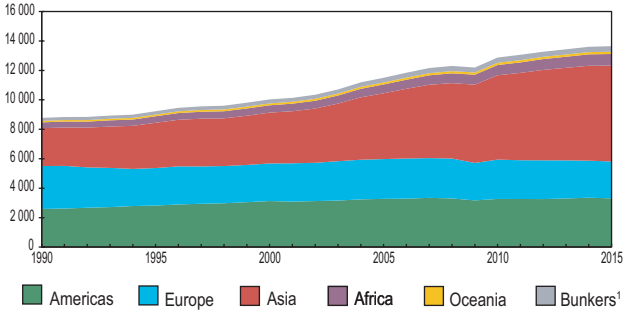
1973 and 2015 regional shares of TPES



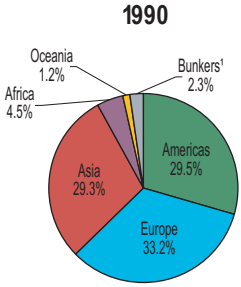
1. Please see geographical coverage for the list of IEA Accession, Association and other countries.
2. Includes international aviation and international marine bunkers.

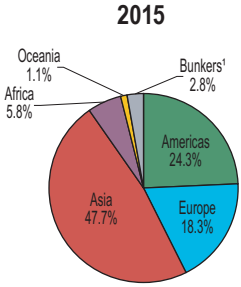
World total primary energy supply by geographical region

World TPES from 1990 to 2015 by region (Mtoe)



1990 and 2015 regional shares of TPES

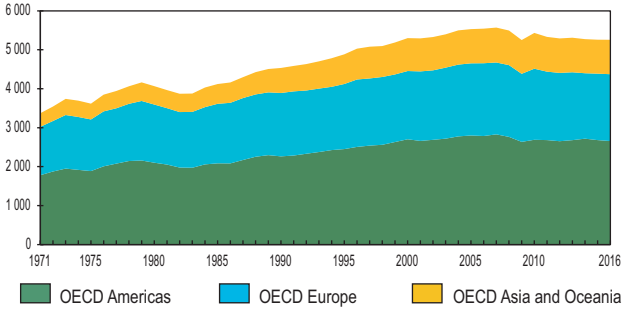




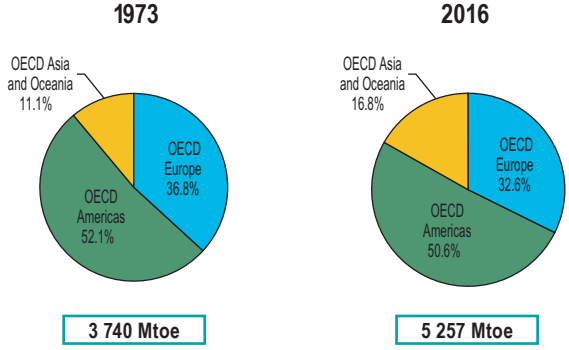
1. Includes international aviation and international marine bunkers.

OECD total primary energy supply by region

OECD TPES[1] from 1971 to 2016 by region (Mtoe)



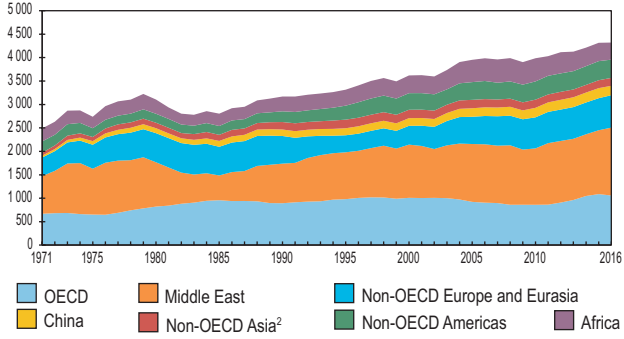
1973 and 2016 regional shares of TPES



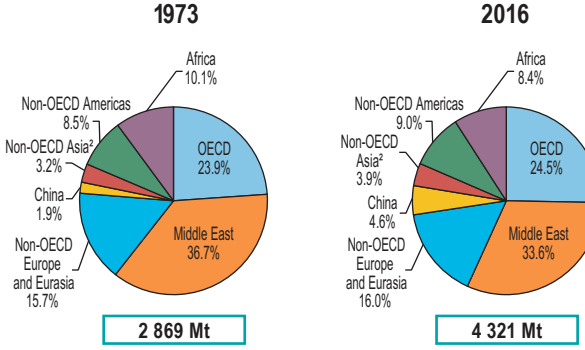
1. Excludes electricity trade.

Crude oil production

World crude oil[1] production from 1971 to 2016 by region (Mt)



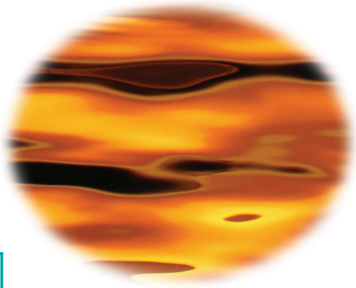
1973 and 2016 regional shares of crude oil[1] production



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

Crude oil production

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



Producers	Mt	% of world total
Saudi Arabia	583	13.5
Russian Federation	546	12.6
United States	537	12.4
Canada	220	5.1
Islamic Rep. of Iran	200	4.6
People's Rep. of China	200	4.6
Iraq	191	4.4
United Arab Emirates	182	4.2
Kuwait	159	3.7
Brazil	135	3.1
Rest of the world	1 368	31.8
World	**4 321**	**100.0**

2016 provisional data

Net exporters	Mt
Saudi Arabia	369
Russian Federation	243
Iraq	148
United Arab Emirates	125
Canada	116
Nigeria	104
Kuwait	100
Venezuela	98
Angola	86
Islamic Rep. of Iran	64
Others	539
Total	**1 992**

2015 data

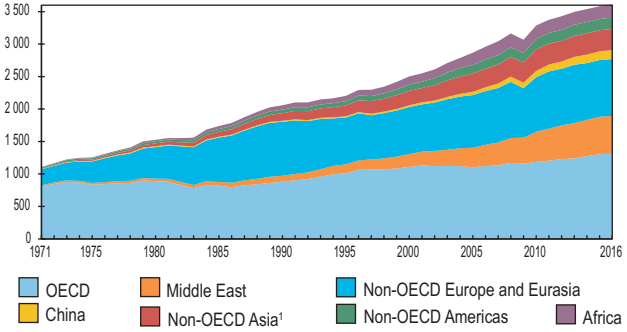
Net importers	Mt
United States	348
People's Rep. of China	333
India	203
Japan	165
Korea	139
Germany	91
Italy	67
Spain	65
Netherlands	59
France	57
Others	514
Total	**2 041**

2015 data

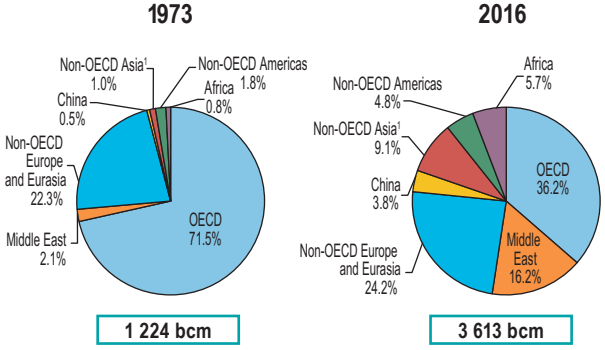
1. Includes production of crude oil, NGL, feedstocks, additives and other hydrocarbons. Excludes liquids from other fuel sources (renewable, coal and natural gas).

Natural gas production

World natural gas production from 1971 to 2016 by region
(billion cubic metres, bcm)



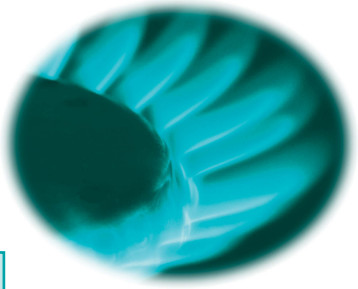
1973 and 2016 regional shares of natural gas production



1. Non-OECD Asia excludes China.

Natural gas production

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



Producers	bcm	% of world total
United States	749	20.7
Russian Federation	644	17.8
Islamic Rep. of Iran	190	5.3
Canada	174	4.8
Qatar	165	4.6
People's Rep. of China	137	3.8
Norway	121	3.3
Algeria	92	2.5
Saudi Arabia	90	2.5
Australia	88	2.4
Rest of the world	1 163	32.3
World	**3 613**	**100.0**

2016 provisional data

Net exporters	bcm
Russian Federation	205
Qatar	117
Norway	115
Canada	61
Algeria	54
Turkmenistan	53
Australia	41
Indonesia	34
Malaysia	24
Nigeria	23
Others	142
Total	**869**

2016 provisional data

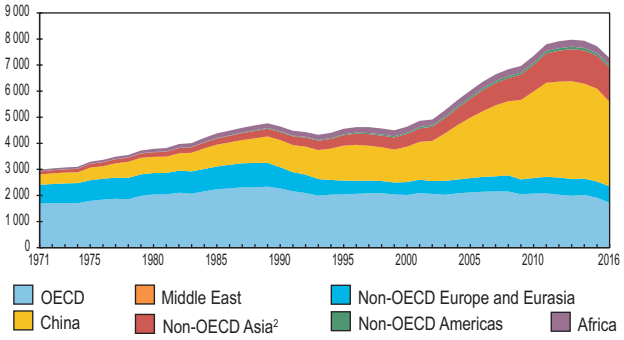
Net importers	bcm
Japan	116
Germany	79
People's Rep. of China	69
Italy	65
Turkey	46
Korea	44
Mexico	43
France	43
United Kingdom	38
Spain	28
Others	286
Total	**857**

2016 provisional data

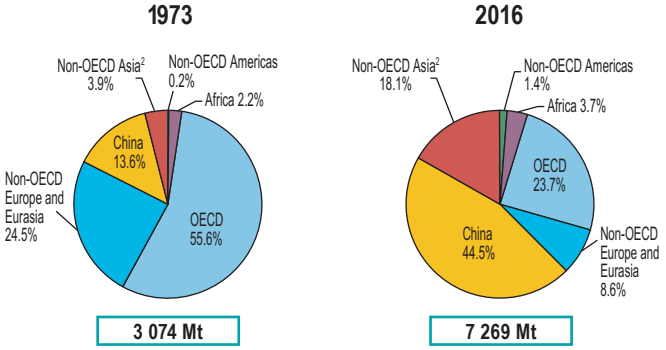
1. Net exports and net imports include pipeline gas and LNG.

Coal production

World coal[1] production from 1971 to 2016 by region (Mt)



1973 and 2016 regional shares of coal[1] production



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

Coal production

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

Producers	Mt	% of world total
People's Rep. of China	3 242	44.6
India	708	9.7
United States	672	9.2
Australia	503	6.9
Indonesia	460	6.3
Russian Federation	365	5.0
South Africa	257	3.5
Germany	176	2.4
Poland	131	1.8
Kazakhstan	98	1.3
Rest of the world	657	9.3
World	**7 269**	**100.0**

2016 provisional data

Net exporters	Mt
Australia	389
Indonesia	367
Russian Federation	147
Colombia	83
South Africa	76
United States	46
Mongolia	26
Kazakhstan	26
Canada	24
DPR of Korea	21
Others	8
Total	**1 213**

2016 provisional data

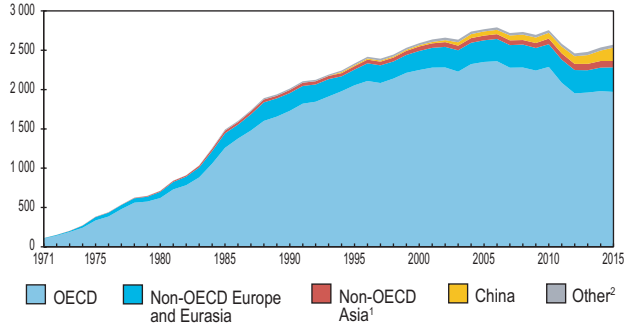
Net importers	Mt
People's Rep. of China	247
India	199
Japan	189
Korea	134
Chinese Taipei	66
Germany	53
Turkey	36
Malaysia	29
Thailand	23
Brazil	20
Others	215
Total	**1 211**

2016 provisional data

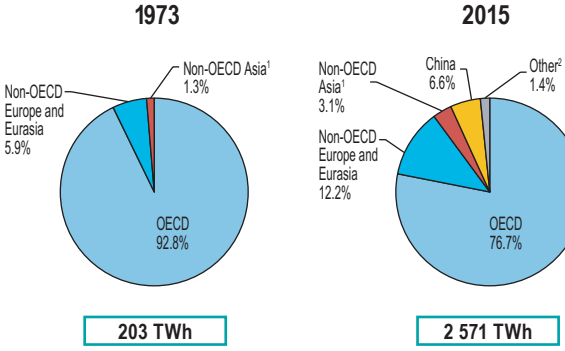
1. Includes steam coal, coking coal, lignite and recovered coal.

Nuclear electricity production

World nuclear electricity production from 1971 to 2015 by region (TWh)



1973 and 2015 regional shares of nuclear electricity production



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

Nuclear electricity production

Producers of nuclear electricity

Producers	TWh	% of world total
United States	830	32.3
France	437	17.0
Russian Federation	195	7.6
People's Rep. of China	171	6.7
Korea	165	6.4
Canada	101	3.9
Germany	92	3.6
Ukraine	88	3.4
United Kingdom	70	2.7
Spain	57	2.2
Rest of the world	365	14.2
World	**2 571**	**100.0**

2015 data

Net installed capacity	GW
United States	99
France	63
Japan	40
People's Rep. of China	27
Russian Federation	25
Korea	22
Canada	14
Ukraine	13
Germany	11
Sweden	10
Rest of the world	59
World	**383**

2015 data

Sources: International Energy Agency, International Atomic Energy Agency.

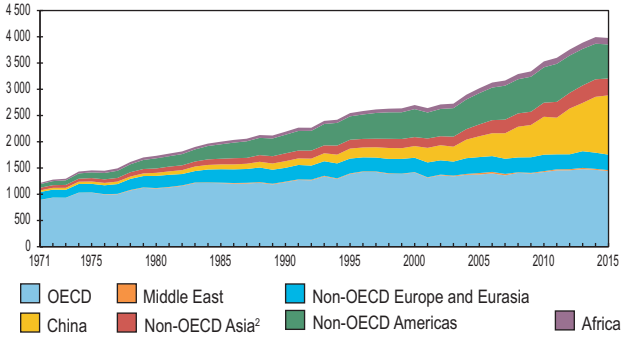
Country (top ten producers)	% of nuclear in total domestic electricity generation
France	77.6
Ukraine	54.1
Korea	30.0
United Kingdom	20.9
Spain	20.6
United States	19.3
Russian Federation	18.3
Canada	15.1
Germany	14.3
People's Rep. of China	2.9
Rest of the world[1]	7.2
World	**10.6**

2015 data

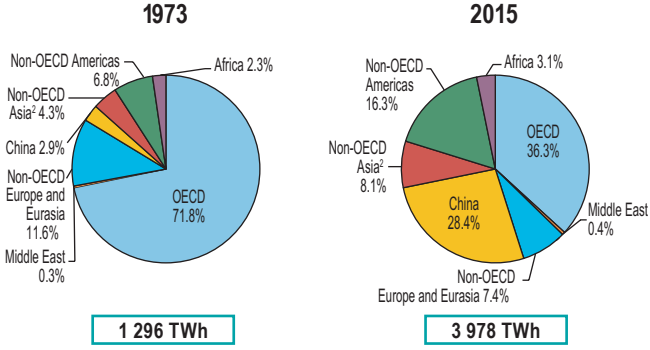
1. Excludes countries with no nuclear production.

Hydro electricity production

World hydro electricity production[1] from 1971 to 2015 by region (TWh)



1973 and 2015 regional shares of hydro electricity production[1]



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

Hydro electricity production

Producers of hydro electricity[1]

Producers	TWh	% of world total
People's Rep. of China	1130	28.4
Canada	381	9.6
Brazil	360	9.0
United States	271	6.8
Russian Federation	170	4.3
Norway	139	3.5
India	138	3.5
Japan	91	2.3
Sweden	75	1.9
Venezuela	75	1.9
Rest of the world	1 148	28.8
World	**3 978**	**100.0**

2015 data

Net installed capacity	GW
People's Rep. of China	332
United States	102
Brazil	92
Canada	79
Russian Federation	51
Japan	50
India	40
Norway	31
Turkey	26
France	25
Rest of the world	377
World	**1 205**

2015 data

Country (top ten producers)	% of hydro in total domestic electricity generation
Norway	95.9
Venezuela	63.7
Brazil	61.9
Canada	56.8
Sweden	46.6
People's Rep. of China	19.3
Russian Federation	15.9
India	10.0
Japan	8.8
United States	6.3
Rest of the world[2]	14.0
World	**16.3**

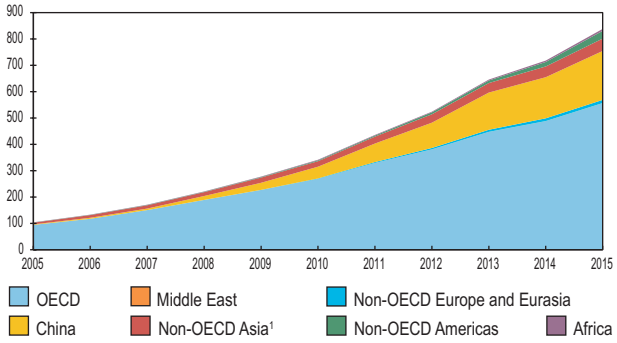
2015 data

Sources: International Energy Agency, United Nations.

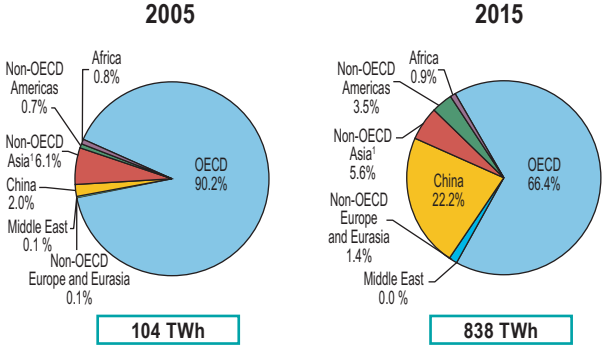
1. Includes electricity production from pumped storage.
2. Excludes countries with no hydro production.

Wind electricity production

World wind electricity production from 2005 to 2015 by region (TWh)



2005 and 2015 regional shares of wind electricity production



1. Non-OECD Asia excludes China.

Wind electricity production

Producers of wind electricity

Producers	TWh	% of world total
United States	193	23.0
People's Rep. of China	186	22.2
Germany	79	9.5
Spain	49	5.9
India	43	5.1
United Kingdom	40	4.8
Canada	26	3.2
Brazil	22	2.6
France	21	2.5
Sweden	16	1.9
Rest of the world	162	19.3
World	**838**	**100.0**

2015 data

Net installed capacity	GW
People's Rep. of China	129.3
United States	72.6
Germany	44.7
India	25.1
Spain	22.9
United Kingdom	14.3
Canada	11.2
France	10.2
Italy	9.1
Brazil	7.6
Rest of the world	67.0
World	**414.0**

2015 data

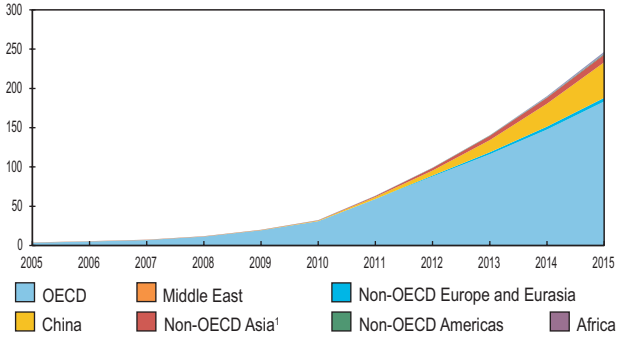
Country (top ten producers)	% of wind in total domestic electricity generation
Spain	17.6
Germany	12.2
United Kingdom	11.9
Sweden	10.0
United States	4.5
Canada	3.9
France	3.7
Brazil	3.7
People's Rep. of China	3.2
India	3.1
Rest of the world[1]	2.0
World	**3.4**

2015 data

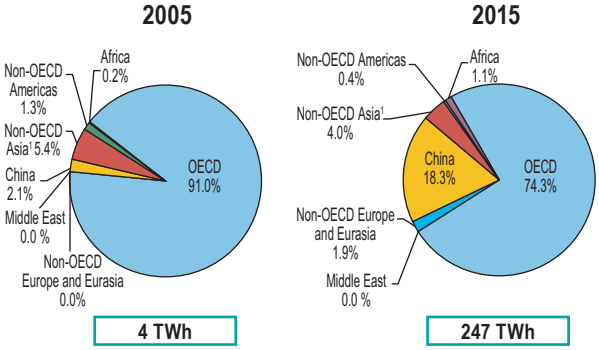
1. Excludes countries with no wind production.

Solar photovoltaic electricity production

World solar PV electricity production from 2005 to 2015 by region (TWh)



2005 and 2015 regional shares of solar PV electricity production



1. Non-OECD Asia excludes China.

Solar photovoltaic electricity production

Producers of solar PV electricity

Producers	TWh	% of world total
People's Rep. of China	45	18.3
Germany	39	15.7
Japan	36	14.5
United States	32	13.0
Italy	23	9.3
Spain	8	3.4
United Kingdom	8	3.1
France	7	2.9
Australia	6	2.4
India	6	2.3
Rest of the world	37	15.1
World	**247**	**100.0**

2015 data

Net installed capacity	GW
People's Rep. of China	43.2
Germany	39.8
Japan	34.2
United States	21.7
Italy	18.9
United Kingdom	9.2
France	6.8
India	5.1
Spain	4.9
Australia	4.4
Rest of the world	32.0
World	**220.2**

2015 data

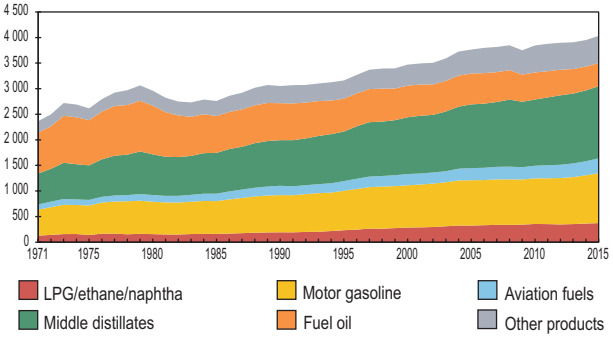
Country (top ten producers)	% of solar PV in total domestic electricity generation
Italy	8.1
Germany	6.0
Japan	3.4
Spain	2.9
Australia	2.4
United Kingdom	2.2
France	1.3
People's Rep. of China	0.8
United States	0.7
India	0.4
Rest of the world[1]	0.5
World	**1.0**

2015 data

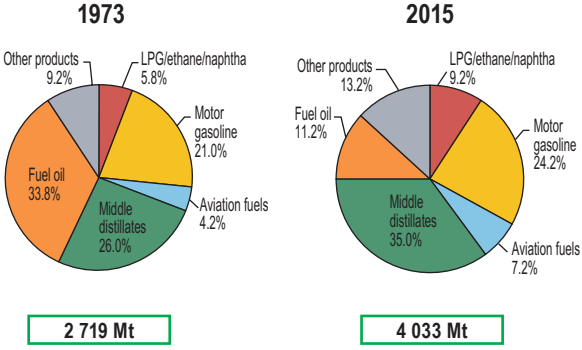
1. Excludes countries with no solar PV production.

Refining by product

World refinery output from 1971 to 2015 by product (Mt)



1973 and 2015 shares of refinery output by product



Refining by product

Producers, net exporters and net importers of oil products

Producers	Mt	% of world total
United States	820	20.3
People's Rep. of China	510	12.6
Russian Federation	278	6.9
India	240	6.0
Japan	163	4.0
Korea	140	3.5
Saudi Arabia	119	3.0
Brazil	107	2.7
Germany	99	2.5
Canada	88	2.2
Rest of the world	1 469	36.3
World	**4 033**	**100.0**

2015 data

Net exporters	Mt
Russian Federation	115
United States	102
Saudi Arabia	44
India	33
Kuwait	31
Korea	25
Algeria	20
Qatar	18
Islamic Republic of Iran	17
Belarus	17
Others	172
Total[1]	**594**

2015 data

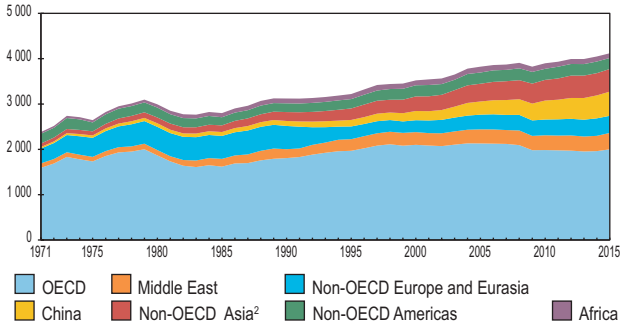
Net importers	Mt
Singapore	30
Japan	25
Mexico	24
Australia	21
Indonesia	20
France	20
Hong Kong, China	18
Turkey	16
Germany	15
Brazil	15
Others	297
Total[1]	**501**

2015 data

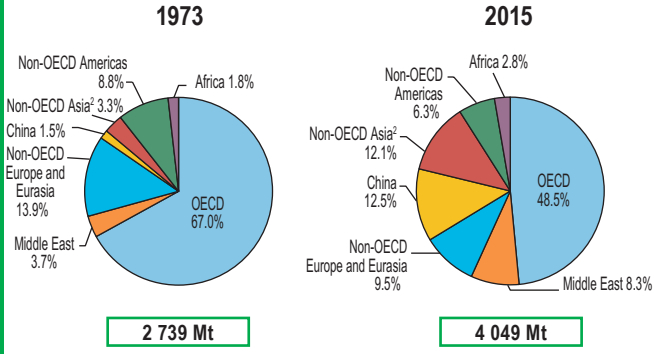
1. The discrepancy between total net exports and total net imports arises from different data sources and possible misallocation of bunkers into exports for some countries.

Refining by region

World refinery intake[1] from 1971 to 2015 by region (Mt)



1973 and 2015 regional shares of refinery intake[1]



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

Refining by region

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

Crude distillation capacity	kb/cd	% of world total
United States	18 119	18.8
People's Rep. of China	14 429	14.9
Russian Federation	6 356	6.6
India	4 664	4.8
Japan	3 684	3.8
Korea	3 068	3.2
Saudi Arabia	2 801	2.9
Brazil	2 175	2.3
Germany	2 022	2.1
Canada	1 931	2.0
Rest of the world	37 325	38.6
World	**96 574**	**100.0**

2016 data

Net exporters	Mt
Saudi Arabia	413
Russian Federation	358
United Arab Emirates	138
Iraq	136
Kuwait	131
Canada	127
Venezuela	115
Nigeria	94
Angola	82
Islamic Rep. of Iran	81
Others	512
Total	**2 187**

2015 data

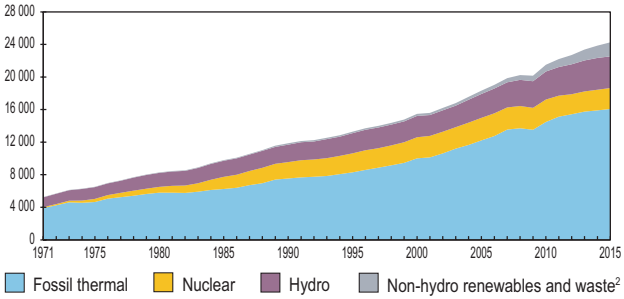
Net importers	Mt
People's Rep. of China	345
United States	246
Japan	190
India	169
Korea	114
Germany	106
France	77
Singapore	69
Spain	60
Italy	53
Others	713
Total	**2 142**

2015 data

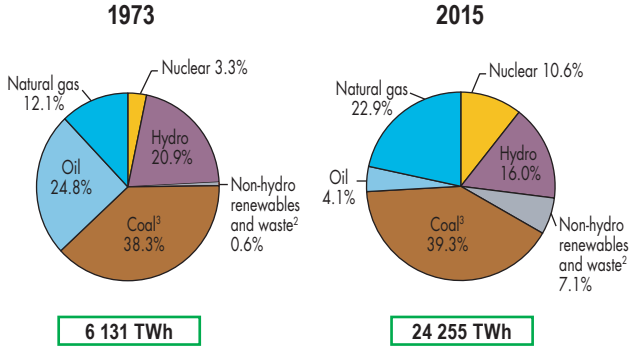
1. Includes crude oil and oil products.

Electricity generation by source

World electricity generation[1] from 1971 to 2015 by fuel (TWh)



1973 and 2015 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.

Electricity generation by source

Producers of electricity by source

Coal[1]	TWh
People's Rep. of China	4 109
United States	1 471
India	1 042
Japan	343
Germany	284
Korea	237
South Africa	229
Australia	159
Russian Federation	159
Poland	133
Rest of the world	1 372
World	**9 538**

2015 data

Oil	TWh
Saudi Arabia	150
Japan	103
Iraq	50
Kuwait	43
Pakistan	41
Islamic Rep. of Iran	40
United States	39
Egypt	38
Mexico	32
Brazil	29
Rest of the world	425
World	**990**

2015 data

Natural gas	TWh
United States	1 373
Russian Federation	530
Japan	410
Islamic Rep. of Iran	222
Saudi Arabia	189
Mexico	186
People's Rep. of China	145
Egypt	129
Thailand	127
United Arab Emirates	125
Rest of the world	2 107
World	**5 543**

2015 data

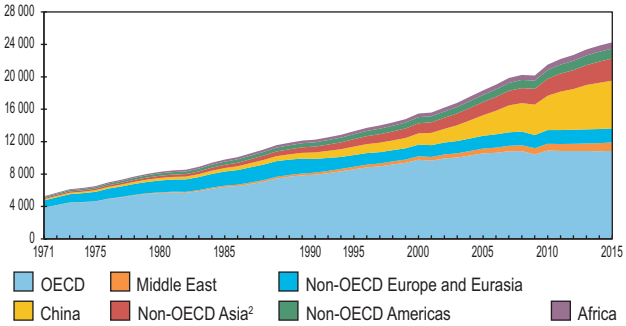
Renewables[2]	TWh
People's Rep. of China	1 398
United States	568
Brazil	430
Canada	423
India	212
Germany	187
Russian Federation	169
Japan	165
Norway	141
Italy	109
Rest of the world	1 732
World	**5 534**

2015 data

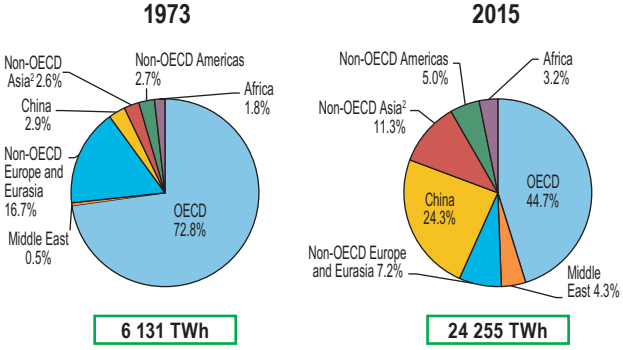
1. In this table, peat and oil shale are aggregated with coal.
2. Excludes electricity generation from pumped storage.

Electricity generation by region

World electricity generation[1] from 1971 to 2015 by region (TWh)



1973 and 2015 regional shares of electricity generation[1]



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

Electricity generation by region

Producers, net exporters and net importers of electricity

Producers[1]	TWh	% of world total
People's Rep. of China	5 844	24.1
United States	4 297	17.7
India	1 383	5.7
Russian Federation	1 066	4.4
Japan	1 035	4.3
Canada	671	2.8
Germany	641	2.6
Brazil	582	2.4
France	563	2.3
Korea	549	2.3
Rest of the world	7 624	31.4
World	**24 255**	**100.0**

2015 data

Net exporters	TWh
France	64
Canada	60
Germany	48
Paraguay	41
Sweden	23
Norway	15
Czech Republic	13
People's Rep. of China	12
Russian Federation	12
Bulgaria	11
Others	39
Total	**338**

2015 data

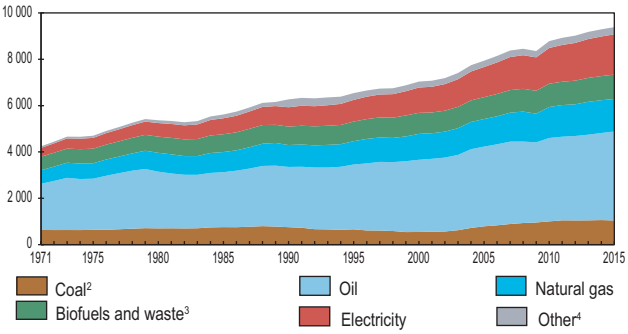
Net importers	TWh
United States	67
Italy	46
Brazil	34
Belgium	21
United Kingdom	21
Finland	16
Hungary	14
Thailand	12
Hong Kong. China	11
Iraq	10
Others	112
Total	**364**

2015 data

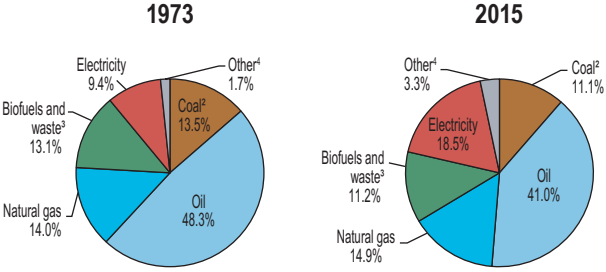
1. Gross production minus production from pumped storage plants.

World total final consumption (TFC) by fuel

World[1] TFC from 1971 to 2015 by fuel (Mtoe)



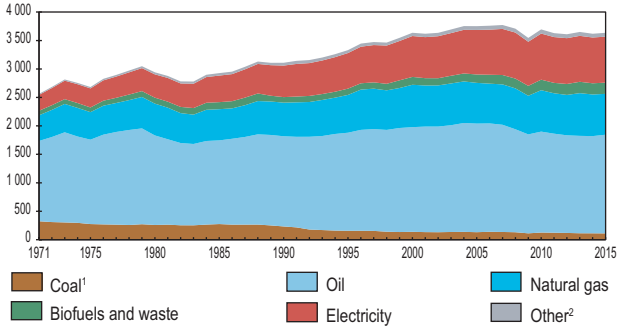
1973 and 2015 fuel shares of TFC



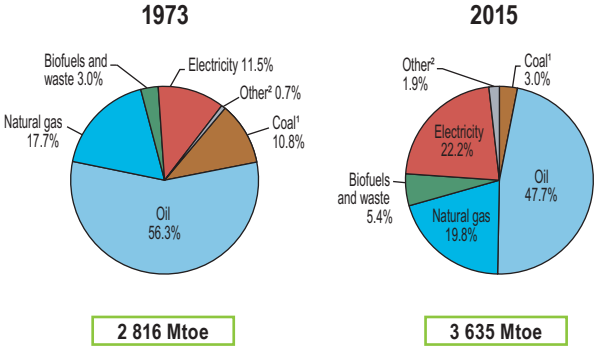
1. World includes international aviation and international marine bunkers.
2. In these graphs, peat and oil shale are aggregated with coal.
3. Data for biofuels and waste final consumption have been estimated for a number of countries.
4. Includes heat, solar thermal and geothermal.

OECD total final consumption by fuel

OECD TFC from 1971 to 2015 by fuel (Mtoe)



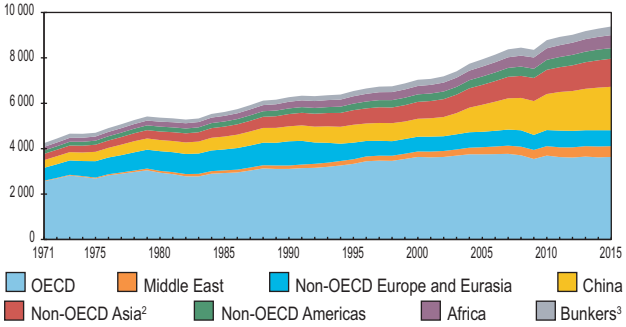
1973 and 2015 fuel shares of TFC



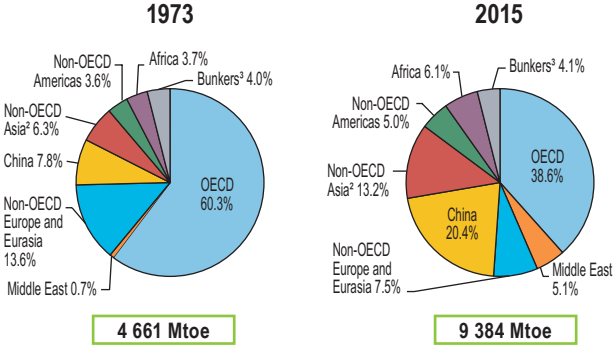
1. In these graphs, peat and oil shale are aggregated with coal.
2. Includes heat, solar thermal and geothermal.

World total final consumption by region

World TFC[1] from 1971 to 2015 by region (Mtoe)



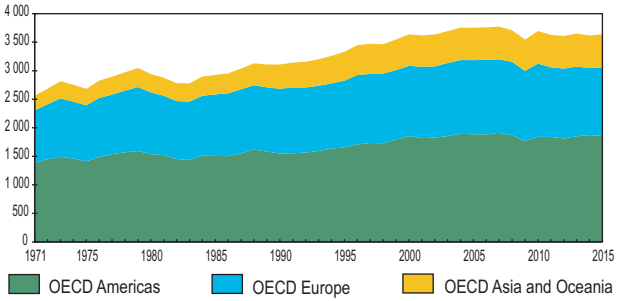
1973 and 2015 regional shares of TFC[1]



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.

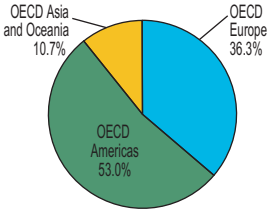
OECD total final consumption by region

OECD TFC from 1971 to 2015 by region (Mtoe)



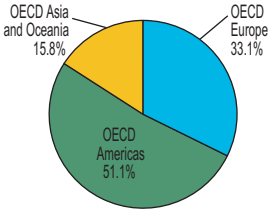
1973 and 2015 regional shares of TFC

1973



2 816 Mtoe

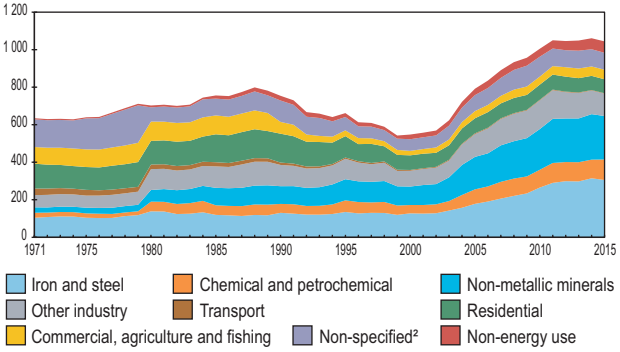
2015



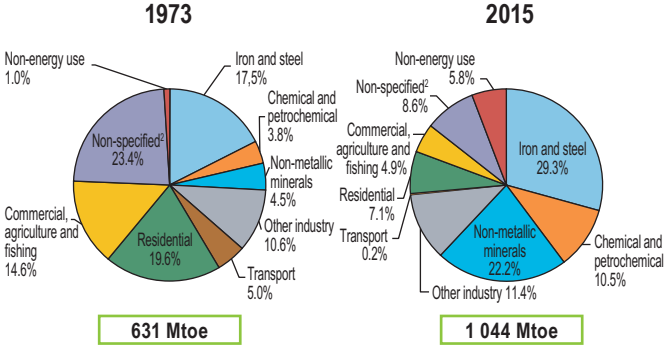
3 635 Mtoe

Total final consumption by sector: coal[1]

Coal TFC from 1971 to 2015 by sector (Mtoe)



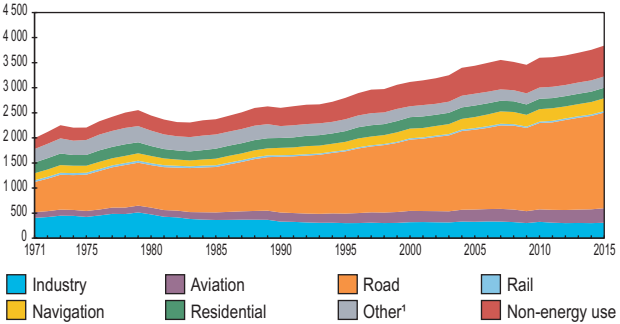
1973 and 2015 shares of world coal[1] consumption



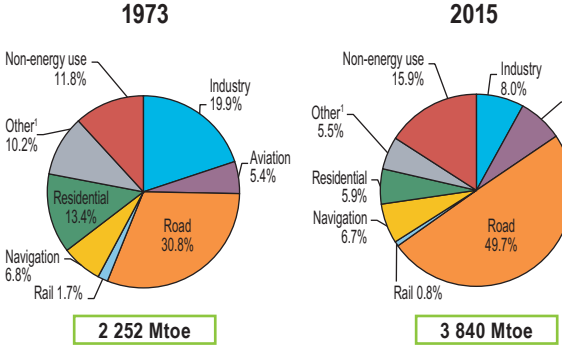
1. In these graphs, peat and oil shale are aggregated with coal.
2. Includes non-specified industry, transport and other.

Total final consumption by sector: oil

Oil TFC from 1971 to 2015 by sector (Mtoe)



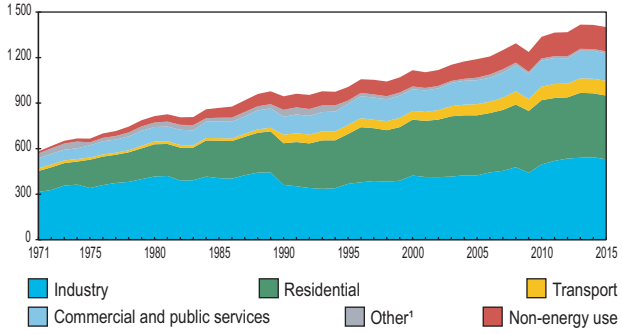
1973 and 2015 shares of world oil consumption



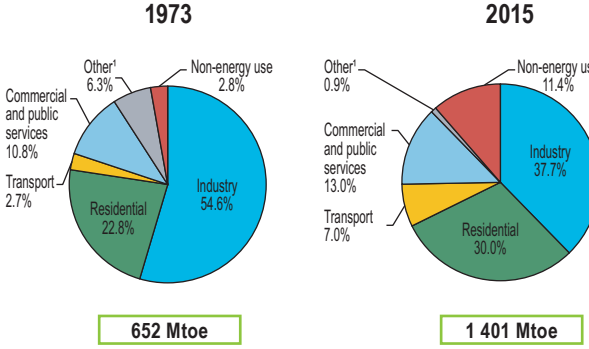
1. Includes agriculture, commercial and public services, non-specified other, pipeline and non-specified transport.

Total final consumption by sector: natural gas

Natural gas TFC from 1971 to 2015 by sector (Mtoe)



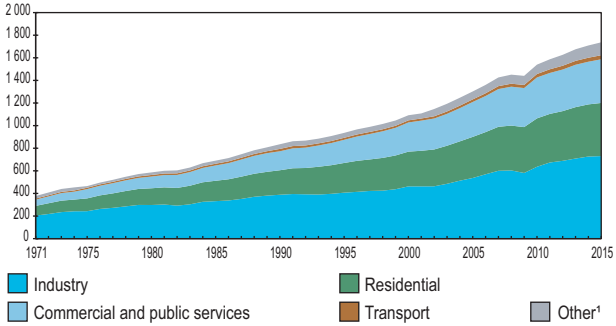
1973 and 2015 shares of world natural gas consumption



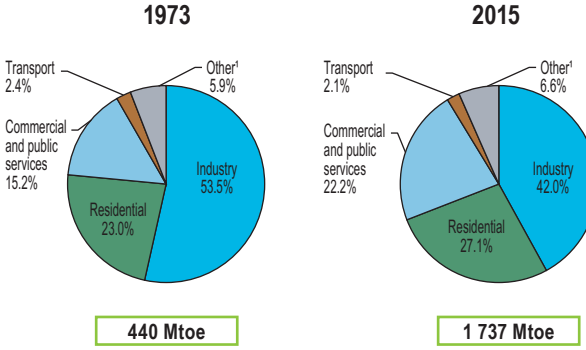
1. Includes agriculture, fishing and non-specified other.

Total final consumption by sector: electricity

Electricity TFC from 1971 to 2015 by sector (Mtoe)



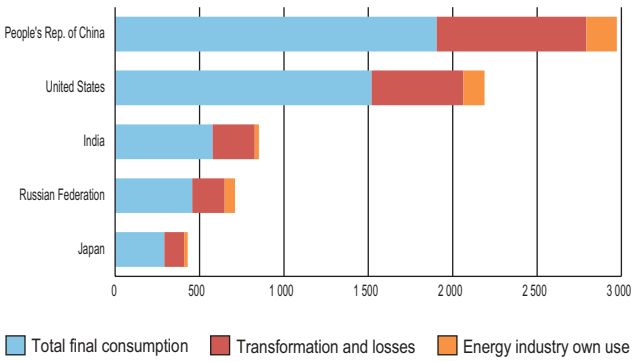
1973 and 2015 shares of world electricity consumption



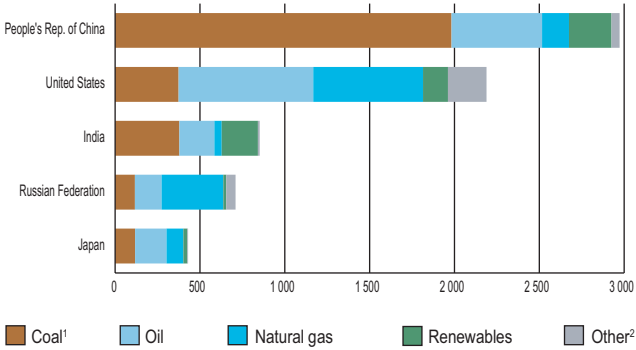
1. Includes agriculture, fishing and non-specified other.

Top five countries by total primary energy supply (TPES)

TPES by sector (Mtoe)



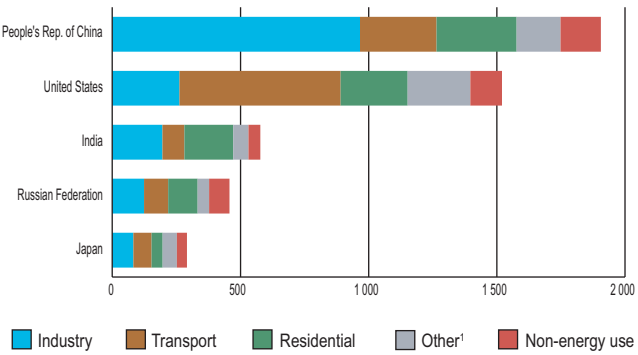
TPES by energy source (Mtoe)



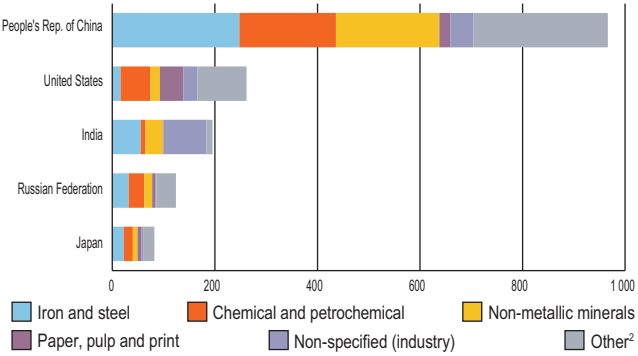
1. In this graph peat and oil shale are aggregated with coal.
2. Other includes nuclear, electricity trade, heat, non-renewable waste.

Top five countries by total final consumption

TFC by sector (Mtoe)



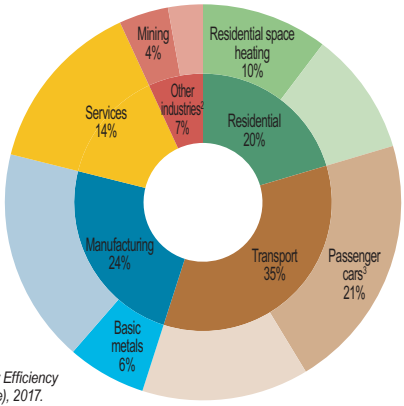
Industry consumption by sub-sector (Mtoe)



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.

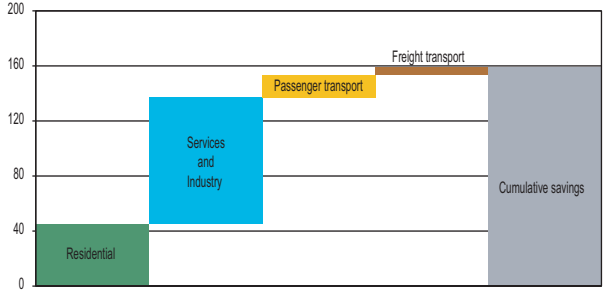
Energy efficiency indicators

Largest end uses of energy by sector in IEA[1], 2014



Source: IEA Energy Efficiency Indicators (database), 2017.

Estimated cumulative energy savings by sector in IEA, 2000-15 (EJ)

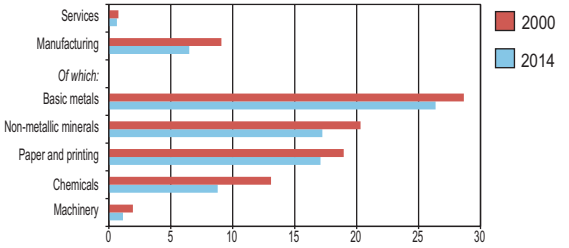


Source: adapted from the *IEA Energy Efficiency Market Report, 2016,* based on *IEA Energy Efficiency Indicators (database), 2016.*

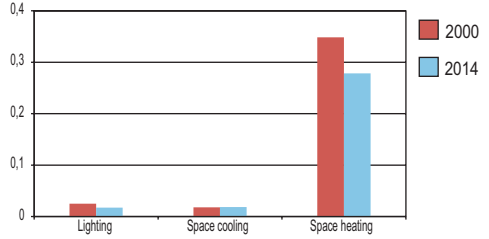
1. Refers to the 19 IEA countries for which data are available for most end uses: Australia, Austria, Canada, Czech Republic, Finland, France, Germany, Greece, Ireland, Italy, Japan, Korea, New Zealand, the Netherlands, Spain, Sweden, Switzerland, the United Kingdom and the United States.
2. Other industries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

Energy efficiency indicators

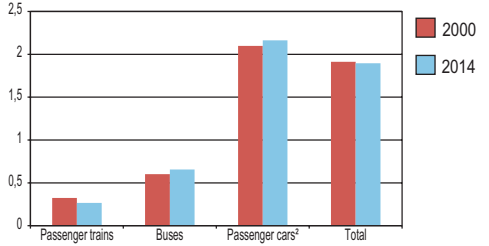
Services and manufacturing in IEA[1]: energy per value added (MJ/2010 USD PPP)



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), 2017.

Simplified energy balance table

World energy balance table, 1973

(Mtoe)

SUPPLY AND CONSUMPTION	Coal[1]	Crude oil	Oil products	Natural gas	Nuclear	Hydro	Biofuels and waste[2]	Other[3]	Total
Production	1474.00	2938.39	-	990.98	53.05	110.31	640.84	6.13	6213.70
Imports	140.06	1561.97	409.59	73.40	-	-	0.13	8.15	2193.29
Exports	-130.35	-1613.00	-442.94	-72.56	-	-	-0.19	-8.31	-2267.34
Stock changes	12.48	-19.81	-16.37	-15.09	-	-	0.06	-	-38.74
TPES	**1496.19**	**2867.55**	**-49.73**	**976.73**	**53.05**	**110.31**	**640.84**	**5.96**	**6100.90**
Transfers	-	-46.76	48.78	-	-	-	-	-	2.02
Statistical diff.	0.99	12.12	-6.18	4.78	-	-	-0.17	-0.19	11.34
Electricity plants	-555.56	-22.91	-318.13	-160.00	-52.95	-110.31	-2.21	503.74	-718.32
CHP plants	-86.40	-	-28.62	-50.84	-0.10	-	-1.11	100.96	-66.10
Heat plants	-7.81	-	-0.90	-0.68	-	-	-0.80	7.11	-3.08
Blast furnaces	-81.58	-	-2.72	-	-	-	-0.06	-	-84.35
Gas works	9.85	-0.60	-9.07	-6.18	-	-	-	-	-6.01
Coke ovens [4]	-99.54	-	-0.68	-0.19	-	-	-0.02	-	-100.43
Oil refineries	-	-2782.93	2762.10	-	-	-	-	-	-20.82
Petchem. plants	-	5.09	-5.37	-	-	-	-	-	-0.28
Liquefaction plants	-0.73	0.23	-	-	-	-	-	-	-0.50
Other transf.	-	-	-0.12	-0.03	-	-	-27.02	-	-27.17
Energy ind. own use	-34.92	-2.59	-158.81	-105.99	-	-	-0.20	-57.68	-360.18
Losses	-9.06	-7.07	-0.27	-6.03	-	-	-0.25	-43.15	-65.83
TFC	**631.43**	**22.14**	**2230.28**	**651.57**	**-**	**-**	**609.01**	**516.76**	**4661.19**
Industry	355.69	16.41	432.59	356.29	-	-	86.59	286.91	1534.49
Transport [5]	31.88	-	1020.83	17.72	-	-	0.24	10.60	1081.26
Other	237.85	0.00	520.41	259.19	-	-	522.18	219.26	1758.88
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.

Simplified energy balance table

World energy balance table, 2015

(Mtoe)

SUPPLY AND CONSUMPTION	Coal[1]	Crude oil	Oil products	Natural gas	Nuclear	Hydro	Biofuels and waste[2]	Other[3]	Total
Production	3871.53	4416.26	-	2975.71	670.73	334.40	1319.00	202.39	13790.02
Imports	791.76	2303.19	1258.87	868.66	-	-	20.75	64.67	5307.89
Exports	-820.39	-2262.47	-1350.24	-883.43	-	-	-16.58	-62.38	-5395.47
Stock changes	-6.83	-14.88	-16.46	-17.22	-	-	0.31	-	-55.08
TPES	**3836.09**	**4442.11**	**-107.83**	**2943.72**	**670.73**	**334.40**	**1323.47**	**204.68**	**13647.37**
Transfers	-0.97	-230.46	259.77	-	-	-	-0.42	-	27.92
Statistical diff.	-14.63	-0.75	11.34	2.20	-	-	0.50	-1.34	-2.68
Electricity plants	-2060.04	-42.30	-192.28	-835.51	-663.14	-334.40	-100.35	1744.52	-2483.50
CHP plants	-171.02	-0.01	-19.16	-303.06	-7.58	-	-58.50	324.82	-234.52
Heat plants	-136.72	-0.65	-11.51	-67.52	-	-	-11.27	178.54	-49.13
Blast furnaces	-205.36	-	-0.21	-0.07	-	-	-0.05	-	-205.70
Gas works	-11.18	-0.00	-2.51	4.61	-	-	-0.11	-	-9.20
Coke ovens[4]	-85.69	-	-2.56	-0.03	-	-	-0.12	-	-88.40
Oil refineries	-	-4188.73	4128.69	-	-	-	-	-	-60.04
Petchem. plants	-	34.97	-34.75	-	-	-	-	-	0.22
Liquefaction plants	-10.10	14.34	-	-17.41	-	-	-	-	-13.18
Other transf.	-0.37	10.70	-0.58	-12.78	-	-	-86.53	-0.85	-90.40
Energy ind. own use	-91.78	-11.51	-207.51	-293.73	-	-	-14.28	-215.30	-834.11
Losses	-4.13	-8.61	-0.42	-19.28	-	-	-0.13	-188.49	-221.06
TFC	**1044.09**	**19.10**	**3820.49**	**1401.13**	**-**	**-**	**1052.21**	**2046.58**	**9383.60**
Industry	826.39	9.07	298.93	529.81	-	-	192.71	855.46	2712.37
Transport[5]	2.53	0.01	2490.99	97.59	-	-	75.99	35.90	2703.00
Other	154.20	0.07	425.88	613.33	-	-	783.51	1155.22	3132.22
Non-energy use	60.96	9.95	604.69	160.41	-	-	-	-	836.01

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 table, 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	-	706.22	49.22	78.94	87.29	6.13	2457.41
Imports	121.92	1277.50	336.20	62.55	-	-	0.03	7.55	1805.76
Exports	-111.10	-63.59	-172.72	-50.38	-	-	-0.01	-7.01	-404.81
Intl. marine bunkers	-	-	-73.65	-	-	-	-	-	-73.65
Intl. aviation bunkers	-	-	-24.64	-	-	-	-	-	-24.64
Stock changes	14.54	-10.78	-11.36	-12.07	-	-	0.06	-	-19.62
TPES	**844.46**	**1913.65**	**53.83**	**706.32**	**49.22**	**78.94**	**87.36**	**6.66**	**3740.45**
Transfers	-	-41.28	42.49	-	-	-	-	-	1.22
Statistical diff.	14.80	11.29	2.56	-5.61	-	-	-0.00	0.00	23.04
Electricity plants	-387.59	-20.61	-228.38	-108.33	-49.12	-78.94	-1.43	364.70	-509.71
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	-65.52	-	-2.72	-	-	-	-	-	-68.24
Gas works	11.02	-0.60	-8.72	-6.37	-	-	-	-	-4.68
Coke ovens [4]	-25.70	-	-0.68	-0.19	-	-	-0.02	-	-26.59
Oil refineries	-	-1865.97	1868.42	-	-	-	-	-	2.45
Petrochem. 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	-72.36	-	-	-0.07	-33.38	-260.20
Losses	-3.80	-	-0.23	-2.63	-	-	-	-30.54	-37.20
TFC	**303.27**	**0.39**	**1583.63**	**498.48**	**-**	**-**	**84.30**	**345.49**	**2815.56**
Industry	182.79	0.39	312.91	250.44	-	-	42.26	169.41	958.18
Transport	7.34	-	665.68	17.00	-	-	0.00	5.30	695.32
Other	110.05	-	393.09	225.47	-	-	42.04	170.78	941.43
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.

Simplified energy balance table

OECD energy balance table, 2015

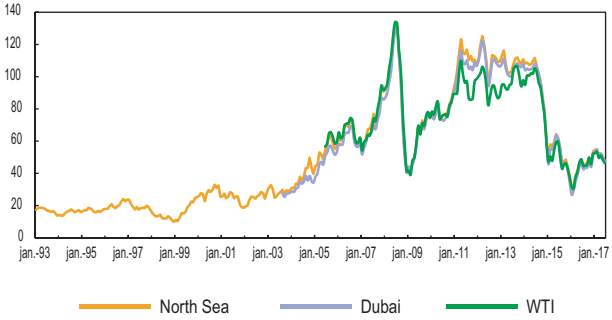
(Mtoe)

SUPPLY AND CONSUMPTION	Coal[1]	Crude oil	Oil products	Natural gas	Nuclear	Hydro	Biofuels and waste[2]	Other[3]	Total
Production	921.66	1125.77	-	1080.13	513.69	118.74	294.91	109.19	4164.09
Imports	400.14	1422.20	600.29	632.55	-	-	18.72	44.22	3118.12
Exports	-358.33	-411.15	-646.77	-326.55	-	-	-11.66	-43.70	-1798.17
Intl. marine bunkers	-	-	-70.36	-	-	-	-0.17	-	-70.53
Intl. aviation bunkers	-	-	-95.41	-	-	-	-	-	-95.41
Stock changes	-15.84	-16.75	-13.47	-12.09	-	-	-0.49	-	-58.65
TPES	**947.63**	**2120.07**	**-225.74**	**1374.05**	**513.69**	**118.74**	**301.31**	**109.71**	**5259.45**
Transfers	-	-103.43	119.04	-	-	-	-0.42	-	15.20
Statistical diff.	-4.75	-3.53	10.85	1.75	-	-	0.49	0.52	5.34
Electricity plants	-666.26	-4.94	-41.86	-397.25	-506.60	-118.74	-50.61	744.89	-1041.38
CHP plants	-77.54	-	-12.95	-107.76	-7.08	-	-46.00	145.80	-105.53
Heat plants	-3.78	-	-1.02	-8.18	-	-	-6.44	15.59	-3.84
Blast furnaces	-53.34	-	-0.21	-0.07	-	-	-	-	-53.63
Gas works	-2.22	-	-2.20	3.24	-	-	-0.10	-	-1.28
Coke ovens[4]	-7.55	-	-1.09	-0.03	-	-	-0.11	-	-8.79
Oil refineries	-	-2042.01	2021.04	-	-	-	-	-	-20.97
Petrochem. plants	-	30.93	-31.26	-	-	-	-	-	-0.33
Liquefaction plants	-1.29	0.80	-	-	-	-	-	-	-0.49
Other transf.	-0.19	9.08	-0.00	-9.37	-	-	-0.22	-0.85	-1.54
Energy ind. own use	-18.56	-0.06	-107.71	-136.43	-	-	-0.85	-75.23	-338.84
Losses	-1.16	-	-0.05	-1.85	-	-	-0.04	-64.77	-67.87
TFC	**110.99**	**6.90**	**1726.83**	**718.10**	**-**	**-**	**197.01**	**875.66**	**3635.50**
Industry	89.44	0.04	92.39	257.42	-	-	72.38	279.91	791.57
Transport	0.01	-	1148.14	25.17	-	-	49.63	9.25	1232.20
Other	18.65	-	182.19	402.36	-	-	75.01	586.51	1264.72
Non-energy use	2.89	6.86	304.11	33.15	-	-	-	-	347.01

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.

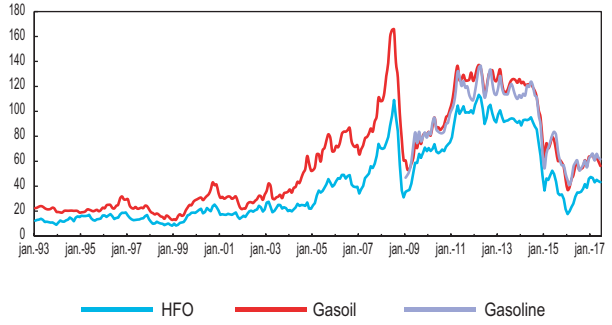
Crude oil

Average key crude oil spot prices in USD/barrel



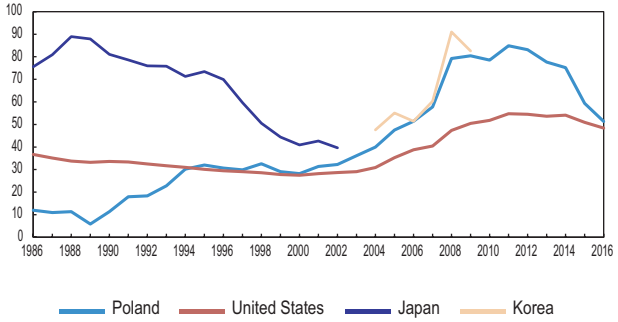
Oil products

Average Rotterdam oil product spot prices in USD/barrel



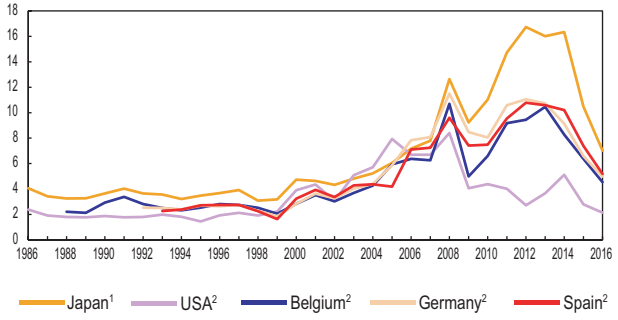
Coal

Average steam coal prices for electricity generation in USD/tonne



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)
Australia	..	..	..	1.070
Austria	430.37	755.83	0.838	1.261
Belgium	366.77	617.87	1.167	1.541
Canada	365.19	759.21	0.660	0.928
Chile	..	866.59	..	1.134
Czech Republic	281.13	710.17	0.990	1.220
Denmark	518.48	1 218.23	1.083	1.596
Estonia	..	760.26	1.061	1.268
Finland	..	946.62	1.155	1.573
France	499.84	822.92	1.113	1.491
Germany	317.50	624.52	1.074	1.475
Greece	456.52	1 035.38	1.093	1.622
Hungary	451.48	x	1.014	1.262
Ireland	758.15	711.14	1.096	1.468
Israel	c	1 613.77	c	1.669
Italy	428.03	1 276.40	1.217	1.642
Japan	556.26	685.47	0.848	1.158
Korea	557.67	747.12	..	1.595
Luxembourg	..	589.80	0.923	1.249
Mexico	259.64	x	0.727	0.880
Netherlands	655.82	1 088.38	1.088	1.665
New Zealand	365.96	..	0.543	1.470
Norway	..	1 257.29	1.301	1.755
Poland	422.39	751.96	0.922	1.164
Portugal	698.24	1 144.00	1.221	1.574
Slovak Republic	373.88	..	1.043	1.413
Slovenia	x	884.55	1.035	1.377
Spain	410.64	740.20	0.987	1.317
Sweden	896.98	..	1.308	1.572
Switzerland	..	798.84	1.256	1.514
Turkey	588.32	1 051.63	1.262	1.444
United Kingdom	c	643.87	1.264	1.479
United States	356.95	684.64	0.678	0.683

1. Prices are for 1st quarter 2017 or latest available quarter for oil products, and annual 2016 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.

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

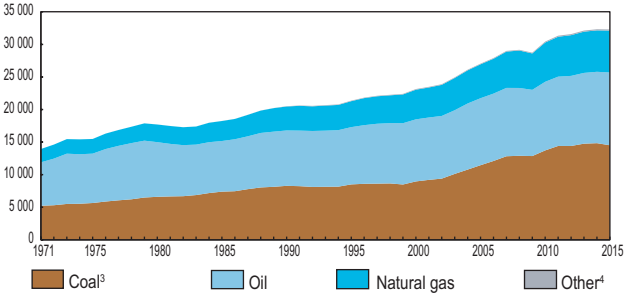
Nat. gas for industry (MWh GCV[5])	Nat. gas for households (MWh GCV[5])	Steam coal for industry[6] (tonne)	Electricity for industry (MWh)	Electricity for households (MWh)	
..	..	..	..	202.04	Australia
38.53	74.84	166.78	105.94	223.51	Austria
27.19	60.69	..	112.32	289.07	Belgium
13.80	26.87	..	78.79	106.32	Canada
c	89.65	..	124.56	169.19	Chile
30.28	64.19	c	89.39	155.97	Czech Republic
..	..	..	..	..	Denmark
26.01	35.94	..	94.55	130.54	Estonia
39.64	..	269.86	83.37	169.87	Finland
36.48	77.24	..	107.57	182.75	France
29.36	76.12	..	143.34	329.71	Germany
28.08	100.33	..	99.31	190.70	Greece
27.82	39.08	x	88.79	125.70	Hungary
34.26	80.07	..	118.64	243.57	Ireland
c	x	x	..	..	Israel
36.68	86.86	..	185.26	276.80	Italy
..	..	91.94	157.89	221.54	Japan
40.94	56.42	..	95.71	119.05	Korea
31.01	48.06	x	68.98	181.55	Luxembourg
..	24.77	x	70.47	63.74	Mexico
27.34	83.48	..	85.39	176.12	Netherlands
15.37	96.38	c	..	..	New Zealand
x	x	..	42.41	104.47	Norway
23.60	50.34	60.00	82.77	155.26	Poland
34.16	96.42	x	125.32	261.40	Portugal
33.81	52.19	..	125.00	169.82	Slovak Republic
32.12	64.25	c	83.95	177.10	Slovenia
26.49	88.90	..	116.01	269.08	Spain
38.52	125.67	..	60.24	174.19	Sweden
61.85	97.66	90.85	133.51	203.28	Switzerland
28.64	37.18	77.95	105.64	132.44	Turkey
24.91	61.48	100.52	125.22	207.59	United Kingdom
11.61	33.21	71.61	67.51	125.48	United States

5. Gross calorific value.
6. Brown coal for Turkey.

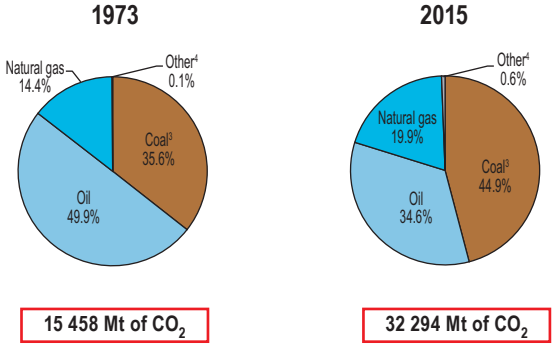
.. not available x not applicable c confidential

CO_2 emissions by fuel

World[1] CO_2 emissions from fuel combustion[2] from 1971 to 2015 by fuel (Mt of CO_2)



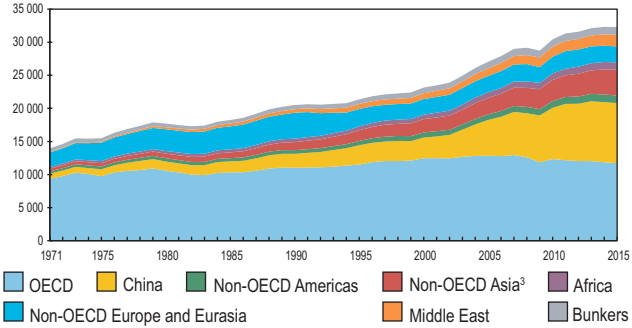
1973 and 2015 fuel shares of CO_2 emissions from fuel combustion[2]



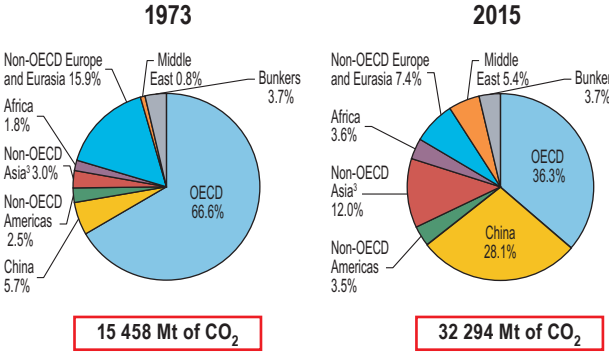
1. World includes international aviation and international marine bunkers.
2. CO_2 emissions from fuel combustion are based on the IEA Energy Balances and on the 2006 IPCC Guidelines, and exclude emissions from non-energy.
3. In these graphs, peat and oil shale are aggregated with coal.
4. Includes industrial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

CO_2 emissions by region

World[1] CO_2 emissions from fuel combustion[2] from 1971 to 2015 by region (Mt of CO_2)



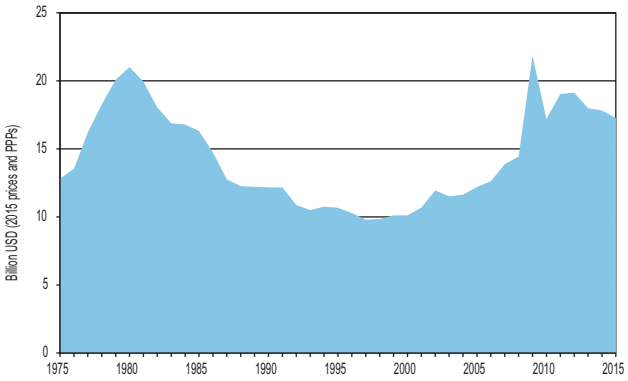
1973 and 2015 regional shares of CO_2 emissions from fuel combustion[2]



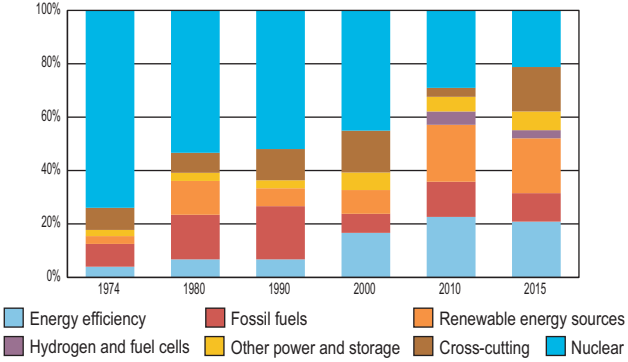
1. World includes international aviation and marine bunkers, which are shown together as Bunkers.
2. CO_2 emissions from fuel combustion are based on the IEA Energy Balances and on the 2006 IPCC Guidelines, and exclude emissions from non-energy.
3. Non-OECD Asia excludes China.

Research, development and demonstration (RD&D)

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



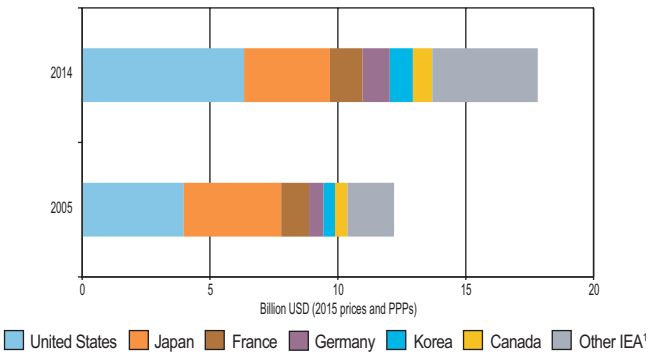
IEA total public energy RD&D budget by technology[2]



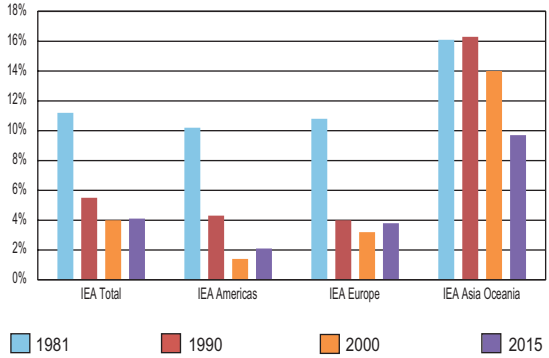
1. Data refer to total public energy RD&D expenditures, converted from current prices in national currencies. All IEA member countries are included, based on available or estimated data. The 2009 peak is mainly the result of the American Recovery and Reinvestment Act (stimulus) spending.
2. For more information and documentation please see: www.iea.org/statistics/RDDonlinedataservice.
Source: Key trends in IEA public energy technology RD&D budgets, 2016, based on IEA energy technology RD&D (database), 2016.

Research, development and demonstration (RD&D)

Total public energy RD&D for selected countries in 2005 and 2014



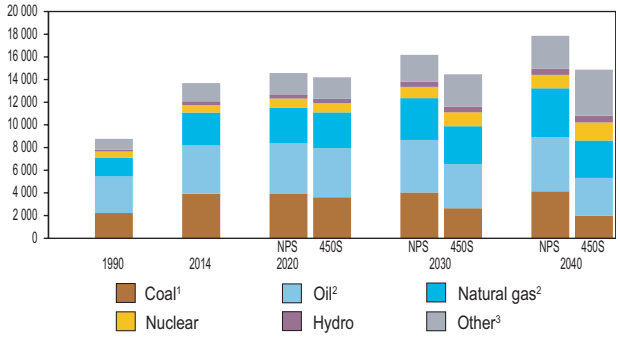
Share of energy in total R&D[2] by region



1. All other IEA member countries are included, based on available or estimated data.
2. Includes energy R&D budgets and excludes demonstration.
Source: Key trends in IEA public energy technology RD&D budgets, 2016, based on *IEA energy technology RD&D (database), 2016.*

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

TPES outlook by fuel and scenario to 2040 (Mtoe)

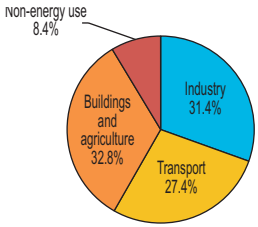


NPS: New Policies Scenario (based on policies under consideration)

450S: 450 Scenario[4] (based on policies needed to limit global average temperature increase to 2 °C)

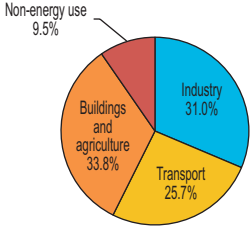
Total final consumption by sector and scenario in 2040

New Policies Scenario



12 538 Mtoe

450 Scenario

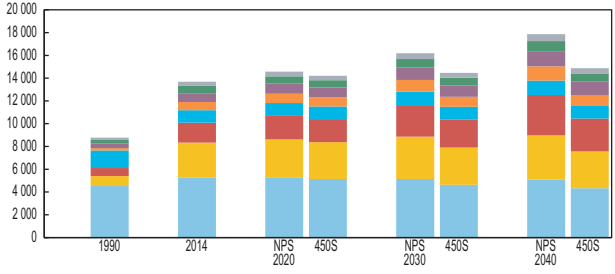


10 706 Mtoe

1. In these graphs, peat and oil shale are aggregated with coal.
2. Includes international aviation and marine bunkers.
3. Includes biofuels and waste, geothermal, solar, wind, tide, etc.
4. Based on a plausible post-2016 climate-policy framework to stabilise the long-term concentration of global greenhouse gases at 450 ppm CO_2-equivalent. Source: IEA, World Energy Outlook 2016.

Outlook for world TPES to 2040

TPES outlook by region and scenario to 2040 (Mtoe)

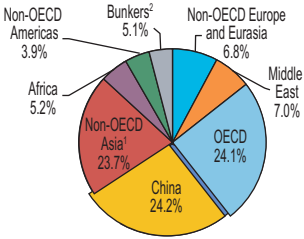


NPS: New Policies Scenario (based on policies under consideration)

450S: 450 Scenario[3] (based on policies needed to limit global average temperature increase to 2 °C)

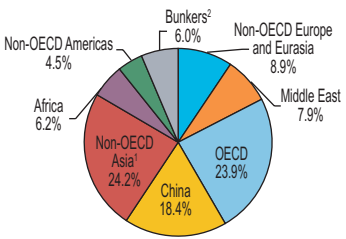
CO_2 emissions by region and scenario in 2040

New Policies Scenario



36 290 Mt of CO_2

450 Scenario



18 427 Mt of CO_2

1. Non-OECD Asia excludes China.
2. Includes international aviation and international marine bunkers.
3. Based on a plausible post-2016 climate-policy framework to stabilise the long-term concentration of global greenhouse gases at 450 ppm CO_2-equivalent. CO_2 emissions are from fossil fuel combustion only.
Source: IEA, World Energy Outlook 2016.

Selected indicators for 2015

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)
World	7334	75489	105035	13790	-	13647 ([3])	22386	32294 ([4])
OECD	1277	48750	47731	4164	1320	5259	10234	11720
Middle East	227	2201	4967	1884	-1116	729	920	1740
Non-OECD Europe and Eurasia	341	2767	5421	1833	-696	1106	1551	2403
China	1379	9174	18432	2496	518	2987	5593	9085
Non-OECD Asia	2438	5948	16764	1479	371	1769	2397	3887
Non-OECD Americas	485	4342	6362	816	-167	628	1019	1132
Africa	1187	2306	5358	1118	-318	788	671	1140
Albania	2.9	13.1	29.8	2.1	0.3	2.2	6.0	3.8
Algeria	39.7	189.8	536.1	142.8	-88.8	54.0	57.6	130.4
Angola	25.0	103.9	170.1	99.7	-84.1	15.0	8.7	20.4
Argentina	43.4	455.9	706.6	73.8	13.7	86.0	134.1	191.4
Armenia	3.0	11.5	23.4	1.1	2.0	3.1	5.7	4.7
Australia	24.1	1485.3	1077.5	381.3	-249.6	125.3	238.1	380.9
Austria	8.6	411.2	369.3	12.0	20.4	32.8	72.0	62.1
Azerbaijan	9.6	59.0	157.9	58.3	-44.1	14.4	21.7	30.8
Bahrain	1.4	30.8	59.5	22.8	-8.2	14.3	27.8	30.1
Bangladesh	161.0	156.6	494.8	31.2	7.0	37.9	52.5	70.5
Belarus	9.5	58.6	154.9	3.6	21.5	25.3	33.8	53.2
Belgium	11.2	508.1	459.6	10.7	50.8	53.3	87.8	92.5
Benin	10.9	8.8	20.6	2.7	1.9	4.6	1.2	5.3
Bolivia	10.7	25.7	68.6	21.0	-12.7	8.3	7.7	18.3
Bosnia and Herzegovina	3.8	18.3	36.6	6.2	2.0	8.0	12.1	22.2
Botswana	2.3	16.0	33.0	1.7	1.0	2.7	3.9	7.1
Brazil	207.8	2330.4	2959.5	279.4	25.3	298.0	523.0	450.8
Brunei Darussalam	0.4	13.6	27.6	16.1	-13.2	2.7	3.9	6.0

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.

Selected indicators for 2015

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 (t CO_2/ toe)	CO_2/ pop. (t CO_2/ capita)	CO_2/ GDP (kg CO_2/ 2010 USD)	CO_2/ GDP (PPP) (kg CO_2/ 2010 USD)	Region/ Country/ Economy
1.86	0.18	0.13	3052	2.37	4.4	0.43	0.31	World
4.12	0.11	0.11	8016	2.23	9.18	0.24	0.25	OECD
3.21	0.33	0.15	4052	2.39	7.66	0.79	0.35	Middle East
3.24	0.4	0.2	4548	2.17	7.05	0.87	0.44	Non-OECD Europe and Eurasia
2.17	0.33	0.16	4057	3.04	6.59	0.99	0.49	China
0.73	0.3	0.11	983	2.2	1.59	0.65	0.23	Non-OECD Asia
1.29	0.14	0.1	2101	1.8	2.33	0.26	0.18	Non-OECD Americas
0.66	0.34	0.15	566	1.45	0.96	0.49	0.21	Africa
0.76	0.17	0.07	2092	1.75	1.32	0.29	0.13	Albania
1.36	0.28	0.10	1451	2.41	3.29	0.69	0.24	Algeria
0.60	0.14	0.09	346	1.37	0.82	0.20	0.12	Angola
1.98	0.19	0.12	3088	2.23	4.41	0.42	0.27	Argentina
1.02	0.27	0.13	1901	1.53	1.56	0.41	0.20	Armenia
5.21	0.08	0.12	9892	3.04	15.83	0.26	0.35	Australia
3.80	0.08	0.09	8346	1.89	7.20	0.15	0.17	Austria
1.49	0.24	0.09	2245	2.15	3.19	0.52	0.20	Azerbaijan
10.36	0.46	0.24	20190	2.11	21.83	0.98	0.51	Bahrain
0.24	0.24	0.08	326	1.86	0.44	0.45	0.14	Bangladesh
2.66	0.43	0.16	3560	2.11	5.61	0.91	0.34	Belarus
4.75	0.10	0.12	7834	1.74	8.25	0.18	0.20	Belgium
0.42	0.52	0.22	106	1.16	0.49	0.60	0.26	Benin
0.77	0.32	0.12	719	2.21	1.70	0.71	0.27	Bolivia
2.11	0.44	0.22	3176	2.77	5.84	1.22	0.61	Bosnia and Herzegovina
1.20	0.17	0.08	1724	2.60	3.12	0.44	0.21	Botswana
1.43	0.13	0.10	2516	1.51	2.17	0.19	0.15	Brazil
6.42	0.20	0.10	9293	2.20	14.13	0.44	0.22	Brunei Darussalam

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.

Selected indicators for 2015

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)
Bulgaria	7.2	54.6	120.4	12.1	6.9	18.6	34.9	43.8
Cambodia	15.6	15.9	50.0	4.4	2.7	7.0	5.1	8.0
Cameroon	23.3	30.4	66.9	10.7	-2.7	7.8	5.9	6.0
Canada	35.9	1796.4	1515.4	471.3	-199.2	270.2	544.5	549.2
Chile	18.0	263.1	375.6	12.9	24.0	36.1	71.7	81.6
China (People's Rep. of)	1371.2	8909.8	18049.6	2495.6	489.0	2973.3	5548.7	9040.7
Colombia	48.2	359.2	613.7	124.7	-89.8	33.8	59.4	72.3
Republic of the Congo	4.6	14.6	27.1	15.1	-12.4	2.7	1.0	2.7
Costa Rica	4.8	44.4	67.2	2.6	2.5	4.9	9.5	6.9
Côte d'Ivoire	22.7	34.0	73.4	12.6	0.5	13.0	6.1	9.7
Croatia	4.2	58.3	82.0	4.4	4.2	8.4	16.4	15.5
Cuba	11.4	73.9	234.5	5.8	7.1	12.0	17.2	29.9
Curaçao[5]	0.2	1.8	1.7	0.0	3.7	2.1	0.7	4.9
Cyprus[5]	0.8	23.4	25.8	0.1	2.4	2.0	4.3	5.9
Czech Republic	10.5	223.8	313.3	29.1	13.5	42.1	67.3	99.6
DPR of Korea	25.2	26.9	100.8	18.8	-11.0	7.8	11.6	22.5
Dem. Rep. of the Congo	77.3	29.7	55.8	29.1	-0.1	28.9	7.3	2.7
Denmark	5.7	341.0	253.1	16.0	2.3	16.1	33.0	32.0
Dominican Republic	10.5	69.0	139.0	1.0	7.8	8.2	16.2	21.4
Ecuador	16.1	86.6	170.5	30.3	-14.6	15.1	23.0	37.6
Egypt	91.5	247.7	919.0	69.5	10.6	79.4	160.5	198.6
El Salvador	6.1	23.6	48.6	2.1	2.4	4.3	6.2	6.5
Eritrea	5.3	2.8	8.0	0.7	0.2	0.9	0.4	0.6
Estonia	1.3	23.2	34.2	5.6	0.5	5.4	8.8	15.5
Ethiopia	99.4	48.3	149.0	46.7	3.7	50.0	8.5	10.2
Finland	5.5	247.7	208.1	17.8	15.7	32.5	82.5	42.1
FYR of Macedonia	2.1	10.6	27.1	1.3	1.4	2.7	7.1	7.2
France	66.5	2777.5	2455.9	137.8	115.7	246.5	468.4	290.5
Gabon	1.7	18.6	31.9	15.9	-10.6	5.1	2.0	3.2
Georgia	3.7	14.8	32.8	1.3	3.4	4.6	10.2	8.4
Germany	81.7	3696.6	3473.5	119.6	198.3	307.8	573.0	729.8

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.

Selected indicators for 2015

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 (t CO_2/ toe)	CO_2/ pop. (t CO_2/ capita)	CO_2/ GDP (kg CO_2/ 2010 USD)	CO_2/ GDP (PPP) (kg CO_2/ 2010 USD)	Region/ Country/ Economy
2.59	0.34	0.15	4858	2.35	6.10	0.80	0.36	Bulgaria
0.45	0.44	0.14	328	1.14	0.51	0.50	0.16	Cambodia
0.33	0.26	0.12	251	0.77	0.26	0.20	0.09	Cameroon
7.54	0.15	0.18	15188	2.03	15.32	0.31	0.36	Canada
2.00	0.14	0.10	3972	2.26	4.52	0.31	0.22	Chile
2.17	0.33	0.16	4047	3.04	6.59	1.01	0.50	China (People's Rep. of)
0.70	0.09	0.06	1231	2.14	1.50	0.20	0.12	Colombia
0.57	0.18	0.10	207	1.02	0.58	0.18	0.10	Republic of the Congo
1.03	0.11	0.07	1985	1.41	1.44	0.16	0.10	Costa Rica
0.57	0.38	0.18	269	0.74	0.43	0.28	0.13	Côte d'Ivoire
2.00	0.14	0.10	3899	1.85	3.69	0.27	0.19	Croatia
1.06	0.16	0.05	1506	2.48	2.62	0.40	0.13	Cuba
12.98	1.11	1.24	4582	2.37	30.72	2.63	2.93	Curaçao[5]
2.38	0.09	0.08	5098	2.93	6.96	0.25	0.23	Cyprus[5]
4.00	0.19	0.13	6384	2.36	9.44	0.44	0.32	Czech Republic
0.31	0.29	0.08	460	2.88	0.90	0.84	0.22	DPR of Korea
0.37	0.97	0.52	94	0.09	0.04	0.09	0.05	Dem. Rep. of the Congo
2.83	0.05	0.06	5812	1.99	5.63	0.09	0.13	Denmark
0.78	0.12	0.06	1537	2.59	2.03	0.31	0.15	Dominican Republic
0.93	0.17	0.09	1426	2.50	2.33	0.43	0.22	Ecuador
0.87	0.32	0.09	1754	2.50	2.17	0.80	0.22	Egypt
0.70	0.18	0.09	1014	1.50	1.05	0.27	0.13	El Salvador
0.16	0.30	0.11	67	0.72	0.12	0.22	0.08	Eritrea
4.13	0.23	0.16	6698	2.86	11.83	0.67	0.45	Estonia
0.50	1.03	0.34	86	0.20	0.10	0.21	0.07	Ethiopia
5.93	0.13	0.16	15050	1.30	7.68	0.17	0.20	Finland
1.29	0.25	0.10	3428	2.70	3.48	0.68	0.27	FYR of Macedonia
3.71	0.09	0.10	7043	1.18	4.37	0.10	0.12	France
2.94	0.27	0.16	1152	0.64	1.88	0.17	0.10	Gabon
1.25	0.31	0.14	2734	1.81	2.26	0.57	0.26	Georgia
3.77	0.08	0.09	7015	2.37	8.93	0.20	0.21	Germany

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

Selected indicators for 2015

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)
Ghana	27.4	46.5	106.2	10.2	-0.5	9.7	8.8	14.0
Gibraltar	0.0	1.2	1.0	0.0	3.8	0.2	0.2	0.6
Greece	10.9	244.3	256.0	8.5	18.4	23.2	56.6	64.6
Guatemala	16.3	49.9	116.1	8.6	5.1	12.7	9.8	15.1
Haiti	10.7	7.8	17.3	3.3	1.0	4.3	0.4	3.2
Honduras	8.1	18.7	37.9	2.7	2.4	5.7	7.8	9.2
Hong Kong, China	7.3	264.3	382.7	0.1	28.9	13.9	44.0	43.9
Hungary	9.8	142.9	235.5	11.3	13.6	25.2	40.3	42.5
Iceland	0.3	15.2	14.0	4.9	1.0	5.6	18.2	2.1
India	1311.1	2296.6	7364.8	554.4	306.8	851.1	1126.5	2066.0
Indonesia	257.6	987.5	2620.8	425.9	-199.3	225.4	211.9	441.9
Islamic Rep. of Iran	79.1	464.1	1264.2	324.2	-82.5	236.5	236.4	552.4
Iraq	36.4	186.5	516.0	182.8	-137.9	47.9	44.4	132.1
Ireland	4.6	303.0	269.8	1.9	12.7	13.3	27.0	35.3
Israel[5]	8.4	277.5	261.2	7.3	16.9	23.0	56.6	62.3
Italy	60.7	2059.5	2015.0	36.1	121.5	152.6	309.7	330.7
Jamaica	2.8	13.6	22.8	0.5	2.8	2.9	3.0	7.0
Japan	127.0	5986.1	4462.3	30.3	409.1	429.8	998.7	1141.6
Jordan	7.6	30.2	76.2	0.3	8.8	8.6	17.4	23.8
Kazakhstan	17.5	186.3	421.4	164.1	-86.5	78.1	101.3	225.1
Kenya	46.1	52.2	130.9	20.4	5.4	25.1	7.8	14.1
Korea	50.6	1266.6	1742.0	51.4	237.0	272.7	534.4	586.0
Kosovo[5]	1.8	6.8	16.1	1.8	0.7	2.5	5.3	8.6
Kuwait	3.9	139.7	267.3	167.8	-130.8	34.7	58.2	85.4
Kyrgyzstan	6.0	6.1	18.8	1.8	2.6	4.0	10.9	9.9
Latvia[5]	2.0	28.3	44.0	2.3	2.4	4.3	6.9	6.8
Lebanon	5.9	41.2	75.0	0.2	7.7	7.6	16.7	22.7
Libya	6.3	34.2	81.9	31.6	-13.6	17.2	10.4	45.3
Lithuania	2.9	44.6	74.7	1.8	5.6	7.2	11.3	10.5
Luxembourg	0.6	62.1	50.8	0.1	4.0	3.7	8.2	8.8
Malaysia	30.3	330.0	752.2	96.5	-8.3	85.9	141.2	220.4

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.

Selected indicators for 2015

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 (t CO_2/ toe)	CO_2/ pop. (t CO_2/ capita)	CO_2/ GDP (kg CO_2/ 2010 USD)	CO_2/ GDP (PPP) (kg CO_2/ 2010 USD)	Region/ Country/ Economy
0.35	0.21	0.09	320	1.45	0.51	0.30	0.13	Ghana
6.28	0.18	0.21	6091	2.77	17.39	0.49	0.57	Gibraltar
2.14	0.09	0.09	5212	2.79	5.95	0.26	0.25	Greece
0.78	0.25	0.11	602	1.19	0.93	0.30	0.13	Guatemala
0.40	0.55	0.25	40	0.75	0.30	0.41	0.19	Haiti
0.70	0.30	0.15	968	1.63	1.14	0.49	0.24	Honduras
1.90	0.05	0.04	6025	3.16	6.01	0.17	0.11	Hong Kong, China
2.56	0.18	0.11	4099	1.69	4.32	0.30	0.18	Hungary
16.87	0.37	0.40	55054	0.37	6.20	0.14	0.15	Iceland
0.65	0.37	0.12	859	2.43	1.58	0.90	0.28	India
0.87	0.23	0.09	823	1.96	1.72	0.45	0.17	Indonesia
2.99	0.51	0.19	2988	2.34	6.98	1.19	0.44	Islamic Rep. of Iran
1.31	0.26	0.09	1218	2.76	3.63	0.71	0.26	Iraq
2.86	0.04	0.05	5811	2.66	7.61	0.12	0.13	Ireland
2.74	0.08	0.09	6751	2.71	7.44	0.22	0.24	Israel[5]
2.51	0.07	0.08	5099	2.17	5.45	0.16	0.16	Italy
1.04	0.21	0.13	1069	2.42	2.50	0.51	0.31	Jamaica
3.38	0.07	0.10	7865	2.66	8.99	0.19	0.26	Japan
1.14	0.29	0.11	2288	2.76	3.13	0.79	0.31	Jordan
4.45	0.42	0.19	5774	2.88	12.83	1.21	0.53	Kazakhstan
0.55	0.48	0.19	169	0.56	0.31	0.27	0.11	Kenya
5.39	0.22	0.16	10558	2.15	11.58	0.46	0.34	Korea
1.40	0.37	0.16	2914	3.43	4.78	1.26	0.53	Kosovo[5]
8.90	0.25	0.13	14951	2.46	21.93	0.61	0.32	Kuwait
0.67	0.66	0.21	1831	2.48	1.66	1.63	0.53	Kyrgyzstan
2.16	0.15	0.10	3492	1.61	3.46	0.24	0.16	Latvia[5]
1.31	0.19	0.10	2861	2.97	3.88	0.55	0.30	Lebanon
2.75	0.50	0.21	1656	2.63	7.22	1.32	0.55	Libya
2.49	0.16	0.10	3906	1.46	3.63	0.24	0.14	Lithuania
6.55	0.06	0.07	14418	2.36	15.47	0.14	0.17	Luxembourg
2.83	0.26	0.11	4656	2.57	7.27	0.67	0.29	Malaysia

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

Selected indicators for 2015

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)
Malta	0.4	10.5	13.3	0.0	2.2	0.6	2.2	1.6
Mauritius	1.3	12.0	22.8	0.3	1.8	1.5	2.8	4.0
Mexico	121.0	1207.7	1990.2	191.8	-1.6	187.4	269.8	442.3
Moldova	3.6	7.0	16.6	0.3	3.1	3.4	5.0	7.6
Mongolia	3.0	11.7	33.3	14.9	-9.6	4.9	6.1	17.2
Montenegro	0.6	4.5	9.1	0.7	0.3	1.0	2.9	2.4
Morocco	34.4	113.2	252.2	1.8	18.8	19.4	30.7	54.9
Mozambique	28.0	14.3	30.7	19.1	-5.5	13.0	14.2	5.0
Myanmar	53.9	88.6	308.3	26.7	-6.9	19.8	13.4	24.4
Namibia	2.5	14.8	23.6	0.5	1.4	1.9	3.8	3.8
Nepal	28.5	19.7	64.6	9.8	2.0	11.7	3.9	5.6
Netherlands	16.9	868.3	769.0	47.6	47.5	73.8	113.6	156.0
New Zealand	4.6	167.4	155.3	16.5	4.9	20.6	41.4	31.2
Nicaragua	6.1	11.2	29.1	2.2	1.7	3.9	3.8	5.1
Niger	19.9	7.6	17.5	3.0	0.0	3.0	1.1	2.0
Nigeria	182.2	461.8	1006.6	254.3	-116.7	139.4	26.2	64.4
Norway	5.2	465.0	307.7	208.1	-177.3	29.6	121.5	36.7
Oman	4.5	71.7	165.1	77.5	-50.4	25.4	29.6	64.3
Pakistan	188.9	215.9	871.1	70.9	23.7	93.9	92.2	146.0
Panama	3.9	42.2	80.4	0.9	6.6	4.3	8.8	10.7
Paraguay	6.6	25.4	56.2	7.1	-1.7	5.4	11.0	5.7
Peru	31.4	186.2	358.9	25.5	-0.2	24.6	42.9	49.1
Philippines	100.7	265.8	684.5	26.3	27.0	52.1	74.9	103.9
Poland	38.5	556.2	931.8	67.7	28.8	94.9	154.1	282.4
Portugal	10.4	227.5	276.2	5.3	18.5	22.0	49.8	47.0
Qatar	2.2	167.0	294.7	221.3	-171.9	45.4	39.0	79.9
Romania	19.8	189.0	377.7	26.5	5.4	31.9	52.4	69.5
Russian Federation	144.1	1723.9	3103.3	1334.2	-601.9	709.7	949.3	1469.0
Saudi Arabia	31.5	672.2	1553.9	648.6	-423.1	221.7	313.1	531.5
Senegal	15.1	15.8	33.9	1.9	2.5	4.1	3.3	6.6
Serbia	7.1	40.2	87.7	10.8	4.1	14.8	32.2	44.5

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.

Selected indicators for 2015

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 (t CO_2/ toe)	CO_2/ pop. (t CO_2/ capita)	CO_2/ GDP (kg CO_2/ 2010 USD)	CO_2/ GDP (PPP) (kg CO_2/ 2010 USD)	Region/ Country/ Economy
1.48	0.06	0.05	5042	2.57	3.81	0.16	0.12	Malta
1.15	0.12	0.06	2233	2.73	3.14	0.33	0.17	Mauritius
1.55	0.16	0.09	2230	2.36	3.66	0.37	0.22	Mexico
0.95	0.48	0.20	1396	2.24	2.13	1.08	0.46	Moldova
1.67	0.42	0.15	2064	3.47	5.80	1.47	0.52	Mongolia
1.62	0.22	0.11	4727	2.34	3.80	0.52	0.26	Montenegro
0.56	0.17	0.08	892	2.83	1.60	0.49	0.22	Morocco
0.46	0.90	0.42	507	0.39	0.18	0.35	0.16	Mozambique
0.37	0.22	0.06	249	1.23	0.45	0.28	0.08	Myanmar
0.76	0.13	0.08	1540	2.04	1.55	0.26	0.16	Namibia
0.41	0.59	0.18	138	0.48	0.20	0.28	0.09	Nepal
4.36	0.09	0.10	6706	2.11	9.21	0.18	0.20	Netherlands
4.46	0.12	0.13	8947	1.51	6.74	0.19	0.20	New Zealand
0.64	0.35	0.13	617	1.31	0.85	0.46	0.18	Nicaragua
0.15	0.39	0.17	55	0.67	0.10	0.26	0.11	Niger
0.76	0.30	0.14	144	0.46	0.35	0.14	0.06	Nigeria
5.71	0.06	0.10	23403	1.24	7.07	0.08	0.12	Norway
5.65	0.35	0.15	6588	2.53	14.32	0.90	0.39	Oman
0.50	0.43	0.11	488	1.56	0.77	0.68	0.17	Pakistan
1.08	0.10	0.05	2233	2.51	2.72	0.25	0.13	Panama
0.82	0.21	0.10	1661	1.05	0.86	0.22	0.10	Paraguay
0.78	0.13	0.07	1366	2.00	1.57	0.26	0.14	Peru
0.52	0.20	0.08	744	1.99	1.03	0.39	0.15	Philippines
2.47	0.17	0.10	4007	2.97	7.34	0.51	0.30	Poland
2.12	0.10	0.08	4807	2.14	4.54	0.21	0.17	Portugal
20.33	0.27	0.15	17460	1.76	35.77	0.48	0.27	Qatar
1.61	0.17	0.08	2645	2.18	3.51	0.37	0.18	Romania
4.93	0.41	0.23	6588	2.07	10.19	0.85	0.47	Russian Federation
7.03	0.33	0.14	9926	2.40	16.85	0.79	0.34	Saudi Arabia
0.27	0.26	0.12	218	1.63	0.44	0.42	0.20	Senegal
2.08	0.37	0.17	4540	3.02	6.27	1.11	0.51	Serbia

Selected indicators for 2015

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)
Singapore	5.5	287.0	434.9	0.6	77.1	25.6	49.5	44.4
Slovak Republic	5.4	101.1	152.3	6.6	9.8	16.4	27.9	29.4
Slovenia	2.1	49.1	58.2	3.4	3.2	6.6	14.2	12.8
South Africa	55.0	417.3	668.7	167.4	-20.8	142.0	228.2	427.6
South Sudan	12.3	4.1	21.1	7.7	-7.1	0.6	0.3	1.1
Spain	46.4	1414.9	1472.3	33.6	95.4	118.9	254.4	247.0
Sri Lanka	21.0	76.3	226.9	5.4	6.0	11.4	12.3	19.5
Sudan	40.2	72.7	162.5	15.8	0.2	15.7	10.6	15.4
Suriname	0.5	4.9	8.3	1.0	-0.3	0.7	2.0	2.1
Sweden	9.8	540.6	432.5	34.0	14.6	45.5	133.2	37.1
Switzerland	8.3	625.9	446.1	12.2	13.6	24.5	62.1	37.3
Syrian Arab Republic	18.5	17.0	37.5	4.7	5.5	10.0	15.0	26.2
Chinese Taipei	23.4	505.8	986.3	12.3	101.5	108.8	249.9	249.4
Tajikistan	8.5	7.9	22.1	1.9	0.8	2.7	13.1	4.3
Tanzania	53.5	43.7	127.7	22.9	3.3	26.0	5.2	11.6
Thailand	68.0	392.5	1021.9	75.2	64.9	135.2	178.1	247.5
Togo	7.3	4.0	9.8	2.7	0.7	3.4	1.2	1.9
Trinidad and Tobago	1.4	22.7	39.9	37.6	-17.2	19.4	10.1	22.8
Tunisia	11.3	48.1	119.3	6.4	4.9	10.9	16.4	25.6
Turkey	77.5	1087.6	1779.2	31.7	103.6	128.8	229.2	317.2
Turkmenistan	5.4	37.3	81.7	81.2	-53.1	27.6	16.4	69.1
Ukraine	45.2	121.1	313.8	61.6	30.1	90.1	144.9	189.4
United Arab Emirates	9.2	360.0	589.6	229.6	-132.8	73.3	118.3	180.2
United Kingdom	65.1	2682.3	2476.5	119.0	72.3	180.7	330.9	389.8
United States	321.7	16597.4	16597.4	2018.5	257.7	2188.3	4128.5	4997.5
Uruguay	3.4	47.8	67.1	2.9	2.4	5.0	10.9	6.4
Uzbekistan	31.3	58.1	173.0	56.0	-13.4	42.6	51.3	95.6
Venezuela	31.1	398.0	475.6	182.7	-121.8	59.4	76.2	136.8
Viet Nam	91.7	154.5	509.3	70.4	5.7	73.8	140.7	168.3
Yemen	26.8	20.8	68.0	4.1	-0.6	3.5	4.0	11.1
Zambia	16.2	26.1	57.2	9.2	1.1	10.2	11.8	3.3
Zimbabwe	15.6	12.7	25.7	10.7	1.1	11.3	8.0	11.8

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.

Selected indicators for 2015

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 (t CO_2/ toe)	CO_2/ pop. (t CO_2/ capita)	CO_2/ GDP (kg CO_2/ 2010 USD)	CO_2/ GDP (PPP) (kg CO_2/ 2010 USD)	Region/ Country/ Economy
4.63	0.09	0.06	8949	1.73	8.03	0.15	0.10	Singapore
3.02	0.16	0.11	5151	1.80	5.43	0.29	0.19	Slovak Republic
3.19	0.13	0.11	6877	1.95	6.22	0.26	0.22	Slovenia
2.58	0.34	0.21	4148	3.01	7.77	1.02	0.64	South Africa
0.05	0.14	0.03	25	1.91	0.09	0.26	0.05	South Sudan
2.56	0.08	0.08	5481	2.08	5.32	0.17	0.17	Spain
0.55	0.15	0.05	585	1.70	0.93	0.26	0.09	Sri Lanka
0.39	0.22	0.10	264	0.98	0.38	0.21	0.09	Sudan
1.22	0.13	0.08	3712.71	3.12	3.80	0.42	0.25	Suriname
4.64	0.08	0.11	13594.45	0.82	3.78	0.07	0.09	Sweden
2.96	0.04	0.05	7499.15	1.52	4.51	0.06	0.08	Switzerland
0.54	0.59	0.27	811.16	2.63	1.42	1.54	0.70	Syrian Arab Republic
4.65	0.22	0.11	10669.43	2.29	10.65	0.49	0.25	Chinese Taipei
0.32	0.34	0.12	1547.39	1.60	0.51	0.55	0.20	Tajikistan
0.49	0.59	0.20	98.11	0.45	0.22	0.27	0.09	Tanzania
1.99	0.34	0.13	2621.07	1.83	3.64	0.63	0.24	Thailand
0.47	0.85	0.35	166.32	0.55	0.26	0.46	0.19	Togo
14.26	0.85	0.49	7411.03	1.17	16.76	1.00	0.57	Trinidad and Tobago
0.97	0.23	0.09	1458.41	2.34	2.28	0.53	0.21	Tunisia
1.66	0.12	0.07	2959.24	2.46	4.10	0.29	0.18	Turkey
5.14	0.74	0.34	3058.8	2.50	12.86	1.85	0.85	Turkmenistan
2.00	0.74	0.29	3208.8	2.10	4.20	1.56	0.60	Ukraine
8.00	0.20	0.12	12915.47	2.46	19.68	0.50	0.31	United Arab Emirates
2.78	0.07	0.07	5082.23	2.16	5.99	0.15	0.16	United Kingdom
6.80	0.13	0.13	12833.25	2.28	15.53	0.30	0.30	United States
1.46	0.11	0.07	3185.02	1.27	1.86	0.13	0.10	Uruguay
1.36	0.73	0.25	1638.49	2.24	3.05	1.64	0.55	Uzbekistan
1.91	0.15	0.12	2450.66	2.30	4.40	0.34	0.29	Venezuela
0.80	0.48	0.14	1534.37	2.28	1.83	1.09	0.33	Viet Nam
0.13	0.17	0.05	147.36	3.20	0.42	0.54	0.16	Yemen
0.63	0.39	0.18	726.25	0.32	0.20	0.13	0.06	Zambia
0.72	0.89	0.44	509.84	1.05	0.75	0.93	0.46	Zimbabwe

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

Sources: Energy data: International Energy Agency.
Population: OECD/World Bank.
GDP and GDP(PPP) (in 2010 USD): OECD/World Bank/CEPII (Paris).

Conversion factors

General conversion factors for energy

To: / From:	TJ	Gcal	Mtoe	MBtu	GWh
	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: / From:	kg	t	lt	st	lb
	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: / From:	gal U.S.	gal U.K.	bbl	ft^3	l	m^3
	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 (ft^3)	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 x 10-3	3.531×10^{-2}	1	1.000 x 10-3
cubic metre (m^3)	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 2016	toe/tonne
People's Rep. of China	0.521
India	0.388
United States	0.537
Indonesia	0.536
South Africa	0.564
Australia	0.599
Russian Federation	0.601
Colombia	0.650
Kazakhstan	0.444
Poland	0.543

Crude oil[1]

Top ten producers in 2016	toe/tonne
Saudi Arabia	1.016
Russian Federation	1.005
United States	1.021
People's Rep. of China	1.000
Iraq	1.023
Islamic Republic of Iran	1.019
Canada	1.022
United Arab Emirates	1.018
Kuwait	1.016
Brazil	1.018

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.

Selected country-specific gross calorific values

Natural gas

Top ten producers in 2016	kJ/m³
United States	38 267
Russian Federation	38 230
Islamic Republic of Iran	39 356
Canada	39 040
Qatar	41 400
People's Rep. of China	38 931
Norway	39 275
Algeria	39 565
Saudi Arabia	38 000
Australia	39 028

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.

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.

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.

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

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.

Definitions

Other (ctd.)

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 can not 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 and 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;

Definitions

Industry (ctd.)

- *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*.

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

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.
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.

Geographical coverage

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.
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, the Netherlands, New Zealand, Norway, Poland, Portugal, the Slovak Republic, Spain, Sweden, Switzerland, Turkey, the United Kingdom and the United States, *Accession countries:* Chile and Mexico, *Association countries:* 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, Malta, Moldova, Montenegro, Romania, Russian Federation, Serbia[7], Tajikistan, Turkmenistan, Ukraine and Uzbekistan.
China	People's Republic of China and Hong Kong (China).
Non-OECD Asia	Bangladesh, Brunei Darussalam, Cambodia, India, Indonesia, Democratic People's Republic of Korea, Malaysia, Mongolia, Myanmar, Nepal, Pakistan, Philippines, Singapore, Sri Lanka, Chinese Taipei, Thailand, Viet Nam and Other Asia.
Non-OECD Americas	Argentina, Bolivia, Brazil, Colombia, Costa Rica, Cuba, Curaçao[2], Dominican Republic, Ecuador, El Salvador, Guatemala, Haiti, Honduras, Jamaica, Nicaragua, Panama, Paraguay, Peru, Suriname, Trinidad and Tobago, Uruguay, Venezuela and Other Non-OECD Americas.

Geographical coverage

1. OECD includes Estonia, Latvia and Slovenia starting in 1990. Prior to 1990, data for these two 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 became an OECD member in July 2016. Accordingly, Latvia appears in the list of OECD members and is included in the zone aggregates for data from 1990, starting with the 2017 edition. Prior to 1990, data for Latvia are included in Former Soviet Union.

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

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.

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Published August 2017 – Price: Print €120; PDF €96

World Energy Balances 2017

World Energy Balances presents comprehensive energy balances for all the world's largest energy producing and consuming countries. It contains detailed data on the supply and consumption of energy for 150 countries and regions, including all OECD countries, over 100 other key energy producing and consuming countries, as well as world totals. The book includes graphs and detailed data by country for all energy sources – coal, gas, oil, electricity, renewables and waste - expressed in balance format, for the year 2015. Alongside this, there are summary time series on production, trade, final consumption by sector, as well as key energy and economic indicators. The volume also presents provisional 2016 supply data for OECD countries, and initial 2016 estimates for non-OECD countries' production and trade of natural gas, primary coal and oil.

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Electricity Information provides a comprehensive review of historical and current market trends in the OECD electricity sector, including 2016 provisional data. It provides an overview of the world electricity developments in 2015 covering world electricity and heat production, input fuel mix, supply and consumption, and electricity imports and exports. More detail is provided for the 35 OECD countries with information covering production, installed capacity, input energy mix to electricity and heat production, consumption, electricity trades, input fuel prices and end-user electricity prices. It provides comprehensive statistical details on overall energy consumption, economic indicators, electricity and heat production by energy form and plant type, electricity imports and exports, sectoral energy and electricity consumption, as well as prices for electricity and electricity input fuels for each country and regional aggregate.

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Published August 2017 – Price: Print €165; PDF €132

Oil Information 2017

Oil Information is a comprehensive reference book on current developments in oil supply and demand. This publication contains key data on world production, trade, prices and consumption of major oil product groups, with time series back to the early 1970s. Its core consists of a detailed and comprehensive picture of oil supply, demand, trade, production and consumption by end-user for each OECD country individually and for the OECD regions. Trade data are reported extensively by origin and destination.

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Renewables Information 2017

Renewables Information provides a comprehensive review of historical and current market trends in OECD countries, including 2015 provisional data. It provides an overview of the development of renewables and waste in the world over the 1990 to 2015 period. A greater focus is given to the OECD countries with a review of electricity generation and capacity from renewable and waste energy sources, including detailed tables. However, an overview of developments in the world and OECD renewable and waste market is also presented. The publication encompasses energy indicators, generating capacity, electricity and heat production from renewable and waste sources, as well as production and consumption of renewables and waste.

Published August 2017 – Price: Print €110; PDF €88

CO_2 Emissions from Fuel Combustion, 2017

In recognition of the fundamental importance of understanding energy related environmental issues, the IEA's *CO_2 Emissions from Fuel Combustion* provides a full analysis of emissions stemming from energy use. This annual publication has become an essential tool for analysts and policy makers in many international fora such as the Conference of the Parties, which will be meeting in Bonn, Germany, from 7 to 16 November 2017. The data in this book are designed to assist in understanding the evolution of the emissions of CO_2 from 1971 to 2015 for 150 countries and regions by sector and by fuel. Emissions were calculated using IEA energy databases and the default methods and emission factors from the 2006 *IPCC Guidelines for National Greenhouse Gas Inventories*.

Published November 2017 – Price: Print €165; PDF €132

Energy Efficiency Indicators Highlights 2017

Energy Efficiency Indicators Highlights is designed to help understand what drives final energy use in IEA member countries in order to improve and track national energy efficiency policies.

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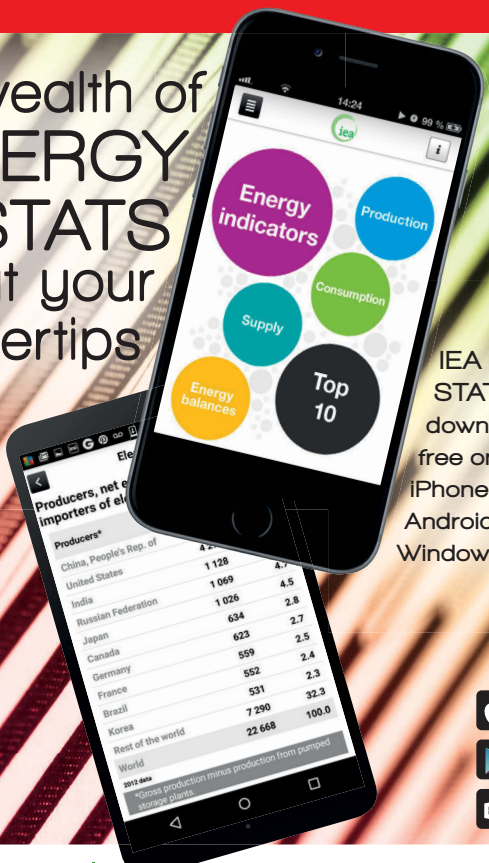

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The global energy scene is in a state of flux, thrown off balance by falling costs for a range of technologies, led by wind and solar, and shale oil and gas. Understanding the dynamic interplay of energy markets, technologies and policies has never been more critical. The *World Energy Outlook (WEO)*, widely regarded as the gold standard of energy analysis, provides strategic insight on what today's policy and investment decisions mean for long-term trends.

The 2017 edition of the *WEO* will contain a full update of energy demand and supply projections through 2040 under different scenarios, and their consequences for energy security, economic prosperity, efficiency, investment, air quality and climate change. A vital aid to decision-makers, this year's *WEO* will also include in-depth analysis of:

- **China's energy outlook:** China's influence has long been felt in coal, oil and gas, as well as in nuclear power, but the country is also now firmly established as a global leader in renewable energy, efficiency and innovation. In cooperation with the newly established IEA-China Liaison Office in Beijing, the *WEO* will examine China's economic and energy transitions in detail, and consider how the country's policy choices can shape not just national prospects, but also global outcomes.
- **Natural gas:** The outlook for gas markets is evolving rapidly under pressure from two revolutions: the shale revolution, led by the United States, and the LNG revolution that is testing traditional gas business and pricing models. It will also investigate the wider opportunities and uncertainties for gas in the transition to a cleaner energy system, including its role in tackling local pollution as well as the risk of methane emissions.

In addition, the WEO-2017 series will feature two special reports:

- The close links between **energy and development**, assessing today's global picture for access to modern energy, the strategies and technologies that can enable countries to achieve energy for all by 2030, and the ways in which reliable energy can move communities to meet Sustainable Development Goals.
- Prospects for **energy in Southeast Asia,** where infrastructure and investment will have to keep up with rapid, sustained growth in energy demand if the region is to build on its position as one of growth engines in Asia. The report will include coverage of the particular challenge of providing secure, clean and affordable energy to small island systems and remote settlements.

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Printed in France by Chirat, September 2017
Cover design: IEA, Photo credits: © Image 100
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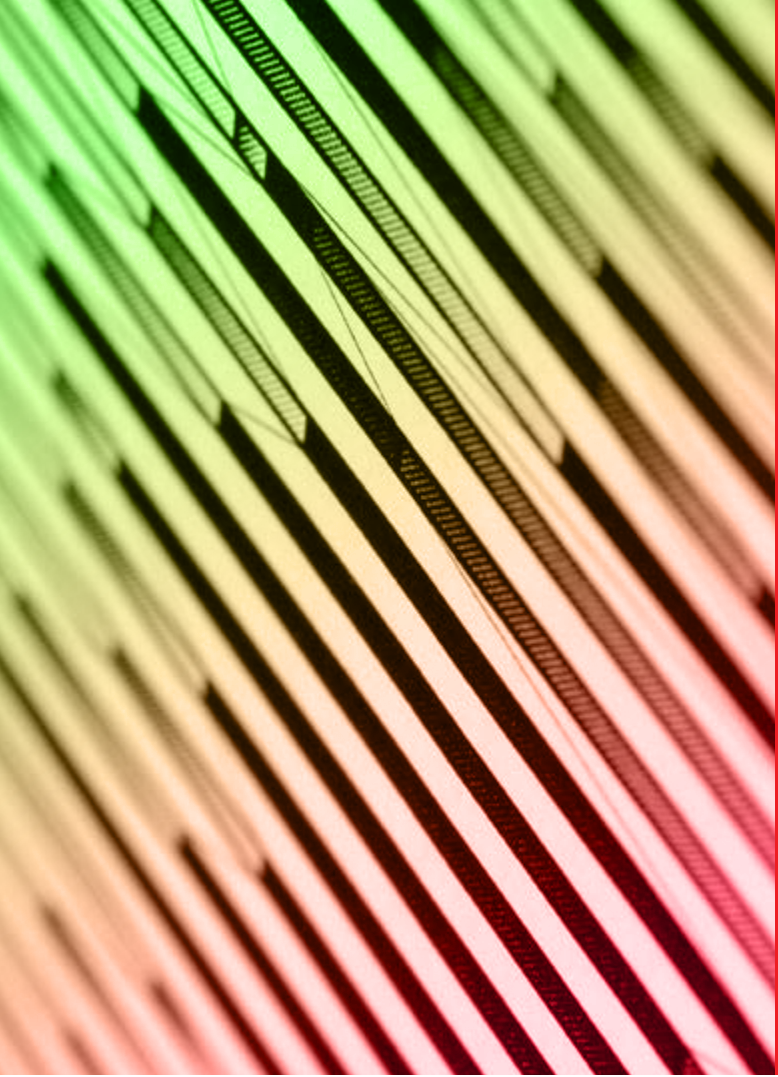

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