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#### **IEA** member countries

**Australia Austria Belgium** Canada **Czech Republic Denmark** Estonia **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 Australian production of coal, the electricity production in Japan, 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
- disseminates information on the world energy market and seeks to promote stable international trade in energy.

# TABLE OF DELE CONTENTS

Due to newly available revisions from China's National Bureau of Statistics, data for 2011, 2012 and 2013 for China have been revised in this publication. As such, care should be used when interpreting energy trends between 2010 and 2011. For the years 2000-2010, revisions will be published in the next edition of this publication.

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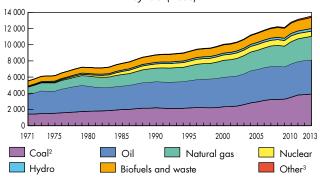
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**GLOSSARY** 

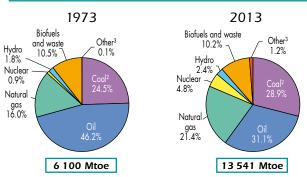
## TOTAL PRIMARY ENERGY SUPPLY

#### World

World¹ total primary energy supply (TPES) from 1971 to 2013 by fuel (Mtoe)



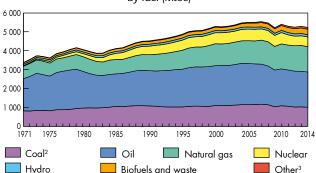
#### 1973 and 2013 fuel shares of TPES



World includes international aviation and international marine bunkers.
 In these graphs, peat and oil shale are aggregated with coal.
 Includes geothermal, solar, wind, heat, etc.

#### **OECD**

#### OECD total primary energy supply<sup>1</sup> from 1971 to 2014 by fuel (Mtoe)



#### 1973 and 2014 fuel shares of TPES1

2014

5 238 Mtoe

1973

3 740 Mtoe

Biofuels and Biofuels and waste 2.3% Hydro 2.1% Hydro 2.3% waste 5.5% Other<sup>3</sup> Nuclear Other<sup>3</sup> Nuclear / 0.2% 9.9% 1.7% 1.3% Natural gas 18.9% Natural gas 25.6%

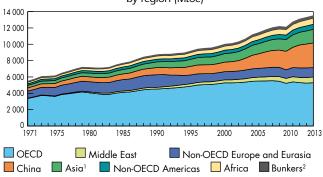
Excludes electricity trade.

In these graphs, peat and oil shale are aggregated with coal.
 Includes geothermal, solar, wind, heat, etc.

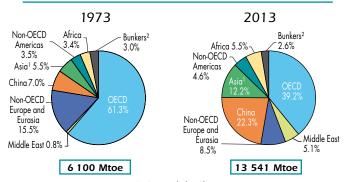
### TOTAL PRIMARY ENERGY SUPPLY

#### World

World total primary energy supply from 1971 to 2013 by region (Mtoe)



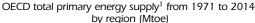
#### 1973 and 2013 regional shares of TPES

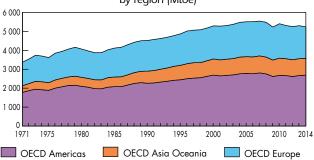


Asia excludes China.

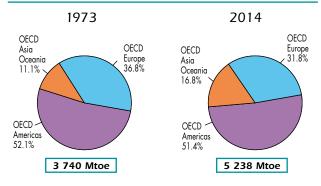
2. Includes international aviation and international marine bunkers.

#### **OECD**



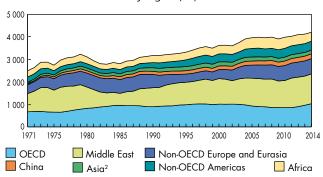


#### 1973 and 2014 regional shares of TPES<sup>1</sup>

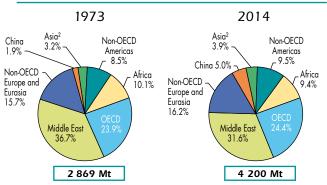


#### **Crude oil production**

Crude oil<sup>1</sup> production from 1971 to 2014 by region (Mt)



## 1973 and 2014 regional shares of crude oil<sup>1</sup> production



Includes crude oil, NGL, feedstocks, additives and other hydrocarbons.
 Asia excludes China.

# Producers, net exporters and net importers of crude oil<sup>1</sup>



Producers	Mt	% of world total
Saudi Arabia	542	12.9
Russian Federation	529	12.6
United States	509	12.1
People's Rep. of China	212	5.0
Canada	208	5.0
Islamic Rep. of Iran	166	4.0
Iraq	160	3.8
Kuwait	158	3.8
United Arab Emirates	157	3.7
Venezuela	151	3.6
Rest of the world	1 408	33.5
World	4 200	100.0

2014 provisional data

Net exporters	Mt
Saudi Arabia	377
Russian Federation	236
United Arab Emirates	125
Iraq	117
Nigeria	108
Kuwait	103
Canada	100
Venezuela	98
Angola	84
Mexico	62
Others	519
Total	1 929

2013 data

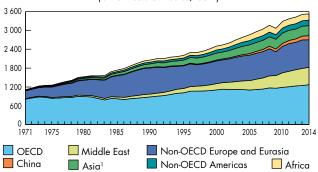
Includes	crude oil,	NGL,	feedstocks,	additives
	and other	hydro	ocarbone	

Net importers	Mt
United States	391
People's Rep. of China	280
India	189
Japan	178
Korea	123
Germany	91
Italy	65
Spain	60
France	56
Netherlands	54
Others	507
Total	1 994

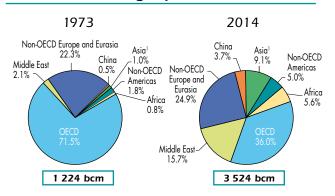
2013 data

### Natural gas production

Natural gas production from 1971 to 2014 by region (billion cubic metres, bcm)



## 1973 and 2014 regional shares of natural gas production



1. Asia excludes China.

# Producers, net exporters and net importers<sup>1</sup> of natural gas



Producers	bcm	% of world total
United States	730	20.7
Russian Federation	644	18.3
Islamic Rep. of Iran	169	4.8
Canada	162	4.6
Qatar	160	4.5
People's Rep. of China	130	3.7
Norway	113	3.2
Turkmenistan	87	2.5
Saudi Arabia	84	2.4
Algeria	80	2.3
Rest of the world	1 165	33.0
World	3 524	100.0

2014 provisional data

Net exporters	bcm
Russian Federation	179
Qatar	119
Norway	107
Turkmenistan	57
Canada	56
Algeria	45
Indonesia	34
Netherlands	30
Nigeria	25
Australia	25
Others	159
Total	836

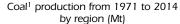
2014 provisional data

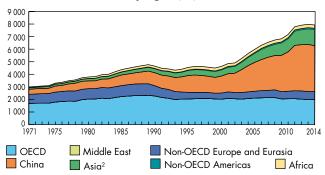
Net importers	bcm
Japan	128
Germany	68
Italy	56
People's Rep. of China	50
Korea	49
Turkey	48
France	38
United States	33
United Kingdom	32
Spain	28
Others	286
Total	816

2014 provisional data

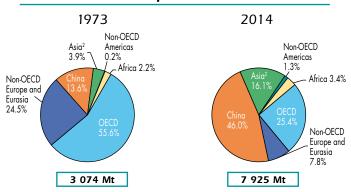
<sup>1.</sup> Net exports and net imports include pipeline gas and LNG.

#### **Coal production**





## 1973 and 2014 regional shares of coal<sup>1</sup> production



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

# Producers, net exporters and net importers of coal<sup>1</sup>



Producers	Mt	% of world total
People's Rep. of China	3 650	46.1
United States	916	11.6
India	668	8.4
Australia	491	6.2
Indonesia	471	5.9
Russian Federation	334	4.2
South Africa	253	3.2
Germany	187	2.4
Poland	137	1.7
Kazakhstan	115	1.5
Rest of the world	703	8.8
World	7 925	100.0

2014 provisional data

Net exporters	Mt
Indonesia	409
Australia	375
Russian Federation	130
Colombia	80
United States	78
South Africa	75
Kazakhstan	29
Canada	27
Mongolia	19
DPR of Korea	15
Others	18
Total	1 255

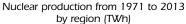
2014 provisional data

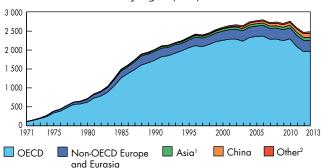
Net importers	Mt
People's Rep. of China	286
India	238
Japan	188
Korea	131
Chinese Taipei	67
Germany	56
United Kingdom	40
Turkey	30
Malaysia	23
Thailand	21
Others	215
Total	1 295

2014 provisional data

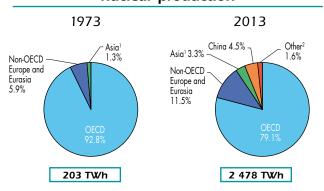
Includes steam coal, coking coal, lignite and recovered coal.

#### **Nuclear production**





## 1973 and 2013 regional shares of nuclear production



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





Producers	T₩h	% of world total
United States	822	33.2
France	424	17.1
Russian Federation	173	7.0
Korea	139	5.6
People's Rep. of China	112	4.5
Canada	103	4.2
Germany	97	3.9
Ukraine	83	3.3
United Kingdom	71	2.9
Sweden	66	2.7
Rest of the world	388	15.6
World	2 478	100.0

2013 data

Net installed capacity	G₩
United States	99
France	63
Japan	42
Russian Federation	24
Korea	21
People's Rep. of China	16
Canada	14
Ukraine	13
Germany	12
Sweden	9
Rest of the world	59
World	372

2013 data Sources: IEA, International Atomic Energy Agency.

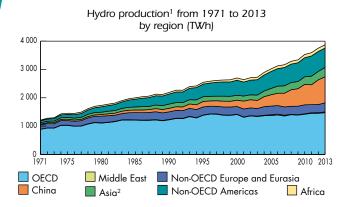
Country (top-ten producers)	% of nuclear in total domestic electricity generation
France	74.7
Sweden	43.4
Ukraine	43.0
Korea	25.8
United Kingdom	19.8
United States	19.2
Russian Federation	16.3
Canada	15.8
Germany	15.5
People's Rep. of China	2.1
Rest of the world <sup>1</sup>	7.9
World	10.6

2013 data

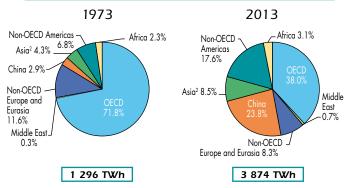
1. E	xcl	ıdes	cou	ntries	
with	no	nuc	lear	prod	luction



### **Hydro production**



## 1973 and 2013 regional shares of hydro production<sup>1</sup>



Includes electricity production from pumped storage.
 Asia excludes China.





Producers	T₩h	% of world total
People's Rep. of China	920	23.8
Canada	392	10.1
Brazil	391	10.1
United States	290	7.5
Russian Federation	183	4.7
India	142	3.7
Norway	129	3.3
Japan	85	2.2
Venezuela	84	2.2
France	76	2.0
Rest of the world	1 182	30.4
World	3 874	100.0

2013 data

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

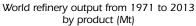
Net installed capacity	GW		
People's Rep. of China	194		
United States	102		
Brazil	86		
Canada	76		
Russian Federation	50		
Japan	49		
India	40		
Norway	31		
France	25		
Italy	22		
Rest of the world	359		
World	1 034		

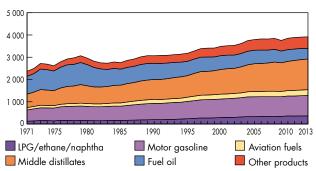
2013 data Sources: IEA. United Nations.

Country (top-ten producers)	% of hydro in total domestic electricity generation
Norway	96.1
Brazil	68.6
Venezuela	67.8
Canada	60.1
Russian Federation	17.3
People's Rep. of China	16.9
France	13.2
India	11.9
Japan	8.1
United States	6.7
Rest of the world <sup>2</sup>	15.6
World	16.6
2013 data	

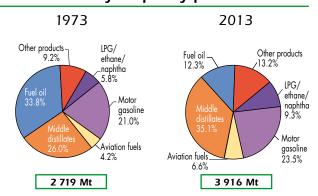
2013 data

### Refining by product





## 1973 and 2013 shares of refinery output by product



# Producers, net exporters and net importers of oil products



Producers	Mt	% of world total
United States	801	20.5
People's Rep. of China	460	11.7
Russian Federation	265	6.8
India	228	5.8
Japan	171	4.4
Korea	126	3.2
Brazil	111	2.8
Germany	98	2.5
Islamic Rep. of Iran	95	2.4
Canada	93	2.4
Rest of the world	1 468	37.5
World	3 916	100.0

2013 data

Net exporters	Mt
Russian Federation	115
United States	81
India	53
Saudi Arabia	34
Kuwait	30
Qatar	20
Venezuela	19
Korea	16
Belarus	14
Canada	13
Others	146
Total <sup>1</sup>	541

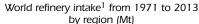
2013 data

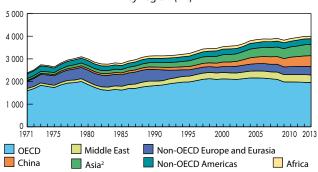
1. The discrepancy between total net exports and total net imports							
arises	from	different	data	sources	and	possible	misallocation
of bunkers into exports for some countries.							

Net importers	Mt
Japan	29
Indonesia	26
France	22
People's Rep. of China	21
Singapore	21
Mexico	19
Germany	18
Australia	17
Hong Kong, China	17
Brazil	16
Others	268
Total <sup>1</sup>	474

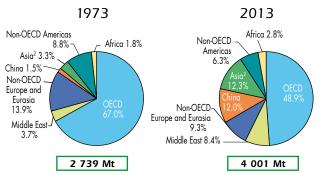
2013 data

### Refining by region





## 1973 and 2013 regional shares of refinery intake<sup>1</sup>



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

# Refinery capacity, net exporters and net importers of oil<sup>1</sup>



Crude distillation capacity	kb/cd	% of world total
United States	17 726	18.6
People's Rep. of China <sup>2</sup>	12 957	13.6
Russian Federation	5 992	6.3
Japan	4 349	4.6
India	4 394	4.6
Korea	3 051	3.2
Saudi Arabia	2 506	2.6
Germany	2 022	2.1
Italy	2 014	2.1
Brazil	2 006	2.1
Rest of the world	38 370	40.2
World	95 387	100.0

2014 data

Net exporters	Mt
Saudi Arabia	410
Russian Federation	351
Kuwait	132
United Arab Emirates	121
Venezuela	117
Canada	113
Iraq	106
Nigeria	101
Angola	80
Qatar	71
Others	518
Total	2 120

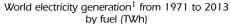
2013 data

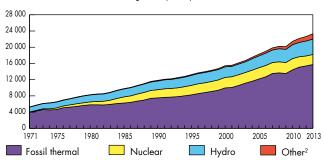
Includes crude oil and oil products.
 Includes unlisted small teapot refineries estimated at 500 kb/cd (i.e. calendar day).

Net importers	Mt
United States	310
People's Rep. of China	302
Japan	207
India	136
Germany	108
Korea	107
France	78
Singapore	66
Spain	56
Italy	54
Others	695
Total	2 119

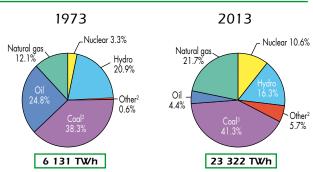
2013 data

#### **Electricity generation by fuel**





## 1973 and 2013 fuel shares of electricity generation<sup>1</sup>



- Excludes electricity generation from pumped storage.
   Includes geothermal, solar, wind, heat, etc.
- 3. In these graphs, peat and oil shale are aggregated with coal.

## Electricity production from fossil fuels



Coal <sup>1</sup>	T₩h
People's Rep. of China	4 111
United States	1 712
India	869
Japan	337
Germany	293
South Africa	237
Korea	223
Russian Federation	162
Australia	161
Poland	140
Rest of the world	1 388
World	9 633

2013 data

Oil	T₩h
Japan	150
Saudi Arabia	134
Islamic Rep. of Iran	71
Mexico	48
Kuwait	39
United States	37
Pakistan	36
Iraq	28
Indonesia	27
Brazil	27
Rest of the world	431
World	1 028

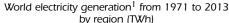
2013 data

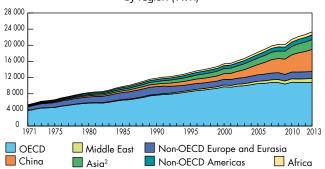
Natural gas	TWh
United States	1 158
Russian Federation	530
Japan	402
Islamic Rep. of Iran	178
Mexico	166
Saudi Arabia	150
Korea	145
Egypt	129
Thailand	117
Italy	109
Rest of the world	1 982
World	5 066

2013 data

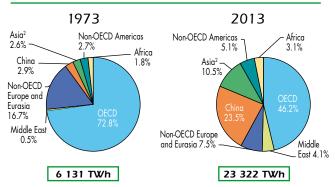
1. In this table, peat and oil shale are aggregated with coal.

#### Electricity generation by region





## 1973 and 2013 regional shares of electricity generation<sup>1</sup>



Excludes electricity generation from pumped storage.
 Asia excludes China.

# Producers, net exporters and net importers of electricity



Producers <sup>1</sup>	T₩h	% of world total
People's Rep. of China	5 437	23.3
United States	4 287	18.4
India	1 193	5.1
Russian Federation	1 058	4.5
Japan	1 038	4.5
Canada	652	2.8
Germany	627	2.7
Brazil	570	2.4
France	567	2.4
Korea	538	2.3
Rest of the world	7 355	31.6
World	23 322	100.0

2013 data

Net exporters	TWh
Canada	50
France	48
Paraguay	47
Germany	32
Czech Republic	17
Russian Federation	14
People's Rep. of China	11
Sweden	10
Ukraine	10
Islamic Rep. of Iran	8
Others	61
Total	308

2013 data

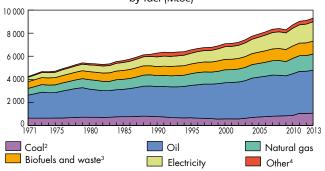
Net importers	T₩h
United States	59
Italy	42
Brazil	40
Netherlands	18
Finland	16
United Kingdom	14
Argentina	14
Hungary	12
Thailand	11
Belgium	10
Others	107
Total	343

<sup>1.</sup> Gross production minus production from pumped storage plants. 2013 data

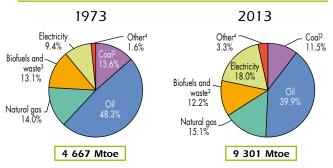
## TOTAL FINAL CONSUMPTION

#### World

World<sup>1</sup> total final consumption from 1971 to 2013 by fuel (Mtoe)



## 1973 and 2013 fuel shares of total final consumption

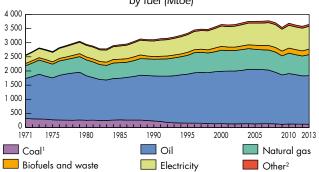


- 1. World includes international aviation and international marine bunkers.
- In these graphs, peat and oil shale are aggregated with coal.
   Data for biofuels and waste final consumption have been estimated for a number of countries.
   A. Includes geothermal, solar, wind, heat, etc.

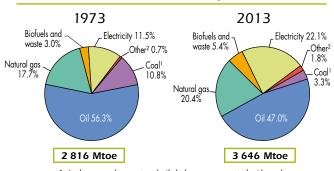
### BY FUEL

#### **OECD**

OECD total final consumption from 1971 to 2013 by fuel (Mtoe)



# 1973 and 2013 fuel shares of total final consumption

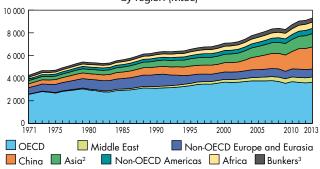


In these graphs, peat and oil shale are aggregated with coal.
 Includes geothermal, solar, wind, heat, etc.

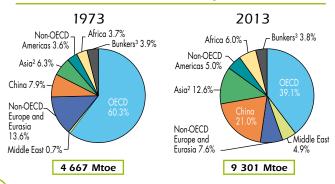
## TOTAL FINAL CONSUMPTION

#### World

World total final consumption<sup>1</sup> from 1971 to 2013 by region (Mtoe)



## 1973 and 2013 regional shares of total final consumption<sup>1</sup>

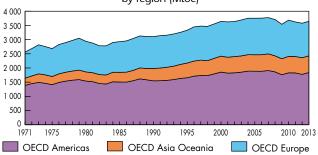


- Data for biofuels and waste final consumption have been estimated for a number of countries.
   Asia excludes China.
  - 3. Includes international aviation and international marine bunkers.

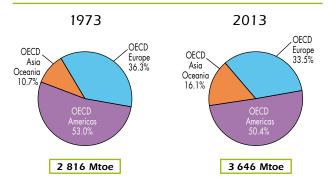
## BY REGION

#### **OECD**

OECD total final consumption from 1971 to 2013 by region (Mtoe)



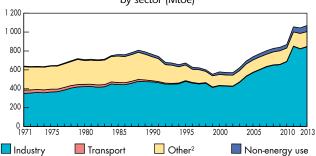
## 1973 and 2013 regional shares of total final consumption



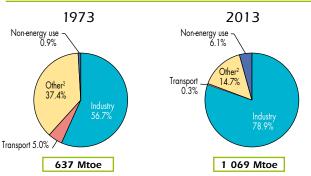
## TOTAL FINAL CONSUMPTION

#### Coal<sup>1</sup>

Total final consumption from 1971 to 2013 by sector (Mtoe)



## 1973 and 2013 shares of world coal<sup>1</sup> consumption

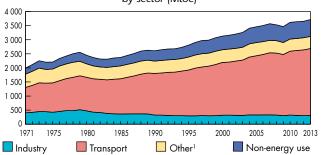


In these graphs, peat and oil shale are aggregated with coal.
 Includes agriculture, commercial and public services, residential, and non-specified other.

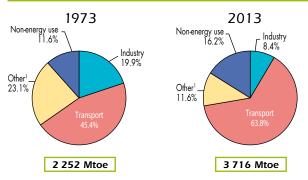
## BY SECTOR

#### Oil

## Total final consumption from 1971 to 2013 by sector (Mtoe)



## 1973 and 2013 shares of world oil consumption



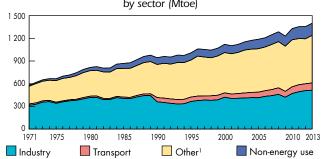
 Includes agriculture, commercial and public services, residential, and non-specified other.

© OECD/IEA, 2015

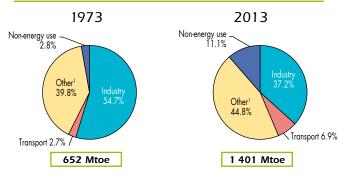
## TOTAL FINAL CONSUMPTION

#### Natural gas

Total final consumption from 1971 to 2013 by sector (Mtoe)



## 1973 and 2013 shares of world natural gas consumption

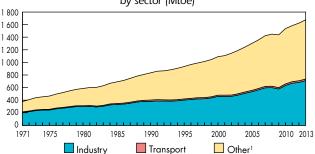


 Includes agriculture, commercial and public services, residential, and non-specified other.

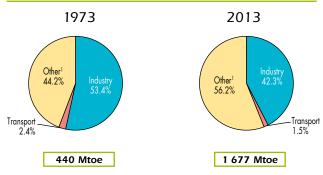
## BY SECTOR

#### **Electricity**

Total final consumption from 1971 to 2013 by sector (Mtoe)



# 1973 and 2013 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 <sup>1</sup>	Crude oil	Oil products	Natural gas	Nuclear	Hydro	Biofuels and waste <sup>2</sup>	Other <sup>3</sup>	Total
Production	1474.35	2938.38	-	990.98	53.05	110.31	640.07	6.13	6213.26
Imports	140.06	1561.97	409.59	73.40	-	-	0.13	8.15	2193.29
Exports	-130.35	-1613.00	-442.94	-72.56	-	-	-0.19	-8.31	-2267.35
Stock changes	12.47	-19.81	-16.37	-15.09	-		0.06	-	-38.75
TPES	1 496.52	2867.54	-49.73	976.74	53.05	110.31	640.06	5.96	6100.45
Transfers	-	-46.76	48.78	-	-	-	-	-	2.02
Statistical diff.	6.06	12.13	-6.19	4.78	-	-	-0.17	-0.19	16.41
Electricity plants	-555.65	-22.91	-318.13	-160.00	-52.95	-110.31	-2.40	503.76	-718.59
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	-	-84.30
Gas works	9.85	-0.60	-9.07	-6.18	-	-	-	-	-6.01
Coke ovens <sup>4</sup>	-99.53	-	-0.68	-0.19	-	-	-0.02	-	-100.42
Oil refineries	-	-2782.93	2762.10	-	-	-	-	-	-20.82
Petchem. plants	-	5.09	-5.37	-	-	-	-	-	-0.28
Liquefaction plants	-0.73	0.23	-	-	-	-	-	-	-0.50
Other transf.	-	-	-0.12	-0.03	-	-	-26.16	-	-26.30
Energy ind. own use	-34.93	-2.59	-158.81	-105.99	-	-	-0.20	-57.68	-360.19
Losses	-9.06	-7.07	-0.27	-6.03	-	-	-0.25	-43.15	-65.83
TFC	636.80	22.14	2230.27	651.57			609.10	516.76	4666.63
Industry	360.91	16.41	432.59	356.29	-		86.71	286.90	1539.81
Transport <sup>5</sup>	31.96	-	1 020.82	17.72	-	-	0.24	10.60	1081.34
Other	237.92	0.00	520.41	259.19	-	-	522.15	219.26	1758.93
Non-energy use	6.01	5.73	256.45	18.37	-		-	-	286.56

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

# BALANCE TABLE

### World

### 2013

(Mtoe)

SUPPLY AND CONSUMPTION	Coal <sup>1</sup>	Crude oil	Oil products	Natural gas	Nuclear	Hydro	Biofuels and waste <sup>2</sup>	Other <sup>3</sup>	Total
Production	3958.10	4215.64	-	2908.64	646.50	325.96	1 375.55	163.72	13594.11
Imports	830.67	2 246.09	1 177.25	873.04	-	-	15.89	59.94	5202.89
Exports	-863.26	-2 181.50	-1 237.91	-895.12	-	-	-13.84	-56.95	-5248.57
Stock changes	-18.30	-0.68	-3.03	15.37	-		-0.50	-	-7.14
TPES	3 907.21	4279.54	-63.69	2901.94	646.50	325.96	1377.10	166.71	13541.28
Transfers	-0.61	-181.33	224.41	-0.00	-	-	-	-	42.47
Statistical diff.	-4.20	13.41	-7.36	9.90	-	-	-0.24	1.46	12.96
Electricity plants	-2098.90	-39.85	-211.12	-746.72	-638.87	-325.96	-87.17	1701.35	-2 447.25
CHP plants	-175.68	-0.01	-16.74	-322.41	-7.63	-	-55.66	326.91	-251.23
Heat plants	-135.11	-0.81	-11.03	-98.20	-	-	-11.28	176.57	-79.86
Blast furnaces	-223.58	-	-0.43	-0.04	-	-	-0.03	-	-224.08
Gas works	-7.14	-	-3.13	3.51	-	-	-0.07	-	-6.84
Coke ovens <sup>4</sup>	-70.14	-	-2.68	-0.00	-	-	-0.13	-	-72.95
Oil refineries	-	-4076.24	4 004.94	-	-	-	-	-	-71.30
Petchem. plants	-	31.55	-31.47	-	-	-	-	-	0.07
Liquefaction plants	-8.53	11.33	-	-15.63	-	-	-	-	-12.82
Other transf.	-0.43	4.96	-0.64	-7.25	-	-	-78.20	-0.74	-82.30
Energy ind. own use	-109.94	-11.00	-186.70	-303.74	-	-	-13.80	-204.07	-829.24
Losses	-3.56	-8.76	-0.82	-20.68	-	-	-0.15	-183.90	-217.87
TFC	1 069.41	22.79	3 693.55	1400.68			1130.35	1 984.28	9301.06
Industry	844.02	12.78	298.34	520.72	-	-	193.55	833.02	2702.44
Transport <sup>5</sup>	3.22	0.02	2373.66	96.22	-	-	64.52	25.86	2563.52
Other	157.35	0.20	430.60	628.53	-		872.28	1125.40	3214.34
Non-energy use	64.81	9.80	590.95	155.20	-	-	-	-	820.76

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

# SIMPLIFIED ENERGY

### **OECD**

### 1973

(Mtoe)

SUPPLY AND	Coal <sup>1</sup>	Crude	Oil	Natural	Nuclear	Hydro	Biofuels	Other <sup>3</sup>	Total
CONSUMPTION		oil	products	gas		•	and		
							waste <sup>2</sup>		
Production	819.10	710.51	-	706.22	49.22	78.94	87.29	6.13	2457.41
Imports	121.92	1277.50	336.20	62.55	-	-	0.03	7.55	1805.76
Exports	-111.10	-63.59	-172.72	-50.38	-	-	-0.01	-7.01	-404.81
Intl. marine bunkers	-	-	-73.65	-	-	-	-	-	-73.65
Intl. aviation bunkers	-	-	-24.64	-	-	-	-	-	-24.64
Stock changes	14.54	-10.78	-11.36	-12.07	-	-	0.06	-	-19.62
TPES	844.46	1913.65	53.83	706.32	49.22	78.94	87.36	6.66	3740.45
Transfers	-	-41.28	42.49	-	-	-	-	-	1.22
Statistical diff.	14.80	11.29	2.56	-5.61	-	-	-	-	23.04
Electricity plants	-387.59	-20.61	-228.38	-108.33	-49.12	-78.94	-1.43	364.70	-509.71
CHP plants	-52.07	-	-7.89	-11.64	-0.10	-	-0.75	30.94	-41.51
Heat plants	-7.81	-	-0.90	-0.68	-	-	-0.80	7.11	-3.08
Blast furnaces	-65.52	-	-2.72	-	-	-	-	-	-68.24
Gas works	11.02	-0.60	-8.72	-6.37	-	-	-	-	-4.68
Coke ovens <sup>4</sup>	-25.70	-	-0.68	-0.19	-	-	-0.02	-	-26.59
Oil refineries	-	-1865.97	1868.42	-	-	-	-	-	2.45
Petrochem. plants	-	4.88	-5.16	-	-	-	-	-	-0.28
Liquefaction plants	-	0.02	-	-	-	-	-	-	0.02
Other transf.	-	-	-0.12	-0.03	-	-	-	-	-0.15
Energy ind. own use	-24.53	-0.99	-128.88	-72.36	-	-	-0.07	-33.38	-260.20
Losses	-3.80	-	-0.23	-2.63	-	-	-	-30.54	-37.20
TFC	303.27	0.39	1583.63	498.48	-		84.30	345.49	2815.56
Industry	182.79	0.39	312.91	250.44	-	-	42.26	169.41	958.18
Transport	7.34	-	665.68	17.00	-		-	5.30	695.32
Other	110.05	-	393.09	225.47	-		42.04	170.78	941.43
Non-energy use	3.10	-	211.95	5.58	-	-	-	-	220.63

In this table, peat and oil shale are aggregated with coal.
 Data for biofuels and waste final consumption have been estimated for a number of countries.

<sup>3.</sup> Includes geothermal, solar, wind, heat, etc.

<sup>4.</sup> Also includes patent fuel, BKB and peat briquette plants.

# BALANCE TABLE

### **OECD**

### 2013

(Mtoe)

SUPPLY AND CONSUMPTION	Coal <sup>1</sup>	Crude oil	Oil products	Natural gas	Nuclear	Hydro	Biofuels and waste <sup>2</sup>	Other <sup>3</sup>	Total
Production	952.72	996.24	-	1 020.39	511.35	121.54	286.35	88.42	3977.02
Imports	408.65	1417.27	569.15	648.50	-	-	14.35	39.15	3097.06
Exports	-351.55	-364.22	-579.58	-315.45	-	-	-7.50	-38.14	-1 656.45
Intl. marine bunkers	-	-	-72.24	-	-	-	-0.03	-	-72.27
Intl. aviation bunkers	-	-	-87.97	-	-	-	-		-87.97
Stock changes	19.45	3.08	2.43	17.46	-	-	-0.22		42.21
TPES	1 029.27	2052.37	-168.21	1370.91	511.35	121.54	292.95	89.43	5 299.61
Transfers	-	-71.46	103.67	-	-	-	-	-	32.20
Statistical diff.	-7.77	8.09	-14.93	4.87	-	-	-0.02	1.47	-8.29
Electricity plants	-741.28	-10.07	-53.91	-366.91	-504.27	-121.54	-44.56	760.96	-1 081.57
CHP plants	-77.25	-	-10.96	-106.11	-7.09	-	-44.97	144.50	-101.88
Heat plants	-4.56	-	-0.89	-8.61	-	-	-6.24	16.26	-4.04
Blast furnaces	-53.82	-	-0.43	-0.04	-	-	-	-	-54.28
Gas works	-1.98	-	-2.82	3.40	-	-	-0.06	-	-1.45
Coke ovens <sup>4</sup>	-6.27	-	-1.16	-	-	-	-0.13	-	-7.57
Oil refineries	-	-2003.09	1 985.51	-	-	-	-	-	-17.58
Petrochem. plants	-	27.40	-27.91	-	-	-	-	-	-0.51
Liquefaction plants	-0.98	0.59	-	-	-	-	-	-	-0.39
Other transf.	-0.21	3.40	-	-4.28	-	-	-0.43	-0.74	-2.26
Energy ind. own use	-15.14	-0.05	-100.79	-145.07	-	-	-1.30	-74.96	-337.31
Losses	-0.93	-	-0.03	-2.69	-	-	-0.02	-65.33	-69.02
TFC	119.09	7.18	1707.13	745.47	-	-	195.22	871.58	3 6 4 5 . 6 7
Industry	96.31	2.21	95.32	248.36	-	-	74.59	278.68	795.46
Transport	0.15	-	1111.81	28.73	-	-	44.16	9.04	1 193.89
Other	19.84	-	195.56	435.94	-	-	76.47	583.86	1311.67
Non-energy use	2.79	4.97	304.45	32.44	-	-	-	-	344.65

1. In this table, peat and oil shale are aggregated with coal.

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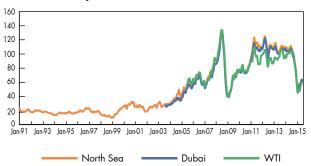
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Data for biofuels and waste final consumption have been estimated for a number of countries.
 Includes geothermal, solar, wind, heat, etc.

<sup>4.</sup> Also includes patent fuel, BKB and peat briquette plants.

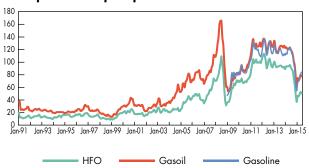
### Crude oil

# Average key crude oil spot prices in USD/barrel



## Oil products

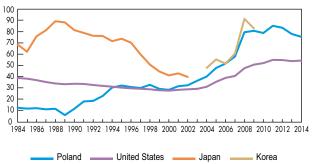
# Average Rotterdam oil product spot prices in USD/barrel



Source for all prices: Based on Argus. Copyright © 2015 Argus Media Ltd - All rights reserved.

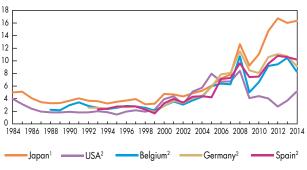
### Coal

# Average steam coal prices for electricity generation in USD/tonne



## Natural gas

# Average natural gas import prices in USD/MBtu



1. LNG 2. Pipeline

# **ENERGY PRICES' IN SELECTED**

	Heavy fuel oil for industry <sup>2</sup> (tonne)	Light fuel oil for households (1 000 litres)	Automotive diesel oil <sup>3</sup> (litre)	Unleaded premium⁴ (litre)
Australia				1.027
Austria	403.86	820.13	0.892	1.317
Belgium	342.30	671.17	1.156	1.573
Canada	354.70	899.94	0.916	0.925
Chile		1 052.54		1.144
Czech Republic	279.23	748.54	1.062	1.255
Denmark	574.09	1 390.08	1.153	1.641
Estonia		884.82	1.037	1.197
Finland		974.33	1.164	1.546
France	437.15	815.35	1.090	1.494
Germany	320.00	680.42	1.206	1.521
Greece	431.35	1 018.66	1.056	1.605
Hungary	490.29	х	1.042	1.273
Ireland	712.02	785.35	1.125	1.485
Israel	С	1 613.59	С	1.678
Italy	455.59	1 352.10	1.308	1.700
Japan	597.43	711.71	0.843	1.164
Korea	561.61	906.94		1.704
Luxembourg		629.27	0.992	1.277
Mexico	280.66	х	0.816	0.931
Netherlands	564.00	1 158.39	1.158	1.718
New Zealand	407.00		0.617	1.444
Norway		1 268.36	1.276	1.775
Poland	483.81	849.26	0.984	1.204
Portugal	667.57	1 205.67	1.211	1.556
Slovak Republic	332.65		1.090	1.435
Slovenia	х	958.86	1.106	1.447
Spain	405.23	760.34	1.044	1.342
Sweden	907.53		1.288	1.549
Switzerland		791.37	1.327	1.526
Turkey	652.60	1 250.74	1.540	1.758
United Kingdom	С	725.19	1.467	1.650
United States	353.77	788.05	0.771	0.652

<sup>1.</sup> Prices are for 1st quarter 2015 or latest available quarter for oil products, and annual 2014 for other products.

Low sulphur fuel oil; high sulphur fuel oil for Canada, Ireland, Mexico, New Zealand, Turkey and the United States.

<sup>3.</sup> For commercial purposes.

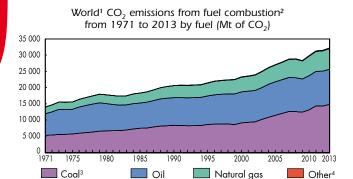
# **OECD COUNTRIES** in USD/unit

Nat. gas for industry (MWh GCV <sup>5</sup> )	Nat. gas for households (MWh GCV <sup>5</sup> )	Steam coal for industry <sup>6</sup> (tonne)	Electricity for industry (MWh)	Electricity for households (MWh)	
					Australia
45.31	92.48	220.51	135.11	266.93	Austria
35.69	86.77		128.10	243.86	Belgium
15.98	34.92				Canada
	102.67		103.84	151.44	Chile
42.80	76.99	С	122.84	174.44	Czech Republic
	117.98		101.80	403.12	Denmark
47.39	64.23		117.89	168.90	Estonia
45.78		270.17	104.52	201.35	Finland
49.16	89.44		125.96	207.12	France
44.61	94.68		179.25	395.05	Germany
56.53	139.79		142.76	235.64	Greece
51.16	49.00		123.29	158.21	Hungary
48.62	100.46		166.38	305.27	Ireland
С	х	х			Israel
			327.78	306.82	Italy
		114.91	188.12	253.26	Japan
68.76	73.52			109.61	Korea
44.83	69.15	х	98.85	218.39	Luxembourg
	35.38	х	121.46	90.08	Mexico
43.19	102.58		118.08	252.43	Netherlands
**		С		236.05	New Zealand
х	х		54.60	127.10	Norway
43.83	72.62	92.59	99.93	192.15	Poland
59.77	130.94	180.79	155.96	291.56	Portugal
44.16	70.75		156.96	213.98	Slovak Republic
51.74	88.55	С	115.11	212.72	Slovenia
44.44	118.87				Spain
54.93	153.95		81.73	214.45	Sweden
73.55	112.65	112.30	128.74	209.29	Switzerland
38.74	47.54	90.68	130.81	169.59	Turkey
40.06	83.43	167.60	157.24	255.66	United Kingdom
18.27	36.14	80.06	70.14	125.02	United States

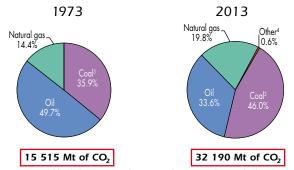
<sup>4.</sup> Unleaded premium gasoline (95 RON); unleaded regular for Japan.

<sup>5.</sup> Gross calorific value. 6. Brown coal for Turkey. .. not available x not applicable c confidential

## CO<sub>2</sub> Emissions by fuel



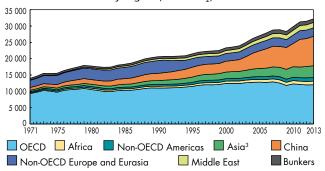
# 1973 and 2013 fuel shares of CO<sub>2</sub> emissions from fuel combustion<sup>2</sup>



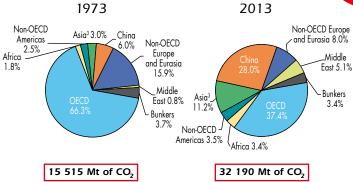
- 1. World includes international aviation and international marine bunkers.
- CO<sub>2</sub> emissions from fuel combustion are based on the IEA energy balances and on the 2006 IPCC Guidelines, excluding emissions from non-energy.
  - In these graphs, peat and oil shale are aggregated with coal.
  - 4. Includes industrial waste and non-renewable municipal waste.

## CO<sub>2</sub> Emissions by region

World<sup>1</sup> CO<sub>2</sub> emissions from fuel combustion<sup>2</sup> 1971 to 2013 by region (Mt of CO<sub>2</sub>)



# 1973 and 2013 regional shares of CO<sub>2</sub> emissions from fuel combustion<sup>2</sup>

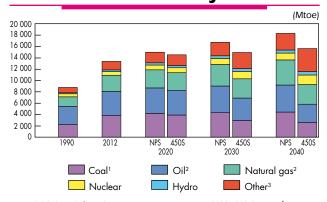


- World includes international aviation and international marine bunkers, which are shown together as Bunkers.
  - CO<sub>2</sub> emissions from fuel combustion are based on the IEA energy balances and on the 2006 IPCC Guidelines, excluding emissions from non-energy.
     Asia excludes China.

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# OUTLOOK FOR WORLD TPES

### **TPES Outlook by fuel**

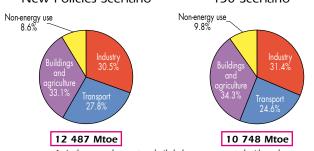


NPS: New Policies Scenario (based on policies under consideration) 450S: 450 Scenario<sup>4</sup> (based on policies needed to limit global average temperature increase to 2 °C)

### Total final consumption by sector in 2040

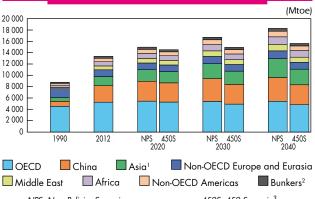
### New Policies Scenario

### 450 Scenario



- In these graphs, peat and oil shale are aggregated with coal.
   Includes international aviation and international marine bunkers.
- 3. Includes biofuels and waste, geothermal, solar, wind, tide, etc.
- Based on a plausible post-2014 climate-policy framework to stabilise the long-term concentration of global greenhouse gases at 450 ppm CO₂-equivalent.

### TPES Outlook by region



NPS: New Policies Scenario (based on policies under consideration) 450S: 450 Scenario<sup>3</sup> (based on policies needed to limit global average temperature increase to 2 °C)

### CO<sub>2</sub> emissions by region in 2040

#### New Policies Scenario 450 Scenario Non-OECD Bunkers<sup>2</sup> 4.0% Non-OECD Europe Bunkers<sup>2</sup> 5.9% Non-OECD Americas Non-OECD Europe Americas and Eurasia 4 8% and Eurasia 4 3% 7 8% 9.9% Middle Africa Africa East Middle East 48% 6.5% 5.6% 8.1% 38 037 Mt of CO<sub>2</sub> 19 300 Mt of CO2 1 Asia excludes China

Includes international aviation and international marine bunkers.
 Based on a plausible post-2014 climate-policy framework to stabilise the long-term concentration of global greenhouse gases at 450 ppm CO<sub>2</sub> equivalent.

CO<sub>2</sub> emissions are from fossil fuel combustion only.

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### Selected indicators for 2013

Region/ Country/ Economy	Popu- lation (million)	GDP (billion 2005 USD)	GDP (PPP) (billion 2005 USD)	Energy prod. (Mtoe)	Net imports (Mtoe)	TPES (Mtoe)	Elec. cons. <sup>1</sup> (TWh)	emissions <sup>2</sup> (Mt of CO <sub>2</sub> )
World	7118	56519	86334	13594	-	13541(3)	21 538	32 190(4)
OECD	1 261	40615	40316	3977	1441	5300	10179	12038
Middle East	218	1 490	4299	1791	-1059	689	841	1647
Non-OECD Europe and Eurasi	a 341	1679	4164	1861	-677	1156	1538	2573
China	1367	5105	14257	2566	532	3 0 2 3	5165	9023
Asia	2348	3754	13293	1473	247	1655	2155	3607
Non-OECD Americas	472	2468	5 5 4 6	796	-164	619	1011	1128
Africa	1111	1 408	4459	1129	-365	747	649	1 075
Albania	2.90	11.35	25.97	2.03	0.58	2.32	7.33	3.64
Algeria	39.21	127.19	450.07	137.67	-89.19	47.58	48.78	113.87
Angola	21.47	58.79	143.15	98.01	-82.35	15.36	5.32	18.49
Argentina	41.45	331.26	666.21	71.43	12.01	80.59	131.59	182.28
Armenia	2.98	6.88	19.95	0.81	2.14	2.90	5.60	5.24
Australia	23.27	949.05	895.13	343.90	-209.70	129.14	234.27	388.68
Austria	8.48	349.52	317.07	12.11	21.12	33.22	72.19	65.13
Azerbaijan	9.42	30.63	139.12	59.35	-44.74	13.88	19.71	29.45
Bahrain	1.33	23.32	50.40	22.04	-7.87	13.73	24.58	28.30
Bangladesh	157.00	97.26	397.83	28.73	5.53	33.87	46.05	59.56
Belarus	9.47	46.51	143.73	3.99	23.57	27.28	34.54	58.25
Belgium	11.11	420.46	375.84	14.91	49.37	56.35	89.09	89.11
Benin	10.32	6.02	15.93	2.23	2.02	4.06	0.97	5.22
Bolivia	10.67	14.12	56.38	21.92	-13.71	8.17	7.34	17.31
Bosnia and Herzegovin	a 3.83	13.03	28.54	4.62	1.92	6.45	12.31	21.50
Botswana	2.02	14.20	27.44	1.33	1.31	2.39	3.40	5.48
Brazil	200.00	1166.72	2596.47	252.92	45.70	293.68	516.63	452.39
Brunei Darussalam	0.42	10.10	25.84	16.99	-13.78	3.04	3.99	6.85

<sup>1.</sup> Gross production + imports - exports - losses.

<sup>2.</sup> CO<sub>2</sub> emissions from fuel combustion only. Emissions are calculated using the IEA's energy balances and the Revised 2006 IPCC Guidelines.

Region/ Country/ Economy	CO <sub>2</sub> / GDP (PPP) (kg CO <sub>2</sub> / 2005 USD)	CO <sub>2</sub> / GDP (kg CO <sub>2</sub> / 2005 USD)	CO <sub>2</sub> / pop. (t CO <sub>2</sub> / capita)	CO <sub>2</sub> / TPES (t CO <sub>2</sub> / toe)	Elec. cons./pop. (kWh/ capita)	TPES/ GDP (PPP) (toe/000 2005 USD)		TPES/ pop. (toe/capita)
World	0.37	0.57	4.52	2.38	3026	0.16	0.24	1.90
OECD	0.30	0.30	9.55	2.27	8072	0.13	0.13	4.20
Middle East	0.38	1.11	7.57	2.39	3863	0.16	0.46	3.17
on-OECD Europe and Eurasia	0.62 No	1.53	7.54	2.23	4510	0.28	0.69	3.39
China	0.63	1.77	6.60	2.98	3778	0.21	0.59	2.21
Asia	0.27	0.96	1.54	2.18	918	0.12	0.44	0.71
Non-OECD Americas	0.20	0.46	2.39	1.82	2142	0.11	0.25	1.31
Africa	0.24	0.76	0.97	1.44	584	0.17	0.53	0.67
Albania	0.14	0.32	1.26	1.57	2532	0.09	0.20	0.80
Algeria	0.25	0.90	2.90	2.39	1244	0.11	0.37	1.21
Angola	0.13	0.31	0.86	1.20	248	0.11	0.26	0.72
Argentina	0.27	0.55	4.40	2.26	3175	0.12	0.24	1.94
Armenia	0.26	0.76	1.76	1.81	1880	0.15	0.42	0.97
Australia	0.43	0.41	16.70	3.01	10067	0.14	0.14	5.55
Austria	0.21	0.19	7.68	1.96	8515	0.10	0.10	3.92
Azerbaijan	0.21	0.96	3.13	2.12	2092	0.10	0.45	1.47
Bahrain	0.56	1.21	21.24	2.06	18455	0.27	0.59	10.30
Bangladesh	0.15	0.61	0.38	1.76	293	0.09	0.35	0.22
Belarus	0.41	1.25	6.15	2.14	3648	0.19	0.59	2.88
Belgium	0.24	0.21	8.02	1.58	8023	0.15	0.13	5.07
Benin	0.33	0.87	0.51	1.28	94	0.25	0.67	0.39
Bolivia	0.31	1.23	1.62	2.12	687	0.14	0.58	0.77
osnia and Herzegovina	0.75 Bo	1.65	5.62	3.33	3214	0.23	0.50	1.69
Botswana	0.20	0.39	2.71	2.29	1 684	0.09	0.17	1.18
Brazil	0.17	0.39	2.26	1.54	2583	0.11	0.25	1.47
Brunei Darussalam	0.27	0.68	16.39	2.25	9553	0.12	0.30	7.28

<sup>3.</sup> TPES for world includes international aviation and international marine bunkers as well as electricity and heat trade.

CO<sub>2</sub> emissions for world include emissions from international aviation and international marine bunkers.

Region/ Country/ Economy	Popu- lation (million)	GDP (billion 2005 USD)	GDP (PPP) (billion 2005 USD)	Energy prod. (Mtoe)	Net imports (Mtoe)	TPES (Mtoe)	Elec. cons. <sup>1</sup> (TWh)	CO <sub>2</sub> emissions <sup>2</sup> (Mt of CO <sub>2</sub> )
Bulgaria	7.27	34.93	91.78	10.63	6.64	16.91	33.71	39.32
Cambodia	15.14	10.73	39.67	4.09	1.95	5.97	3.33	5.18
Cameroon	22.25	22.02	54.28	8.99	-1.52	7.35	6.18	5.90
Canada	35.15	1327.40	1 325.34	435.07	-184.55	253.20	545.59	536.32
Chile	17.64	172.01	288.55	14.98	25.21	38.69	68.18	82.01
China, People's Rep. o	of 1 360.00	4864.00	13927.71	2565.67	503.90	3009.47	5121.93	8977.10
Colombia	48.32	212.33	517.36	125.55	-96.05	31.65	55.73	68.34
Congo	4.45	8.72	22.49	14.98	-12.57	2.44	1.03	2.34
Costa Rica	4.87	28.45	58.26	2.47	2.53	4.84	9.20	7.13
Côte d'Ivoire	20.32	21.93	56.21	12.60	0.52	13.09	5.46	8.68
Croatia	4.26	44.92	68.26	3.63	4.13	7.72	15.98	16.01
Cuba	11.27	62.80	122.56	5.85	6.05	11.71	16.20	29.79
Curação <sup>5</sup>	0.15	1.85	1.66	0.00	3.48	1.82	0.77	4.45
Cyprus <sup>5</sup>	0.87	17.81	19.38	0.11	2.32	1.93	4.10	5.62
Czech Republic	10.51	154.01	257.72	30.16	11.75	41.95	66.08	101.13
DPR of Korea	24.90	27.79	104.32	24.10	-9.65	14.45	16.44	47.68
Dem. Rep. of the Congo	67.51	19.46	47.08	21.62	-0.24	21.20	7.98	2.63
Denmark	5.61	265.14	185.10	16.84	2.25	17.45	33.91	38.81
Dominican Republic	10.40	50.81	109.26	1.02	7.01	7.52	15.59	19.69
Ecuador	15.74	58.24	147.70	29.73	-15.00	15.34	20.88	39.50
Egypt	82.06	128.55	784.16	82.82	-3.95	77.54	148.72	184.32
El Salvador	6.34	19.42	42.42	2.27	2.05	4.22	5.57	5.78
Eritrea	6.33	1.25	6.53	0.64	0.18	0.82	0.31	0.55
Estonia	1.32	15.89	25.45	5.65	0.90	6.09	8.78	18.86
Ethiopia	94.10	27.74	111.91	45.32	3.02	47.94	6.11	8.50
Finland	5.44	212.43	174.80	18.16	16.54	33.04	84.36	49.19
FYR of Macedonia	2.11	7.54	20.21	1.44	1.31	2.80	7.37	8.30
France	65.90	2351.95	2048.28	136.25	124.00	253.32	486.48	315.57
Gabon	1.67	11.60	27.75	13.68	-11.04	2.37	1.93	2.83
Georgia	4.49	9.69	27.69	1.43	2.56	3.90	9.29	6.63

Gross production + imports - exports - losses.
 CO<sub>2</sub> emissions from fuel combustion only. Emissions are calculated using the IEA's energy balances and the Revised 2006 IPCC Guidelines.

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Region Country Economy	CO <sub>2</sub> / GDP (PPP) (kg CO <sub>2</sub> / 2005 USD)	CO <sub>2</sub> / GDP (kg CO <sub>2</sub> / 2005 USD)	CO <sub>2</sub> / pop. (t CO <sub>2</sub> / capita)	CO <sub>2</sub> / TPES (t CO <sub>2</sub> / toe)	Elec. cons./pop. (kWh/ capita)	TPES/ GDP (PPP) (toe/000 2005 USD)	TPES/ GDP (toe/000 2005 USD)	TPES/ pop. (toe/capita)
Bulgari	0.43	1.13	5.41	2.33	4640	0.18	0.48	2.33
Cambodi	0.13	0.48	0.34	0.87	220	0.15	0.56	0.39
Cameroo	0.11	0.27	0.27	0.80	278	0.14	0.33	0.33
Canad	0.40	0.40	15.26	2.12	15520	0.19	0.19	7.20
Chil	0.28	0.48	4.65	2.12	3865	0.13	0.22	2.19
hina, People's Rep. o	0.64 C	1.85	6.60	2.98	3766	0.22	0.62	2.21
Colombi	0.13	0.32	1.41	2.16	1153	0.06	0.15	0.65
Cong	0.10	0.27	0.53	0.96	231	0.11	0.28	0.55
Costa Ric	0.12	0.25	1.46	1.47	1888	0.08	0.17	0.99
Côte d'Ivoir	0.15	0.40	0.43	0.66	269	0.23	0.60	0.64
Croati	0.23	0.36	3.76	2.07	3754	0.11	0.17	1.81
Cub	0.24	0.47	2.64	2.54	1 438	0.10	0.19	1.04
Curaçao	2.69	2.41	28.91	2.45	5000	1.10	0.98	11.79
Cyprus	0.29	0.32	6.49	2.91	4739	0.10	0.11	2.23
Czech Republi	0.39	0.66	9.62	2.41	6287	0.16	0.27	3.99
DPR of Kore	0.46	1.72	1.92	3.30	660	0.14	0.52	0.58
Dem. Rep. of the Cong	0.06	0.14	0.04	0.12	118	0.45	1.09	0.31
Denmar	0.21	0.15	6.91	2.22	6042	0.09	0.07	3.11
Dominican Republi	0.18	0.39	1.89	2.62	1499	0.07	0.15	0.72
Ecuado	0.27	0.68	2.51	2.57	1327	0.10	0.26	0.97
Egyp	0.24	1.43	2.25	2.38	1812	0.10	0.60	0.94
El Salvado	0.14	0.30	0.91	1.37	879	0.10	0.22	0.67
Eritre	0.08	0.44	0.09	0.67	49	0.13	0.66	0.13
Estoni	0.74	1.19	14.29	3.10	6655	0.24	0.38	4.62
Ethiopi	0.08	0.31	0.09	0.18	65	0.43	1.73	0.51
Finlan	0.28	0.23	9.04	1.49	15510	0.19	0.16	6.07
FYR of Macedoni	0.41	1.10	3.94	2.97	3498	0.14	0.37	1.33
Franc	0.15	0.13	4.79	1.25	7 382	0.12	0.11	3.84
Gabo	0.10	0.24	1.69	1.20	1153	0.09	0.20	1.42
Georgi	0.24	0.68	1.48	1.70	2070	0.14	0.40	0.87

<sup>5.</sup> Please refer to geographical coverage section for more details.

Region/ Country/ Economy	Popu- lation (million)	GDP (billion 2005 USD)	GDP (PPP) (billion 2005 USD)	Energy prod. (Mtoe)	Net imports (Mtoe)	TPES (Mtoe)	Elec. cons. <sup>1</sup> (TWh)	CO <sub>2</sub> emissions <sup>2</sup> (Mt of CO <sub>2</sub> )
Germany	82.10	3161.94	2933.04	120.38	207.31	317.66	576.49	759.60
Ghana	25.91	19.93	89.12	9.62	-0.09	8.99	10.00	13.65
Gibraltar	0.03	1.12	0.96	0.00	3.98	0.18	0.18	0.50
Greece	11.03	199.82	225.03	9.31	16.17	23.40	55.14	68.89
Guatemala	15.47	36.21	97.26	8.69	3.20	12.04	8.71	12.22
Haiti	10.32	4.88	15.14	3.33	0.84	4.10	0.51	2.17
Honduras	8.10	12.77	32.05	2.52	2.72	5.20	5.66	8.45
Hong Kong, China	7.19	241.03	329.62	0.10	28.46	13.93	42.65	46.05
Hungary	9.89	113.12	175.57	10.21	12.00	22.56	38.49	39.50
Iceland	0.32	19.20	12.20	5.27	0.81	5.89	17.74	2.03
India	1 250.00	1 489.78	5846.09	523.34	254.70	775.45	978.82	1868.62
Indonesia	250.00	452.34	2058.78	459.99	-245.76	213.64	197.92	424.61
Islamic Rep. of Iran	77.45	242.55	1041.76	298.93	-55.78	228.40	223.67	525.92
Iraq	33.42	84.13	430.57	157.58	-107.36	50.02	60.74	137.98
Ireland	4.60	217.27	172.94	2.27	12.34	13.06	26.22	34.36
Israel	8.06	196.18	236.86	6.44	19.24	23.94	52.86	68.17
Italy	60.65	1754.56	1 627.97	36.76	123.20	155.37	310.76	338.22
Jamaica	2.72	11.06	18.75	0.51	2.68	2.94	3.06	7.45
Japan	127.33	4784.55	4070.52	27.96	437.00	454.65	997.78	1 235.06
Jordan	6.46	18.45	65.60	0.27	7.59	7.73	15.18	22.82
Kazakhstan	17.04	92.42	340.80	169.07	-85.45	81.54	83.35	244.89
Kenya	44.35	28.05	106.83	17.59	4.84	21.49	7.33	11.70
Korea	50.22	1199.00	1556.46	43.60	234.11	263.83	523.69	572.25
Kosovo	1.82	5.09	12.40	1.79	0.57	2.36	5.30	8.31
Kuwait	3.37	98.15	240.31	170.47	-134.04	35.07	53.58	84.10
Kyrgyzstan	5.72	3.58	15.84	1.76	2.31	3.95	10.79	8.88
Latvia	2.01	17.85	33.37	2.14	2.63	4.35	6.99	6.93
Lebanon	4.47	32.35	66.12	0.25	7.13	7.07	16.89	20.64
Libya	6.20	37.99	74.34	61.70	-44.31	16.99	24.58	43.23
Lithuania	2.96	31.19	58.23	1.64	5.44	6.97	10.84	10.73
Luxembourg	0.55	43.20	36.46	0.14	4.21	3.97	7.71	9.77

<sup>1.</sup> Gross production + imports - exports - losses.

<sup>1.</sup> Oross producinn + imports - exports - losses.
2. CO<sub>2</sub> emissions from fuel combustion only. Emissions are calculated using the IEA's energy balances and the Revised 2006 IPCC Guidelines.

Region/ Country/ Economy	CO <sub>2</sub> / GDP (PPP) (kg CO <sub>2</sub> / 2005 USD)	CO <sub>2</sub> / GDP (kg CO <sub>2</sub> / 2005 USD)	CO <sub>2</sub> / pop. (t CO <sub>2</sub> / capita)	CO <sub>2</sub> / TPES (t CO <sub>2</sub> / toe)	Elec. cons./pop. (kWh/ capita)	TPES/ GDP (PPP) (toe/000 2005 USD)	TPES/ GDP (toe/000 2005 USD)	TPES/ pop. (toe/capita)
Germany	0.26	0.24	9.25	2.39	7022	0.11	0.10	3.87
Ghana	0.15	0.68	0.53	1.52	386	0.10	0.45	0.35
Gibraltar	0.52	0.45	15.12	2.71	5545	0.19	0.16	5.57
Greece	0.31	0.34	6.25	2.94	5000	0.10	0.12	2.12
Guatemala	0.13	0.34	0.79	1.01	563	0.12	0.33	0.78
Haiti	0.14	0.44	0.21	0.53	49	0.27	0.84	0.40
Honduras	0.26	0.66	1.04	1.63	699	0.16	0.41	0.64
Hong Kong, China	0.14	0.19	6.41	3.31	5933	0.04	0.06	1.94
Hungary	0.22	0.35	3.99	1.75	3890	0.13	0.20	2.28
Iceland	0.17	0.11	6.26	0.34	54759	0.48	0.31	18.16
India	0.32	1.25	1.49	2.41	783	0.13	0.52	0.62
Indonesia	0.21	0.94	1.70	1.99	792	0.10	0.47	0.85
Islamic Rep. of Iran	0.50	2.17	6.79	2.30	2888	0.22	0.94	2.95
Iraq	0.32	1.64	4.13	2.76	1817	0.12	0.59	1.50
Ireland	0.20	0.16	7.47	2.63	5697	0.08	0.06	2.84
Israel	0.29	0.35	8.46	2.85	6562	0.10	0.12	2.97
Italy	0.21	0.19	5.58	2.18	5124	0.10	0.09	2.56
Jamaica	0.40	0.67	2.75	2.53	1126	0.16	0.27	1.08
Japan	0.30	0.26	9.70	2.72	7836	0.11	0.10	3.57
Jordan	0.35	1.24	3.53	2.95	2350	0.12	0.42	1.20
Kazakhstan	0.72	2.65	14.38	3.00	4893	0.24	0.88	4.79
Kenya	0.11	0.42	0.26	0.54	165	0.20	0.77	0.48
Korea	0.37	0.48	11.39	2.17	10428	0.17	0.22	5.25
Kosovo	0.67	1.63	4.56	3.52	2908	0.19	0.46	1.29
Kuwait	0.35	0.86	24.96	2.40	15905	0.15	0.36	10.41
Kyrgyzstan	0.56	2.48	1.55	2.25	1887	0.25	1.10	0.69
Latvia	0.21	0.39	3.44	1.59	3472	0.13	0.24	2.16
Lebanon	0.31	0.64	4.62	2.92	3780	0.11	0.22	1.58
Libya	0.58	1.14	6.97	2.54	3963	0.23	0.45	2.74
Lithuania	0.18	0.34	3.63	1.54	3663	0.12	0.22	2.36
Luxembourg	0.27	0.23	17.93	2.46	14150	0.11	0.09	7.29

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Region/ Country/ Economy	Popu- lation (million)	GDP (billion 2005 USD)	GDP (PPP) (billion 2005 USD)	Energy prod. (Mtoe)	Net imports (Mtoe)	TPES (Mtoe)	Elec. cons. <sup>1</sup> (TWh)	CO <sub>2</sub> emissions <sup>2</sup> (Mt of CO <sub>2</sub> )
Malaysia	29.72	207.95	597.67	94.63	-0.89	88.98	132.95	207.25
Malta	0.42	7.08	10.05	0.01	2.14	0.73	2.01	2.33
Mauritius	1.26	8.66	19.21	0.22	1.71	1.38	2.70	3.83
Mexico	118.40	1044.04	1596.47	216.51	-21.72	191.27	254.53	451.76
Moldova	3.56	4.04	14.32	0.31	2.79	3.07	4.81	6.70
Mongolia	2.84	5.10	23.08	16.34	-11.78	5.22	5.46	18.66
Montenegro	0.62	2.91	6.67	0.76	0.28	1.03	3.49	2.27
Morocco	33.01	84.97	208.28	1.87	18.83	18.88	28.98	50.34
Mozambique	25.83	11.19	24.60	16.63	-4.11	10.78	11.53	2.95
Myanmar	53.26	20.96	96.03	23.19	-6.50	16.57	8.71	13.34
Namibia	2.30	10.52	19.02	0.44	1.33	1.74	3.78	3.43
Nepal	27.80	11.37	53.78	8.62	1.78	10.29	3.57	5.14
Netherlands	16.80	720.79	646.76	69.40	24.62	77.39	114.62	156.23
New Zealand	4.46	129.72	120.02	16.20	4.62	19.51	40.35	30.73
Nicaragua	6.08	8.31	24.33	2.13	1.41	3.53	3.56	4.21
Niger	17.83	5.18	14.08	3.01	-0.12	2.80	0.89	1.85
Nigeria	174.00	183.31	838.22	255.66	-121.63	133.59	24.52	61.00
Norway	5.08	337.86	244.66	191.62	-158.11	32.71	118.49	35.29
Oman	3.63	46.39	132.51	75.68	-50.19	24.35	23.37	57.92
Pakistan	182.00	143.82	722.31	65.16	21.25	86.04	81.53	134.83
Panama	3.86	29.91	64.66	0.99	6.64	4.02	7.76	9.21
Paraguay	6.80	13.12	47.44	7.45	-2.59	4.94	9.52	4.93
Peru	30.38	124.83	308.21	21.69	-3.01	21.65	38.81	45.52
Philippines	98.39	155.60	554.20	24.49	20.74	44.60	67.53	89.63
Poland	38.50	415.43	719.11	70.92	25.86	97.59	149.79	292.44
Portugal	10.46	188.59	221.60	5.77	17.20	21.78	48.99	44.92
Qatar	2.17	129.89	259.93	223.98	-181.31	40.18	32.51	72.40
Romania	19.98	121.24	248.23	25.91	5.92	31.82	49.85	68.84
Russian Federation	143.00	993.52	2206.46	1340.21	-592.94	730.89	938.42	1543.12
Saudi Arabia	28.83	520.66	1 336.45	614.48	-419.78	192.18	264.00	472.38
Senegal	14.13	11.25	27.31	1.81	2.19	3.71	3.12	6.00

<sup>1.</sup> Gross production + imports - exports - losses.

<sup>1.</sup> Oross producinn + imports - exports - losses.
2. CO<sub>2</sub> emissions from fuel combustion only. Emissions are calculated using the IEA's energy balances and the Revised 2006 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 <sub>2</sub> / TPES (t CO <sub>2</sub> / toe)	CO <sub>2</sub> / pop. (t CO <sub>2</sub> / capita)	CO <sub>2</sub> / GDP (kg CO <sub>2</sub> / 2005 USD)	CO <sub>2</sub> / GDP (PPP) (kg CO <sub>2</sub> / 2005 USD)	Region/ Country/ Economy
2.99	0.43	0.15	4474	2.33	6.97	1.00	0.35	Malaysia
1.74	0.10	0.07	4740	3.17	5.50	0.33	0.23	Malta
1.09	0.16	0.07	2148	2.78	3.04	0.44	0.20	Mauritius
1.62	0.18	0.12	2150	2.36	3.82	0.43	0.28	Mexico
0.86	0.76	0.21	1353	2.18	1.88	1.66	0.47	Moldova
1.84	1.02	0.23	1923	3.57	6.57	3.66	0.81	Mongolia
1.65	0.35	0.15	5620	2.22	3.66	0.78	0.34	Montenegro
0.57	0.22	0.09	878	2.67	1.53	0.59	0.24	Morocco
0.42	0.96	0.44	446	0.27	0.11	0.26	0.12	Mozambique
0.31	0.79	0.17	164	0.80	0.25	0.64	0.14	Myanmar
0.76	0.17	0.09	1641	1.97	1.49	0.33	0.18	Namibia
0.37	0.91	0.19	128	0.50	0.18	0.45	0.10	Nepal
4.61	0.11	0.12	6823	2.02	9.30	0.22	0.24	Netherlands
4.37	0.15	0.16	9048	1.58	6.89	0.24	0.26	New Zealand
0.58	0.42	0.15	585	1.19	0.69	0.51	0.17	Nicaragua
0.16	0.54	0.20	50	0.66	0.10	0.36	0.13	Niger
0.77	0.73	0.16	141	0.46	0.35	0.33	0.07	Nigeria
6.44	0.10	0.13	23324	1.08	6.95	0.10	0.14	Norway
6.70	0.52	0.18	6434	2.38	15.95	1.25	0.44	Oman
0.47	0.60	0.12	448	1.57	0.74	0.94	0.19	Pakistan
1.04	0.13	0.06	2007	2.29	2.38	0.31	0.14	Panama
0.73	0.38	0.10	1400	1.00	0.73	0.38	0.10	Paraguay
0.71	0.17	0.07	1 278	2.10	1.50	0.36	0.15	Peru
0.45	0.29	0.08	686	2.01	0.91	0.58	0.16	Philippines
2.53	0.23	0.14	3890	3.00	7.60	0.70	0.41	Poland
2.08	0.12	0.10	4685	2.06	4.30	0.24	0.20	Portugal
18.52	0.31	0.15	14988	1.80	33.38	0.56	0.28	Qatar
1.59	0.26	0.13	2495	2.16	3.45	0.57	0.28	Romania
5.11	0.74	0.33	6562	2.11	10.79	1.55	0.70	Russian Federation
6.67	0.37	0.14	9157	2.46	16.39	0.91	0.35	Saudi Arabia
0.26	0.33	0.14	221	1.62	0.42	0.53	0.22	Senegal

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Region/ Country/ Economy	Popu- lation (million)	GDP (billion 2005 USD)	GDP (PPP) (billion 2005 USD)	Energy prod. (Mtoe)	Net imports (Mtoe)	TPES (Mtoe)	Elec. cons. <sup>1</sup> (TWh)	emissions (Mt of CO <sub>2</sub> )
Serbia	7.16	28.41	71.35	11.36	3.59	14.89	31.84	45.31
Singapore	5.40	199.22	366.48	0.64	73.51	26.10	47.73	46.56
Slovak Republic	5.41	64.99	118.22	6.66	10.43	17.21	28.16	32.38
Slovenia	2.06	38.40	50.48	3.56	3.25	6.85	14.08	14.34
South Africa	53.16	323.75	589.43	165.72	-19.80	141.27	230.08	420.40
South Sudan <sup>5</sup>	11.30	10.95	36.98	5.23	-4.51	0.68	0.45	1.47
Spain	46.59	1172.45	1 232.55	34.50	89.88	116.73	251.80	235.66
Sri Lanka	20.48	41.05	171.90	5.43	5.18	10.03	10.82	13.74
Sudan <sup>5</sup>	37.96	29.27	110.35	15.65	-0.94	14.43	7.93	13.58
Sweden	9.60	436.37	347.72	35.08	16.57	49.26	133.16	37.50
Switzerland	8.09	477.25	340.99	12.95	15.20	26.73	63.16	41.54
Syrian Arab Republic	22.85	41.21	109.09	7.53	5.87	12.91	21.77	33.47
Chinese Taipei	23.41	481.26	800.38	13.51	97.82	108.63	244.79	248.70
Tajikistan	8.21	3.95	17.77	1.72	0.77	2.46	13.64	3.31
Tanzania	49.25	23.30	100.68	21.06	2.72	23.59	4.49	9.70
Thailand	67.01	230.37	831.20	78.07	56.82	134.06	166.66	247.45
Togo	6.82	2.89	8.17	2.57	0.69	3.21	1.02	1.67
Trinidad and Tobago	1.34	19.27	35.19	39.90	-19.78	19.60	9.27	22.95
Tunisia	10.89	43.34	104.37	7.30	3.46	10.41	15.62	23.65
Turkey	75.77	654.07	1 057.98	32.35	86.67	116.49	209.22	283.84
Turkmenistan	5.24	18.64	63.24	76.54	-49.81	26.26	13.64	66.02
Ukraine	45.49	97.27	344.58	85.93	31.68	116.14	163.77	265.05
United Arab Emirates	9.35	234.97	482.62	201.67	-113.14	69.53	98.58	167.61
United Kingdom	64.11	2577.06	2227.97	110.08	94.53	190.95	346.76	448.71
United States	316.47	14451.51	14451.51	1881.03	308.31	2188.36	4109.84	5119.70
Uruguay	3.41	26.60	57.53	2.18	2.55	4.60	10.17	7.11
Uzbekistan	30.24	27.20	134.69	54.13	-11.20	42.93	49.51	96.16
Venezuela	30.41	194.65	476.84	192.14	-120.82	68.76	98.25	155.57
Viet Nam	89.71	92.28	409.31	69.28	-6.23	59.93	117.19	130.05
Yemen	24.41	18.12	83.28	18.23	-9.76	8.27	6.31	23.92
Zambia	14.54	15.32	49.18	8.78	0.87	9.63	11.15	3.44
Zimbabwe	14.15	6.73	4.23	9.90	1.40	11.29	7.92	13.46

Gross production + imports - exports - losses.
 CO<sub>2</sub> emissions from fuel combustion only. Emissions are calculated using the IEA's energy balances and the Revised 2006 IPCC Guidelines.

Region/ Country/ Economy	CO <sub>2</sub> / GDP (PPP) (kg CO <sub>2</sub> / 2005 USD)	CO <sub>2</sub> / GDP (kg CO <sub>2</sub> / 2005 USD)	CO <sub>2</sub> / pop. (t CO <sub>2</sub> / capita)	CO <sub>2</sub> / TPES (t CO <sub>2</sub> / toe)	Elec. cons./pop. (kWh/ capita)	TPES/ GDP (PPP) (toe/000 2005 USD)	TPES/ GDP (toe/000 2005 USD)	TPES/ pop. (toe/capita)
Serbia	0.64	1.60	6.33	3.04	4444	0.21	0.52	2.08
Singapore	0.13	0.23	8.62	1.78	8840	0.07	0.13	4.83
Slovak Republic	0.27	0.50	5.98	1.88	5203	0.15	0.26	3.18
Slovenia	0.28	0.37	6.96	2.09	6833	0.14	0.18	3.32
South Africa	0.71	1.30	7.91	2.98	4328	0.24	0.44	2.66
South Sudan <sup>5</sup>	0.04	0.13	0.13	2.18	39	0.02	0.06	0.06
Spain	0.19	0.20	5.06	2.02	5404	0.09	0.10	2.51
Sri Lanka	0.08	0.33	0.67	1.37	528	0.06	0.24	0.49
Sudan <sup>5</sup>	0.12	0.46	0.36	0.94	209	0.13	0.49	0.38
Sweden	0.11	0.09	3.91	0.76	13871	0.14	0.11	5.13
Switzerland	0.12	0.09	5.14	1.55	7808	0.08	0.06	3.30
Syrian Arab Republic	0.31	0.81	1.47	2.59	953	0.12	0.31	0.57
Chinese Taipei	0.31	0.52	10.63	2.29	10458	0.14	0.23	4.64
Tajikistan	0.19	0.84	0.40	1.35	1662	0.14	0.62	0.30
Tanzania	0.10	0.42	0.20	0.41	91	0.23	1.01	0.48
Thailand	0.30	1.07	3.69	1.85	2487	0.16	0.58	2.00
Togo	0.20	0.58	0.24	0.52	150	0.39	1.11	0.47
Trinidad and Tobago	0.65	1.19	17.12	1.17	6913	0.56	1.02	14.62
Tunisia	0.23	0.55	2.17	2.27	1 435	0.10	0.24	0.96
Turkey	0.27	0.43	3.75	2.44	2761	0.11	0.18	1.54
Turkmenistan	1.04	3.54	12.60	2.51	2602	0.42	1.41	5.01
Ukraine	0.77	2.72	5.83	2.28	3600	0.34	1.19	2.55
United Arab Emirates	0.35	0.71	17.93	2.41	10547	0.14	0.30	7.44
United Kingdom	0.20	0.17	7.00	2.35	5409	0.09	0.07	2.98
United States	0.35	0.35	16.18	2.34	12987	0.15	0.15	6.92
Uruguay	0.12	0.27	2.09	1.54	2986	0.08	0.17	1.35
Uzbekistan	0.71	3.54	3.18	2.24	1637	0.32	1.58	1.42
Venezuela	0.33	0.80	5.12	2.26	3231	0.14	0.35	2.26
Viet Nam	0.32	1.41	1.45	2.17	1 306	0.15	0.65	0.67
Yemen	0.29	1.32	0.98	2.89	259	0.10	0.46	0.34
Zambia	0.07	0.22	0.24	0.36	767	0.20	0.63	0.66
Zimbabwe	3.18	2.00	0.95	1.19	560	2.67	1.68	0.80

<sup>5.</sup> Please refer to geographical coverage section for more details.

Sources: Energy data: IEA.
Population: OECD/World Bank.
GDP and GDP(PPP) (in 2005 USD): OECD/World Bank/CEPII (Paris).

### General conversion factors for energy

To:	LJ	Gcal	Mtoe	MBtu	GWh
From:	multiply by:				
IJ	1	2.388 x 10 <sup>2</sup>	2.388 x10 <sup>-5</sup>	9.478 x 10 <sup>2</sup>	2.778 x 10 <sup>-1</sup>
Gcal	4.187 x 10 <sup>-3</sup>	1	1.000 x 10 <sup>-7</sup>	3.968	1.163 x 10 <sup>-3</sup>
Mtoe	4.187 x 10 <sup>4</sup>	1.000 x 10 <sup>7</sup>	1	3.968 x 10 <sup>7</sup>	1.163 x 10 <sup>4</sup>
MBtu	1.055 x 10 <sup>-3</sup>	2.520 x 10 <sup>-1</sup>	2.520 x 10 <sup>-8</sup>	1	2.931 x 10 <sup>-4</sup>
GWh	3.600	8.598 x 10 <sup>2</sup>	8.598 x 10 <sup>-5</sup>	3.412 x 10 <sup>3</sup>	1

### **Conversion factors for mass**

To:	kg	t	lt	st	lb
From:	multiply by:				
kilogramme (kg)	1	1.000 x 10 <sup>3</sup>	9.842 x 10 <sup>-4</sup>	1.102 x 10 <sup>-3</sup>	2.205
tonne (t)	1.000 x 10 <sup>3</sup>	1	9.842 x 10 <sup>-1</sup>	1.102	2.205 x 10 <sup>3</sup>
long ton (It)	1.016 x 10 <sup>3</sup>	1.016	1	1.120	2.240 x 10 <sup>3</sup>
short ton (st)	9.072 x 10 <sup>2</sup>	9.072 x 10 <sup>-1</sup>	8.929 x 10 <sup>-1</sup>	1	2.000 x 10 <sup>3</sup>
pound (lb)	4.536 x 10 <sup>-1</sup>	4.536 x 10 <sup>-4</sup>	4.464 x 10 <sup>-4</sup>	5.000 x 10 <sup>-4</sup>	1

### **Conversion factors for volume**

To:	gal U.S.	gal U.K.	bbl	ft³	- 1	m³		
From:	multiply b	multiply by:						
U.S. gallon (gal)	1	8.327 x 10 <sup>-1</sup>	2.381 x 10 <sup>-2</sup>	1.337 x 10 <sup>-1</sup>	3.785	3.785 x 10 <sup>-3</sup>		
U.K. gallon (gal)	1.201	1	2.859 x 10 <sup>-2</sup>	1.605 x 10 <sup>-1</sup>	4.546	4.546 x 10 <sup>-3</sup>		
barrel (bbl)	4.200 x 10 <sup>1</sup>	3.497 x 10 <sup>1</sup>	1	5.615	1.590 x 10 <sup>2</sup>	1.590 x 10 <sup>-1</sup>		
cubic foot (ft <sup>3</sup> )	7.481	6.229	1.781 x 10 <sup>-1</sup>	1	2.832 x 10 <sup>1</sup>	2.832 x 10 <sup>-2</sup>		
litre (I)	2.642 x 10 <sup>-1</sup>	2.200 x 10 <sup>-1</sup>	6.290 x 10 <sup>-3</sup>	3.531 x 10 <sup>-2</sup>	1	1.000 x 10 <sup>-3</sup>		
cubic metre (m³)	2.642 x 10 <sup>2</sup>	2.200 x 10 <sup>2</sup>	6.290	3.531 x 10 <sup>1</sup>	1.000 x 10 <sup>3</sup>	1		

### Selected country-specific net calorific values

#### Steam Coal

Top-ten producers in 2014	toe/tonne
People's Rep. of China	0.479
United States	0.530
India	0.395
Indonesia	0.575
South Africa	0.564
Australia	0.597
Russian Federation	0.602
Kazakhstan	0.444
Colombia	0.650
Poland	0.546

### Crude oil1

Top-ten producers in 2014	toe/tonne
Russian Federation	1.005
Saudi Arabia	1.016
United States	1.033
People's Rep. of China	1.000
Iraq	1.023
Kuwait	1.016
Canada	1.022
Islamic Rep. of Iran	1.019
Venezuela	1.069
United Arab Emirates	1.018

<sup>1.</sup> Excludes NGL, feedstocks, additives and other hydrocarbons.

### Default net calorific values

#### Oil products

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

<sup>2.</sup> Defaults for OECD Europe were also applied to non-OECD Europe and Eurasia countries.

### Selected country-specific gross calorific values

#### Natural gas

Top-ten producers in 2014	kJ/m³
United States	38 118
Russian Federation	38 230
Islamic Rep. of Iran	39 356
Canada	38 850
Qatar	41 400
People's Rep. of China	38 931
Norway	39 256
Turkmenistan	37 889
Saudi Arabia	38 000
Algeria	39 565

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

Steam coal

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

Crude oil

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

Oil products

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

Natural gas

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

Nuclear

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

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.

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#### Other (ctd.)

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

#### Production

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

## Imports and exports

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

#### a) Oil and natural gas

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

#### b) Coal

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

#### c) Electricity

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

#### International marine bunkers

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

#### International aviation bunkers

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

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

#### Total primary energy supply (TPES)

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

#### Transfers

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

#### Statistical differences

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

#### Electricity plants

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

#### Oil refineries

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

## Other

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

biofuels into charcoal.

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]
- 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
G₩	gigawatt	MWh	megawatt hour
G₩h	gigawatt hour	PPP	purchasing power parity
kb/cd	thousand barrels per calendar day	t	metric ton = tonne = 1 000 kg
kcal	kilocalorie	LJ	terajoule
kg	kilogramme	toe	tonne of oil equivalent = 10 <sup>7</sup> kcal
ĸJ	kilojoule	T₩h	terawatt hour
k₩h	kilowatt hour	USD	United States dollar

#### GEOGRAPHICAL COVERAGE

OFCD1

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

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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<sup>2</sup>, Former Yugoslav Republic of Macedonia, Georgia, Gibraltar, Kazakhstan, Kosovo<sup>3</sup>, Kyrgyzstan, Latvia, Lithuania, Malta, Republic of Moldova, Montenegro<sup>3</sup>, Romania, Russian Federation, Serbia<sup>3</sup>, Tajikistan, Turkmenistan, Ukraine and Uzbekistan.

China

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

Asia

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

Non-OECD Americas

Argentina, Bolivia, Brazil, Colombia, Costa Rica, Cuba, Curaçao<sup>4</sup>, Dominican Republic, Ecuador, El Salvador, Guatemala, Haiti, Honduras, Jamaica, Nicaragua, Panama, Paraguay, Peru, Trinidad and Tobago, Uruguay, Venezuela and Other Non-OECD Americas.

Africa

Algeria, Angola, Benin, Botswana, Cameroon, Congo, Côte d'Ivoire, Democratic Republic of Congo, Egypt, Eritrea, Ethiopia, Gabon, Ghana, Kenya, Libya, Mauritius, Morocco, Mozambique, Namibia, Niger, Nigeria, Senegal, South Africa, South Sudan, Sudan, Tanzania. Togo, Tunisia, Zambia, Zimbabwe and Other Africa.

Note by Turkey:

The information in this document with reference to "Cyprus" relates to the southern part of the Island. There is no single authority representing both Turkish and Greek Cypriot people on the Island. Turkey recognises the Turkish Republic of Northern Cyprus (TRNC). Until a lasting and equitable solution is found within the context of United Nations, Turkey shall preserve its position concerning the "Cyprus issue"

Note by all the European Union Member States of the OECD and the European Union:

The Republic of Cyprus is recognised by all members of the United Nations with the exception of Turkey. The information in this document relates to the area under the effective control of the Government of the Republic of Cyprus.

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. Curacao and Sint Maarten. with the other islands ioining the Netherlands. However, due to a lack of detailed data, the IEA secretariat's data and estimates under the Netherlands Antilles still refer to the whole territory of the Netherlands Antilles as it was known prior to 10 October 2010 up to the end of 2011. Data refer only to the island of Curação from 2012. The other islands of the former Netherlands Antilles are added to Other Non-OECD Americas from 2012.

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.

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

### Ten annual publications

### Energy Statistics of OECD Countries, 2015 edition

This volume contains data on energy supply and consumption in original units for coal, oil, gas, electricity, heat, renewables and waste. Complete data are available for 2012 and 2013 as well as provisional data for the most recent year (i.e. 2014). Historical tables summarise data on production, trade and final consumption by sector. The book also includes definitions of products and flows and explanatory notes on the individual country data

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### Energy Balances of OECD Countries, 2015 edition

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Electricity Information provides a comprehensive review of historical and current market trends in the OECD electricity sector, including 2014 provisional data. It provides an overview of the world electricity developments in 2013 covering world electricity and heat production, input fuel mix, supply and consumption, and electricity imports and exports. More detail is provided for the 34 OECD countries with information covering production, installed capacity, input energy mix to electricity and heat production, consumption, electricity trades, input fuel prices and end-user electricity prices as well as monthly OECD production and trade electricity data for 2014. It provides comprehensive statistical details on overall energy consumption, economic indicators, electricity and heat production by energy form and plant type, electricity imports and exports, sectoral energy and electricity consumption, as well as prices for electricity and electricity input fuels for each country and regional aggregate.

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Coal Information provides a comprehensive review of historical and current market trends in the world coal sector, including 2014 provisional data. It provides a review of the world coal market in 2014, alongside a statistical overview of developments, which covers world coal production and coal reserves, coal demand by type, coal trade and coal prices. A detailed and comprehensive statistical picture of historical and current coal developments in the 34 OECD member countries, by region and individually is presented in tables and charts. Complete coal balances and coal trade data for selected years are presented on 22 major non-OECD coal-producing and -consuming countries, with summary statistics on coal supply and end-use statistics for about 40 countries and regions worldwide *Published August 2015 - Price* €165

### Natural Gas Information 2015

Natural Gas Information is a detailed reference work on gas supply and demand covering not only the OECD countries but also the rest of the world, this publication 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 supply and demand balance for each country and for the three OECD regions: Americas, Asia-Oceania and Europe, as well as a breakdown of gas consumption by end user. Import and export data are reported by source and destination.

Published August 2015 - Price €165

### Oil Information 2015

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Published August 2015 - Price €165

### **Renewables Information 2015**

Renewables Information provides a comprehensive review of historical and current market trends in OECD countries, including 2014 preliminary data. It provides an overview of the development of renewables and waste in the world over the 1990 to 2013 period. A greater focus is given to the OECD countries with a review of electricity generation and capacity from renewable and waste energy sources, including detailed tables. However, an overview of developments in the world and OECD renewable and waste market is also presented. The publication encompasses energy indicators, generating capacity, electricity and heat production from renewable and waste sources, as well as production and consumption of renewables and waste.

Published August 2015 - Price €110

### CO, Emissions from Fuel Combustion, 2015 edition

In recognition of fundamental changes in the way governments approach energy related environmental issues, the IEA has prepared this publication on CO<sub>2</sub> emissions from fuel combustion. This annual publication was first published in 1997 and has become an essential tool for analysts and policy makers in many international fora such as the Conference of the Parties, which will be meeting in Paris, France from 30 November to 11 December 2015. The data in this book are designed to assist in understanding the evolution of the emissions of CO<sub>2</sub> from 1971 to 2013 for more than 140 countries and regions by sector and by fuel. Emissions were calculated using IEA energy databases and the default methods and emission factors from the 2006 IPCC Guidelines for National Greenhouse Gas Inventories

Published November 2015 - Price €165

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### Oil, Gas, Coal and Electricity, Quarterly Statistics

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

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In addition, the WEO-2015 will be informed by in-depth analysis on several topical issues:

- Special Report on Energy and Climate Change: Given the crucial importance of COP21, this report will provide decision-makers with analysis of national climate pledges in the context of the recent downturn in fossifuel prices, suggest pragmatic policy measures to advance climate goals without blunting economic growth and assess adaptation needs, including in the power sectors of China and India (released 15 June).
- Focus on India: How India develops will have widespread implications for global energy markets. Analysis will focus on the current state of the energy sector, how it might evolve and how challenges such as improving access to electricity, expanding domestic energy production and managing increasing energy imports might be addressed. It will also assess implications for regional and global markets.
- A lower oil price future: The decline in oil prices and changing market conditions has prompted questions as to how the market will re-balance. This analysis will examine the implications for markets, policies, competitiveness, investment and the fuel mix if lower oil prices persist.
- Unconventional gas in China: In addition to an update on the opportunities
  and challenges that face the development of unconventional gas globally,
  analysis will focus on the prospects for unconventional gas in China and how
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