2013

Key World Energy STATISTICS

International
Energy Agency

KEY WORLD ENERGY STATISTICS

IEA participating countries

Australia
Austria
Belgium
Canada
Czech Republic
Denmark
Finland
France
Germany
Greece
Hungary
Ireland
Italy
Japan
Korea
Luxembourg
Netherlands
New Zealand
Norway
Poland
Portugal
Slovak Republic
Spain
Sweden
Switzerland
Turkey
United Kingdom
United States

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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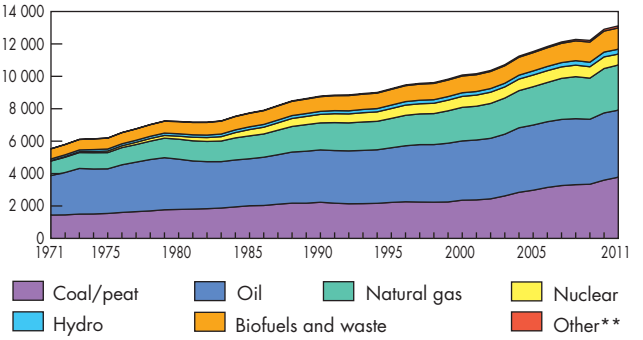
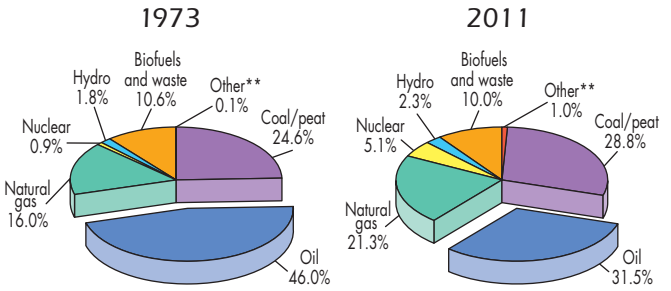
TOTAL PRIMARY ENERGY SUPPLY

World

World* total primary energy supply from 1971 to 2011
by fuel (Mtoe)



1973 and 2011 fuel shares of TPES

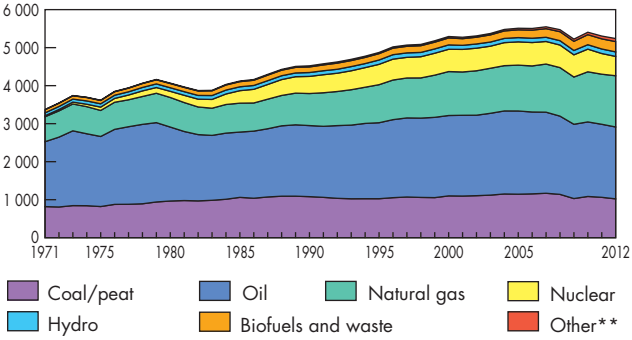


*World includes international aviation and international marine bunkers.
**Other includes geothermal, solar, wind, heat, etc.

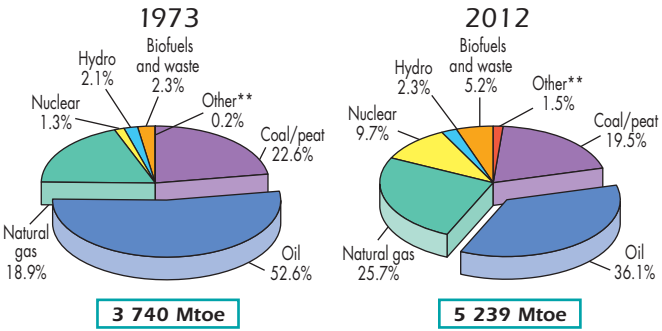
BY FUEL

OECD

OECD total primary energy supply* from 1971 to 2012
by fuel (Mtoe)



1973 and 2012 fuel shares of TPES*

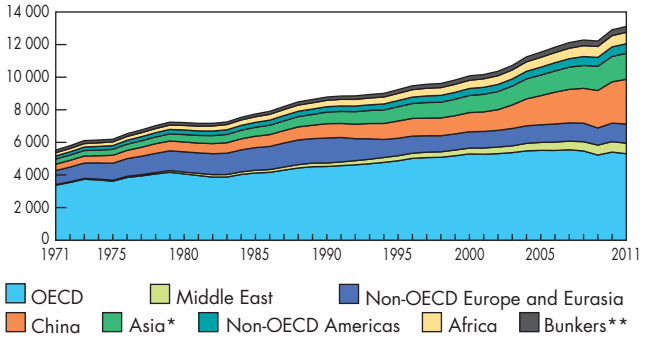


*Excludes electricity trade.
**Other includes geothermal, solar, wind, heat, etc.

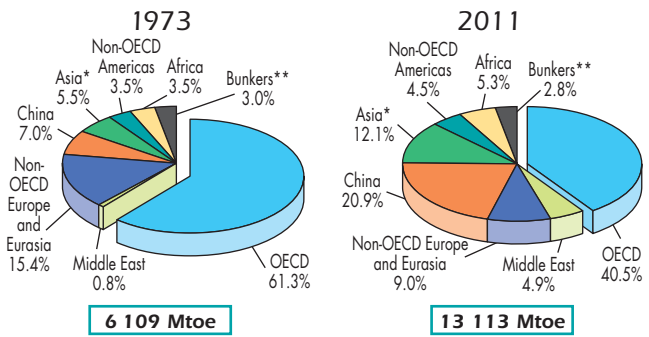
TOTAL PRIMARY ENERGY SUPPLY

World

World total primary energy supply from 1971 to 2011
by region (Mtoe)



1973 and 2011 regional shares of TPES

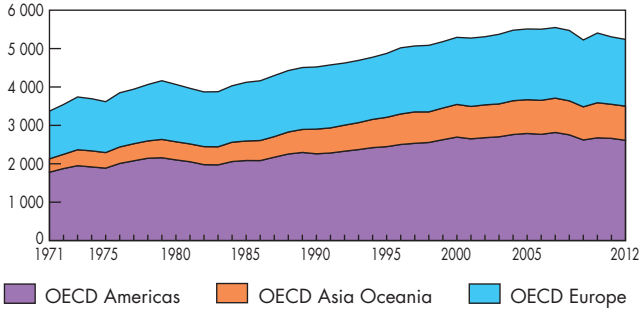


*Asia excludes China.
**Includes international aviation and international marine bunkers.

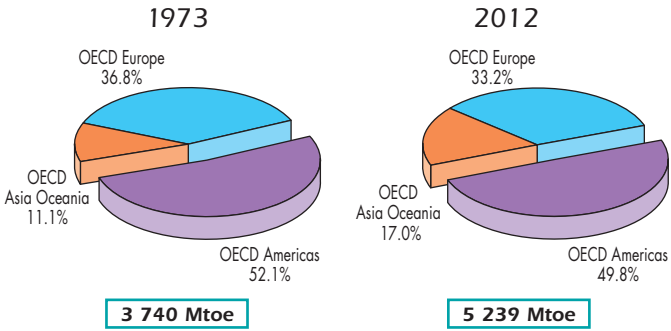
BY REGION

OECD

OECD total primary energy supply* from 1971 to 2012
by region (Mtoe)



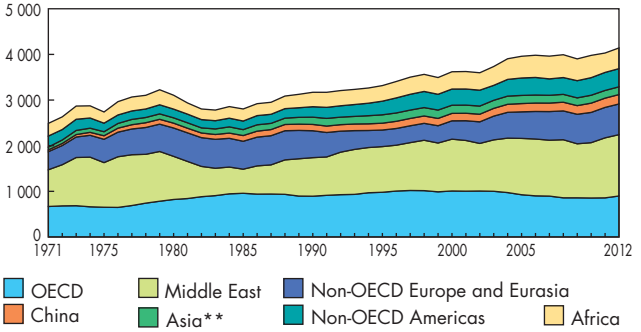
1973 and 2012 regional shares of TPES*



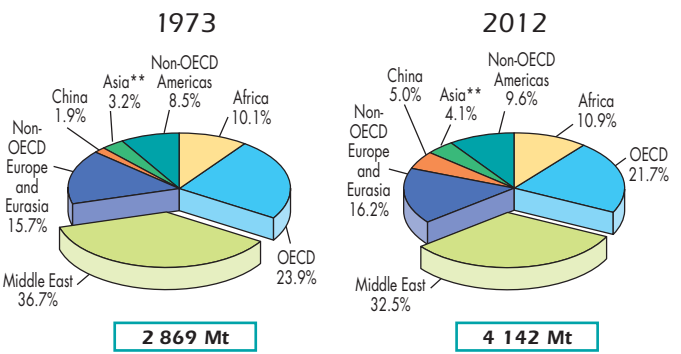
*Excludes electricity trade.

Crude Oil Production

Crude oil* production from 1971 to 2012
by region (Mt)



1973 and 2012 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*

Producers	Mt	% of world total
Saudi Arabia	544	13.1
Russian Federation	520	12.6
United States	387	9.3
People's Rep. of China	206	5.0
Islamic Rep. of Iran	186	4.5
Canada	182	4.4
United Arab Emirates	163	3.9
Venezuela	162	3.9
Kuwait	152	3.7
Iraq	148	3.6
Rest of the world	1 492	36.0
World	**4 142**	**100.0**

2012 data

Net exporters	Mt
Saudi Arabia	353
Russian Federation	247
Islamic Rep. of Iran	122
Nigeria	121
United Arab Emirates	114
Iraq	108
Venezuela	93
Kuwait	89
Canada	82
Angola	79
Others	574
Total	**1 982**

2011 data

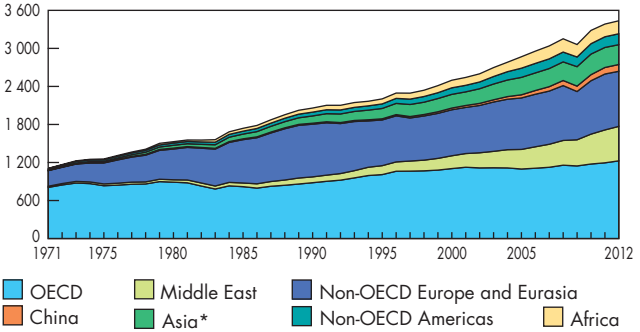
Net importers	Mt
United States	500
People's Rep. of China	251
Japan	177
India	172
Korea	125
Germany	90
Italy	77
France	64
Singapore	58
Netherlands	57
Others	508
Total	**2 079**

2011 data

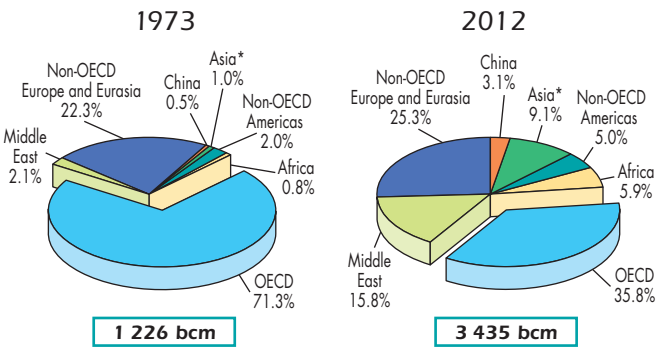
**Includes crude oil, NGL, feedstocks, additives and other hydrocarbons.*

Natural Gas Production

Natural gas production from 1971 to 2012 by region
(billion cubic metres)



1973 and 2012 regional shares of natural gas production



*Asia excludes China.

Producers, net exporters and net importers* of natural gas

Producers	bcm	% of world total
United States	681	19.8
Russian Federation	656	19.1
Qatar	160	4.7
Islamic Rep. of Iran	158	4.6
Canada	157	4.6
Norway	115	3.3
People's Rep. of China	107	3.1
Saudi Arabia	95	2.8
Netherlands	80	2.3
Indonesia	77	2.2
Rest of the world	1 149	33.5
World	**3 435**	**100.0**

2012 data

Net exporters	bcm
Russian Federation	185
Qatar	120
Norway	109
Canada	57
Algeria	48
Turkmenistan	37
Indonesia	37
Netherlands	34
Nigeria	27
Malaysia	21
Others	154
Total	**829**

2012 data

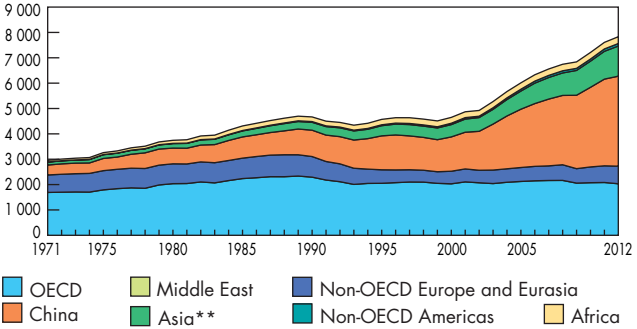
Net importers	bcm
Japan	122
Germany	70
Italy	68
Korea	48
Turkey	45
United States	43
France	43
United Kingdom	37
People's Rep. of China	36
Ukraine	32
Others	283
Total	**827**

2012 data

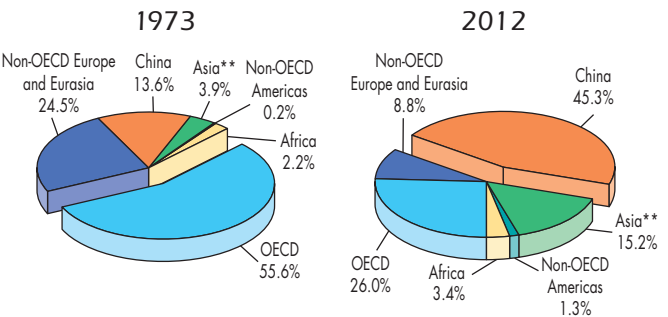
**Net exports and net imports include pipeline gas and LNG.*

Coal Production

Coal* production from 1971 to 2012
by region (Mt)



1973 and 2012 regional shares of coal* production



*Includes steam coal, coking coal, lignite and recovered coal.
**Asia excludes China.

Producers, net exporters and net importers of coal*

Producers	Mt	% of world total
People's Rep. of China	3 549	45.3
United States	935	11.9
India	595	7.6
Indonesia	443	5.7
Australia	421	5.4
Russian Federation	354	4.5
South Africa	259	3.3
Germany	197	2.5
Poland	144	1.8
Kazakhstan	126	1.6
Rest of the world	808	10.4
World	**7 831**	**100.0**

2012 data

Net exporters	Mt
Indonesia	383
Australia	302
United States	106
Russian Federation	103
Colombia	82
South Africa	72
Kazakhstan	32
Canada	25
Mongolia	22
Vietnam	18
Others	23
Total	**1 168**

2012 data

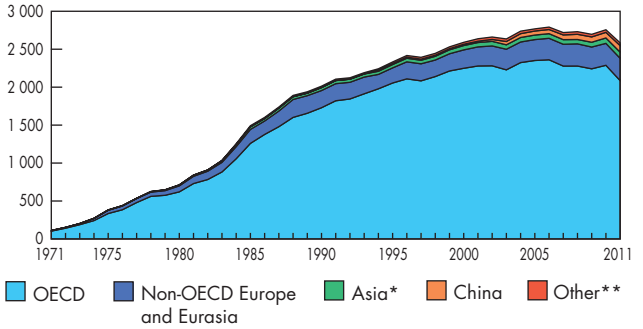
Net importers	Mt
People's Rep. of China	278
Japan	184
India	158
Korea	126
Chinese Taipei	65
Germany	45
United Kingdom	44
Turkey	29
Italy	24
Malaysia	22
Others	213
Total	**1 188**

2012 data

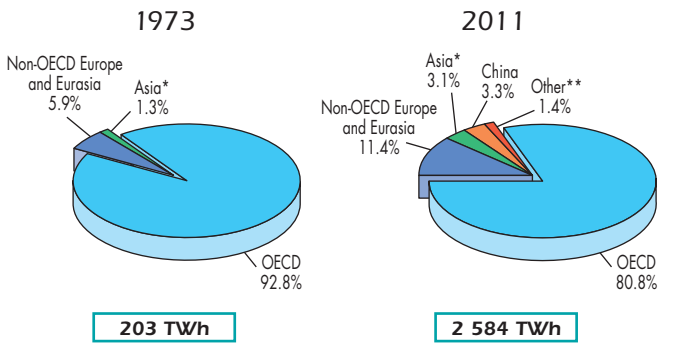
**Includes steam coal, coking coal, lignite and recovered coal.*

Nuclear Production

Nuclear production from 1971 to 2011
by region (TWh)



1973 and 2011 regional shares of nuclear production



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

Producers of nuclear electricity

Producers	TWh	% of world total
United States	821	31.8
France	442	17.1
Russian Federation	173	6.7
Korea	155	6.0
Germany	108	4.2
Japan	102	3.9
Canada	94	3.6
Ukraine	90	3.5
People's Rep. of China	86	3.3
United Kingdom	69	2.7
Rest of the world	444	17.2
World	**2 584**	**100.0**

2011 data

**Excludes countries with no nuclear production.*

Net installed capacity	GW
United States	102
France	63
Japan	44
Russian Federation	24
Korea	19
Ukraine	13
Canada	13
Germany	12
People's Rep. of China	12
United Kingdom	10
Rest of the world	57
World	**369**

2011 data

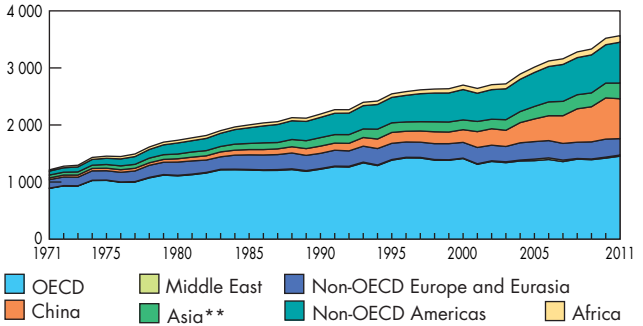
Sources: IEA, International Atomic Energy Agency.

Country (top-ten producers)	% of nuclear in total domestic electricity generation
France	79.4
Ukraine	46.3
Korea	29.8
United States	19.0
United Kingdom	18.9
Germany	17.9
Russian Federation	16.4
Canada	14.7
Japan	9.8
People's Rep. of China	1.8
Rest of the world*	11.5
World	**11.7**

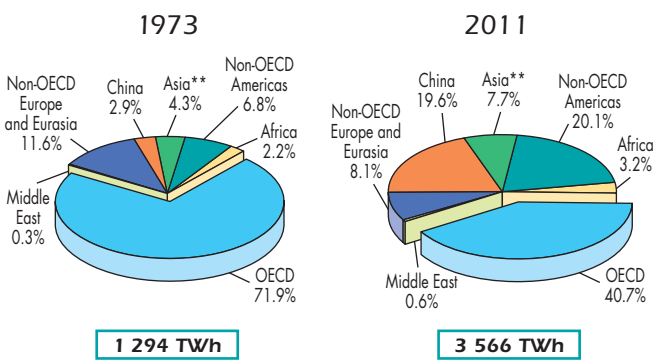
2011 data

Hydro Production

Hydro* production from 1971 to 2011
by region (TWh)



1973 and 2011 regional shares of hydro* production



*Includes pumped storage.
**Asia excludes China.

Producers of hydro* electricity

Producers	TWh	% of world total
People's Rep. of China	699	19.6
Brazil	428	12.0
Canada	376	10.5
United States	345	9.7
Russian Federation	168	4.7
India	131	3.7
Norway	122	3.4
Japan	92	2.6
Venezuela	84	2.3
Sweden	67	1.9
Rest of the world	1 054	29.6
World	**3 566**	**100.0**

2011 data

Net installed capacity	GW
People's Rep. of China	194
United States	101
Brazil	81
Canada	75
Japan	48
Russian Federation	47
India	38
Norway	30
France	25
Italy	22
Rest of the world	338
World	**999**

2010 data

Sources: IEA, United Nations.

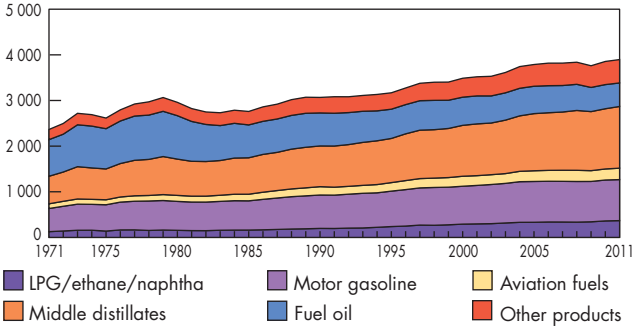
Country (top-ten producers)	% of hydro in total domestic electricity generation
Norway	95.3
Brazil	80.6
Venezuela	68.6
Canada	59.0
Sweden	44.3
Russian Federation	15.9
People's Rep. of China	14.8
India	12.4
Japan	8.7
United States	7.9
Rest of the world**	13.6
World	**16.1**

2011 data

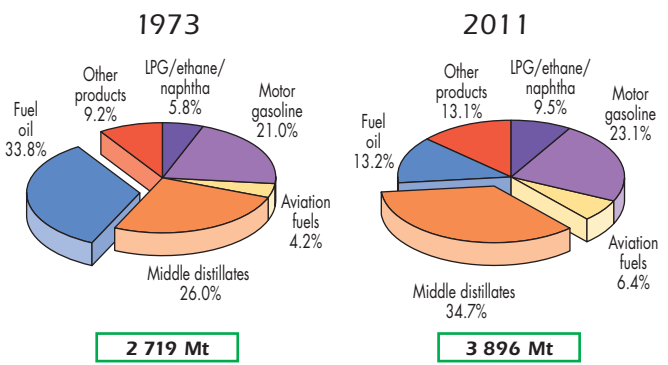
**Includes pumped storage.*
***Excludes countries with no hydro production.*

Refining by Product

World refinery production from 1971 to 2011
by product (Mt)



1973 and 2011 shares of refinery production by product



Producers, net exporters and net importers of oil products

Producers	Mt	% of world total
United States	824	21.1
People's Rep. of China	417	10.7
Russian Federation	248	6.4
India	207	5.3
Japan	169	4.3
Korea	127	3.3
Germany	100	2.6
Brazil	99	2.5
Canada	93	2.4
Saudi Arabia	92	2.4
Rest of the world	1 520	39.0
World	**3 896**	**100.0**

2011 data

Net exporters	Mt
Russian Federation	100
United States	61
India	47
Saudi Arabia	42
Venezuela	31
Kuwait	31
Korea	21
Algeria	17
Qatar	17
Islamic Rep. of Iran	17
Others	134
Total*	**518**

2011 data

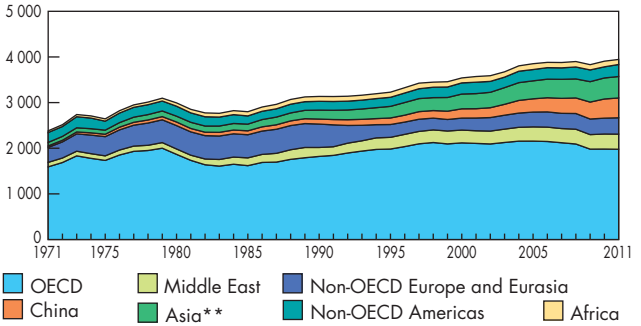
Net importers	Mt
Japan	34
People's Rep. of China	25
Indonesia	22
Mexico	22
France	19
Hong Kong (China)	19
Brazil	17
Germany	15
Singapore	15
Australia	13
Others	229
Total*	**430**

2011 data

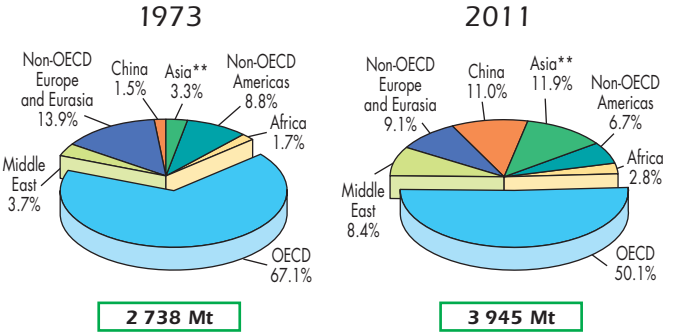
**The discrepancy between total net exports and total net imports arises from different data sources and possible misallocation of bunkers into exports for some countries.*

Refining by Region

World refinery throughput* from 1971 to 2011
by region (Mt)



1973 and 2011 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*

Crude distillation capacity	kb/cd	% of world total
United States	17 647	18.2
People's Rep. of China**	13 410	13.8
Russian Federation	5 605	5.8
Japan	4 574	4.7
India	4 442	4.6
Korea	3 053	3.2
Germany	2 132	2.2
Saudi Arabia	2 116	2.2
Italy	2 094	2.2
Brazil	2 006	2.1
Rest of the world	39 805	41.0
World	**96 884**	**100.0**

2012 data

Net exporters	Mt
Saudi Arabia	394
Russian Federation	347
Islamic Rep. of Iran	139
Venezuela	124
Kuwait	120
Nigeria	115
United Arab Emirates	112
Iraq	99
Canada	88
Norway	82
Others	558
Total	**2 178**

2011 data

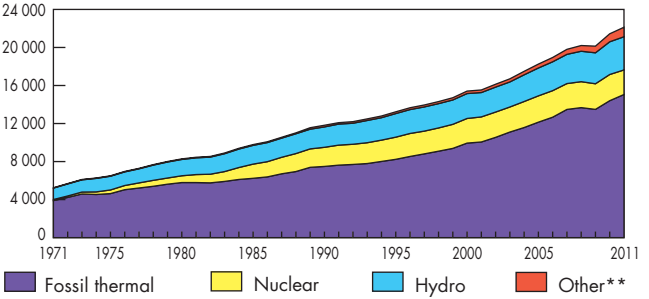
Net importers	Mt
United States	439
People's Rep. of China	276
Japan	211
India	125
Germany	105
Korea	103
France	83
Singapore	72
Spain	66
Italy	63
Others	643
Total	**2 186**

2011 data

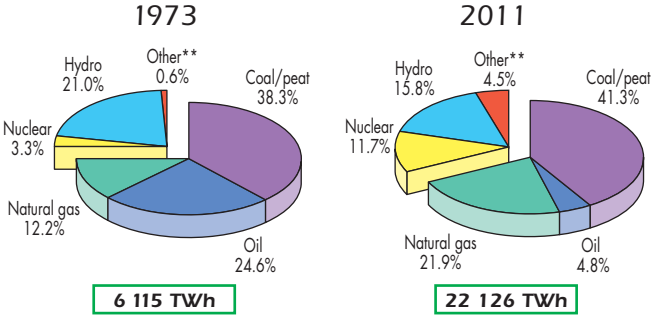
**Crude oil and oil products.*
***Includes unlisted small teapot refineries which are estimated at 500 kb/cd (i.e. calendar day).*

Electricity Generation by Fuel

World electricity generation* from 1971 to 2011
by fuel (TWh)



1973 and 2011 fuel shares of electricity generation*



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

Electricity production from fossil fuels

Coal/peat	TWh
People's Rep. of China	3 723
United States	1 875
India	715
Japan	281
Germany	272
South Africa	243
Korea	225
Australia	173
Russian Federation	164
Poland	141
Rest of the world	1 332
World	**9 144**

2011 data

Oil	TWh
Japan	153
Saudi Arabia	142
Islamic Rep. of Iran	67
Mexico	48
Indonesia	42
United States	40
Kuwait	36
Pakistan	34
Russian Federation	27
Egypt	25
Rest of the world	444
World	**1 058**

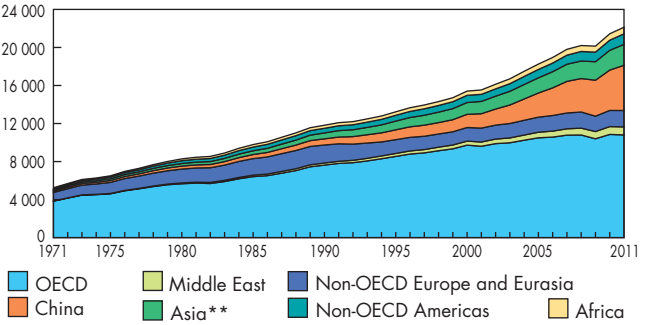
2011 data

Natural gas	TWh
United States	1 045
Russian Federation	519
Japan	374
Islamic Rep. of Iran	160
Mexico	156
United Kingdom	147
Italy	145
Egypt	117
Korea	116
India	109
Rest of the world	1 964
World	**4 852**

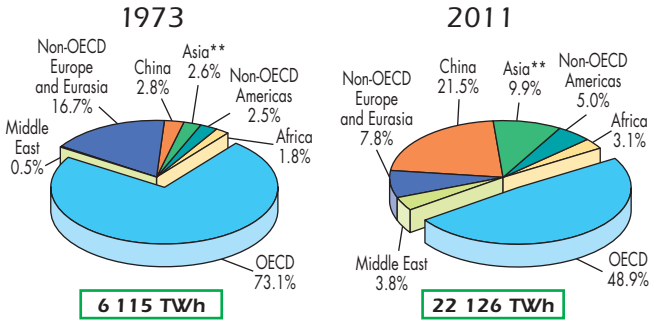
2011 data

Electricity Generation by Region

World electricity generation* from 1971 to 2011 by region (TWh)



1973 and 2011 regional shares of electricity generation*



*Excludes pumped storage.

**Asia excludes China.

Producers, net exporters and net importers of electricity

Producers*	TWh	% of world total
People's Rep. of China	4 716	21.3
United States	4 327	19.6
Russian Federation	1 053	4.8
India	1 052	4.8
Japan	1 043	4.7
Canada	637	2.9
Germany	602	2.7
France	557	2.5
Brazil	532	2.4
Korea	520	2.4
Rest of the world	7 087	31.9
World	**22 126**	**100.0**

2011 data

Net exporters	TWh
France	56
Paraguay	46
Canada	37
Russian Federation	23
Czech Republic	17
People's Rep. of China	13
Bulgaria	11
United Arab Emirates	8
Sweden	7
Ukraine	6
Others	58
Total	**282**

2011 data

Net importers	TWh
Italy	46
United States	37
Brazil	36
Finland	14
Argentina	10
Netherlands	9
Thailand	9
Hong Kong (China)	8
Austria	8
Croatia	8
Others	97
Total	**282**

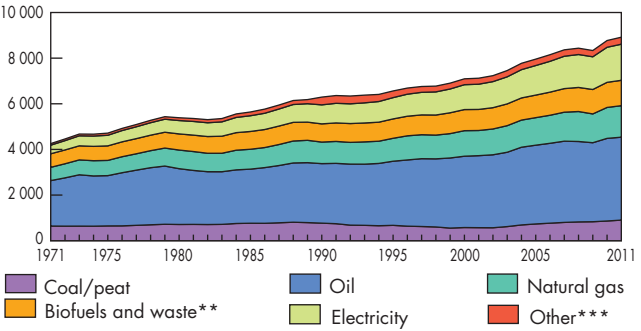
2011 data

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

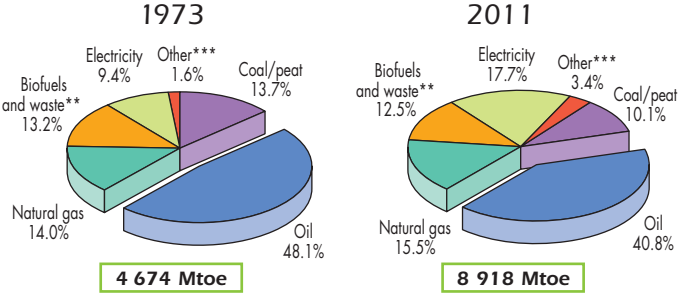
TOTAL FINAL CONSUMPTION

World

World* total final consumption from 1971 to 2011
by fuel (Mtoe)



1973 and 2011 fuel shares of total final consumption

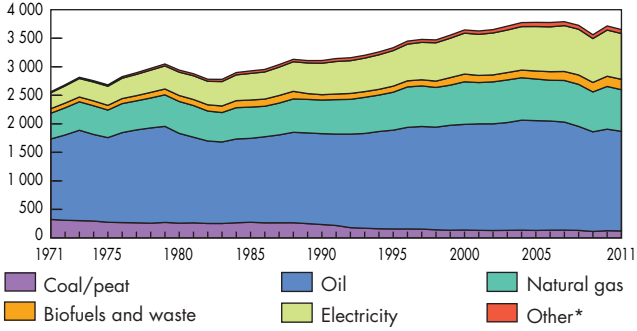


*World includes international aviation and international marine bunkers.
**Data prior to 1994 for biofuels and waste final consumption have been estimated.
***Other includes geothermal, solar, wind, heat, etc.

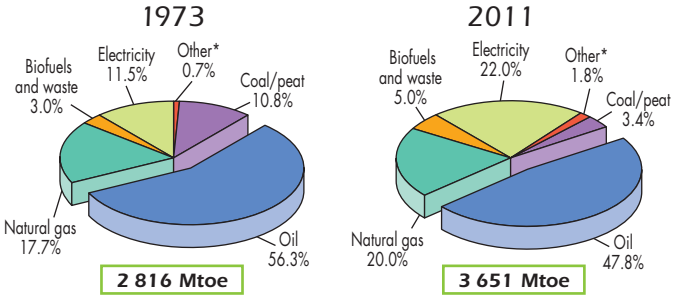
BY FUEL

OECD

OECD total final consumption from 1971 to 2011
by fuel (Mtoe)



1973 and 2011 fuel shares of total final consumption

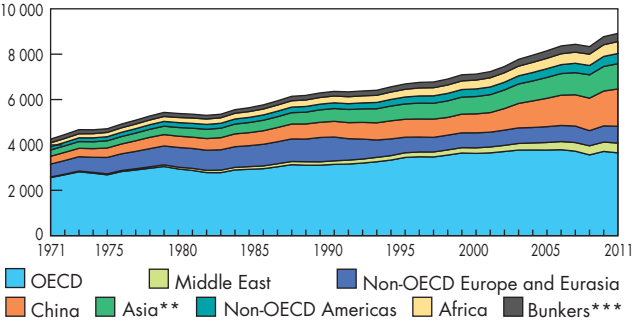


*Other includes geothermal, solar, wind, heat, etc.

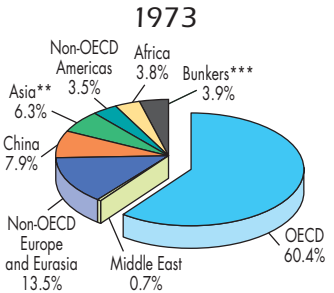
TOTAL FINAL CONSUMPTION

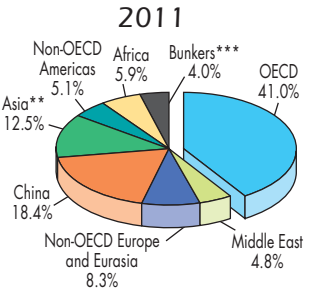
World

World total final consumption* from 1971 to 2011
by region (Mtoe)



1973 and 2011 regional shares of total final consumption*



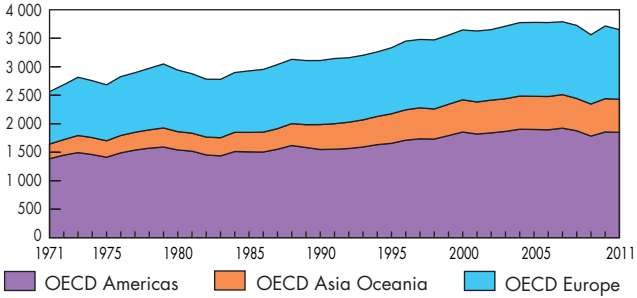


*Data prior to 1994 for biofuels and waste final consumption have been estimated.
**Asia excludes China.
***Includes international aviation and international marine bunkers.

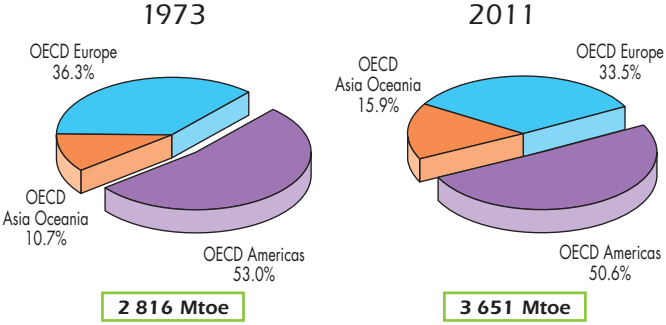
BY REGION

OECD

OECD total final consumption from 1971 to 2011
by region (Mtoe)



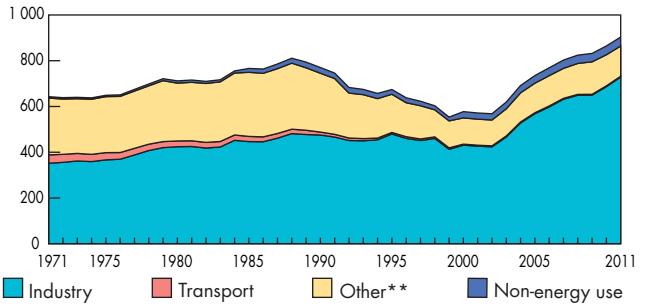
1973 and 2011 regional shares of total final consumption



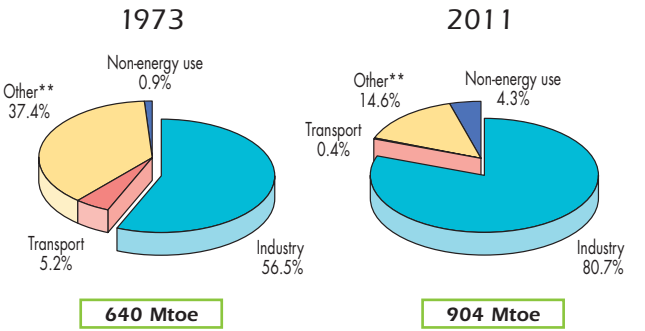
TOTAL FINAL CONSUMPTION

Coal*

Total final consumption from 1971 to 2011
by sector (Mtoe)



1973 and 2011 shares of world coal* consumption

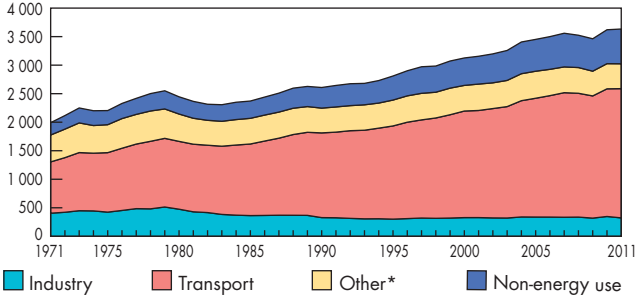


*Coal refers to coal/peat. **Includes agriculture, commercial and public services, residential, and non-specified other.

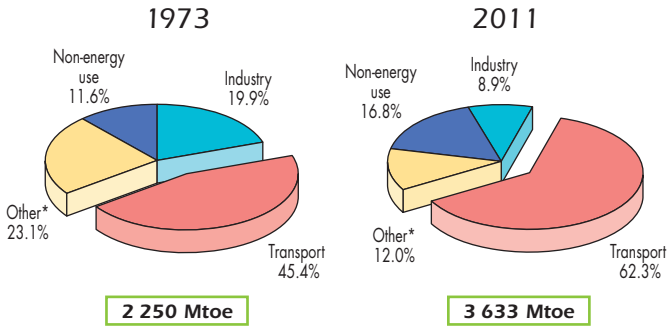
BY SECTOR

Oil

Total final consumption from 1971 to 2011
by sector (Mtoe)



1973 and 2011 shares of world oil consumption

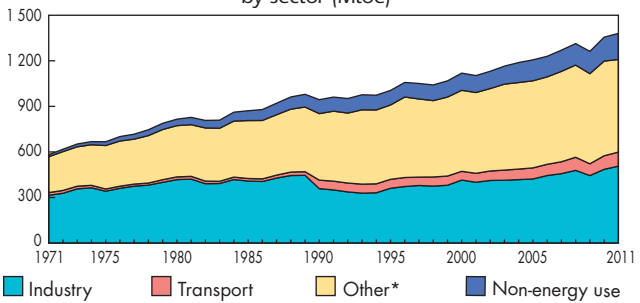


**Includes agriculture, commercial and public services, residential, and non-specified other.*

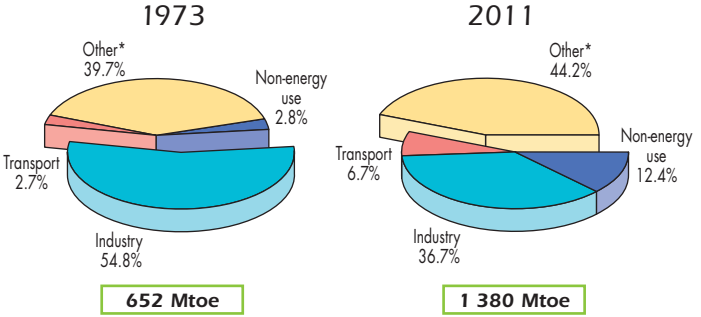
TOTAL FINAL CONSUMPTION

Natural gas

Total final consumption from 1971 to 2011
by sector (Mtoe)



1973 and 2011 shares of world natural gas consumption

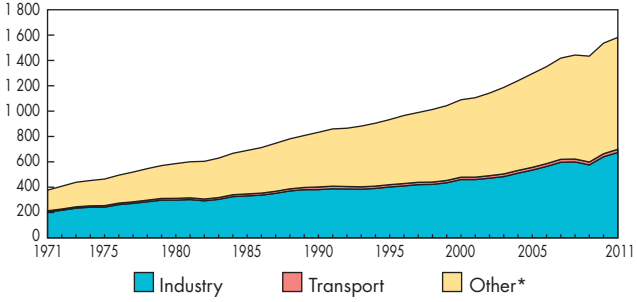


*Includes agriculture, commercial and public services, residential, and non-specified other.

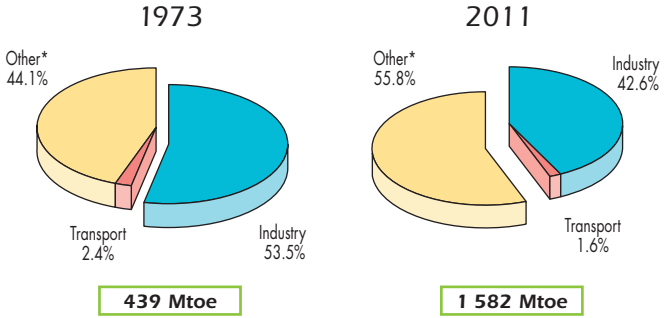
BY SECTOR

Electricity

Total final consumption from 1971 to 2011
by sector (Mtoe)



1973 and 2011 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	2 938.38	-	993.05	53.05	110.19	644.57	6.13	6 224.36
Imports	140.01	1 561.28	407.65	73.40	-	-	0.12	8.14	2 190.61
Exports	-130.40	-1 612.99	-442.73	-72.56	-	-	-0.19	-8.27	-2 267.15
Stock changes	12.30	-19.68	-16.40	-15.09	-	-	0.06	-	-38.82
TPES	**1 500.92**	**2 866.99**	**-51.48**	**978.80**	**53.05**	**110.19**	**644.55**	**6.00**	**6 109.01**
Transfers	-	-46.76	48.78	-	-	-	-	-	2.02
Statistical diff.	7.52	12.00	-6.77	4.78	-	-	-0.17	-0.03	17.32
Electricity plants	-557.08	-22.91	-317.91	-160.52	-52.95	-110.19	-2.45	502.41	-721.60
CHP plants	-86.40	-	-28.62	-50.84	-0.10	-	-0.91	100.94	-65.93
Heat plants	-7.81	-	-0.90	-0.68	-	-	-0.80	7.11	-3.08
Blast furnaces	-81.53	-	-2.72	-	-	-	-0.06	-	-84.31
Gas works	9.87	-0.60	-9.07	-6.21	-	-	-	-	-6.01
Coke ovens[c]	-100.69	-	-0.68	-0.19	-	-	-0.02	-	-101.59
Oil refineries	-	-2 782.24	2 761.31	-	-	-	-	-	-20.93
Petchem. plants	-	5.09	-5.37	-	-	-	-	-	-0.28
Liquefaction plants	-0.73	0.23	-	-	-	-	-	-	-0.50
Other transf.	-	-	-0.12	-0.03	-	-	-23.14	-	-23.28
Energy ind. own use	-35.06	-2.59	-158.81	-106.78	-	-	-0.20	-57.68	-361.10
Losses	-8.97	-7.07	-0.27	-6.03	-	-	-0.25	-43.14	-65.73
TFC	**640.04**	**22.15**	**2 227.36**	**652.29**	**-**	**-**	**616.56**	**515.61**	**4 674.01**
Industry	361.89	16.42	432.21	356.95	-	-	91.52	286.35	1 545.32
Transport[d]	33.00	-	1 019.05	17.72	-	-	0.24	10.60	1 080.60
Other	239.14	0.00	520.05	259.26	-	-	524.80	218.67	1 761.93
Non-energy use	6.01	5.73	256.05	18.37	-	-	-	-	286.16

(a) Biofuels and waste final consumption has been estimated.
(b) Other includes geothermal, solar, wind, electricity and heat, etc.
(c) Also includes patent fuel and BKB plants.
(d) Includes international aviation and international marine bunkers.

BALANCE TABLE

World

2011

(Mtoe)

SUPPLY AND CONSUMPTION	Coal/ peat	Crude oil	Oil products	Natural gas	Nuclear	Hydro	Biofuels and waste	Other[a]	Total
Production	3 850.54	4 132.97	-	2 805.35	674.01	300.17	1 310.64	128.08	13 201.76
Imports	696.75	2 299.34	1 077.39	865.30	-	-	13.89	55.78	5 008.45
Exports	-726.24	-2 210.80	-1 164.02	-861.72	-	-	-11.64	-55.82	-5 030.23
Stock changes	-44.99	-1.94	3.05	-21.98	-	-	-0.74	-	-66.60
TPES	**3 776.06**	**4 219.57**	**-83.58**	**2 786.95**	**674.01**	**300.17**	**1 312.15**	**128.05**	**13 113.38**
Transfers	-0.34	-169.12	195.38	-	-	-	0.02	-	25.94
Statistical diff.	-143.75	6.79	3.52	10.31	-	-	-0.08	-1.74	-124.94
Electricity plants	-2 075.41	-41.61	-203.82	-711.28	-670.42	-300.17	-81.07	1 624.79	-2 459.00
CHP plants	-180.77	-0.01	-25.55	-313.98	-3.57	-	-42.75	329.47	-237.16
Heat plants	-109.45	-0.83	-11.71	-92.93	-0.02	-	-10.82	189.23	-36.53
Blast furnaces	-190.85	-	-0.61	-0.08	-	-	-0.06	-	-191.60
Gas works	-6.32	-0.00	-3.82	3.18	-	-	-0.03	-	-7.00
Coke ovens[b]	-59.09	-	-2.61	-0.00	-	-	-0.02	-	-61.72
Oil refineries	-	-4 023.86	3 989.31	-0.85	-	-	-	-	-35.40
Petchem. plants	-	31.37	-31.81	-	-	-	-	-	-0.44
Liquefaction plants	-17.55	9.57	-	-10.74	-	-	-	-	-18.72
Other transf.	-0.06	1.22	-2.79	-3.59	-	-	-54.63	-0.35	-60.20
Energy ind. own use	-85.43	-6.47	-206.71	-267.51	-	-	-10.77	-207.25	-784.14
Losses	-3.42	-7.87	-0.69	-18.97	-	-	-0.19	-173.79	-204.93
TFC	**903.62**	**18.76**	**3 614.51**	**1 380.50**	**-**	**-**	**1 111.74**	**1 888.41**	**8 917.53**
Industry	728.93	10.67	312.48	506.38	-	-	198.15	800.14	2 556.74
Transport[c]	3.41	0.02	2 265.21	92.52	-	-	58.61	25.16	2 444.94
Other	132.05	0.50	435.55	610.23	-	-	854.99	1 063.11	3 096.43
Non-energy use	39.22	7.56	601.27	171.36	-	-	-	-	819.42

(a) Other includes geothermal, solar, wind, electricity and heat, 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	121.92	1 277.47	336.20	62.55	-	-	0.03	7.55	1 805.73
Exports	-111.10	-63.58	-172.72	-50.38	-	-	-0.01	-7.01	-404.80
Intl. marine bunkers	-	-	-73.65	-	-	-	-	-	-73.65
Intl. aviation bunkers	-	-	-24.64	-	-	-	-	-	-24.64
Stock changes	14.52	-10.78	-11.36	-12.07	-	-	0.06	-	-19.64
TPES	**844.60**	**1 913.62**	**53.83**	**706.32**	**49.22**	**78.94**	**87.36**	**6.66**	**3 740.55**
Transfers	-	-41.28	42.49	-	-	-	-	-	1.22
Statistical diff.	14.82	11.29	2.56	-5.61	-	-	-0.00	0.00	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	-65.52	-	-2.72	-	-	-	-	-	-68.24
Gas works	11.02	-0.60	-8.72	-6.37	-	-	-	-	-4.68
Coke ovens[b]	-25.71	-	-0.68	-0.19	-	-	-0.02	-	-26.60
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	-260.20
Losses	-3.80	-	-0.23	-2.63	-	-	-	-30.54	-37.20
TFC	**303.31**	**0.39**	**1 583.63**	**498.48**	**-**	**-**	**84.30**	**345.49**	**2 815.60**
Industry	182.81	0.39	312.91	250.44	-	-	42.26	169.41	958.20
Transport	7.34	-	665.68	17.00	-	-	0.00	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, wind, electricity and heat, etc.
(b) Also includes patent fuel and BKB plants.

BALANCE TABLE

OECD

2011

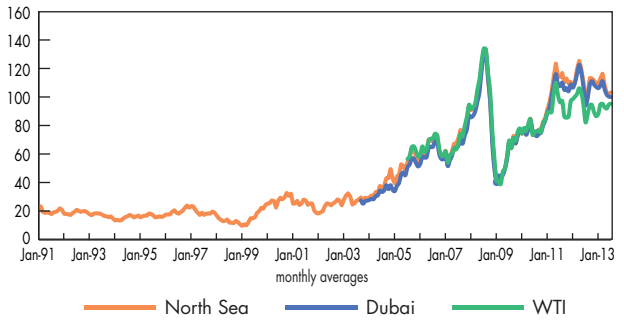
(Mtoe)

SUPPLY AND CONSUMPTION	Coal/ peat	Crude oil	Oil products	Natural gas	Nuclear	Hydro	Biofuels and waste	Other[a]	Total
Production	977.83	898.48	-	979.64	544.02	119.38	261.61	72.95	3 853.90
Imports	376.48	1 514.88	561.41	653.99	-	-	12.41	35.96	3 155.14
Exports	-296.66	-355.11	-537.54	-300.72	-	-	-6.95	-35.81	-1 532.79
Intl. marine bunkers	-0.00	-	-89.33	-	-	-	-	-	-89.33
Intl. aviation bunkers	-	-	-88.17	-	-	-	-	-	-88.17
Stock changes	5.39	12.50	4.21	-15.68	-	-	-0.39	-	6.04
TPES	**1 063.04**	**2 070.75**	**-149.42**	**1 317.24**	**544.02**	**119.38**	**266.68**	**73.10**	**5 304.78**
Transfers	-	-51.95	66.83	-	-	-	0.02	-	14.90
Statistical diff.	-9.09	-2.52	1.87	8.96	-	-	0.03	0.09	-0.66
Electricity plants	-766.26	-10.02	-54.04	-367.04	-540.97	-119.38	-44.11	776.64	-1 125.18
CHP plants	-82.03	-	-13.97	-108.46	-3.02	-	-34.27	147.92	-93.83
Heat plants	-4.56	-	-1.01	-7.59	-0.02	-	-6.03	14.56	-4.64
Blast furnaces	-52.02	-	-0.61	-0.08	-	-	-	-	-52.71
Gas works	-2.09	-	-3.27	3.75	-	-	-0.03	-	-1.64
Coke ovens[b]	-8.75	-	-1.21	-0.00	-	-	-0.01	-	-9.97
Oil refineries	-	-2 028.89	2 039.25	-0.85	-	-	-	-	9.51
Petchem. plants	-	27.84	-28.30	-	-	-	-	-	-0.46
Liquefaction plants	-0.76	1.33	-	-1.94	-	-	-	-	-1.36
Other transf.	0.00	0.15	-2.79	-0.42	-	-	-0.43	-0.35	-3.84
Energy ind. own use	-14.06	-0.08	-114.36	-110.29	-	-	-0.18	-78.02	-316.98
Losses	-0.93	-	-0.01	-3.18	-	-	-0.04	-62.33	-66.48
TFC	**122.48**	**6.62**	**1 738.97**	**730.11**	**-**	**-**	**181.63**	**871.62**	**3 651.43**
Industry	98.51	2.14	109.83	266.24	-	-	72.28	287.35	836.36
Transport	0.13	0.01	1 107.34	23.56	-	-	41.75	9.27	1 182.06
Other	21.17	0.34	198.70	409.55	-	-	67.60	575.00	1 272.35
Non-energy use	2.66	4.13	323.11	30.76	-	-	-	-	360.66

(a) Other includes geothermal, solar, wind, electricity and heat, etc.
(b) Also includes patent fuel and BKB plants.

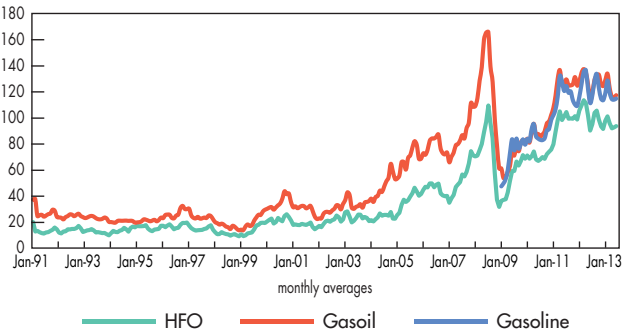
Crude Oil

Key crude oil spot prices in USD/barrel



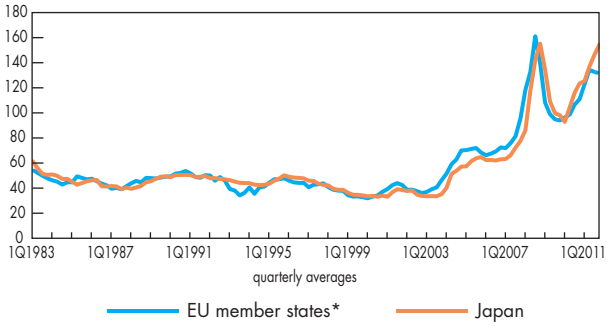
Oil Products

Rotterdam oil product spot prices in USD/barrel



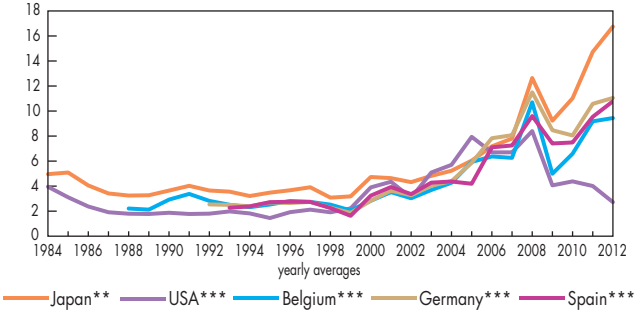
Coal

Steam coal import costs in USD/tonne



Natural Gas

Natural gas import prices in USD/MBtu



**The weighted average for European Union member states is based only on imports for which prices are available and may include different components in different time periods.*
***LNG ***Pipeline*

RETAIL PRICES[a] IN SELECTED

	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	..	..	..	1.611
Austria	787.97	1 285.31	1.16	1.869
Belgium	719.64	1 154.87	1.643	2.216
Canada	732.89	1 218.27	1.296	1.389
Chile	..	1 342.21	..	1.682
Czech Republic	554.27	1 254.46	1.543	1.867
Denmark	905.73	2 033.16	1.614	2.265
Estonia	..	1 342.53	1.495	1.772
Finland	..	1 490.08	1.657	2.161
France	754.20	1 274.28	1.527	2.079
Germany	703.63	1 137.63	1.597	2.114
Greece	811.62	1 717.62	1.512	2.266
Hungary	730.94	x	1.517	1.912
Ireland	1 132.67	1 448.63	1.664	2.112
Israel	c	2 071.73	c	2.125
Italy	877.74	1 904.45	1.85	2.343
Japan	951.41	1 082.34	1.301	1.662
Korea	915.72	1 276.99	..	2.057
Luxembourg	..	1 054.16	1.432	1.796
Mexico	567.74	x	0.775	0.911
Netherlands	684.18	..	1.589	2.329
New Zealand	679.27	..	0.979	1.85
Norway	..	1 759.80	1.861	2.588
Poland	779.61	1 279.85	1.427	1.748
Portugal	1 092.19	1 707.24	1.712	2.13
Slovak Republic	691.01	..	1.574	2.004
Slovenia	..	1 366.61	1.539	2.012
Spain	752.26	1 242.60	1.5	1.903
Sweden	1 458.88	2 098.14	1.819	2.26
Switzerland	736.24	1 102.43	1.721	1.924
Turkey	1 229.65	1 922.02	2.403	2.68
United Kingdom	c	1 116.81	1.842	2.094
United States	704.81	1 079.83	1.063	0.983

(a) Prices are for 1st quarter 2013 for oil products, and annual 2012 for other products. (b) Low sulphur fuel oil; high sulphur fuel oil for Canada, Ireland, Mexico, New Zealand, Turkey and the United States.
(c) For commercial purposes.

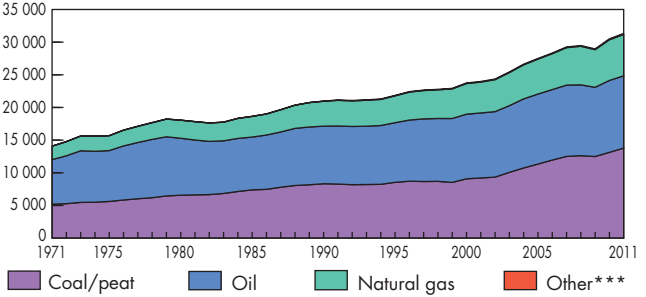
OECD COUNTRIES in USD/unit

Nat. gas for industry (MWh GCV[e])	Nat. gas for households (MWh GCV[e])	Steam coal for industry[f] (tonne)	Electricity for industry (MWh)	Electricity for households (MWh)	
..	..	..	..	..	Australia
..	90.34	229.43	..	253.92	Austria
35.99	91.45	..	126.61	249.94	Belgium
11.90	34.36	..	..	..	Canada
..	125.01	..	126.70	185.38	Chile
48.82	87.63	c	144.87	198.95	Czech Republic
..	123.09	..	104.15	383.43	Denmark
45.61	65.79	..	100.96	138.95	Estonia
45.75	62.51	280.76	103.89	194.87	Finland
51.14	83.76	..	116.33	174.77	France
51.04	90.32	..	148.71	338.75	Germany
66.76	138.05	..	133.74	180.53	Greece
47.85	60.43	..	131.57	204.16	Hungary
45.58	86.75	..	155.20	270.32	Ireland
c	x	x	107.69	151.39	Israel
..	..	..	291.79	288.40	Italy
..	..	150.55	194.27	276.76	Japan
64.80	69.18	..	..	93.08	Korea
50.53	74.62	..	111.70	209.25	Luxembourg
..	30.36	x	114.74	90.20	Mexico
38.62	98.70	..	109.51	238.24	Netherlands
21.62	108.72	c	94.34	231.76	New Zealand
x	x	..	57.56	135.98	Norway
43.96	70.06	109.41	114.59	190.87	Poland
52.70	102.28	232.19	147.30	260.67	Portugal
52.53	68.39	..	169.74	229.64	Slovak Republic
64.38	98.49	..	117.77	193.44	Slovenia
43.97	106.50	..	..	..	Spain
63.32	156.89	..	89.19	223.96	Sweden
71.71	106.77	152.53	130.24	204.16	Switzerland
41.15	50.24	98.02	148.22	184.75	Turkey
38.45	73.65	148.61	134.17	220.74	United Kingdom
12.74	35.22	81.37	66.98	118.83	United States

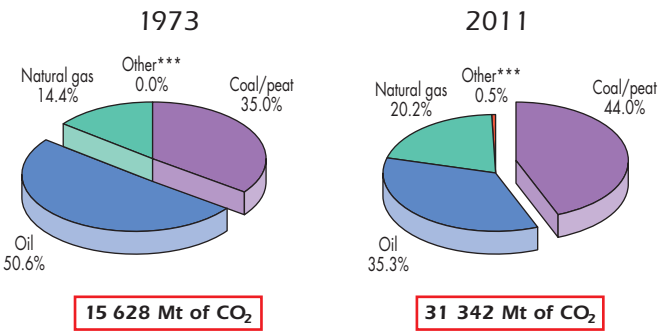
(d) Unleaded premium gasoline (95 RON); unleaded regular for Japan. (e) Gross calorific value. (f) Brown coal for Turkey.
.. not available x not applicable c confidential

CO_2 Emissions by Fuel

World* CO_2 emissions** from 1971 to 2011
by fuel (Mt of CO_2)



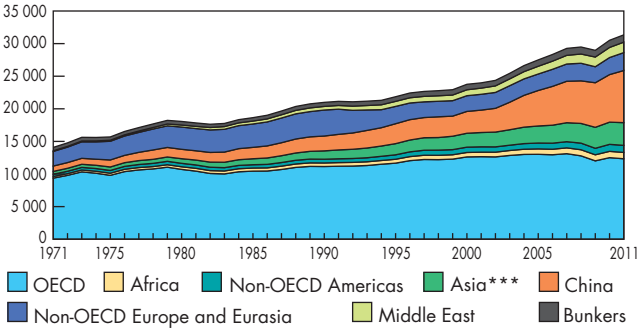
1973 and 2011 fuel shares of CO_2 emissions**



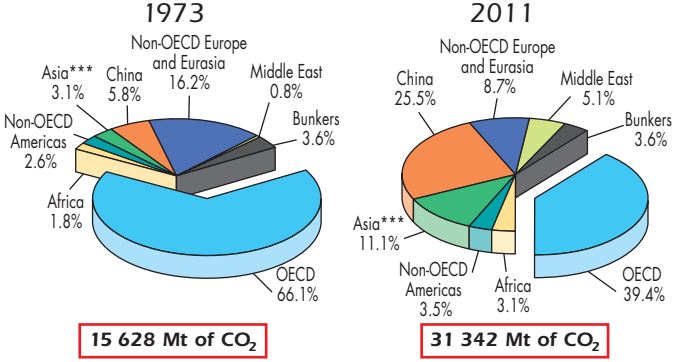
*World includes international aviation and international marine bunkers.
**Calculated using the IEA's energy balances and the Revised 1996 IPCC Guidelines. CO_2 emissions are from fuel combustion only. ***Other includes industrial waste and non-renewable municipal waste.

CO_2 Emissions by Region

World* CO_2 emissions** from 1971 to 2011 by region (Mt of CO_2)



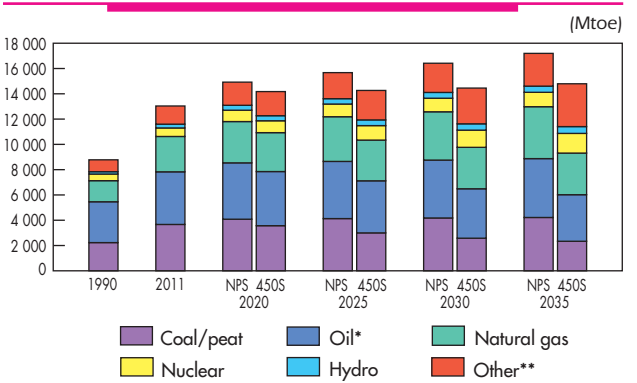
1973 and 2011 regional shares of CO_2 emissions**



**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. CO_2 emissions are from fuel combustion only. ***Asia excludes China.*

OUTLOOK FOR WORLD TPES

TPES Outlook by Fuel

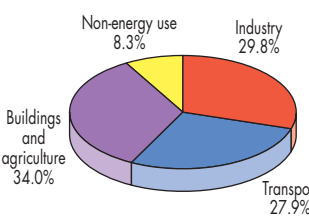


NPS: New Policies Scenario (based on policies under consideration)

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

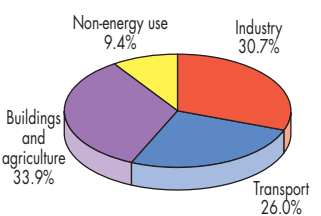
Total Final Consumption by Sector in 2035

New Policies Scenario



11 750 Mtoe

450 Scenario

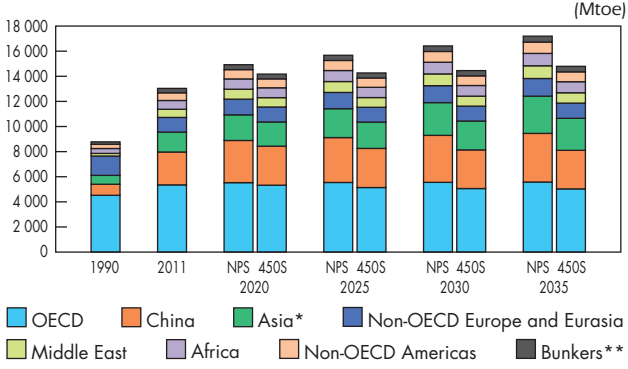


10 390 Mtoe

**Includes international aviation and international marine bunkers.*
***Other includes biofuels and waste (referred to as "bioenergy" in WEO 2012), geothermal, solar, wind, tide, etc.*
****Based on a plausible post-2012 climate-policy framework to stabilise the long-term concentration of global greenhouse gases at 450 ppm CO_2-equivalent.*

(Source: IEA, *World Energy Outlook 2012*)

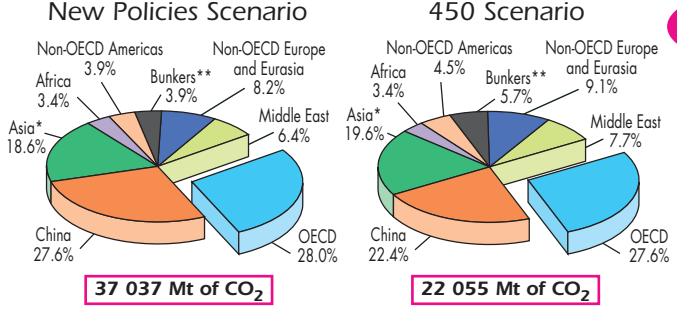
TPES Outlook by Region



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

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

CO_2 Emissions by Region in 2035



**Asia excludes China.*
***Includes international aviation and international marine bunkers.*
****Based on a plausible post-2012 climate-policy framework to stabilise the long-term concentration of global greenhouse gases at 450 ppm CO_2-equivalent. CO_2 emissions are from fuel combustion only for both scenarios.*

Selected Indicators for 2011

Region/ Country/ Economy	Population (million)	GDP (billion 2005 USD)	GDP (PPP) (billion 2005 USD)	Energy prod. (Mtoe)	Net imports (Mtoe)	TPES (Mtoe)	Elec. cons.[a] (TWh)	CO_2 emissions[b] (Mt of CO_2)
World	6 958	52 486	70 313	13 202	-	13 113[c]	20 407	31 342[d]
OECD	1 241	38 239	37 906	3 854	1 622	5 305	10 205	12 341
Middle East	209	1 271	2 489	1 788	-1 106	647	737	1 607
Non-OECD Europe and Eurasia	340	1 597	3 666	1 822	-623	1 176	1 525	2 743
China	1 351	4 426	10 286	2 433	408	2 743	4 475	8 000
Asia	2 313	3 386	8 749	1 405	252	1 593	1 904	3 484
Non-OECD Americas	460	2 298	4 403	797	-186	589	942	1 087
Africa	1 045	1 267	2 814	1 104	-390	700	619	968
Albania	3.22	11.05	25.28	1.49	0.71	2.17	6.38	3.87
Algeria	35.98	119.37	275.00	145.85	-103.27	41.85	41.18	103.88
Angola	19.62	56.77	102.55	92.16	-77.99	13.58	5.01	15.72
Argentina	40.77	276.25	631.91	77.24	5.14	80.11	120.86	183.56
Armenia	3.10	6.18	15.85	0.89	1.87	2.72	5.20	4.66
Australia	22.76	899.11	848.02	296.73	-179.65	122.89	239.31	396.77
Austria	8.42	335.39	304.26	11.51	23.51	33.02	70.39	68.49
Azerbaijan	9.17	28.61	81.50	59.96	-47.15	12.56	15.64	26.79
Bahrain	1.32	18.14	27.41	18.08	-7.86	9.51	12.95	22.68
Bangladesh	150.49	86.94	236.14	26.09	5.56	31.29	39.53	54.12
Belarus	9.47	45.22	124.96	4.30	24.60	29.50	34.37	66.04
Belgium	10.98	407.96	364.66	18.21	49.43	59.09	88.62	108.59
Benin	9.10	5.41	12.99	2.11	1.81	3.76	0.87	4.68
Bolivia	10.09	12.57	45.43	18.00	-10.09	7.70	6.44	15.25
Bosnia and Herzegovina	3.75	13.04	28.55	4.62	2.36	7.10	12.24	22.81
Botswana	2.03	12.53	26.44	0.98	1.25	2.22	3.18	4.69
Brazil	196.66	1 126.72	2 021.34	249.20	28.61	270.03	480.12	408.00
Brunei Darrussalam	0.41	10.07	18.55	18.69	-14.61	3.83	3.46	8.91

(a) Gross production + imports – exports – losses.
(b) CO_2 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 2005 USD)	TPES/ GDP (PPP) (toe/000 2005 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/ 2005 USD)	CO_2/ GDP (PPP) (kg CO_2/ 2005 USD)	Region/ Country/ Economy
1.88	0.25	0.19	2 933	2.39	4.50	0.60	0.45	World
4.28	0.14	0.14	8 226	2.33	9.95	0.32	0.33	OECD
3.10	0.51	0.26	3 532	2.48	7.70	1.26	0.65	Middle East
3.46	0.74	0.32	4 492	2.33	8.08	1.72	0.75	Non-OECD Europe and Eurasia
2.03	0.62	0.27	3 312	2.92	5.92	1.81	0.78	China
0.69	0.47	0.18	823	2.19	1.51	1.03	0.40	Asia
1.28	0.26	0.13	2 046	1.84	2.36	0.47	0.25	Non-OECD Americas
0.67	0.55	0.25	592	1.38	0.93	0.76	0.34	Africa
0.68	0.20	0.09	1 983	1.78	1.20	0.35	0.15	Albania
1.16	0.35	0.15	1 145	2.48	2.89	0.87	0.38	Algeria
0.69	0.24	0.13	256	1.16	0.80	0.28	0.15	Angola
1.97	0.29	0.13	2 965	2.29	4.50	0.66	0.29	Argentina
0.88	0.44	0.17	1 678	1.72	1.50	0.75	0.29	Armenia
5.40	0.14	0.14	10 514	3.23	17.43	0.44	0.47	Australia
3.92	0.10	0.11	8 359	2.07	8.13	0.20	0.23	Austria
1.37	0.44	0.15	1 706	2.13	2.92	0.94	0.33	Azerbaijan
7.18	0.52	0.35	9 782	2.39	17.13	1.25	0.83	Bahrain
0.21	0.36	0.13	263	1.73	0.36	0.62	0.23	Bangladesh
3.11	0.65	0.24	3 628	2.24	6.97	1.46	0.53	Belarus
5.38	0.14	0.16	8 072	1.84	9.89	0.27	0.30	Belgium
0.41	0.70	0.29	95	1.24	0.51	0.86	0.36	Benin
0.76	0.61	0.17	638	1.98	1.51	1.21	0.34	Bolivia
1.89	0.54	0.25	3 263	3.21	6.08	1.75	0.80	Bosnia and Herzegovina
1.09	0.18	0.08	1 568	2.12	2.31	0.37	0.18	Botswana
1.37	0.24	0.13	2 441	1.51	2.07	0.36	0.20	Brazil
9.44	0.38	0.21	8 517	2.32	21.94	0.88	0.48	Brunei Darrussalam

(c) TPES for world includes international aviation and international marine bunkers as well as electricity and heat trade.
(d) CO_2 emissions for world include emissions from international aviation and international marine bunkers.

Region/ Country/ Economy	Population (million)	GDP (billion 2005 USD)	GDP (PPP) (billion 2005 USD)	Energy prod. (Mtoe)	Net imports (Mtoe)	TPES (Mtoe)	Elec. cons.[a] (TWh)	CO_2 emissions[b] (Mt of CO_2)
Bulgaria	7.48	33.55	88.16	12.37	7.14	19.22	35.74	49.22
Cambodia	14.31	9.31	29.79	3.79	1.57	5.33	2.40	4.03
Cameroon	20.03	19.86	41.72	8.19	-1.36	6.72	5.41	5.11
Canada	34.48	1 234.78	1 232.87	409.03	-158.46	251.85	565.73	529.84
Chile	17.27	157.22	263.74	9.88	24.85	33.57	61.76	76.31
People's Rep. of China	1 344.13	4 194.94	9 970.61	2 432.50	378.62	2 727.73	4 432.90	7 954.55
Chinese Taipei	23.39	470.55	782.59	13.59	97.25	108.58	241.87	264.66
Colombia	46.93	193.77	415.77	120.50	-87.50	31.61	52.86	66.69
Congo	4.14	8.12	15.94	16.67	-14.11	1.66	0.73	2.06
Dem. Rep. of Congo	67.76	10.09	22.31	24.75	-0.14	24.50	6.73	3.27
Costa Rica	4.73	26.00	50.74	2.41	2.45	4.66	8.74	6.68
Cote d'Ivoire	20.15	17.36	31.84	11.88	-0.63	11.23	4.12	5.89
Croatia	4.41	46.27	70.31	3.79	4.68	8.44	16.70	18.77
Cuba	11.25	57.34	64.98	5.67	5.67	11.19	14.96	27.97
Cyprus*	0.80	19.27	20.97	0.10	2.65	2.37	4.77	6.93
Czech Republic	10.50	151.18	252.99	32.06	12.03	43.43	66.01	112.68
Denmark	5.57	260.14	181.61	21.01	-1.66	18.00	34.10	41.68
Dominican Republic	10.06	50.04	86.99	0.79	6.74	7.38	9.07	18.03
Ecuador	14.67	47.45	112.27	28.33	-14.38	12.94	18.18	30.93
Egypt	82.54	123.22	457.79	88.21	-9.55	77.65	138.37	188.44
El Salvador	6.23	18.61	37.56	2.24	2.10	4.32	5.19	6.03
Eritrea	5.42	1.15	2.80	0.60	0.17	0.77	0.29	0.51
Estonia	1.34	15.16	24.29	5.04	0.78	5.60	8.38	19.30
Ethiopia	84.73	21.58	82.97	32.11	2.32	34.06	4.65	5.86
Finland	5.39	209.75	172.59	17.09	19.17	34.75	84.80	55.61
France	65.12	2 249.13	1 958.74	136.07	126.40	252.83	476.50	328.31
Gabon	1.53	10.43	21.48	14.27	-11.99	2.00	1.45	2.18
Georgia	4.49	8.81	21.65	1.12	2.46	3.54	8.60	6.26
Germany	81.78	3 048.69	2 827.99	124.19	199.04	311.77	579.21	747.58
Ghana	24.97	16.94	41.25	10.11	0.61	10.55	8.53	10.82

(a) Gross production + imports – exports – losses.
(b) CO_2 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 2005 USD)	TPES/ GDP (PPP) (toe/000 2005 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/ 2005 USD)	CO_2/ GDP (PPP) (kg CO_2/ 2005 USD)	Region/ Country/ Economy
2.57	0.57	0.22	4781	2.56	6.58	1.47	0.56	Bulgaria
0.37	0.57	0.18	168	0.76	0.28	0.43	0.14	Cambodia
0.34	0.34	0.16	270	0.76	0.26	0.26	0.12	Cameroon
7.30	0.20	0.20	16 406	2.10	15.37	0.43	0.43	Canada
1.94	0.21	0.13	3 576	2.27	4.42	0.49	0.29	Chile
2.03	0.65	0.27	3 298	2.92	5.92	1.90	0.80	People's Rep. of China
4.64	0.23	0.14	10 340	2.44	11.31	0.56	0.34	Chinese Taipei
0.67	0.16	0.08	1 126	2.11	1.42	0.34	0.16	Colombia
0.40	0.20	0.10	175	1.24	0.50	0.25	0.13	Congo
0.36	2.43	1.10	99	0.13	0.05	0.32	0.15	Dem. Rep. of Congo
0.98	0.18	0.09	1 848	1.43	1.41	0.26	0.13	Costa Rica
0.56	0.65	0.35	204	0.52	0.29	0.34	0.19	Cote d'Ivoire
1.91	0.18	0.12	3 789	2.22	4.26	0.41	0.27	Croatia
0.99	0.20	0.17	1 329	2.50	2.49	0.49	0.43	Cuba
2.95	0.12	0.11	5 939	2.92	8.63	0.36	0.33	Cyprus*
4.14	0.29	0.17	6 288	2.59	10.73	0.75	0.45	Czech Republic
3.23	0.07	0.10	6 124	2.32	7.48	0.16	0.23	Denmark
0.73	0.15	0.08	901	2.44	1.79	0.36	0.21	Dominican Republic
0.88	0.27	0.12	1 239	2.39	2.11	0.65	0.28	Ecuador
0.94	0.63	0.17	1 677	2.43	2.28	1.53	0.41	Egypt
0.69	0.23	0.11	833	1.40	0.97	0.32	0.16	El Salvador
0.14	0.67	0.27	53	0.67	0.09	0.44	0.18	Eritrea
4.18	0.37	0.23	6 255	3.44	14.40	1.27	0.79	Estonia
0.40	1.58	0.41	55	0.17	0.07	0.27	0.07	Ethiopia
6.45	0.17	0.20	15 742	1.60	10.32	0.27	0.32	Finland
3.88	0.11	0.13	7 318	1.30	5.04	0.15	0.17	France
1.30	0.19	0.09	942	1.09	1.42	0.21	0.10	Gabon
0.79	0.40	0.16	1 917	1.77	1.39	0.71	0.29	Georgia
3.81	0.10	0.11	7 083	2.40	9.14	0.25	0.26	Germany
0.42	0.62	0.26	342	1.03	0.43	0.64	0.26	Ghana

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

Region/ Country/ Economy	Population (million)	GDP (billion 2005 USD)	GDP (PPP) (billion 2005 USD)	Energy prod. (Mtoe)	Net imports (Mtoe)	TPES (Mtoe)	Elec. cons.[a] (TWh)	CO_2 emissions[b] (Mt of CO_2)
Gibraltar	0.03	1.07	0.87	0.00	2.77	0.17	0.17	0.52
Greece	11.31	223.83	252.07	9.60	19.59	26.72	59.85	83.64
Guatemala	14.76	33.83	64.21	7.33	3.17	10.16	7.93	10.44
Haiti	10.12	4.55	10.47	2.51	0.72	3.21	0.33	2.13
Honduras	7.76	11.94	27.71	2.31	2.44	4.74	5.50	7.63
Hong Kong (China)	7.07	230.86	315.67	0.05	29.87	14.89	42.07	45.02
Hungary	9.97	111.16	172.52	10.78	13.12	24.96	38.84	47.39
Iceland	0.32	16.86	10.72	4.80	1.13	5.73	16.71	1.85
India	1 241.49	1 317.48	3 976.50	540.94	213.46	749.45	835.40	1 745.06
Indonesia	242.33	402.19	992.10	394.57	-184.80	209.01	165.71	425.88
Islamic Rep. of Iran	74.80	246.57	826.34	353.67	-138.82	212.15	199.79	520.98
Iraq	32.96	42.69	112.47	142.06	-100.76	40.22	42.65	108.26
Ireland	4.58	209.92	167.09	1.79	12.45	13.22	26.09	34.93
Israel	7.76	173.16	209.06	4.70	18.84	23.25	53.78	67.24
Italy	60.72	1 770.47	1 642.74	31.56	141.12	167.42	327.47	392.97
Jamaica	2.71	11.14	18.88	0.55	2.90	3.07	4.19	7.60
Japan	127.83	4 621.97	3 932.20	51.67	421.10	461.47	1 003.09	1 186.04
Jordan	6.18	17.48	32.56	0.28	6.86	7.06	14.15	19.80
Kazakhstan	16.56	83.04	191.54	160.15	-83.54	78.10	81.01	234.18
Kenya	41.61	24.55	62.81	16.20	4.72	20.18	6.52	11.64
Korea	49.78	1 056.12	1 370.98	46.99	227.36	260.44	505.86	587.73
DPR of Korea	24.45	28.11	101.76	25.19	-6.16	19.04	18.21	64.82
Kosovo	1.79	5.06	12.71	1.80	0.70	2.53	5.28	8.48
Kuwait	2.82	98.82	135.08	154.34	-120.50	32.52	50.38	84.74
Kyrgyzstan	5.51	3.23	11.67	1.62	1.81	3.10	9.05	6.67
Latvia	2.22	16.35	30.58	2.07	2.88	4.37	6.72	7.58
Lebanon	4.26	30.89	54.95	0.21	6.41	6.35	15.34	18.49
Libya	6.42	20.92	38.44	30.96	-17.42	13.34	23.96	34.89
Lithuania	3.20	28.95	54.06	1.53	5.94	7.29	10.69	13.22
Luxembourg	0.52	41.94	35.39	0.12	4.45	4.17	8.05	10.43

(a) Gross production + imports – exports – losses.
(b) CO_2 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 2005 USD)	TPES/ GDP (PPP) (toe/000 2005 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/ 2005 USD)	CO_2/ GDP (PPP) (kg CO_2/ 2005 USD)	Region/ Country/ Economy
5.48	0.16	0.19	5 355	3.04	16.66	0.48	0.59	Gibraltar
2.36	0.12	0.11	5 292	3.13	7.40	0.37	0.33	Greece
0.69	0.30	0.16	537	1.03	0.71	0.31	0.16	Guatemala
0.32	0.71	0.31	32	0.66	0.21	0.47	0.20	Haiti
0.61	0.40	0.17	710	1.61	0.98	0.64	0.28	Honduras
2.11	0.06	0.05	5 949	3.02	6.37	0.20	0.14	Hong Kong (China)
2.50	0.22	0.14	3 895	1.90	4.75	0.43	0.27	Hungary
17.97	0.34	0.53	52 376	0.32	5.81	0.11	0.17	Iceland
0.60	0.57	0.19	673	2.33	1.41	1.32	0.44	India
0.86	0.52	0.21	684	2.04	1.76	1.06	0.43	Indonesia
2.84	0.86	0.26	2 671	2.46	6.97	2.11	0.63	Islamic Rep. of Iran
1.22	0.94	0.36	1 294	2.69	3.28	2.54	0.96	Iraq
2.89	0.06	0.08	5 701	2.64	7.63	0.17	0.21	Ireland
3.00	0.13	0.11	6 927	2.89	8.66	0.39	0.32	Israel
2.76	0.09	0.10	5 393	2.35	6.47	0.22	0.24	Italy
1.13	0.28	0.16	1 548	2.48	2.80	0.68	0.40	Jamaica
3.61	0.10	0.12	7 847	2.57	9.28	0.26	0.30	Japan
1.14	0.40	0.22	2 289	2.80	3.20	1.13	0.61	Jordan
4.72	0.94	0.41	4 892	3.00	14.14	2.82	1.22	Kazakhstan
0.48	0.82	0.32	157	0.58	0.28	0.47	0.19	Kenya
5.23	0.25	0.19	10 162	2.26	11.81	0.56	0.43	Korea
0.78	0.68	0.19	745	3.41	2.65	2.31	0.64	DPR of Korea
1.41	0.50	0.20	2 942	3.35	4.73	1.68	0.67	Kosovo
11.54	0.33	0.24	17 876	2.61	30.07	0.86	0.63	Kuwait
0.56	0.96	0.27	1 644	2.15	1.21	2.07	0.57	Kyrgyzstan
1.97	0.27	0.14	3 028	1.73	3.41	0.46	0.25	Latvia
1.49	0.21	0.12	3 601	2.91	4.34	0.60	0.34	Lebanon
2.08	0.64	0.35	3 731	2.62	5.43	1.67	0.91	Libya
2.28	0.25	0.13	3 337	1.81	4.13	0.46	0.24	Lithuania
8.04	0.10	0.12	15 511	2.50	20.10	0.25	0.29	Luxembourg

Region/ Country/ Economy	Population (million)	GDP (billion 2005 USD)	GDP (PPP) (billion 2005 USD)	Energy prod. (Mtoe)	Net imports (Mtoe)	TPES (Mtoe)	Elec. cons.[a] (TWh)	CO_2 emissions[b] (Mt of CO_2)
FYR of Macedonia	2.06	7.28	19.51	1.78	1.43	3.12	8.17	9.07
Malaysia	28.86	187.28	409.05	84.27	-4.05	75.91	122.12	193.96
Malta	0.42	6.79	9.64	0.05	2.16	0.86	1.95	2.47
Mexico	109.22	956.82	1 463.10	228.21	-35.96	186.17	249.67	432.30
Republic of Moldova	3.56	3.73	10.59	0.12	3.24	3.33	5.23	7.89
Mongolia	2.80	4.06	11.73	19.31	-15.21	3.61	4.34	13.04
Montenegro	0.63	2.89	6.62	0.79	0.40	1.18	3.57	2.50
Morocco	32.27	78.99	143.54	0.77	17.39	17.28	26.49	50.16
Mozambique	23.93	9.75	20.61	12.77	-2.48	10.20	10.99	2.85
Myanmar	48.34	18.37	75.02	22.39	-8.39	14.06	5.77	8.25
Namibia	2.32	9.33	13.91	0.33	1.30	1.59	3.44	3.13
Nepal	30.49	10.53	33.71	9.04	1.45	10.39	2.87	4.06
Netherlands	16.69	690.53	619.62	64.40	29.24	77.42	117.45	174.47
Netherlands Antilles*	0.23	2.71	2.43	0.00	4.88	2.50	1.10	5.15
New Zealand	4.42	119.53	110.60	16.13	3.18	18.17	41.40	30.31
Nicaragua	5.87	7.60	19.76	1.53	1.58	3.04	3.08	4.53
Nigeria	162.47	166.75	363.42	256.93	-138.22	118.32	24.45	52.85
Norway	4.95	319.64	231.47	195.35	-165.84	28.14	114.78	38.10
Oman	2.85	43.55	72.06	73.51	-49.51	25.28	19.03	63.48
Pakistan	176.75	137.99	428.41	65.07	19.82	84.84	79.14	136.28
Panama	3.57	25.61	49.16	0.82	5.50	4.06	6.84	9.36
Paraguay	6.57	10.36	31.91	7.34	-2.56	4.86	8.07	4.91
Peru	29.40	119.83	265.69	23.37	-2.05	20.58	36.95	44.68
Philippines	94.85	136.26	345.03	23.89	18.04	40.45	61.50	77.12
Poland	38.53	399.89	692.21	68.51	34.57	101.31	147.67	300.00
Portugal	10.65	194.10	228.08	5.31	19.08	23.08	51.19	48.08
Qatar	1.87	109.99	145.84	211.23	-175.70	33.29	30.11	71.38
Romania	21.39	113.93	233.27	27.57	7.63	35.83	53.17	81.78
Russian Federation	141.93	947.18	2 103.54	1 314.88	-571.81	730.97	927.21	1 653.23
Saudi Arabia	28.08	387.14	601.82	601.72	-404.10	187.07	226.57	457.30

(a) Gross production + imports – exports – losses.
(b) CO_2 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 2005 USD)	TPES/ GDP (PPP) (toe/000 2005 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/ 2005 USD)	CO_2/ GDP (PPP) (kg CO_2/ 2005 USD)	Region/ Country/ Economy
1.51	0.43	0.16	3 956	2.91	4.40	1.25	0.47	FYR of Macedonia
2.63	0.41	0.19	4 232	2.56	6.72	1.04	0.47	Malaysia
2.05	0.13	0.09	4 659	2.88	5.90	0.36	0.26	Malta
1.70	0.19	0.13	2 286	2.32	3.96	0.45	0.30	Mexico
0.94	0.89	0.31	1 471	2.37	2.22	2.12	0.75	Republic of Moldova
1.29	0.89	0.31	1 551	3.61	4.66	3.21	1.11	Mongolia
1.87	0.41	0.18	5 644	2.12	3.95	0.86	0.38	Montenegro
0.54	0.22	0.12	821	2.90	1.55	0.64	0.35	Morocco
0.43	1.05	0.50	459	0.28	0.12	0.29	0.14	Mozambique
0.29	0.77	0.19	119	0.59	0.17	0.45	0.11	Myanmar
0.68	0.17	0.11	1 478	1.97	1.35	0.34	0.23	Namibia
0.34	0.99	0.31	94	0.39	0.13	0.39	0.12	Nepal
4.64	0.11	0.12	7 036	2.25	10.45	0.25	0.28	Netherlands
10.92	0.92	1.03	4 786	2.06	22.48	1.90	2.12	Netherlands Antilles*
4.11	0.15	0.16	9 378	1.67	6.87	0.25	0.27	New Zealand
0.52	0.40	0.15	525	1.49	0.77	0.60	0.23	Nicaragua
0.73	0.71	0.33	151	0.45	0.33	0.32	0.15	Nigeria
5.68	0.09	0.12	23 174	1.35	7.69	0.12	0.16	Norway
8.88	0.58	0.35	6 687	2.51	22.30	1.46	0.88	Oman
0.48	0.61	0.20	448	1.61	0.77	0.99	0.32	Pakistan
1.14	0.16	0.08	1 916	2.31	2.62	0.37	0.19	Panama
0.74	0.47	0.15	1 229	1.01	0.75	0.47	0.15	Paraguay
0.70	0.17	0.08	1 257	2.17	1.52	0.37	0.17	Peru
0.43	0.30	0.12	648	1.91	0.81	0.57	0.22	Philippines
2.63	0.25	0.15	3 833	2.96	7.79	0.75	0.43	Poland
2.17	0.12	0.10	4 806	2.08	4.51	0.25	0.21	Portugal
17.80	0.30	0.23	16 099	2.14	38.17	0.65	0.49	Qatar
1.68	0.31	0.15	2 486	2.28	3.82	0.72	0.35	Romania
5.15	0.77	0.35	6 533	2.26	11.65	1.75	0.79	Russian Federation
6.66	0.48	0.31	8 068	2.44	16.28	1.18	0.76	Saudi Arabia

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

Region/ Country/ Economy	Population (million)	GDP (billion 2005 USD)	GDP (PPP) (billion 2005 USD)	Energy prod. (Mtoe)	Net imports (Mtoe)	TPES (Mtoe)	Elec. cons.[a] (TWh)	CO_2 emissions[b] (Mt of CO_2)
Senegal	12.77	10.58	22.18	1.66	2.13	3.51	2.49	5.67
Serbia	7.26	28.42	71.38	11.17	4.87	16.19	32.48	49.78
Singapore	5.18	177.26	277.80	0.93	79.00	33.45	43.57	64.77
Slovak Republic	5.44	62.11	112.99	6.42	11.29	17.35	28.87	33.86
Slovenia	2.05	39.24	51.59	3.76	3.52	7.25	13.97	15.26
South Africa	50.59	298.09	489.59	162.58	-17.31	141.37	237.47	367.60
Spain	46.13	1 183.83	1 244.51	31.78	105.16	125.57	258.48	270.32
Sri Lanka	20.87	36.00	102.86	5.33	5.38	10.42	10.23	14.98
Sudan*	44.63	40.51	91.65	34.76	-17.80	16.62	6.72	14.51
Sweden	9.45	416.51	331.89	32.50	18.84	49.04	132.57	44.90
Switzerland	7.87	436.15	311.63	12.33	14.38	25.37	62.73	39.86
Syrian Arab Republic	20.82	35.88	95.00	23.61	-2.99	19.99	37.68	53.20
Tajikistan	6.98	3.42	14.32	1.54	0.89	2.40	13.39	2.99
United Rep. of Tanzania	46.22	20.99	59.90	19.26	1.64	20.75	4.27	6.26
Thailand	69.52	210.25	530.78	68.74	54.22	119.15	154.19	243.19
Togo	6.16	2.60	5.70	2.28	0.56	2.76	0.72	1.25
Trinidad and Tobago	1.35	18.18	29.81	42.16	-21.07	20.92	8.44	40.78
Tunisia	10.67	39.50	88.14	7.53	2.23	9.50	13.85	21.13
Turkey	73.95	614.68	994.25	32.06	80.16	112.46	197.94	285.73
Turkmenistan	5.11	15.22	42.47	65.24	-40.04	24.71	12.48	61.55
Ukraine	45.71	95.29	290.93	85.48	47.75	126.44	167.40	285.36
United Arab Emira	7.89	221.56	333.73	190.12	-107.12	66.11	83.79	165.89
United Kingdom	62.74	2386.63	2063.34	129.54	72.52	188.07	346.16	443.01
United States	312.04	13 225.90	13 225.90	1 784.77	457.62	2 191.19	4 127.31	5 287.18
Uruguay	3.37	24.33	44.85	1.87	2.86	4.43	9.51	7.57
Uzbekistan	29.34	23.28	85.18	57.27	-9.51	47.75	47.71	110.22
Venezuela	29.28	181.84	329.61	200.76	-129.50	70.20	97.73	159.22
Vietnam	87.84	78.64	264.63	66.60	-6.77	61.21	94.28	137.36
Yemen	24.80	18.59	51.24	18.93	-11.50	7.26	4.51	20.71
Zambia	13.48	10.43	19.28	7.77	0.77	8.46	8.17	2.10
Zimbabwe	12.75	5.60	3.79	8.61	0.71	9.31	10.12	9.46

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

(b) CO_2 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 2005 USD)	TPES/ GDP (PPP) (toe/000 2005 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/ 2005 USD)	CO_2/ GDP (PPP) (kg CO_2/ 2005 USD)	Region/ Country/ Economy
0.28	0.33	0.16	195	1.61	0.44	0.54	0.26	Senegal
2.23	0.57	0.23	4 473	3.08	6.86	1.75	0.70	Serbia
6.45	0.19	0.12	8 404	1.94	12.49	0.37	0.23	Singapore
3.19	0.28	0.15	5 306	1.95	6.22	0.55	0.30	Slovak Republic
3.53	0.18	0.14	6 806	2.11	7.43	0.39	0.30	Slovenia
2.79	0.47	0.29	4 694	2.60	7.27	1.23	0.75	South Africa
2.72	0.11	0.10	5 604	2.15	5.86	0.23	0.22	Spain
0.50	0.29	0.10	490	1.44	0.72	0.42	0.15	Sri Lanka
0.37	0.41	0.18	150	0.87	0.33	0.36	0.16	Sudan*
5.19	0.12	0.15	14 029	0.92	4.75	0.11	0.14	Sweden
3.22	0.06	0.08	7 972	1.57	5.06	0.09	0.13	Switzerland
0.96	0.56	0.21	1 810	2.66	2.56	1.48	0.56	Syrian Arab Republic
0.34	0.70	0.17	1 920	1.25	0.43	0.87	0.21	Tajikistan
0.45	0.99	0.35	92	0.30	0.14	0.30	0.10	United Rep. of Tanzania
1.71	0.57	0.22	2 218	2.04	3.50	1.16	0.46	Thailand
0.45	1.06	0.48	117	0.45	0.20	0.48	0.22	Togo
15.54	1.15	0.70	6 271	1.95	30.29	2.24	1.37	Trinidad and Tobago
0.89	0.24	0.11	1 297	2.22	1.98	0.53	0.24	Tunisia
1.52	0.18	0.11	2 677	2.54	3.86	0.46	0.29	Turkey
4.84	1.62	0.58	2 445	2.49	12.06	4.04	1.45	Turkmenistan
2.77	1.33	0.43	3 662	2.26	6.24	2.99	0.98	Ukraine
8.38	0.30	0.20	10 619	2.51	21.02	0.75	0.50	United Arab Emirates
3.00	0.08	0.09	5 518	2.36	7.06	0.19	0.21	United Kingdom
7.02	0.17	0.17	13 227	2.41	16.94	0.40	0.40	United States
1.31	0.18	0.10	2 822	1.71	2.25	0.31	0.17	Uruguay
1.63	2.05	0.56	1 626	2.31	3.76	4.74	1.29	Uzbekistan
2.40	0.39	0.21	3 338	2.27	5.44	0.88	0.48	Venezuela
0.70	0.78	0.23	1 073	2.24	1.56	1.75	0.52	Vietnam
0.29	0.39	0.14	182	2.85	0.83	1.11	0.40	Yemen
0.63	0.81	0.44	606	0.25	0.16	0.20	0.11	Zambia
0.73	1.66	2.46	793	1.02	0.74	1.69	2.50	Zimbabwe

Sources: Energy data: IEA. Population: OECD/World Bank.
GDP and GDP(PPP) (in 2005 USD): OECD/World Bank/CEPII (Paris).
**Please refer to geographical coverage section for more details.*

General conversion factors for energy

To: / From:	TJ	Gcal	Mtoe	MBtu	GWh
	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}	11 630
MBtu	1.0551×10^{-3}	0.252	2.52×10^{-8}	1	2.931×10^{-4}
GWh	3.6	860	8.6×10^{-5}	3 412	1

Conversion factors for mass

To: / From:	kg	t	lt	st	lb
	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: / From:	gal U.S.	gal U.K.	bbl	ft³	l	m³
	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 (ft³)	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 (m³)	264.2	220.0	6.289	35.3147	1 000.0	1

Selected country-specific net calorific values

Steam Coal*

	toe/tonne
People's Rep. of China	0.597
United States	0.537
India	0.443
Indonesia	0.565
South Africa	0.566
Russian Federation	0.602
Australia	0.582
Kazakhstan	0.446
Colombia	0.653
Poland	0.543

*steam coal for the top-ten producers in 2012.

Crude oil**

	toe/tonne
Russian Federation	1.005
Saudi Arabia	1.016
United States	1.033
People's Rep. of China	1.000
Islamic Rep. of Iran	1.019
Venezuela	1.069
Iraq	1.023
Kuwait	1.016
Mexico	1.114
United Arab Emirates	1.018

**crude oil for the top-ten producers in 2012.

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	1.099	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	1.025	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	1.025	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

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

Selected country-specific gross calorific values

Natural gas*

	kJ/m³
United States	38 080
Russian Federation	38 232
Qatar	41 400
Islamic Rep. of Iran	39 356
Canada	38 560
Norway	39 600
People's Rep. of China	38 931
Saudi Arabia	38 000
Netherlands	33 339
Indonesia	40 600

*for the top-ten producers in 2012.
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.

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.

Hard coal — *Hard coal* comprises anthracite, coking coal and other bituminous coal.

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

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

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

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

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

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 geothermal and solar thermal is known, the quantity of geothermal and solar energy entering electricity generation is inferred from the electricity/heat production at geothermal and solar plants assuming an average thermal efficiency of:

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

For solar PV, wind and tide/wave/ocean energy, the quantities entering electricity generation are equal to the electrical energy generated. Direct use of geothermal and

Other (ctd.)

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

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/peat 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.

Combined heat and power plants

Combined heat and power plants 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

Heat plants 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

Blast furnaces contains inputs to and outputs of fuels from blast furnaces.

Gas works

Gas works 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 *Coke ovens* 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 *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.

Petrochemical plants *Petrochemical plants* covers backflows returned from the petrochemical industry. Note that backflows from oil products that are used for non-energy purposes (*i.e.* white spirit and lubricants) are not included here, but in non-energy use.

Liquefaction plants *Liquefaction plants* includes diverse liquefaction processes, such as coal liquefaction plants and gas-to-liquid plants.

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. Backflows from the petrochemical industry are not included in final consumption.

Industry *Industry* consumption is specified in the following subsectors (energy used for transport by industry is not included here but reported under transport):

- *Iron and steel industry* [ISIC Group 241 and Class 2431];
- *Chemical and petrochemical industry* [ISIC Divisions 20 and 21] excluding petrochemical feedstocks;
- *Non-ferrous metals* basic industries [ISIC Group 242 and Class 2432];
- *Non-metallic minerals* such as glass, ceramic, cement, etc. [ISIC Division 23];
- *Transport equipment* [ISIC Divisions 29 and 30];
- *Machinery* comprises fabricated metal products, machinery and equipment other than transport equipment [ISIC Divisions 25 to 28];

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	**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

OECD[1]	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[2], Georgia, Gibraltar, Kazakhstan, Kosovo[3], Kyrgyzstan, Latvia, Lithuania, the Former Yugoslav Republic of Macedonia, Malta, Republic of Moldova, Montenegro[3], Romania, Russian Federation, Serbia[3], 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.
Non-OECD Americas	Argentina, Bolivia, Brazil, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, El Salvador, Guatemala, Haiti, Honduras, Jamaica, Netherlands Antilles[4], Nicaragua, Panama, Paraguay, Peru, Trinidad and Tobago, Uruguay, Venezuela and Other Non-OECD Americas.
Africa	Algeria, Angola, Benin, Botswana, Cameroon, Congo, Democratic Republic of Congo, Côte d'Ivoire, Egypt, Eritrea, Ethiopia, Gabon, Ghana, Kenya, Libya, Morocco, Mozambique, Namibia, Nigeria, Senegal, South Africa, Sudan[5], United Republic of Tanzania, Togo, Tunisia, Zambia, Zimbabwe and Other Africa.

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

2. 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 the 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.

3. Serbia includes Kosovo from 1990 to 1999 and Montenegro from 1990 to 2004.

4. The Netherlands Antilles was dissolved on 10 October 2010, resulting in two new constituent countries, Curaçao and Saint 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 cover the whole territory of the former Netherlands Antilles.

5. South Sudan became an independent state on 9 July 2011. However, due to a lack of detailed data, the Secretariat's data and estimates under Sudan cover the whole territory of Sudan as it was on 1 January 2011.

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.

Ten Annual Publications

Energy Statistics of OECD Countries, 2013 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 2010 and 2011 and supply estimates are available for the most recent year (*i.e.* 2012). 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 2013 - Price €120

Energy Balances of OECD Countries, 2013 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 2010 and 2011 and supply estimates are available for the most recent year (*i.e.* 2012). 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.

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Published August 2013 - Price €120

Energy Balances of Non-OECD Countries, 2013 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 2010 and 2011. For a description of the content, please see *Energy Balances of OECD Countries* above.

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Electricity Information 2013

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Published August 2013 - Price €150

Coal Information 2013

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 2013 - Price €165

Natural Gas Information 2013

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 2013 - Price €165

Oil Information 2013

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 2013 - Price €165

Renewables Information 2013

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 2013 - Price €110

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Published November 2013 - 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

Energy Prices and Taxes

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 crude oil import prices by crude stream, industry prices and consumer prices. The end-user prices for OECD member countries cover main petroleum products, gas, coal and electricity. Every issue includes full notes on sources and methods and a description of price mechanisms in each country. Time series availability varies with each data series.

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- Trade — Price: €2 000
- Field-by-Field Supply — Price: €3 000
- *Complete Service* — *Price: €9 000*

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The Monthly Gas Data Service

The Monthly Gas Data Service provides monthly natural gas data for OECD countries:

- supply balances in terajoules and cubic metres;
- production, trade, stock changes and levels where available, gross inland deliveries, own use and losses;
- highly detailed trade data with about 50 imports origins and exports destinations;
- LNG trade detail available from January 2002.

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

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For more information, please feel free to contact the Energy Data Centre of the IEA by

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International Energy Agency (IEA)

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Energy Agency

9, rue de la Fédération
75739 Paris Cedex 15

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