

2011

Key World Energy STATISTICS



International
Energy Agency



International
Energy Agency

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www.iea.org



KEY WORLD ENERGY STATISTICS

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IEA participating countries

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The International Energy Agency

The IEA, which was established in November 1974, has over the years gained recognition as one of the world's most authoritative sources for energy statistics. Its all-encompassing annual studies of oil, natural gas, coal, electricity and renewables are indispensable tools for energy policy makers, companies involved in the energy field and scholars.

In 1997 the IEA produced a handy, pocket-sized summary of key energy data. This new edition responds to the enormously positive reaction to the books since then. **Key World Energy Statistics from the IEA** contains timely, clearly-presented data on the supply, transformation and consumption of all major energy sources. The interested businessman, journalist or student will have at his or her fingertips the annual Canadian production of coal, the electricity consumption in Thailand, the price of diesel oil in Spain and thousands of other useful energy facts.

Gathering and analysing statistics is one of the important IEA functions. But the Agency – an autonomous body within the Organisation for Economic Co-operation and Development – also:

- administers a plan to guard member countries against the risk of a major disruption of oil supplies;
- coordinates national efforts to conserve energy and develop alternative energy sources, as well as to limit pollution and energy-related climate change; and
- disseminates information on the world energy market and seeks to promote stable international trade in energy.

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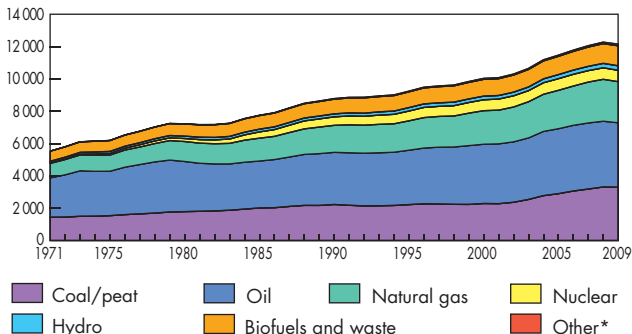
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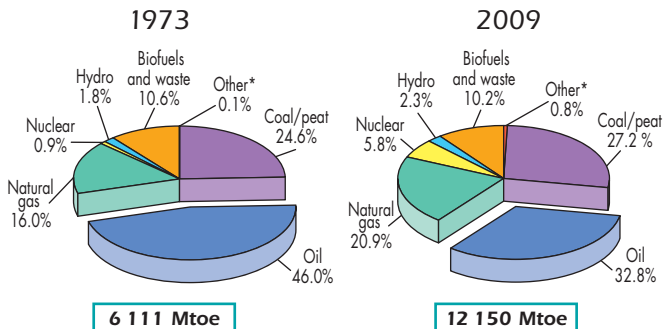
TOTAL PRIMARY ENERGY SUPPLY

World

World total primary energy supply from 1971 to 2009 by fuel (Mtoe)



1973 and 2009 fuel shares of TPES

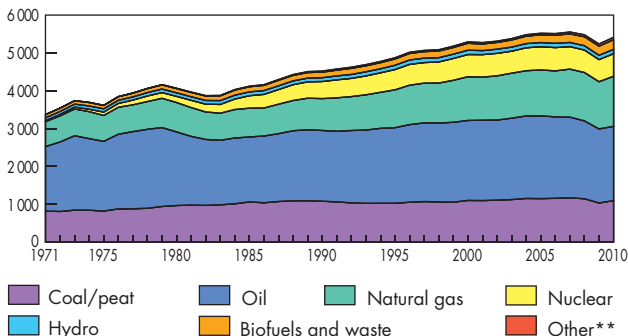


BY FUEL

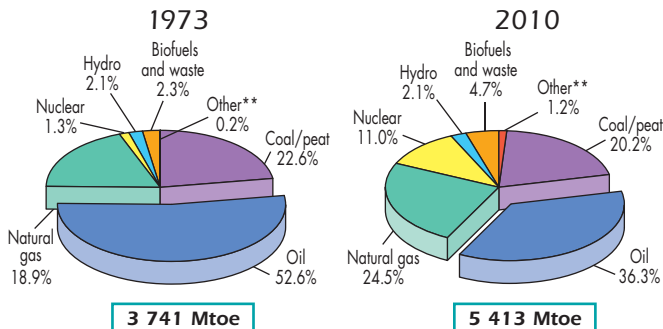
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OECD

OECD total primary energy supply* from 1971 to 2010
by fuel (Mtoe)



1973 and 2010 fuel shares of TPES*



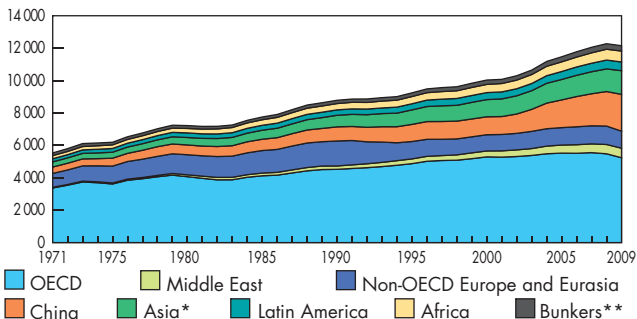
*Excludes electricity trade.

**Other includes geothermal, solar, wind, heat, etc.

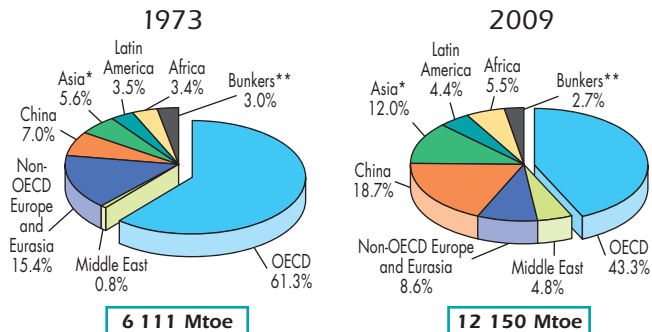
TOTAL PRIMARY ENERGY SUPPLY

World

World total primary energy supply from 1971 to 2009
by region (Mtoe)



1973 and 2009 regional shares of TPES



*Asia excludes China.

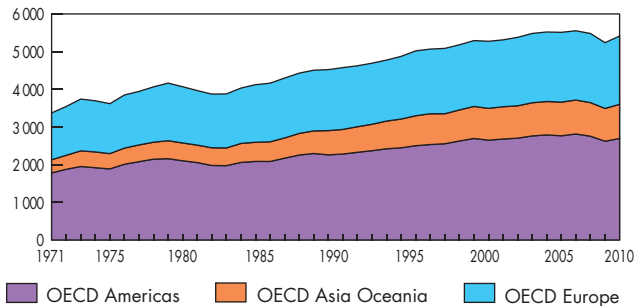
**Includes international aviation and international marine bunkers.

BY REGION

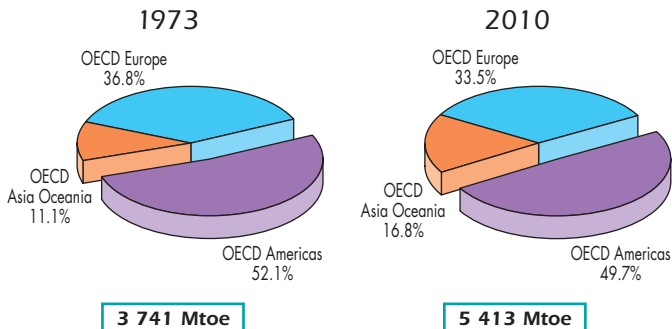
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OECD

OECD total primary energy supply* from 1971 to 2010
by region (Mtoe)



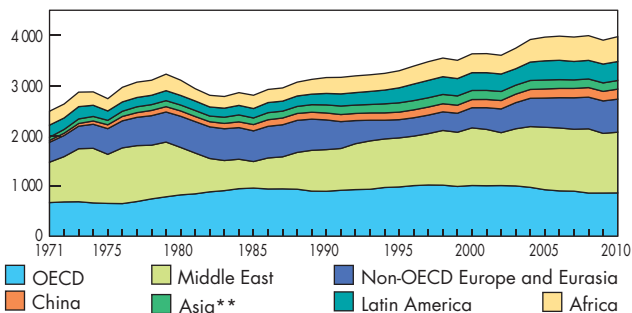
1973 and 2010 regional shares of TPES*



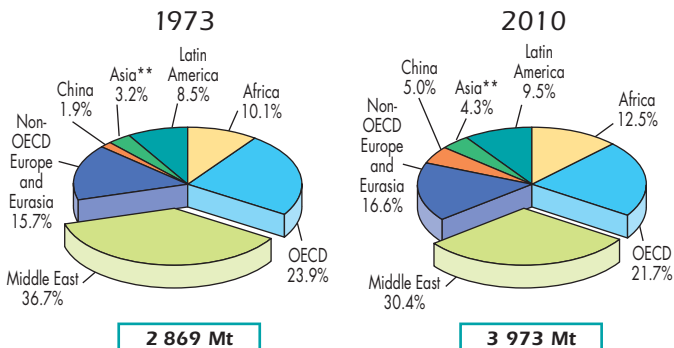
*Excludes electricity trade.

Crude Oil Production

Crude oil* production from 1971 to 2010
by region (Mt)



1973 and 2010 regional shares of crude oil* production



*Includes crude oil, NGL, feedstocks, additives and other hydrocarbons.

**Asia excludes China.

Producers, net exporters and net importers of crude oil*

1



Producers	Mt	% of world total
Russian Federation	502	12.6
Saudi Arabia	471	11.9
United States	336	8.5
Islamic Rep. of Iran	227	5.7
People's Rep. of China	200	5.0
Canada	159	4.0
Venezuela	149	3.8
Mexico	144	3.6
Nigeria	130	3.3
United Arab Emirates	129	3.2
Rest of the world	1 526	38.4
World	3 973	100.0

2010 data

Net exporters	Mt
Saudi Arabia	313
Russian Federation	247
Islamic Rep. of Iran	124
Nigeria	114
United Arab Emirates	100
Iraq	94
Angola	89
Norway	87
Venezuela	85
Kuwait	68
Others	574
Total	1 895

2009 data

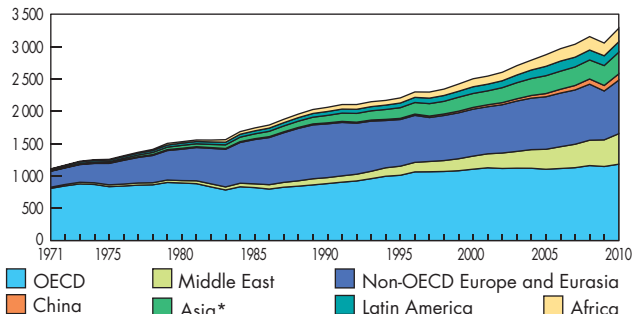
Net importers	Mt
United States	510
People's Rep. of China	199
Japan	179
India	159
Korea	115
Germany	98
Italy	80
France	72
Netherlands	57
Spain	56
Others	477
Total	2 002

2009 data

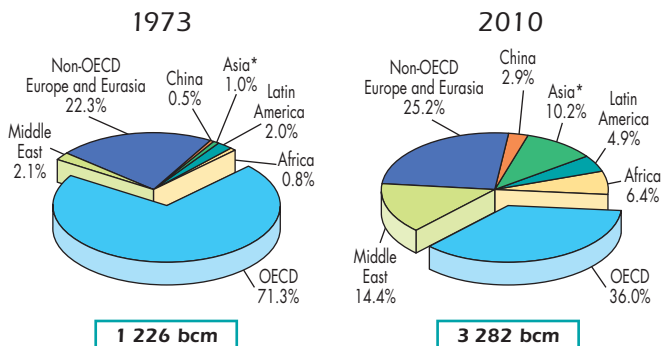
*Includes crude oil, NGL, feedstocks, additives and other hydrocarbons.

Natural Gas Production

Natural gas production from 1971 to 2010 by region
(billion cubic metres)



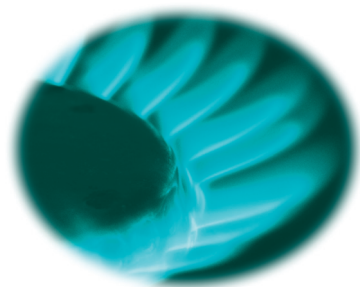
1973 and 2010 regional shares of natural gas production



*Asia excludes China.

Producers, net exporters and net importers* of natural gas

1



Producers	bcm	% of world total
Russian Federation	637	19.4
United States	613	18.7
Canada	160	4.9
Islamic Rep. of Iran	145	4.4
Qatar	121	3.7
Norway	107	3.3
People's Rep. of China	97	3.0
Netherlands	89	2.7
Indonesia	88	2.7
Saudi Arabia	82	2.5
Rest of the world	1 143	34.7
World	3 282	100.0

2010 data

Net exporters	bcm
Russian Federation	169
Norway	101
Qatar	97
Canada	72
Algeria	55
Indonesia	42
Netherlands	34
Malaysia	25
Turkmenistan	24
Nigeria	24
Others	165
Total	808

2010 data

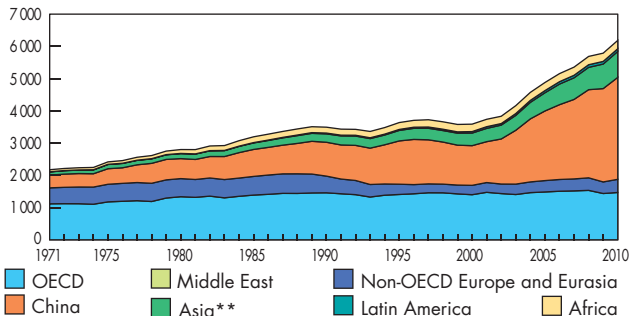
Net importers	bcm
Japan	99
Germany	83
Italy	75
United States	74
France	46
Korea	43
Turkey	37
United Kingdom	37
Ukraine	37
Spain	36
Others	253
Total	820

2010 data

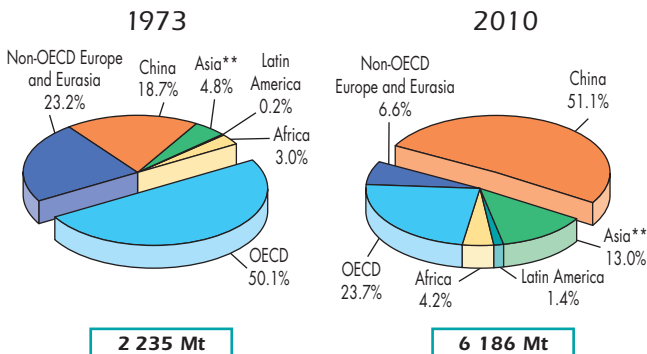
*Net exports and net imports include pipeline gas and LNG.

Hard Coal Production

Hard coal* production from 1971 to 2010
by region (Mt)



1973 and 2010 regional shares of hard coal* production



*Includes recovered coal.

**Asia excludes China.

Producers, net exporters and net importers of coal

1



Producers	Hard coal* (Mt)	Brown coal (Mt)
People's Rep. of China	3 162	**
United States	932	65
India	538	33
Australia	353	67
South Africa	255	0
Russian Federation	248	76
Indonesia	173	163
Kazakhstan	105	6
Poland	77	57
Colombia	74	0
Rest of the world	269	576
World	6 186	1 043

2010 data

*Includes recovered coal.

**Included in hard coal.

Net exporters	Hard coal (Mt)
Australia	298
Indonesia	162
Russian Federation	89
Colombia	68
South Africa	68
United States	57
Kazakhstan	33
Canada	24
Vietnam	21
Mongolia	17
Others	19
Total	856

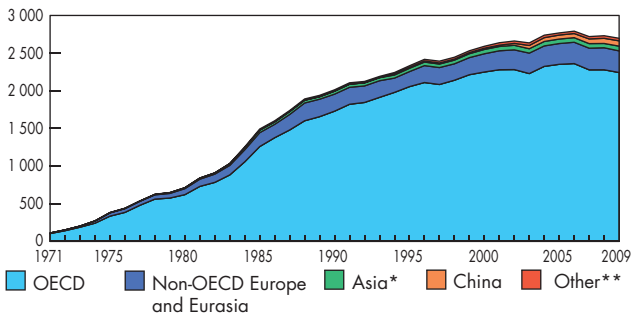
2010 data

Net importers	Hard coal (Mt)
Japan	187
People's Rep. of China	157
Korea	119
India	88
Chinese Taipei	63
Germany	45
Turkey	27
United Kingdom	26
Italy	22
Malaysia	19
Others	196
Total	949

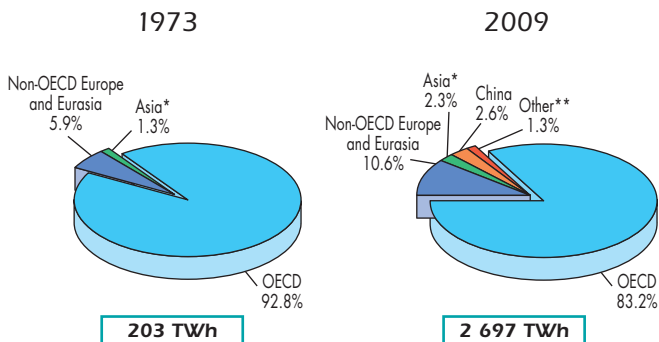
2010 data

Nuclear Production

Nuclear production from 1971 to 2009
by region (TWh)



1973 and 2009 regional shares of nuclear production



*Asia excludes China.

**Other includes Africa, Latin America and the Middle East.

Producers of nuclear electricity

1



Producers	TWh	% of world total
United States	830	30.8
France	410	15.2
Japan	280	10.4
Russian Federation	164	6.1
Korea	148	5.5
Germany	135	5.0
Canada	90	3.3
Ukraine	83	3.1
People's Rep. of China	70	2.6
United Kingdom	69	2.6
Rest of the world	418	15.4
World	2 697	100.0

2009 data

Installed capacity	GW
United States	101
France	63
Japan	49
Russian Federation	22
Germany	20
Korea	18
Canada	13
Ukraine	13
United Kingdom	11
Sweden	9
Rest of the world	52
World	371

2009 data
Sources: IEA,
Commissariat à l'Énergie
Atomique (France).

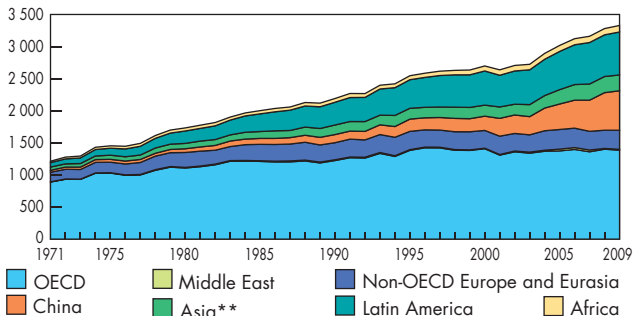
Country (top-ten producers)	% of nuclear in total domestic electricity generation
France	76.2
Ukraine	48.0
Korea	32.7
Japan	26.9
Germany	23.0
United States	19.9
United Kingdom	18.6
Russian Federation	16.5
Canada	15.0
People's Rep. of China	1.9
Rest of the world*	12.7
World	13.5

2009 data

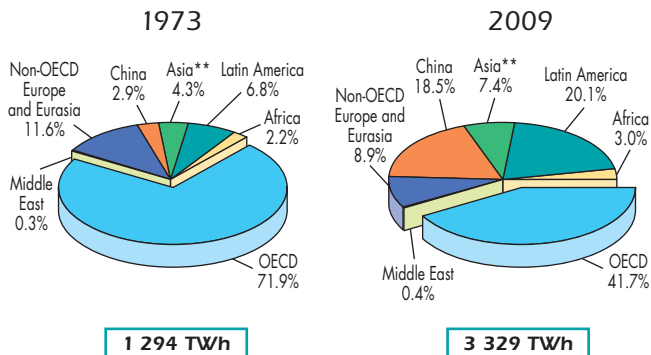
*Excludes countries with no nuclear production.

Hydro Production

Hydro* production from 1971 to 2009
by region (TWh)



1973 and 2009 regional shares of hydro* production



*Includes pumped storage.
**Asia excludes China.

Producers of hydro* electricity

1



Producers	TWh	% of world total
People's Rep. of China	616	18.5
Brazil	391	11.7
Canada	364	10.9
United States	298	9.0
Russian Federation	176	5.3
Norway	127	3.8
India	107	3.2
Venezuela	90	2.7
Japan	82	2.5
Sweden	66	2.0
Rest of the world	1 012	30.4
World	3 329	100.0

2009 data

*Includes pumped storage.

**Excludes countries with no hydro production.

Installed capacity	GW
People's Rep. of China	168
United States	100
Brazil	78
Canada	75
Japan	47
Russian Federation	47
India	37
Norway	30
France	25
Italy	21
Rest of the world	324
World	952

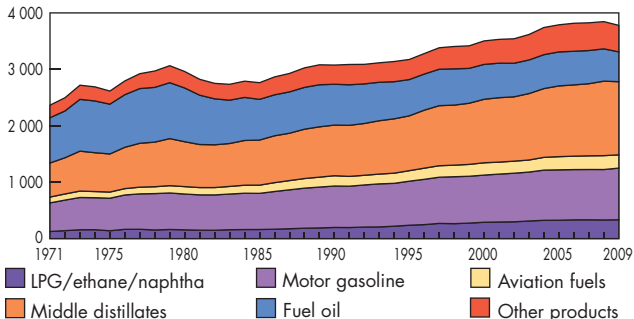
2008 data
Sources: IEA,
United Nations.

Country (top-ten producers)	% of hydro in total domestic electricity generation
Norway	95.7
Brazil	83.8
Venezuela	72.8
Canada	60.3
Sweden	48.3
Russian Federation	17.8
People's Rep. of China	16.7
India	11.9
Japan	7.8
United States	7.1
Rest of the world**	13.9
World	16.5

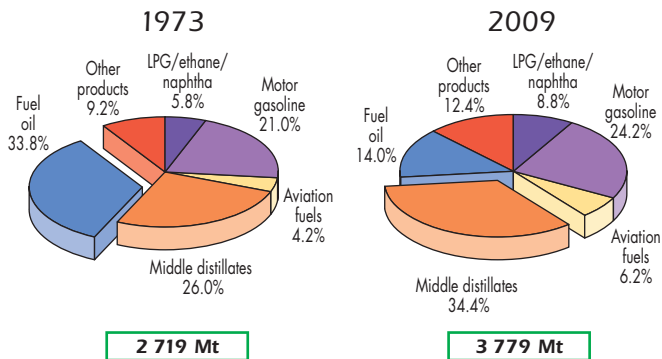
2009 data

Refining by Product

World refinery production from 1971 to 2009
by product (Mt)



1973 and 2009 shares of refinery production by product



Producers, net exporters and net importers of oil products

2



Producers	Mt	% of world total
United States	807	21.4
People's Rep. of China	355	9.4
Russian Federation	232	6.1
India	186	4.9
Japan	179	4.7
Korea	116	3.1
Germany	108	2.9
Canada	96	2.5
Brazil	96	2.5
Saudi Arabia	94	2.5
Rest of the world	1 510	40.0
World	3 779	100.0

2009 data

Net exporters	Mt
Russian Federation	102
Saudi Arabia	50
India	36
Venezuela	33
Kuwait	28
United States	19
Algeria	16
Belarus	13
Korea	13
Italy	12
Others	139
Total*	461

2009 data

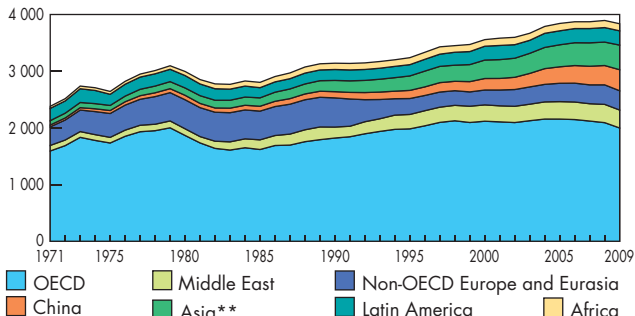
Net importers	Mt
Japan	23
People's Rep. of China	20
Hong Kong (China)	19
France	16
Spain	15
Australia	14
Mexico	13
Indonesia	13
Turkey	13
Vietnam	13
Others	196
Total*	355

2009 data

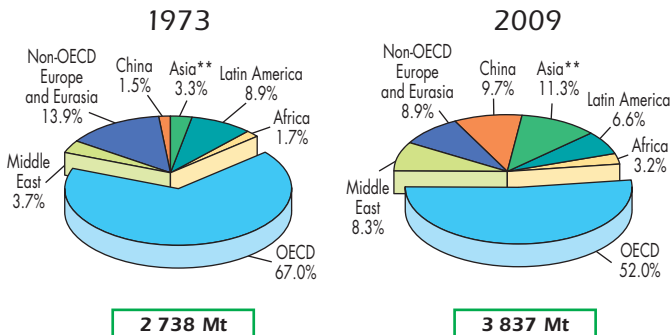
*The discrepancy between total net exports and total net imports arises from different data sources and possible misallocation of bunkers into exports for some countries.

Refining by Region

World refinery throughput* from 1971 to 2009
by region (Mt)



1973 and 2009 regional shares of refinery throughput*



*Includes crude oil, NGL, refinery feedstocks, additives and other hydrocarbons.

**Asia excludes China.

Refinery capacity, net exporters and net importers of oil*

2



Crude distillation capacity	kb/cd	% of world total
United States	17 515	18.8
People's Rep. of China**	9 890	10.6
Russian Federation	5 291	5.7
Japan	4 692	5.0
India	4 003	4.3
Korea	3 003	3.2
Germany	2 392	2.6
Italy	2 277	2.4
Saudi Arabia	2 098	2.3
Brazil	1 981	2.1
Rest of the world	39 938	42.9
World	93 081	100.0

2010 data

Net exporters	Mt
Saudi Arabia	363
Russian Federation	349
Islamic Rep. of Iran	130
Venezuela	117
Nigeria	107
United Arab Emirates	98
Norway	97
Kuwait	97
Angola	87
Iraq	85
Others	595
Total	2 125

2009 data

Net importers	Mt
United States	492
People's Rep. of China	218
Japan	202
India	123
Germany	108
Korea	102
France	88
Spain	71
Italy	68
Singapore	53
Others	601
Total	2 126

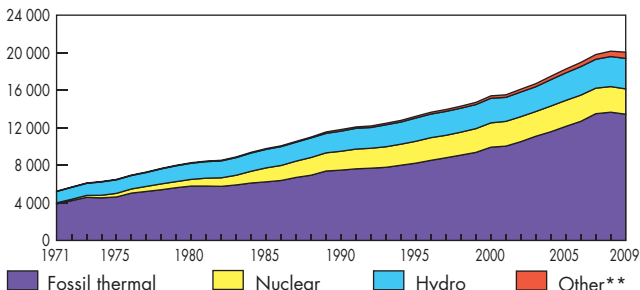
2009 data

*Crude oil and oil products.

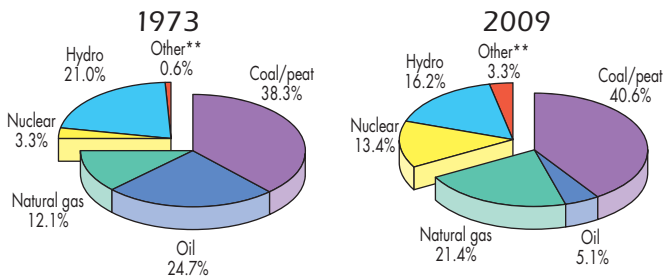
**Includes unlisted small teapot refineries which are estimated at 500 kb/cd (i.e. calendar day).

Electricity Generation by Fuel

World electricity generation* from 1971 to 2009
by fuel (TWh)



1973 and 2009 fuel shares of electricity generation*



6 115 TWh

20 055 TWh

*Excludes pumped storage.

**Other includes geothermal, solar, wind, biofuels and waste, and heat.

Electricity production from fossil fuels

2



Coal/peat	TWh
People's Rep. of China	2 913
United States	1 893
India	617
Japan	279
Germany	257
South Africa	232
Korea	209
Australia	203
Russian Federation	164
Poland	135
Rest of the world	1 217
World	8 119

2009 data

Oil	TWh
Saudi Arabia	120
Japan	92
Islamic Rep. of Iran	52
United States	50
Mexico	46
Iraq	43
Kuwait	38
Pakistan	36
Indonesia	35
Egypt	30
Rest of the world	485
World	1 027

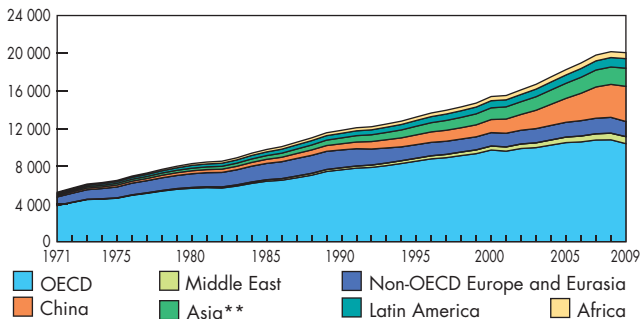
2009 data

Natural gas	TWh
United States	950
Russian Federation	469
Japan	285
United Kingdom	165
Italy	147
Islamic Rep. of Iran	143
Mexico	138
India	111
Spain	107
Thailand	105
Rest of the world	1 681
World	4 301

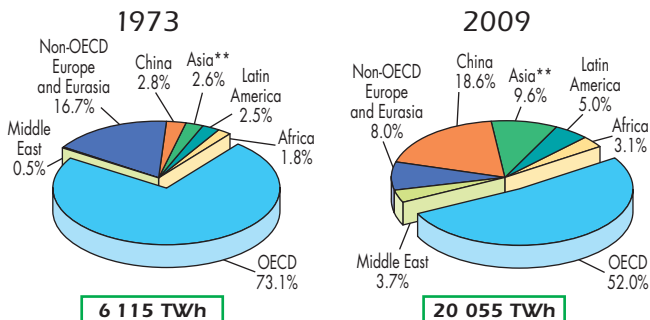
2009 data

Electricity Generation by Region

World electricity generation* from 1971 to 2009
by region (TWh)



1973 and 2009 regional shares of electricity generation*



*Excludes pumped storage.

**Asia excludes China.

Producers, net exporters and net importers of electricity

2



Producers*	TWh	% of world total
United States	4 165	20.8
People's Rep. of China	3 696	18.4
Japan	1 041	5.2
Russian Federation	990	4.9
India	899	4.5
Canada	603	3.0
Germany	586	2.9
France	537	2.7
Brazil	466	2.3
Korea	452	2.3
Rest of the world	6 620	33.0
World	20 055	100.0

2009 data

Net exporters	TWh
Paraguay	45
Canada	34
France	26
Russian Federation	15
Czech Republic	14
Germany	12
People's Rep. of China	11
Norway	9
Spain	8
Ukraine	6
Others	50
Total	230

2009 data

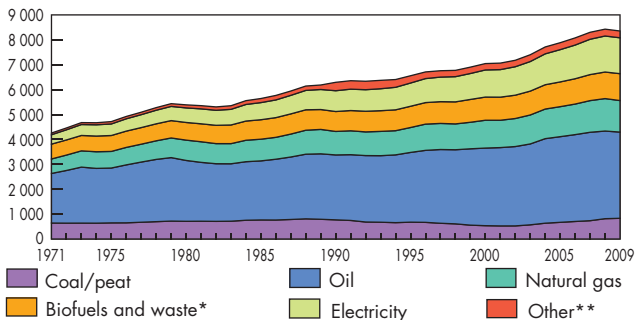
Net importers	TWh
Italy	45
Brazil	40
United States	34
Finland	12
India	10
Hong Kong (China)	8
Argentina	6
Croatia	6
Iraq	6
Hungary	6
Others	68
Total	241

*Gross production minus production from pumped storage plants. 2009 data

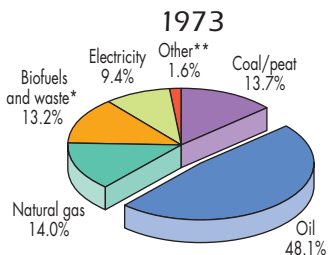
TOTAL FINAL CONSUMPTION

World

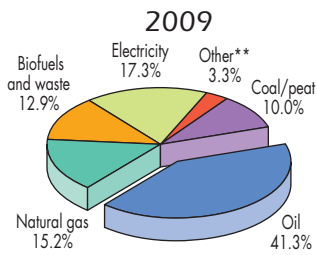
World total final consumption from 1971 to 2009 by fuel (Mtoe)



1973 and 2009 fuel shares of total final consumption



4 674 Mtoe



8 353 Mtoe

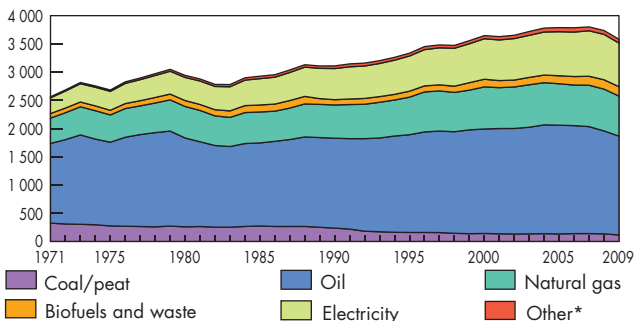
*Data prior to 1994 for biofuels and waste final consumption have been estimated.

**Other includes geothermal, solar, wind, heat, etc.

BY FUEL

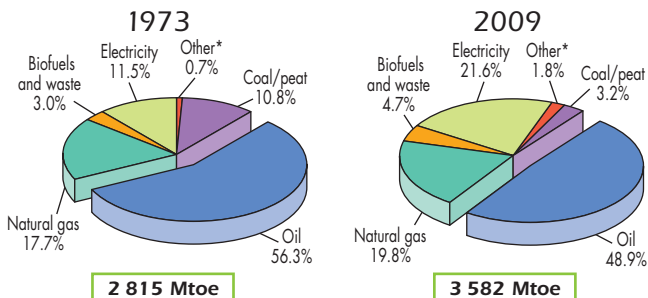
OECD

OECD total final consumption from 1971 to 2009
by fuel (Mtoe)



3

1973 and 2009 fuel shares of total final consumption

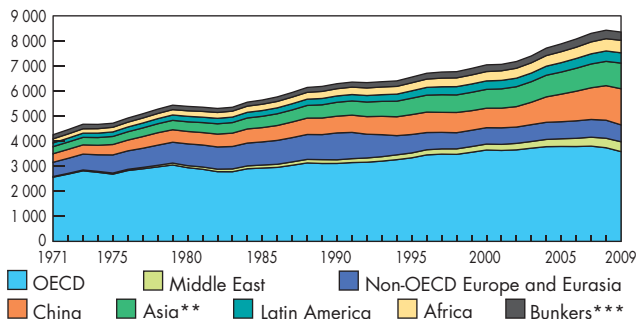


*Other includes geothermal, solar, wind, heat, etc.

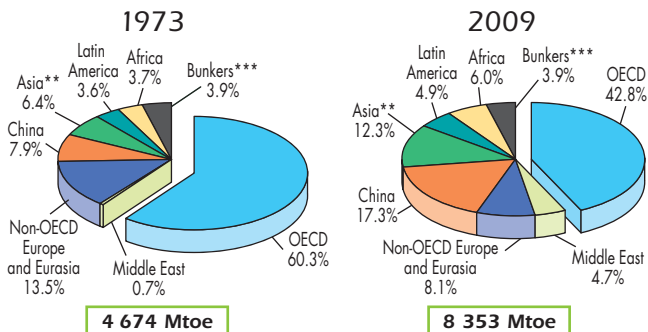
TOTAL FINAL CONSUMPTION

World

World total final consumption* from 1971 to 2009
by region (Mtoe)



1973 and 2009 regional shares of total final consumption*



*Data prior to 1994 for biofuels and waste final consumption have been estimated.

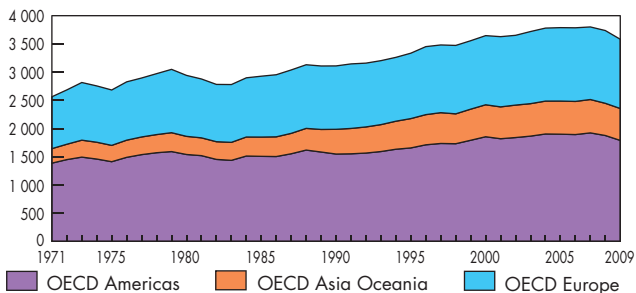
**Asia excludes China.

***Includes international aviation and international marine bunkers.

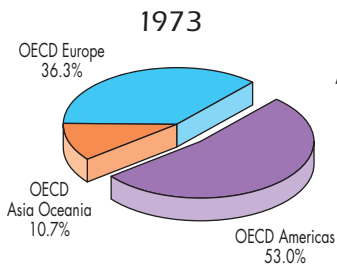
BY REGION

OECD

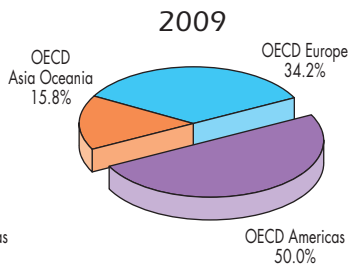
OECD total final consumption from 1971 to 2009
by region (Mtoe)



1973 and 2009 regional shares of total final consumption



2 815 Mtoe

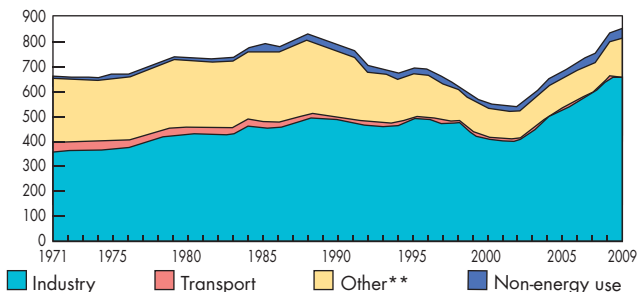


3 582 Mtoe

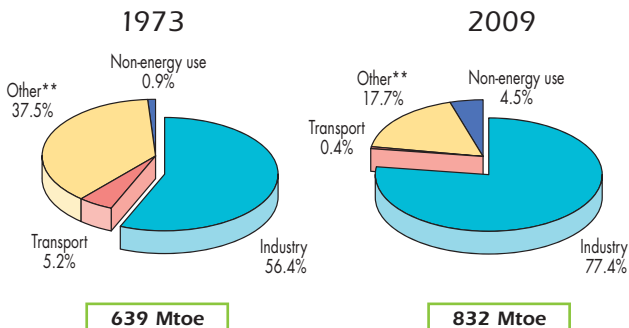
TOTAL FINAL CONSUMPTION

Coal*

Total final consumption from 1971 to 2009
by sector (Mtoe)



1973 and 2009 shares of world coal* consumption

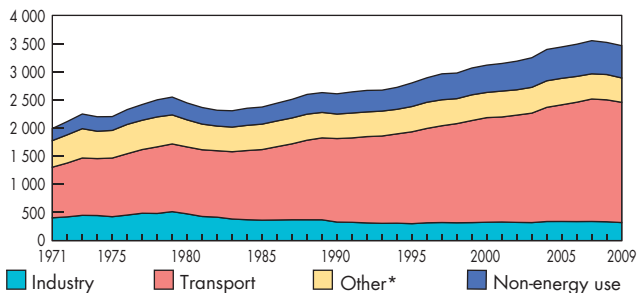


*Coal refers to coal/peat. **Includes agriculture, commercial and public services, residential, and non-specified other.

BY SECTOR

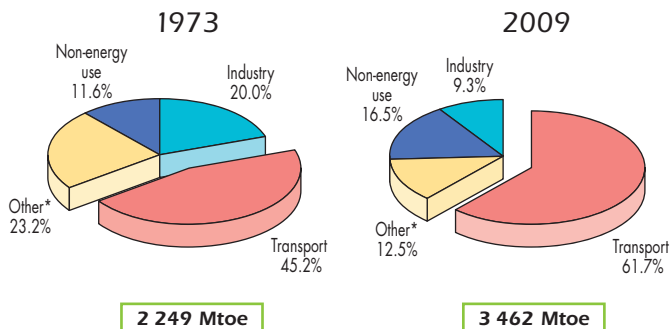
Oil

Total final consumption from 1971 to 2009
by sector (Mtoe)



3

1973 and 2009 shares of world oil consumption

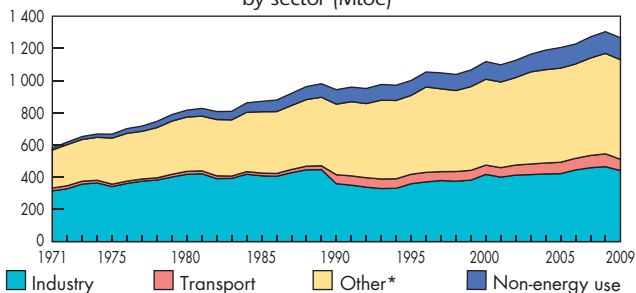


*Includes agriculture, commercial and public services, residential, and non-specified other.

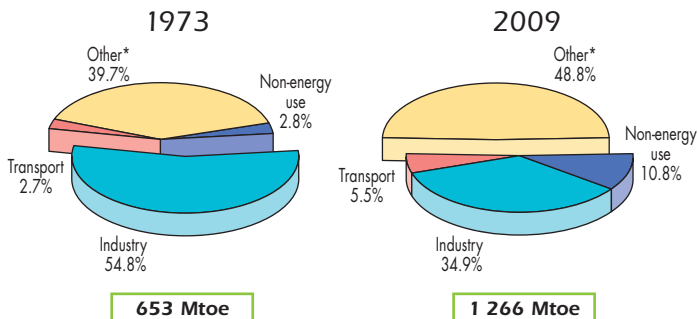
TOTAL FINAL CONSUMPTION

Natural gas

Total final consumption from 1971 to 2009
by sector (Mtoe)



1973 and 2009 shares of world natural gas consumption

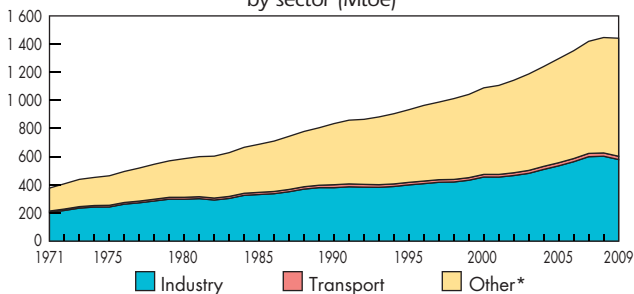


*Includes agriculture, commercial and public services, residential, and non-specified other.

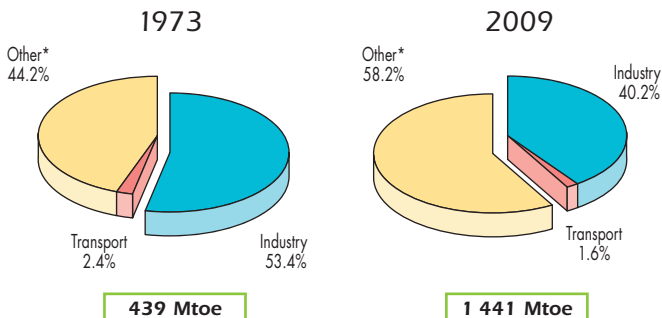
BY SECTOR

Electricity

Total final consumption from 1971 to 2009
by sector (Mtoe)



1973 and 2009 shares of world electricity consumption



*Includes agriculture, commercial and public services, residential, and non-specified other.

SIMPLIFIED ENERGY

World

1973

(Mtoe)

SUPPLY AND CONSUMPTION	Coal/ peat	Crude oil	Oil products	Natural gas	Nuclear	Hydro	Biofuels and waste ^(a)	Other ^(b)	Total
Production	1 479.01	2 938.36	-	993.10	53.05	110.19	646.78	6.13	6 226.61
Imports	140.02	1 561.51	407.22	73.40	-	-	0.12	8.14	2 190.41
Exports	-130.39	-1 612.54	-442.16	-72.56	-	-	-0.19	-8.27	-2 266.10
Stock changes	12.31	-20.68	-16.43	-15.09	-	-	0.06	-	-39.84
TPES	1 500.95	2 866.65	-51.37	978.85	53.05	110.19	646.76	6.00	6 111.08
Transfers	-	-46.80	48.66	-	-	-	-	-	1.85
Statistical diff.	10.04	11.85	-6.87	4.80	-	-	-0.17	-0.03	19.63
Electricity plants	-559.61	-22.91	-319.02	-160.03	-52.95	-110.19	-2.74	502.64	-724.80
CHP plants	-86.32	-	-28.26	-50.84	-0.10	-	-0.75	100.70	-65.56
Heat plants	-7.81	-	-0.90	-0.68	-	-	-0.80	7.11	-3.08
Blast furnaces	-83.39	-	-2.72	-	-	-	-0.06	-	-86.17
Gas works	10.09	-0.60	-9.11	-6.42	-	-	-	-	-6.03
Coke ovens ^(c)	-100.55	-	-0.68	-0.19	-	-	-0.02	-	-101.44
Oil refineries	-	-2 781.71	2 761.15	-	-	-	-	-	-20.56
Petchem. plants	-	5.09	-5.37	-	-	-	-	-	-0.28
Liquefaction plants	-0.73	0.23	-	-	-	-	-	-	-0.50
Other transf.	-	-	-0.12	-0.03	-	-	-23.07	-	-23.22
Energy ind. own use	-35.07	-2.59	-158.57	-106.83	-	-	-0.20	-57.68	-360.93
Losses	-8.88	-7.07	-0.27	-6.03	-	-	-0.25	-43.14	-65.63
TFC	638.71	22.15	2 226.56	652.61	-	-	618.71	515.61	4 674.35
Industry	360.39	16.42	432.55	357.44	-	-	89.40	286.35	1 542.54
Transport ^(d)	33.00	-	1 018.37	17.72	-	-	0.24	10.60	1 079.93
Other	239.31	0.00	520.83	259.08	-	-	529.07	218.67	1 766.97
Non-energy use	6.01	5.73	254.81	18.37	-	-	-	-	284.92

(a) Biofuels and waste final consumption has been estimated.

(b) Other includes geothermal, solar, electricity and heat, wind, etc.

(c) Also includes patent fuel and BKB plants.

(d) Includes international aviation and international marine bunkers.

BALANCE TABLE

World

2009

(Mtoe)

SUPPLY AND CONSUMPTION	Coal/peat	Crude oil	Oil products	Natural gas	Nuclear	Hydro	Biofuels and waste	Other ^(a)	Total
Production	3 449.47	3 994.48	-	2 526.42	703.31	279.64	1 236.93	101.42	12 291.68
Imports	578.13	2 249.41	1 004.78	753.66	-	-	8.24	50.61	4 644.83
Exports	-614.41	-2 146.20	-1 112.42	-731.86	-	-	-7.87	-49.61	-4 662.38
Stock changes	-113.67	-2.09	-0.55	-8.00	-	-	0.37	-	-123.93
TPES	3 299.51	4 095.59	-108.18	2 540.22	703.31	279.64	1 237.67	102.42	12 150.19
Transfers	-	-137.01	145.87	-	-	-	0.43	-	9.30
Statistical diff.	-24.85	-12.38	-0.11	-6.24	-	-	0.11	6.42	-37.06
Electricity plants	-1 872.15	-30.38	-200.50	-635.35	-697.41	-279.64	-54.13	1 480.53	-2 289.02
CHP plants	-171.39	-0.01	-23.37	-283.63	-5.91	-	-30.76	302.40	-212.68
Heat plants	-96.38	-0.76	-12.16	-86.55	-	-	-8.70	167.94	-36.60
Blast furnaces	-146.16	-	-0.62	-0.06	-	-	-	-	-146.84
Gas works	-6.80	-	-3.59	2.91	-	-	-0.02	-	-7.50
Coke ovens ^(b)	-46.62	-0.00	-1.78	-0.04	-	-	-0.00	-	-48.44
Oil refineries	-	-3 909.83	3 873.54	-0.59	-	-	-	-	-36.88
Petchem. plants	-	29.33	-29.79	-	-	-	-	-	-0.46
Liquefaction plants	-18.89	10.88	-	-6.60	-	-	-	-	-14.61
Other transf.	0.03	0.14	-1.00	-2.06	-	-	-51.18	-0.34	-54.42
Energy ind. own use	-82.67	-10.20	-206.98	-238.35	-	-	-13.23	-180.00	-731.43
Losses	-1.75	-3.92	-0.64	-17.80	-	-	-0.15	-166.54	-190.80
TFC	831.90	31.45	3 430.68	1 265.86	-	-	1 080.04	1 712.84	8 352.77
Industry	644.15	10.89	309.71	441.32	-	-	186.15	689.90	2 282.12
Transport ^(c)	3.36	-	2 135.62	70.20	-	-	51.54	23.38	2 284.10
Other	147.35	0.20	432.72	617.85	-	-	842.35	999.56	3 040.02
Non-energy use	37.05	20.36	552.62	136.50	-	-	-	-	746.53

(a) Other includes geothermal, solar, electricity and heat, wind, etc.

(b) Also includes patent fuel and BKB plants.

(c) Includes international aviation and international marine bunkers.

SIMPLIFIED ENERGY

OECD

1973

(Mtoe)

SUPPLY AND CONSUMPTION	Coal/ peat	Crude oil	Oil products	Natural gas	Nuclear	Hydro	Biofuels and waste	Other ^(a)	Total
Production	819.25	710.51	-	706.22	49.22	78.94	87.29	6.13	2 457.55
Imports	121.93	1 277.47	336.20	62.55	-	-	0.03	7.55	1 805.74
Exports	-111.09	-63.58	-172.72	-50.38	-	-	-0.01	-7.01	-404.79
Intl. marine bunkers	-	-	-73.65	-	-	-	-	-	-73.65
Intl. aviation bunkers	-	-	-24.64	-	-	-	-	-	-24.64
Stock changes	14.53	-10.78	-11.36	-12.07	-	-	0.06	-	-19.62
TPES	844.63	1 913.62	53.83	706.32	49.22	78.94	87.36	6.66	3 740.58
Transfers	-	-41.28	42.49	-	-	-	-	-	1.22
Statistical diff.	14.81	11.29	2.56	-5.61	-	-	-	-	23.06
Electricity plants	-387.69	-20.61	-228.38	-108.33	-49.12	-78.94	-1.43	364.70	-509.81
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	-65.68	-	-2.72	-	-	-	-	-	-68.40
Gas works	11.02	-0.60	-8.72	-6.37	-	-	-	-	-4.68
Coke ovens ^(b)	-25.72	-	-0.68	-0.19	-	-	-0.02	-	-26.61
Oil refineries	-	-1 865.94	1 868.42	-	-	-	-	-	2.48
Petchem. plants	-	4.88	-5.16	-	-	-	-	-	-0.28
Liquefaction plants	-	0.02	-	-	-	-	-	-	0.02
Other transf.	-	-	-0.12	-0.03	-	-	-	-	-0.15
Energy ind. own use	-24.53	-0.99	-128.88	-72.36	-	-	-0.07	-33.38	-260.19
Losses	-3.80	-	-0.23	-2.63	-	-	-	-30.54	-37.20
TFC	303.17	0.39	1 583.63	498.48	-	-	84.30	345.49	2 815.46
Industry	182.67	0.39	312.91	250.44	-	-	42.26	169.41	958.06
Transport	7.34	-	665.68	17.00	-	-	-	5.30	695.32
Other	110.07	-	393.09	225.47	-	-	42.04	170.78	941.45
Non-energy use	3.10	-	211.95	5.58	-	-	-	-	220.63

(a) Other includes geothermal, solar, electricity and heat, wind, etc.

(b) Also includes patent fuel and BKB plants.

BALANCE TABLE

OECD

2009

(Mtoe)

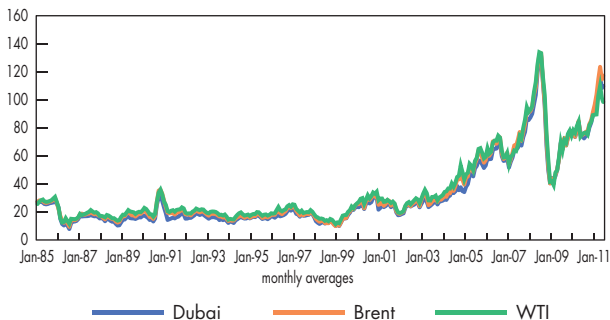
SUPPLY AND CONSUMPTION	Coal/peat	Crude oil	Oil products	Natural gas	Nuclear	Hydro	Biofuels and waste	Other ^(a)	Total
Production	981.91	892.57	-	939.26	584.52	113.58	237.66	57.18	3 806.68
Imports	342.97	1 524.15	539.59	596.28	-	-	7.78	32.93	3 043.71
Exports	-256.89	-352.62	-473.22	-281.09	-	-	-3.28	-32.16	-1 399.26
Intl. marine bunkers	-	-	-87.76	-	-	-	-	-	-87.76
Intl. aviation bunkers	-	-	-83.74	-	-	-	-	-	-83.74
Stock changes	-34.69	0.62	-1.43	-6.07	-	-	-0.34	-	-41.90
TPES	1 033.30	2 064.72	-106.55	1 248.38	584.52	113.58	241.82	57.95	5 237.72
Transfers	-	-28.31	42.09	-	-	-	-	-	13.78
Statistical diff.	-10.25	-8.20	-13.34	-3.61	-	-	0.03	0.14	-35.23
Electricity plants	-761.16	-3.18	-55.52	-319.88	-581.84	-113.58	-40.59	760.62	-1 115.14
CHP plants	-80.58	-	-14.57	-106.49	-2.68	-	-28.91	143.51	-89.70
Heat plants	-4.45	-	-1.31	-7.30	-	-	-4.76	14.29	-3.54
Blast furnaces	-39.68	-	-0.62	-0.06	-	-	-	-	-40.36
Gas works	-2.03	-	-2.93	3.38	-	-	-0.02	-	-1.60
Coke ovens ^(b)	-6.70	-	-0.93	-0.04	-	-	-	-	-7.68
Oil refineries	-	-2 046.91	2 043.84	-0.59	-	-	-	-	-3.65
Petchem. plants	-	25.65	-26.09	-	-	-	-	-	-0.44
Liquefaction plants	-0.71	1.05	-	-1.96	-	-	-	-	-1.63
Other transf.	0.03	0.14	-0.09	-0.43	-	-	-0.12	-0.34	-0.82
Energy ind. own use	-12.16	-0.14	-117.24	-99.81	-	-	-0.20	-74.12	-303.65
Losses	-0.76	-	-0.01	-2.94	-	-	-0.03	-62.37	-66.12
TFC	114.83	4.83	1 746.73	708.64	-	-	167.22	839.69	3 581.93
Industry	90.44	2.01	111.56	236.30	-	-	68.79	263.65	772.75
Transport	0.10	-	1 105.78	20.82	-	-	35.30	9.56	1 171.56
Other	22.26	-	212.11	424.30	-	-	63.13	566.47	1 288.27
Non-energy use	2.04	2.81	317.27	27.22	-	-	-	-	349.35

(a) Other includes geothermal, solar, electricity and heat, wind, etc.

(b) Also includes patent fuel and BKB plants.

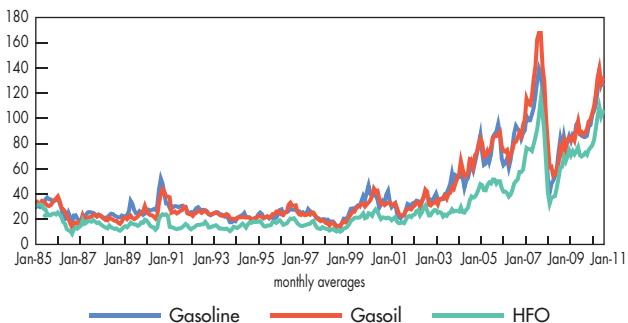
Crude Oil

Key crude oil spot prices in USD/barrel



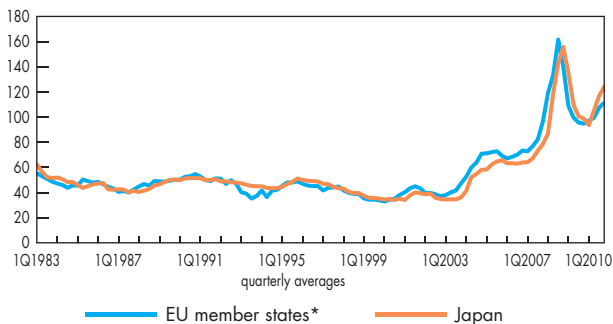
Oil Products

Rotterdam oil product spot prices in USD/barrel



Coal

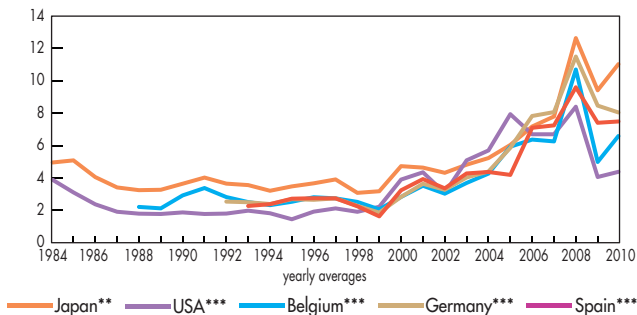
Steam coal import costs in USD/tonne



5

Natural Gas

Natural gas import prices in USD/MBtu



*The weighted average for EU member states is based only on imports for which prices are available and may include different components in different time periods. Romania and Bulgaria are not available for any of the time periods. **LNG ***Pipeline

RETAIL PRICES^(a)

	Heavy fuel oil for industry ^(b) (tonne)	Light fuel oil for households (1 000 litres)	Automotive diesel oil ^(c) (litre)	Unleaded premium ^(d) (litre)
Australia	..	..	..	1.393
Austria	715.73	1 217.04	1.179	1.794
Belgium	650.39	1 055.80	1.562	2.133
Canada	687.43	1 065.14	1.209	1.250
Chinese Taipei	563.27	x	0.987	1.084
Czech Republic	482.00	1 194.19	1.543	1.886
Denmark	720.39	1 837.21	1.503	2.144
Finland	..	1 442.44	1.486	2.086
France	663.65	1 186.09	1.504	2.019
Germany	633.03	1 075.92	1.604	2.063
Greece	714.64	1 127.60	1.587	2.219
Hungary	646.03	x	1.461	1.848
India	..	..	..	..
Ireland	885.21	1 348.11	1.512	1.917
Italy	701.52	1 794.36	1.556	2.026
Japan	..	1 055.29	1.221	1.715
Korea	736.89	1 110.08	..	1.673
Luxembourg	..	954.02	1.345	1.716
Mexico	459.78	..	0.660	0.731
Netherlands	624.67	..	1.518	2.198
New Zealand	626.79	..	0.945	1.535
Norway	..	1 375.65	1.595	2.180
Poland	682.08	1 190.60	1.335	1.692
Portugal	832.18	1 352.20	1.671	2.066
Slovak Republic	555.72	..	1.486	1.925
Spain	642.48	1 135.10	1.445	1.766
Sweden	1 388.29	1 918.67	1.684	2.090
Switzerland	760.49	1 026.02	1.635	1.819
Turkey	1 055.24	1 823.30	2.210	2.541
United Kingdom	c	1 031.26	1.796	2.070
United States	609.33	944.90	0.958	0.869

(a) Prices are for 1st quarter 2011 for oil products, and annual 2010 for other products. (b) High sulphur fuel oil for Canada, Ireland, Mexico, New Zealand, Turkey and the United States; low sulphur fuel oil for all other countries.

(c) For commercial purposes.

IN SELECTED COUNTRIES in USD/unit

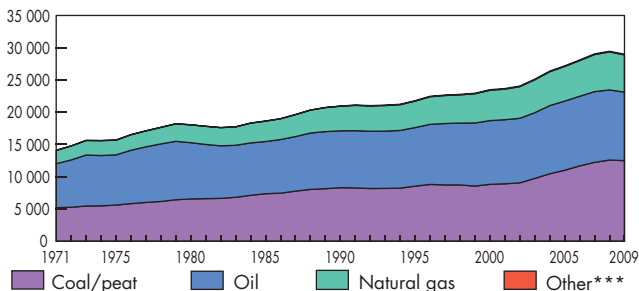
Nat. gas for industry (10 ⁷ kcal GCV ^[e])	Nat. gas for households (10 ⁷ kcal GCV ^[e])	Steam coal for industry ^[f] (tonne)	Electricity for industry (kWh)	Electricity for households (kWh)	
..	..	..	..	..	Australia
..	946.57	232.78	..	0.2576	Austria
354.91	872.86	..	0.1245	0.2317	Belgium
160.13	430.77	..	0.0699	0.0945	Canada
600.92	584.54	..	0.0776	0.0932	Chinese Taipei
530.45	797.27	c	0.1439	0.1855	Czech Republic
..	1 449.36	..	0.1144	0.3563	Denmark
350.37	496.51	168.60	0.0948	0.1754	Finland
484.43	864.00	..	0.1056	0.1568	France
..	..	..	..	0.3248	Germany
517.56	1 084.65	..	0.1139	0.1584	Greece
..	..	..	..	..	Hungary
..	..	..	..	..	India
431.22	822.78	..	0.1372	0.2326	Ireland
483.01	1 093.65	111.97	0.2581	0.2632	Italy
..	..	114.65	0.1544	0.2322	Japan
610.27	655.49	..	..	0.0834	Korea
449.67	673.71	..	0.1219	0.2155	Luxembourg
..	453.45	x	0.1042	0.0888	Mexico
413.85	1 001.23	..	0.1230	0.2212	Netherlands
234.01	1 009.50	c	..	0.1815	New Zealand
x	x	..	0.0737	0.1758	Norway
454.78	772.94	96.35	0.1204	0.1791	Poland
555.51	942.20	..	0.1203	0.2152	Portugal
534.71	703.69	..	0.1691	0.2130	Slovak Republic
390.42	859.14	..	..	..	Spain
662.73	1 636.48	..	0.0964	0.2180	Sweden
661.55	1 015.73	155.37	0.1023	0.1800	Switzerland
407.27	526.44	83.68	0.1509	0.1841	Turkey
303.30	745.22	116.98	0.1211	0.1990	United Kingdom
207.37	429.48	70.54	0.0679	0.1158	United States

[d] Unleaded premium gasoline (95 RON); unleaded regular for Australia, Canada, Japan, Korea, Mexico, New Zealand and the United States. [e] Gross calorific value. [f] Brown coal for Turkey.

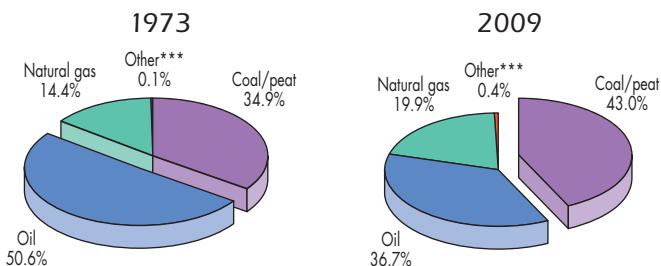
.. not available x not applicable c confidential

CO₂ Emissions by Fuel

World* CO₂ emissions** from 1971 to 2009
by fuel (Mt of CO₂)



1973 and 2009 fuel shares of CO₂ emissions**



15 624 Mt of CO₂

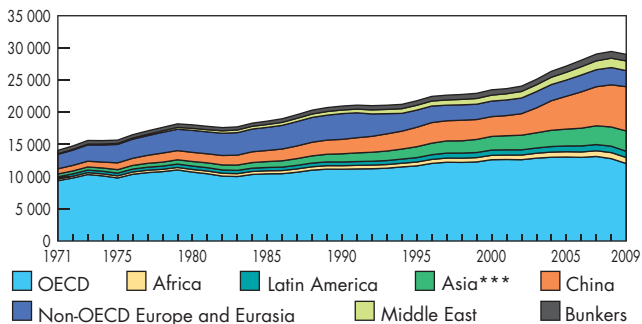
28 999 Mt of CO₂

*World includes international aviation and international marine bunkers.

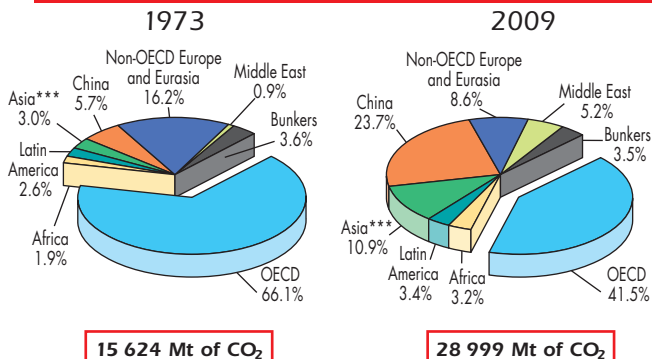
Calculated using the IEA's energy balances and the Revised 1996 IPCC Guidelines. CO₂ emissions are from fuel combustion only. *Other includes industrial waste and non-renewable municipal waste.

CO₂ Emissions by Region

World* CO₂ emissions** from 1971 to 2009
by region (Mt of CO₂)



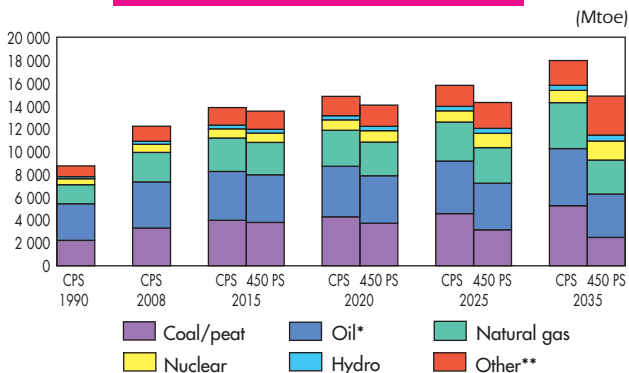
1973 and 2009 regional shares of CO₂ emissions**



*World includes international aviation and international marine bunkers, which are shown together as Bunkers. **Calculated using the IEA's energy balances and the Revised 1996 IPCC Guidelines. CO₂ emissions are from fuel combustion only. ***Asia excludes China.

OUTLOOK FOR WORLD TPES

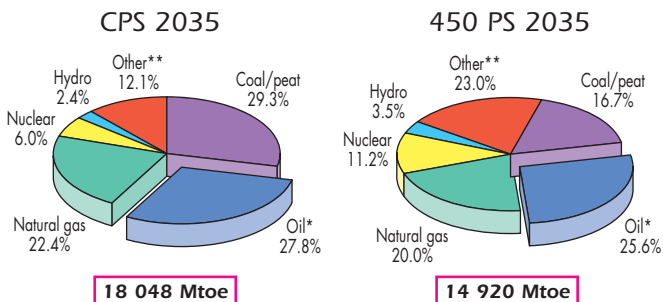
TPES Outlook by Fuel



CPS: Current Policy Scenario
(based on current policies)

450 PS: 450 Policy Scenario***
(based on policies under consideration)

Fuel shares of TPES in 2035 for Current Policy Scenario and 450 Policy Scenario



18 048 Mtoe

14 920 Mtoe

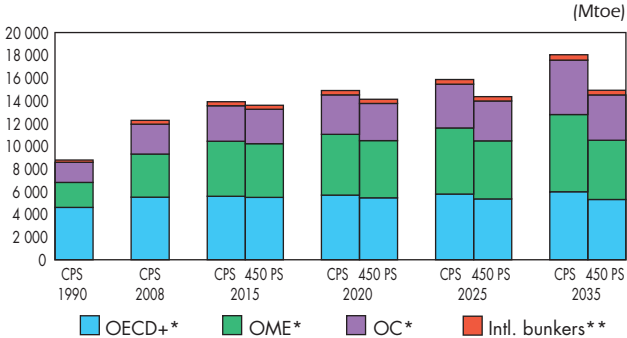
*Includes international aviation and international marine bunkers.

**Other includes biofuels and waste, geothermal, solar, wind, tide, etc.

***Based on a plausible post-2012 climate-policy framework to stabilise the concentration of global greenhouse gases at 450 ppm CO₂-equivalent.

TO 2035

TPES Outlook by Region

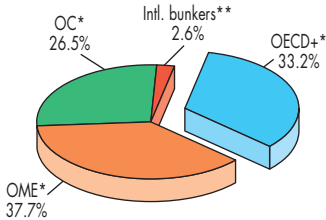


CPS: Current Policy Scenario
(based on current policies)

450 PS: 450 Policy Scenario***
(based on policies under consideration)

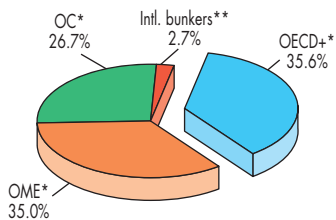
Regional shares of TPES in 2035 for Current Policy Scenario and 450 Policy Scenario

CPS 2035



18 048 Mtoe

450 PS 2035



14 920 Mtoe

*Please refer to the geographical coverage section for definitions of the regions.

**Includes international aviation and international marine bunkers.

***Based on a plausible post-2012 climate-policy framework to stabilise the concentration of global greenhouse gases at 450 ppm CO₂-equivalent.

Selected Indicators for 2009

Region/ Country/ Economy	Popu- lation (million)	GDP (billion 2000 USD)	GDP (PPP) (billion 2000 USD)	Energy prod. (Mtoe)	Net imports (Mtoe)	TPES (Mtoe)	Elec. cons. ^[a] (TWh)	CO ₂ emissions ^[b] (Mt of CO ₂)
World	6 761	39 674	64 244	12 292	-	12 150 ^(c)	18 456	28 999 ^(d)
OECD	1 225	29 633	32 114	3 807	1 644	5 238	9 813	12 045
Middle East	195	782	1 433	1 561	-951	588	638	1 509
Non-OECD Europe and Eurasia	335	752	2 835	1 645	-580	1 050	1 407	2 497
China	1 338	3 169	12 434	2 085	305	2 272	3 545	6 877
Asia	2 208	2 486	9 094	1 310	203	1 459	1 637	3 153
Latin America	451	1 957	3 769	751	-188	540	850	975
Africa	1 009	896	2 565	1 133	-452	673	566	928
Albania	3.16	5.88	18.16	1.25	0.48	1.72	5.58	2.70
Algeria	34.90	76.41	226.31	152.29	-111.67	39.76	33.94	92.52
Angola	18.50	24.30	53.87	100.96	-88.84	11.90	3.75	12.92
Argentina	40.28	397.95	624.85	80.82	-4.95	74.25	110.52	166.61
Armenia	3.08	4.00	15.63	0.82	1.81	2.60	4.78	4.26
Australia	22.10	535.23	703.82	310.70	-172.99	131.07	243.96	394.88
Austria	8.36	218.36	263.22	11.40	20.99	31.66	66.46	63.37
Azerbaijan	8.78	20.22	76.40	64.56	-51.86	11.97	14.50	25.22
Bahrain	0.79	13.67	17.91	17.55	-5.58	9.47	10.78	22.82
Bangladesh	162.22	78.23	330.48	24.84	4.98	29.60	37.00	50.66
Belarus	9.66	24.70	93.18	4.05	22.21	26.76	31.36	60.79
Belgium	10.79	260.83	317.71	15.32	49.59	57.22	85.33	100.70
Benin	8.94	3.24	10.08	2.00	1.57	3.47	0.79	4.15
Bolivia	9.86	11.76	27.79	14.19	-8.02	6.23	5.46	12.87
Bosnia and Herzegovina	3.77	8.14	33.13	4.47	1.59	5.95	10.80	19.09
Botswana	1.95	7.96	18.88	0.94	1.13	2.05	2.98	4.18
Brazil	193.73	856.02	1 652.10	230.31	15.65	240.16	426.34	337.80
Brunei Darussalam	0.40	6.82	8.14	18.94	-15.58	3.12	3.39	8.12

(a) Gross production + imports – exports – losses.

(b) CO₂ emissions from fuel combustion only. Emissions are calculated using the IEA's energy balances and the Revised 1996 IPCC Guidelines.

TPES/ pop. (toe/capita)	TPES/ GDP (toe/000 2000 USD)	TPES/ GDP (PPP) (toe/000 2000 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 / 2000 USD)	CO ₂ / GDP (PPP) (kg CO ₂ / 2000 USD)	Region/ Country/ Economy
1.80	0.31	0.19	2 730	2.39	4.29	0.73	0.45	World
4.28	0.18	0.16	8 012	2.30	9.83	0.41	0.38	OECD
3.03	0.75	0.41	3 278	2.56	7.76	1.93	1.05	Middle East
3.14	1.40	0.37	4 200	2.38	7.46	3.32	0.88	Non-OECD Europe and Eurasia
1.70	0.72	0.18	2 648	3.03	5.14	2.17	0.55	China
0.66	0.59	0.16	741	2.16	1.43	1.27	0.35	Asia
1.20	0.28	0.14	1 884	1.80	2.16	0.50	0.26	Latin America
0.67	0.75	0.26	561	1.38	0.92	1.04	0.36	Africa
0.54	0.29	0.09	1768	1.57	0.85	0.46	0.15	Albania
1.14	0.52	0.18	973	2.33	2.65	1.21	0.41	Algeria
0.64	0.49	0.22	203	1.09	0.70	0.53	0.24	Angola
1.84	0.19	0.12	2 744	2.24	4.14	0.42	0.27	Argentina
0.84	0.65	0.17	1 551	1.64	1.38	1.06	0.27	Armenia
5.93	0.24	0.19	11 038	3.01	17.87	0.74	0.56	Australia
3.79	0.14	0.12	7 947	2.00	7.58	0.29	0.24	Austria
1.36	0.59	0.16	1 651	2.11	2.87	1.25	0.33	Azerbaijan
11.97	0.69	0.53	13 625	2.41	28.86	1.67	1.27	Bahrain
0.18	0.38	0.09	228	1.71	0.31	0.65	0.15	Bangladesh
2.77	1.08	0.29	3 245	2.27	6.29	2.46	0.65	Belarus
5.30	0.22	0.18	7 908	1.76	9.33	0.39	0.32	Belgium
0.39	1.07	0.34	88	1.19	0.46	1.28	0.41	Benin
0.63	0.53	0.22	553	2.07	1.31	1.10	0.46	Bolivia
1.58	0.73	0.18	2 868	3.21	5.07	2.34	0.58	Bosnia and Herzegovina
1.05	0.26	0.11	1 528	2.04	2.14	0.53	0.22	Botswana
1.24	0.28	0.15	2 201	1.41	1.74	0.39	0.20	Brazil
7.81	0.46	0.38	8 485	2.60	20.30	1.19	1.00	Brunei Darussalam

(c) TPES for world includes international aviation and international marine bunkers as well as electricity and heat trade.

(d) CO₂ emissions for world include emissions from international aviation and international marine bunkers.

Region/ Country/ Economy	Popu- lation (million)	GDP (billion 2000 USD)	GDP (PPP) (billion 2000 USD)	Energy prod. (Mtoe)	Net imports (Mtoe)	TPES (Mtoe)	Elec. cons. ^(a) (TWh)	CO ₂ emissions ^(b) (Mt of CO ₂)
Bulgaria	7.59	19.29	74.84	9.83	8.06	17.48	33.38	42.21
Cambodia	14.81	7.48	45.54	3.67	1.55	5.18	1.83	4.26
Cameroon	19.52	13.55	37.54	8.85	-2.19	6.92	5.20	4.79
Canada	33.74	846.83	1 021.09	389.81	-141.46	254.12	521.85	520.75
Chile	16.93	103.28	196.05	9.30	20.46	28.78	55.67	64.93
People's Rep. of China	1 331.46	2 937.55	12 194.40	2 084.94	274.92	2 257.10	3 503.40	6 831.60
Chinese Taipei	22.97	412.14	630.41	12.80	90.73	101.09	220.28	250.11
Colombia	45.66	141.65	420.98	99.15	-65.90	31.83	47.80	60.56
Congo	3.68	4.67	5.25	15.28	-14.24	1.40	0.58	1.66
Dem. Rep. of Congo	66.02	6.38	44.61	23.35	-0.41	22.92	6.67	2.87
Costa Rica	4.58	23.09	46.48	2.71	2.31	4.90	8.32	6.27
Cote d'Ivoire	21.08	11.30	28.82	11.89	-1.48	10.35	3.94	6.09
Croatia	4.43	28.35	63.14	4.07	4.49	8.70	16.44	19.77
Cuba	11.20	47.78	110.25	5.57	6.12	11.51	15.18	26.84
Cyprus	0.81	12.09	17.58	0.08	2.91	2.51	5.04	7.46
Czech Republic	10.51	75.87	206.01	31.20	11.38	41.99	64.12	109.84
Denmark	5.52	167.73	161.21	23.91	-3.74	18.61	34.50	46.78
Dominican Republic	10.09	37.31	105.49	1.89	6.27	8.09	13.31	18.07
Ecuador	13.63	24.13	60.17	27.32	-14.78	11.35	15.91	28.48
Egypt	83.00	152.36	362.18	88.19	-15.00	72.01	123.45	175.41
El Salvador	6.16	15.81	34.76	3.16	2.03	5.10	5.21	6.79
Eritrea	5.07	0.83	4.75	0.56	0.16	0.73	0.26	0.47
Estonia	1.34	8.04	19.15	4.16	1.20	4.75	7.98	14.66
Ethiopia	82.83	16.62	110.21	30.37	2.30	32.68	3.72	7.42
Finland	5.34	141.16	153.98	16.55	18.35	33.17	81.37	55.01
France	64.49	1 472.79	1 702.03	129.50	134.38	256.22	483.32	354.30
Gabon	1.48	5.98	8.77	13.59	-11.64	1.79	1.36	1.70
Georgia	4.26	5.26	16.23	1.26	1.97	3.19	6.99	5.68
Germany	81.88	1 998.65	2 243.18	127.09	202.94	318.53	555.19	750.19
Ghana	23.84	8.18	62.77	7.05	2.41	9.24	6.32	9.02

(a) Gross production + imports – exports – losses.

(b) CO₂ emissions from fuel combustion only. Emissions are calculated using the IEA's energy balances and the Revised 1996 IPCC Guidelines

TPES/ pop. (toe/capita)	TPES/ GDP (toe/000 2000 USD)	TPES/ GDP (PPP) (toe/000 2000 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 / 2000 USD)	CO ₂ / GDP (PPP) (kg CO ₂ / 2000 USD)	Region/ Country/ Economy
2.30	0.91	0.23	4 401	2.41	5.56	2.19	0.56	Bulgaria
0.35	0.69	0.11	123	0.82	0.29	0.57	0.09	Cambodia
0.35	0.51	0.18	266	0.69	0.25	0.35	0.13	Cameroon
7.53	0.30	0.25	15 467	2.05	15.43	0.61	0.51	Canada
1.70	0.28	0.15	3 288	2.26	3.84	0.63	0.33	Chile
1.70	0.77	0.19	2 631	3.03	5.13	2.33	0.56	People's Rep. of China
4.40	0.25	0.16	9 588	2.47	10.89	0.61	0.40	Chinese Taipei
0.70	0.22	0.08	1 047	1.90	1.33	0.43	0.14	Colombia
0.38	0.30	0.27	157	1.18	0.45	0.36	0.32	Congo
0.35	3.59	0.51	101	0.13	0.04	0.45	0.06	Dem. Rep. of Congo
1.07	0.21	0.11	1 817	1.28	1.37	0.27	0.13	Costa Rica
0.49	0.92	0.36	187	0.59	0.29	0.54	0.21	Cote d'Ivoire
1.96	0.31	0.14	3 709	2.27	4.46	0.70	0.31	Croatia
1.03	0.24	0.10	1 355	2.33	2.40	0.56	0.24	Cuba
3.11	0.21	0.14	6 251	2.98	9.26	0.62	0.42	Cyprus
4.00	0.55	0.20	6 103	2.62	10.45	1.45	0.53	Czech Republic
3.37	0.11	0.12	6 248	2.51	8.47	0.28	0.29	Denmark
0.80	0.22	0.08	1 319	2.23	1.79	0.48	0.17	Dominican Republic
0.83	0.47	0.19	1 168	2.51	2.09	1.18	0.47	Ecuador
0.87	0.47	0.20	1 487	2.44	2.11	1.15	0.48	Egypt
0.83	0.32	0.15	845	1.33	1.10	0.43	0.20	El Salvador
0.14	0.88	0.15	51	0.65	0.09	0.57	0.10	Eritrea
3.54	0.59	0.25	5 951	3.09	10.94	1.82	0.77	Estonia
0.39	1.97	0.30	45	0.23	0.09	0.45	0.07	Ethiopia
6.21	0.23	0.22	15 241	1.66	10.30	0.39	0.36	Finland
3.97	0.17	0.15	7 494	1.38	5.49	0.24	0.21	France
1.22	0.30	0.20	924	0.95	1.15	0.28	0.19	Gabon
0.75	0.61	0.20	1 641	1.78	1.33	1.08	0.35	Georgia
3.89	0.16	0.14	6 781	2.36	9.16	0.38	0.33	Germany
0.39	1.13	0.15	265	0.98	0.38	1.10	0.14	Ghana

Region/ Country/ Economy	Popu- lation (million)	GDP (billion 2000 USD)	GDP (PPP) (billion 2000 USD)	Energy prod. (Mtoe)	Net imports (Mtoe)	TPES (Mtoe)	Elec. cons. ^(a) (TWh)	CO ₂ emissions ^(b) (Mt of CO ₂)
Gibraltar	0.03	0.84	0.88	0.00	1.43	0.16	0.17	0.50
Greece	11.28	168.11	265.88	10.08	22.18	29.44	62.51	90.22
Guatemala	14.03	26.06	61.07	6.05	3.88	9.84	7.69	14.51
Haiti	10.03	3.91	13.05	1.87	0.75	2.60	0.35	2.37
Honduras	7.47	10.31	31.92	2.19	2.23	4.41	5.05	7.14
Hong Kong (China)	7.00	231.34	2 39.51	0.05	29.88	14.94	41.49	45.60
Hungary	10.02	56.40	147.51	11.00	14.86	24.86	37.82	48.16
Iceland	0.32	11.22	10.46	4.40	0.96	5.22	16.33	2.00
India	1 155.35	874.94	4 566.96	502.47	181.97	675.83	689.54	1 585.82
Indonesia	229.97	258.49	938.71	351.84	-153.64	202.00	140.11	376.26
Islamic Rep. of Iran	72.90	158.09	576.96	349.78	-132.12	216.20	167.69	533.22
Iraq	28.95	23.01	31.46	119.64	-86.75	32.17	33.22	98.77
Ireland	4.47	125.11	141.16	1.53	13.20	14.34	26.91	39.46
Israel	7.44	162.17	192.20	3.27	19.43	21.55	49.46	64.63
Italy	60.19	1 110.68	1 475.11	27.01	141.21	164.63	317.25	389.28
Jamaica	2.70	9.96	11.56	0.53	2.72	3.26	5.13	8.27
Japan	127.33	4 872.22	3 392.86	93.79	384.46	471.99	997.40	1 092.86
Jordan	5.95	14.86	35.38	0.29	7.50	7.45	12.49	19.20
Kazakhstan	15.89	37.75	133.48	145.81	-80.07	65.84	71.59	189.54
Kenya	39.80	17.99	44.88	15.57	3.55	18.72	5.82	10.02
Korea	48.75	752.83	1 140.99	44.31	198.10	229.18	437.73	515.46
DPR of Korea	23.91	11.53	40.56	20.26	-1.00	19.27	17.76	66.20
Kuwait	2.80	63.63	72.41	130.24	-98.58	30.17	46.60	80.72
Kyrgyzstan	5.32	2.05	11.00	1.16	2.35	3.01	7.46	7.06
Latvia	2.26	11.21	27.08	2.10	2.70	4.22	6.48	6.75
Lebanon	4.22	26.78	25.83	0.17	6.67	6.63	13.14	19.33
Libyan Arab Jamahiriya	6.42	52.02	70.70	87.14	-66.40	20.41	26.12	50.05
Lithuania	3.34	17.21	45.99	4.21	4.18	8.39	11.46	12.39
Luxembourg	0.50	26.46	30.55	0.11	4.26	3.95	7.18	9.99
FYR of Macedonia	2.04	4.41	14.95	1.61	1.25	2.78	7.08	8.34

(a) Gross production + imports – exports – losses.

(b) CO₂ emissions from fuel combustion only. Emissions are calculated using the IEA's energy balances and the Revised 1996 IPCC Guidelines.

TPES/ pop. (toe/capita)	TPES/ GDP (toe/000 2000 USD)	TPES/ GDP (PPP) (toe/000 2000 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 / 2000 USD)	CO ₂ / GDP (PPP) (kg CO ₂ / 2000 USD)	Region/ Country/ Economy
5.65	0.19	0.19	6 000	3.06	17.26	0.60	0.57	Gibraltar
2.61	0.18	0.11	5 540	3.06	8.00	0.54	0.34	Greece
0.70	0.38	0.16	548	1.47	1.03	0.56	0.24	Guatemala
0.26	0.66	0.20	35	0.91	0.24	0.61	0.18	Haiti
0.59	0.43	0.14	677	1.62	0.96	0.69	0.22	Honduras
2.13	0.06	0.06	5 924	3.05	6.51	0.20	0.19	Hong Kong (China)
2.48	0.44	0.17	3 773	1.94	4.80	0.85	0.33	Hungary
16.38	0.47	0.50	51 179	0.38	6.26	0.18	0.19	Iceland
0.58	0.77	0.15	597	2.35	1.37	1.81	0.35	India
0.88	0.78	0.22	609	1.86	1.64	1.46	0.40	Indonesia
2.97	1.37	0.37	2 300	2.47	7.31	3.37	0.92	Islamic Rep. of Iran
1.11	1.40	1.02	1 148	3.07	3.41	4.29	3.14	Iraq
3.21	0.11	0.10	6 022	2.75	8.83	0.32	0.28	Ireland
2.90	0.13	0.11	6 648	3.00	8.69	0.40	0.34	Israel
2.74	0.15	0.11	5 271	2.36	6.47	0.35	0.26	Italy
1.21	0.33	0.28	1 899	2.54	3.06	0.83	0.72	Jamaica
3.71	0.10	0.14	7 833	2.32	8.58	0.22	0.32	Japan
1.25	0.50	0.21	2 099	2.58	3.23	1.29	0.54	Jordan
4.14	1.74	0.49	4 506	2.88	11.93	5.02	1.42	Kazakhstan
0.47	1.04	0.42	146	0.54	0.25	0.56	0.22	Kenya
4.70	0.30	0.20	8 980	2.25	10.57	0.68	0.45	Korea
0.81	1.67	0.48	743	3.44	2.77	5.74	1.63	DPR of Korea
10.80	0.47	0.42	16 673	2.68	28.88	1.27	1.11	Kuwait
0.57	1.47	0.27	1 402	2.34	1.33	3.45	0.64	Kyrgyzstan
1.87	0.38	0.16	2 875	1.60	2.99	0.60	0.25	Latvia
1.57	0.25	0.26	3 110	2.91	4.58	0.72	0.75	Lebanon
3.18	0.39	0.29	4 068	2.45	7.80	0.96	0.71	Libyan Arab Jamahiriya
2.51	0.49	0.18	3 430	1.48	3.71	0.72	0.27	Lithuania
7.95	0.15	0.13	14 447	2.53	20.10	0.38	0.33	Luxembourg
1.36	0.63	0.19	3 467	3.00	4.08	1.89	0.56	FYR of Macedonia

Region/ Country/ Economy	Popu- lation (million)	GDP (billion 2000 USD)	GDP (PPP) (billion 2000 USD)	Energy prod. (Mtoe)	Net imports (Mtoe)	TPES (Mtoe)	Elec. cons. ^(a) (TWh)	CO ₂ emissions ^(b) (Mt of CO ₂)
Malaysia	27.47	137.13	299.35	89.69	-21.71	66.83	101.00	164.16
Malta	0.42	4.36	7.73	0.00	1.98	0.80	1.83	2.45
Mexico	107.44	724.35	1 122.95	220.03	-42.34	174.64	217.66	399.67
Republic of Moldova	3.60	1.97	8.65	0.10	2.37	2.45	3.63	5.75
Mongolia	2.67	1.91	7.42	7.69	-4.20	3.24	3.83	11.99
Morocco	31.99	57.89	174.85	0.78	14.84	15.08	23.90	41.30
Mozambique	22.89	8.49	32.16	11.92	-2.07	9.77	10.36	2.24
Myanmar	50.02	19.91	120.41	22.36	-7.17	15.06	4.94	10.14
Namibia	2.17	5.80	18.80	0.33	1.39	1.71	3.53	3.69
Nepal	29.33	7.65	45.10	8.82	1.21	9.96	2.68	3.40
Netherlands	16.53	432.48	525.84	63.05	35.12	78.17	113.99	176.11
Netherlands Antilles	0.20	1.28	2.88	0.00	3.92	2.12	1.09	4.97
New Zealand	4.33	67.48	102.87	15.21	3.45	17.40	40.34	31.31
Nicaragua	5.74	5.00	19.57	1.71	1.38	3.09	2.62	4.22
Nigeria	154.73	78.33	179.92	228.72	-122.01	108.25	18.62	41.19
Norway	4.83	195.96	188.92	213.64	-185.51	28.24	113.72	37.31
Oman	2.85	31.63	49.02	67.20	-51.03	15.06	15.52	38.95
Pakistan	169.71	111.48	394.89	64.86	19.84	85.52	76.61	136.94
Panama	3.45	19.80	30.40	0.67	2.60	3.10	6.01	7.25
Paraguay	6.35	9.10	28.64	7.43	-2.65	4.75	6.70	4.06
Peru	29.17	84.96	195.44	15.14	2.50	15.83	32.67	38.55
Philippines	91.98	111.74	449.68	23.47	16.34	38.84	54.42	70.54
Poland	38.15	241.67	570.39	67.52	30.23	93.99	137.00	286.76
Portugal	10.63	123.35	191.32	4.89	20.66	24.10	51.19	53.14
Qatar	1.41	40.71	36.47	139.95	-115.07	23.82	23.04	56.53
Romania	21.48	56.00	199.91	28.30	6.62	34.41	48.69	78.36
Russian Federation	141.90	397.54	1 530.15	1 181.59	-528.63	646.91	870.33	1 532.60
Saudi Arabia	25.39	249.54	371.91	528.38	-371.80	157.85	199.12	410.47
Senegal	12.53	6.69	22.60	1.26	1.87	2.94	2.37	5.26
Serbia	7.32	9.00	33.13	9.44	4.89	14.45	30.93	46.26

(a) Gross production + imports – exports – losses.

(b) CO₂ emissions from fuel combustion only. Emissions are calculated using the IEA's energy balances and the Revised 1996 IPCC Guidelines.

TPES/ pop. (toe/capita)	TPES/ GDP (toe/000 2000 USD)	TPES/ GDP (PPP) (toe/000 2000 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 / 2000 USD)	CO ₂ / GDP (PPP) (kg CO ₂ / 2000 USD)	Region/ Country/ Economy
2.43	0.49	0.22	3 677	2.46	5.98	1.20	0.55	Malaysia
1.93	0.18	0.10	4 405	3.06	5.89	0.56	0.32	Malta
1.63	0.24	0.16	2 026	2.29	3.72	0.55	0.36	Mexico
0.68	1.24	0.28	1 007	2.35	1.59	2.91	0.66	Republic of Moldova
1.21	1.69	0.44	1 432	3.70	4.49	6.27	1.62	Mongolia
0.47	0.26	0.09	747	2.74	1.29	0.71	0.24	Morocco
0.43	1.15	0.30	453	0.23	0.10	0.26	0.07	Mozambique
0.30	0.76	0.13	99	0.67	0.20	0.51	0.08	Myanmar
0.79	0.30	0.09	1 628	2.15	1.70	0.64	0.20	Namibia
0.34	1.30	0.22	91	0.34	0.12	0.45	0.08	Nepal
4.73	0.18	0.15	6 897	2.25	10.66	0.41	0.33	Netherlands
10.68	1.65	0.73	5 505	2.35	25.10	3.88	1.72	Netherlands Antilles
4.02	0.26	0.17	9 311	1.80	7.23	0.46	0.30	New Zealand
0.54	0.62	0.16	457	1.37	0.73	0.84	0.22	Nicaragua
0.70	1.38	0.60	120	0.38	0.27	0.53	0.23	Nigeria
5.85	0.14	0.15	23 558	1.32	7.73	0.19	0.20	Norway
5.29	0.48	0.31	5 457	2.59	13.69	1.23	0.79	Oman
0.50	0.77	0.22	451	1.60	0.81	1.23	0.35	Pakistan
0.90	0.16	0.10	1 739	2.34	2.10	0.37	0.24	Panama
0.75	0.52	0.17	1 055	0.85	0.64	0.45	0.14	Paraguay
0.54	0.19	0.08	1 120	2.44	1.32	0.45	0.20	Peru
0.42	0.35	0.09	592	1.82	0.77	0.63	0.16	Philippines
2.46	0.39	0.16	3 591	3.05	7.52	1.19	0.50	Poland
2.27	0.20	0.13	4 815	2.21	5.00	0.43	0.28	Portugal
16.91	0.59	0.65	16 353	2.37	40.12	1.39	1.55	Qatar
1.60	0.61	0.17	2 267	2.28	3.65	1.40	0.39	Romania
4.56	1.63	0.42	6 133	2.37	10.80	3.86	1.00	Russian Federation
6.22	0.63	0.42	7 842	2.60	16.17	1.64	1.10	Saudi Arabia
0.23	0.44	0.13	189	1.79	0.42	0.79	0.23	Senegal
1.97	1.61	0.44	4 225	3.20	6.32	5.14	1.40	Serbia

Region/ Country/ Economy	Popu- lation (million)	GDP (billion 2000 USD)	GDP (PPP) (billion 2000 USD)	Energy prod. (Mtoe)	Net imports (Mtoe)	TPES (Mtoe)	Elec. cons. ^(a) (TWh)	CO ₂ emissions ^(b) (Mt of CO ₂)
Singapore	4.99	143.47	146.68	0.03	58.92	18.48	39.65	44.83
Slovak Republic	5.42	31.32	91.04	5.94	11.25	16.72	26.69	33.17
Slovenia	2.04	25.70	44.90	3.54	3.43	6.97	12.45	15.15
South Africa	49.32	181.92	527.98	160.64	-13.61	144.04	223.52	369.37
Spain	45.93	713.36	1 054.60	29.72	110.69	126.52	275.74	283.37
Sri Lanka	20.30	25.03	102.14	5.09	4.30	9.28	8.44	12.66
Sudan	42.27	22.68	90.90	35.20	-18.34	15.82	4.85	13.26
Sweden	9.30	286.27	287.08	30.35	17.76	45.41	131.50	41.71
Switzerland	7.80	286.30	261.12	12.77	15.64	26.95	62.11	42.42
Syrian Arab Republic	21.09	28.47	78.31	23.58	-2.82	22.50	31.32	59.80
Tajikistan	6.95	1.73	8.83	1.50	0.82	2.32	13.47	2.77
United Rep. of Tanzania	43.74	16.24	31.54	18.05	1.71	19.62	3.73	6.26
Thailand	67.76	173.92	550.39	61.71	47.37	103.32	140.49	227.80
Togo	6.62	1.63	8.95	2.19	0.39	2.63	0.65	1.12
Trinidad and Tobago	1.34	14.11	20.21	44.00	-23.57	20.26	7.57	40.17
Tunisia	10.43	29.27	90.38	7.81	1.60	9.20	13.69	20.78
Turkey	71.90	356.96	789.08	30.28	70.25	97.66	165.09	256.31
Turkmenistan	5.11	9.34	50.38	40.90	-21.32	19.58	12.18	48.77
Ukraine	46.01	45.39	288.25	76.91	41.84	115.47	147.39	256.39
United Arab Emirates	4.60	118.06	116.64	168.80	-93.21	59.59	79.54	147.04
United Kingdom	61.79	1 677.10	1 742.62	158.91	55.08	196.76	351.80	465.80
United States	307.48	11 357.07	11 357.07	1 686.40	559.01	2 162.92	3 961.56	5 195.02
Uruguay	3.35	29.91	42.35	1.52	3.12	4.09	8.93	7.74
Uzbekistan	27.77	24.79	66.51	60.69	-11.88	48.81	45.43	112.36
Venezuela	28.38	160.02	191.23	203.53	-129.22	66.90	89.45	154.57
Vietnam	87.28	58.84	298.94	76.64	-13.83	64.05	78.93	114.07
Yemen	23.58	13.32	20.79	15.22	-8.00	7.56	5.11	22.18
Zambia	12.94	5.19	13.47	7.24	0.66	7.86	8.08	1.69
Zimbabwe	12.52	4.65	19.78	8.53	0.97	9.51	12.80	8.66

(a) Gross production + imports – exports – losses.

(b) CO₂ emissions from fuel combustion only. Emissions are calculated using the IEA's energy balances and the Revised 1996 IPCC Guidelines.

TPES/ pop. (toe/capita)	TPES/ GDP (toe/000 2000 USD)	TPES/ GDP (PPP) (toe/000 2000 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 / 2000 USD)	CO ₂ / GDP (PPP) (kg CO ₂ / 2000 USD)	Region/ Country/ Economy
3.70	0.13	0.13	7 948	2.43	8.99	0.31	0.31	Singapore
3.09	0.53	0.18	4 926	1.98	6.12	1.06	0.36	Slovak Republic
3.41	0.27	0.16	6 096	2.17	7.42	0.59	0.34	Slovenia
2.92	0.79	0.27	4 532	2.56	7.49	2.03	0.70	South Africa
2.75	0.18	0.12	6 004	2.24	6.17	0.40	0.27	Spain
0.46	0.37	0.09	416	1.36	0.62	0.51	0.12	Sri Lanka
0.37	0.70	0.17	115	0.84	0.31	0.58	0.15	Sudan
4.88	0.16	0.16	14 141	0.92	4.48	0.15	0.15	Sweden
3.45	0.09	0.10	7 962	1.57	5.44	0.15	0.16	Switzerland
1.07	0.79	0.29	1 485	2.66	2.84	2.10	0.76	Syrian Arab Republic
0.33	1.34	0.26	1 937	1.19	0.40	1.60	0.31	Tajikistan
0.45	1.21	0.62	85	0.32	0.14	0.39	0.20	United Rep. of Tanzania
1.52	0.59	0.19	2 073	2.20	3.36	1.31	0.41	Thailand
0.40	1.61	0.29	99	0.43	0.17	0.69	0.13	Togo
15.13	1.44	1.00	5 650	1.98	30.00	2.85	1.99	Trinidad and Tobago
0.88	0.31	0.10	1 312	2.26	1.99	0.71	0.23	Tunisia
1.36	0.27	0.12	2 296	2.62	3.57	0.72	0.32	Turkey
3.83	2.10	0.39	2 384	2.49	9.54	5.22	0.97	Turkmenistan
2.51	2.54	0.40	3 204	2.22	5.57	5.65	0.89	Ukraine
12.96	0.50	0.51	17 296	2.47	31.97	1.25	1.26	United Arab Emirates
3.18	0.12	0.11	5 693	2.37	7.54	0.28	0.27	United Kingdom
7.03	0.19	0.19	12 884	2.40	16.90	0.46	0.46	United States
1.22	0.14	0.10	2 671	1.89	2.31	0.26	0.18	Uruguay
1.76	1.97	0.73	1 636	2.30	4.05	4.53	1.69	Uzbekistan
2.36	0.42	0.35	3 152	2.31	5.45	0.97	0.81	Venezuela
0.73	1.09	0.21	904	1.78	1.31	1.94	0.38	Vietnam
0.32	0.57	0.36	216	2.93	0.94	1.67	1.07	Yemen
0.61	1.51	0.58	625	0.22	0.13	0.33	0.13	Zambia
0.76	2.05	0.48	1 022	0.91	0.69	1.86	0.44	Zimbabwe

Sources: Energy data: IEA.

Population: OECD/World Bank.

GDP and GDP(PPP) (in 2000 USD): OECD/World Bank/CEPII (Paris).

General conversion factors for energy

To:	TJ	Gcal	Mtoe	MBtu	GWh
From:	multiply by:				
TJ	1	238.8	2.388×10^{-5}	947.8	0.2778
Gcal	4.1868×10^{-3}	1	10^{-7}	3.968	1.163×10^{-3}
Mtoe	4.1868×10^4	10^7	1	3.968×10^7	11630
MBtu	1.0551×10^{-3}	0.252	2.52×10^{-8}	1	2.931×10^{-4}
GWh	3.6	860	8.6×10^{-5}	3412	1

Conversion factors for mass

To:	kg	t	lt	st	lb
From:	multiply by:				
kilogramme (kg)	1	0.001	9.84×10^{-4}	1.102×10^{-3}	2.2046
tonne (t)	1 000	1	0.984	1.1023	2 204.6
long ton (lt)	1 016	1.016	1	1.120	2 240.0
short ton (st)	907.2	0.9072	0.893	1	2 000.0
pound (lb)	0.454	4.54×10^{-4}	4.46×10^{-4}	5.0×10^{-4}	1

Conversion factors for volume

To:	gal U.S.	gal U.K.	bbl	ft ³	l	m ³
From:	multiply by:					
U.S. gallon (gal)	1	0.8327	0.02381	0.1337	3.785	0.0038
U.K. gallon (gal)	1.201	1	0.02859	0.1605	4.546	0.0045
barrel (bbl)	42.0	34.97	1	5.615	159.0	0.159
cubic foot (ft ³)	7.48	6.229	0.1781	1	28.3	0.0283
litre (l)	0.2642	0.220	0.0063	0.0353	1	0.001
cubic metre (m ³)	264.2	220.0	6.289	35.3147	1000.0	1

Selected country-specific net calorific values

Steam Coal*

	toe/tonne
People's Rep. of China	0.530
United States	0.543
India	0.441
South Africa	0.563
Australia	0.688
Russian Federation	0.599
Indonesia	0.616
Kazakhstan	0.444
Colombia	0.650
Poland	0.549

*steam coal for the top-ten producers in 2010.

Crude oil**

	toe/tonne
Russian Federation	1.005
Saudi Arabia	1.016
United States	1.033
Islamic Rep. of Iran	1.019
People's Rep. of China	1.000
Venezuela	1.069
Mexico	1.081
Nigeria	1.021
Kuwait	1.016
Iraq	1.023

**crude oil for the top-ten producers in 2010.

Default net calorific values

Oil products

	OECD Europe*	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	1.098	1.130	1.139	1.130
Motor gasoline	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	1.024	1.046
Gas/diesel oil	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	1.024	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

*Defaults for OECD Europe were also applied to non-OECD Europe and Eurasia countries.

Selected country-specific gross calorific values

Natural gas*

	kJ/m ³
Russian Federation	38 230
United States	38 192
Canada	38 430
Islamic Rep. of Iran	39 356
Qatar	41 400
Norway	39 650
People's Rep. of China	38 931
Netherlands	33 339
Indonesia	40 600
Saudi Arabia	38 000

*for the top-ten producers in 2010.

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. In the case of electricity produced from geothermal heat, if the actual geothermal efficiency is not known, then the primary equivalent is calculated assuming an efficiency of 10%, so 1 TWh = (0.086 ÷ 0.1) Mtoe.

- Coal/peat** *Coal/peat* includes all coal, both primary (including hard 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). Peat is also included in this category.
- 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 natural gas (excluding natural gas liquids).
- 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.
- 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 the geothermal process is known, the quantity of geothermal energy entering electricity generation is inferred from the electricity production at geothermal plants assuming an average thermal efficiency of 10%. For solar, 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.* hard coal, lignite, peat, 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/peat

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	<i>Stock changes</i> 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)	<i>Total primary energy supply (TPES)</i> 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	<i>Transfers</i> includes both interproduct transfers, products transferred and recycled products.
Statistical differences	<i>Statistical differences</i> 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/peat and oil columns.
Electricity plants	<i>Electricity plants</i> 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.
Combined heat and power plants	<i>Combined heat and power plants</i> refers to plants which are designed to produce both heat and electricity, sometimes referred as co-generation power stations. If possible, fuel inputs and electricity/heat outputs are on a unit basis rather than on a plant basis. However, if data are not available on a unit basis, the convention for defining a CHP plant noted above is adopted. Both main activity producers and autoproducer plants are included here.
Heat plants	<i>Heat plants</i> refers to plants (including heat pumps and electric boilers) designed to produce heat only, which is sold to a third party under the provisions of a contract. Both main activity producers and autoproducer plants are included here.
Blast furnaces	<i>Blast furnaces</i> contains inputs to and outputs of fuels from blast furnaces.
Gas works	<i>Gas works</i> is treated similarly to electricity generation, with the quantity produced appearing as a positive figure in the coal/peat column or the natural gas column after blending with natural gas, inputs as negative entries in the coal/peat and oil products columns, and conversion losses appearing in the total column.

Coke ovens	<i>Coke ovens</i> contains losses in transformation of coal from primary to secondary fuels and from secondary to tertiary fuels (hard coal to coke and patent fuel, lignite to BKB, etc.).
Oil refineries	<i>Oil refineries</i> 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.
Petrochemical plants	<i>Petrochemical plants</i> covers backflows returned from the petrochemical industry. Note that backflows from oil products that are used for non-energy purposes (<i>i.e.</i> white spirit and lubricants) are not included here, but in non-energy use.
Liquefaction plants	<i>Liquefaction plants</i> includes diverse liquefaction processes, such as coal liquefaction plants and gas-to-liquid plants.
Other transformation	<i>Other transformation</i> covers non-specified transformation not shown elsewhere, such as the transformation of primary solid biofuels into charcoal.
Energy industry own use	<i>Energy industry own use</i> 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	<i>Losses</i> includes losses in energy distribution, transmission and transport.
Total final consumption (TFC)	<i>Total final consumption (TFC)</i> is the sum of consumption by the different end-use sectors. Backflows from the petrochemical industry are not included in final consumption.
Industry	<i>Industry</i> consumption is specified in the following subsectors (energy used for transport by industry is not included here but reported under transport): <ul style="list-style-type: none">■ <i>Iron and steel industry</i> [ISIC Group 241 and Class 2431];■ <i>Chemical and petrochemical industry</i> [ISIC Divisions 20 and 21] excluding petrochemical feedstocks;■ <i>Non-ferrous metals</i> basic industries [ISIC Group 242 and Class 2432];■ <i>Non-metallic minerals</i> such as glass, ceramic, cement, etc. [ISIC Division 23];■ <i>Transport equipment</i> [ISIC Divisions 29 and 30];■ <i>Machinery</i> comprises fabricated metal products, machinery and equipment other than transport equipment [ISIC Divisions 25 to 28];

Industry (ctd.)

- *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.

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	kWh	kilowatt hour
Gcal	gigacalorie	MBtu	million British thermal units
GCV	gross calorific value	Mt	million tonnes
GW	gigawatt	Mtoe	million tonnes of oil equivalent
GW/h	gigawatt hour	PPP	purchasing power parity
kb/cd	thousand barrels per calendar day	t	metric ton = tonne = 1000 kg
kcal	kilocalorie	TJ	terajoule
kg	kilogramme	toe	tonne of oil equivalent = 10 ⁷ kcal
kJ	kilojoule	TWh	terawatt hour

GEOGRAPHICAL COVERAGE

OECD*	Australia, Austria, Belgium, Canada, Chile, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Korea, Luxembourg, Mexico, the Netherlands, New Zealand, Norway, Poland, Portugal, the Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey, the United Kingdom and the United States.
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, Georgia, Gibraltar, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, the Former Yugoslav Republic of Macedonia, Malta, Republic of Moldova, Romania, Russian Federation, Serbia**, Tajikistan, Turkmenistan, Ukraine and Uzbekistan.
China	People's Republic of China and Hong Kong (China).
Asia	Bangladesh, Brunei Darussalam, Cambodia, Chinese Taipei, India, Indonesia, Democratic People's Republic of Korea, Malaysia, Mongolia, Myanmar, Nepal, Pakistan, Philippines, Singapore, Sri Lanka, Thailand, Vietnam and Other Asia.
Latin America	Argentina, Bolivia, Brazil, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, El Salvador, Guatemala, Haiti, Honduras, Jamaica, Netherlands Antilles, Nicaragua, Panama, Paraguay, Peru, Trinidad and Tobago, Uruguay, Venezuela and Other Latin America.
Africa	Algeria, Angola, Benin, Botswana, Cameroon, Congo, Democratic Republic of Congo, Côte d'Ivoire, Egypt, Eritrea, Ethiopia, Gabon, Ghana, Kenya, Libyan Arab Jamahiriya, Morocco, Mozambique, Namibia, Nigeria, Senegal, South Africa, Sudan, United Republic of Tanzania, Togo, Tunisia, Zambia, Zimbabwe and Other Africa.
OECD +	OECD countries and those EU countries that are not members of the OECD (<i>i.e.</i> Bulgaria, Cyprus, Latvia, Lithuania, Malta and Romania).
OME (Other Major Economies)	Brazil, China, India, Indonesia, Russian Federation and Middle East.
OC (Other Countries)	World excluding OECD+ and OME.

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

** Includes Montenegro until 2004 and Kosovo until 1999.

Note: The countries listed above are those for which the IEA Secretariat has direct statistics contacts.

Ten Annual Publications

Energy Statistics of OECD Countries, 2011 Edition

No other publication offers such in-depth statistical coverage. It is intended for anyone involved in analytical or policy work related to energy issues. It contains data on energy supply and consumption in original units for coal, oil, natural gas, biofuels/waste and products derived from these primary fuels, as well as for electricity and heat. Complete data are available for 2008 and 2009 and supply estimates are available for the most recent year (*i.e.* 2010). Historical tables summarise data on production, trade and final consumption. Each issue includes definitions of products and flows and explanatory notes on the individual country data.

Published July 2011 - Price €120

Energy Balances of OECD Countries, 2011 Edition

A companion volume to *Energy Statistics of OECD Countries*, this publication presents standardised energy balances expressed in million tonnes of oil equivalent. Energy supply and consumption data are divided by main fuel: coal, oil, natural gas, nuclear, hydro, geothermal/solar, biofuels/waste, electricity and heat. This allows for easy comparison of the contributions each fuel makes to the economy and their interrelationships through the conversion of one fuel to another. All of this is essential for estimating total energy supply, forecasting, energy conservation, and analysing the potential for interfuel substitution. Complete data are available for 2008 and 2009 and supply estimates are available for the most recent year (*i.e.* 2010). Historical tables summarise key energy and economic indicators as well as data on production, trade and final consumption. Each issue includes definitions of products and flows and explanatory notes on the individual country data as well as conversion factors from original units to tonnes of oil equivalent.

Published July 2011 - Price €120

Energy Statistics of Non-OECD Countries, 2011 Edition

This publication offers the same in-depth statistical coverage as the homonymous publication covering OECD countries. It includes data in original units for more than 100 individual countries and nine main regions. The consistency of OECD and non-OECD countries' detailed statistics provides an accurate picture of the global energy situation for 2008 and 2009. For a description of the content, please see *Energy Statistics of OECD Countries* above.

Published August 2011 - Price €120

Energy Balances of Non-OECD Countries, 2011 Edition

A companion volume to the publication *Energy Statistics of Non-OECD Countries*, this publication presents energy balances in thousand tonnes of oil equivalent and key economic and energy indicators for more than 100 individual countries and nine main regions. It offers the same statistical coverage as the homonymous publication covering OECD countries, and thus provides an accurate picture of the global energy situation for 2008 and 2009. For a description of the content, please see *Energy Balances of OECD Countries* above.

Published August 2011 - Price €120

Electricity Information 2011

This reference document provides essential statistics on electricity and heat for each OECD member country by bringing together information on production, installed capacity, input energy mix to electricity and heat production, input fuel prices, consumption, end-user electricity prices and electricity trades.

Published August 2011 - Price €150

Coal Information 2011

This well-established publication provides detailed information on past and current evolution of the world coal market. It presents country-specific statistics for OECD member countries and selected non-OECD countries on coal production, demand, trade and prices. This publication represents a key reference tool for all those involved in the coal supply or consumption stream, as well as institutions and governments involved in market and policy analysis of the world coal market.

Published August 2011 - Price €165

Natural Gas Information 2011

A detailed reference work on gas supply and demand, covering not only the OECD countries but also the rest of the world. Contains essential information on LNG and pipeline trade, gas reserves, storage capacity and prices. The main part of the book, however, concentrates on OECD countries, showing a detailed gas supply and demand balance for each individual country and for the three OECD regions, as well as a breakdown of gas consumption by end-user. Import and export data are reported by source and destination.

Published August 2011 - Price €165

Oil Information 2011

A comprehensive reference book on current developments in oil supply and demand. The first part of 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. The second part gives a more 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.

Published August 2011 - Price €165

Renewables Information 2011

This reference document brings together in one volume essential statistics on renewables and waste energy sources. It presents a detailed and comprehensive picture of developments for renewable and waste energy sources for each of the OECD member countries, encompassing energy indicators, generating capacity, electricity and heat production from renewable and waste sources, as well as production and consumption of renewable and waste products.

Published August 2011 - Price €110

CO₂ Emissions from Fuel Combustion, 2011 Edition

In order for nations to tackle the problem of climate change, they need accurate greenhouse gas emissions data. This publication provides a basis for comparative analysis of CO₂ emissions from fossil fuel combustion, a major source of anthropogenic emissions. The data in this book are designed to assist in understanding the evolution of the emissions of CO₂ from 1971 to 2009 for more than 140 countries and regions by sector and by fuel. Emissions were calculated using IEA energy databases and the default methods and emissions factors from the *Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories*.

Published November 2011 - Price €165

Two Quarterlies

Oil, Gas, Coal and Electricity, Quarterly Statistics

This publication provides up-to-date, detailed quarterly statistics on oil, coal, natural gas and electricity for the OECD countries. Oil statistics cover production, trade, refinery intake and output, stock changes and consumption for crude oil, NGL and nine selected oil product groups. Statistics for electricity, natural gas and coal show supply and trade. Import and export data are reported by origin and destination. Moreover, oil as well as hard coal and brown coal production are reported on a worldwide basis.

Published Quarterly - Price €120, annual subscription €380

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This publication responds to the needs of the energy industry and OECD governments for up-to-date information on prices and taxes in national and international energy markets. It contains prices at all market levels for OECD countries and certain non-OECD countries: import prices, industry prices and consumer prices. The statistics cover the main oil products, natural gas, coal and electricity, giving for imported products an average price both for importing country and country of origin. Every issue includes full notes on sources and methods and a description of price mechanisms in each country.

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|---------------------------------------|---------------|
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E-mail: stats@iea.org

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