



INTERNATIONAL ENERGY AGENCY

KEY WORLD ENERGY STATISTICS

2009



INTERNATIONAL ENERGY AGENCY

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www.iea.org

KEY WORLD ENERGY STATISTICS

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IEA participating countries

Australia
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Slovak Republic
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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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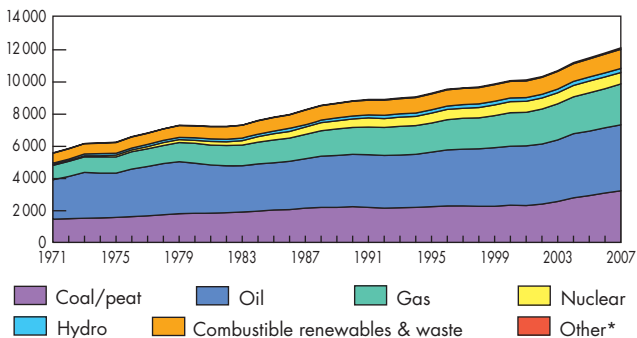
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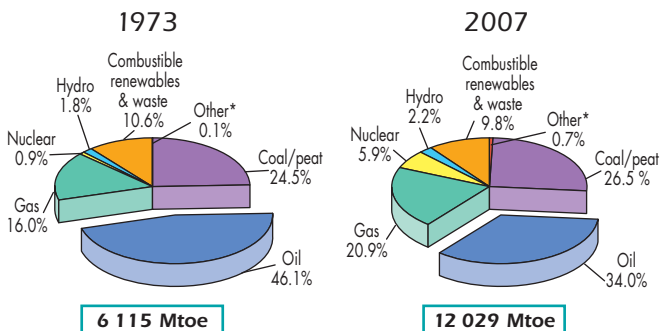
TOTAL PRIMARY ENERGY SUPPLY

World

Evolution from 1971 to 2007 of world total primary energy supply by fuel (Mtoe)



1973 and 2007 fuel shares of TPES



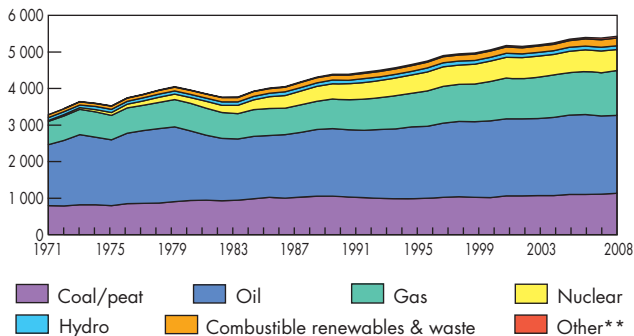
*Other includes geothermal, solar, wind, heat, etc.

BY FUEL

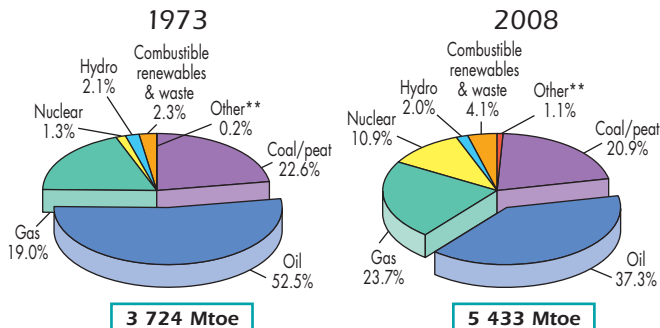
1

OECD

Evolution from 1971 to 2008 of OECD total primary energy supply* by fuel (Mtoe)



1973 and 2008 fuel shares of TPES*



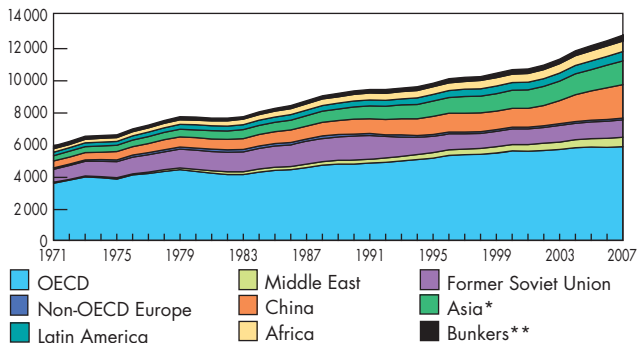
*Excludes electricity trade. Starting with this edition, international aviation bunkers are subtracted out of supply in the same way as international marine bunkers at the country and regional level.

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

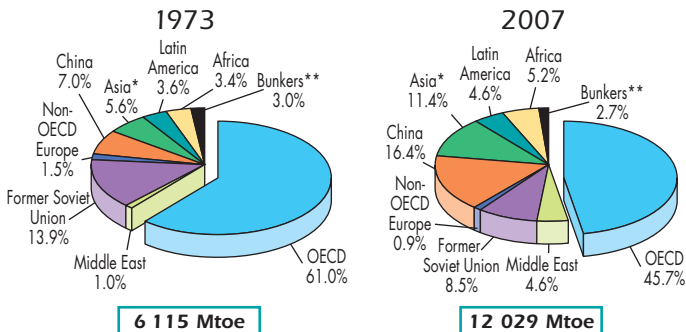
TOTAL PRIMARY ENERGY SUPPLY

World

Evolution from 1971 to 2007 of world total primary energy supply by region (Mtoe)



1973 and 2007 regional shares of TPES



*Asia excludes China.

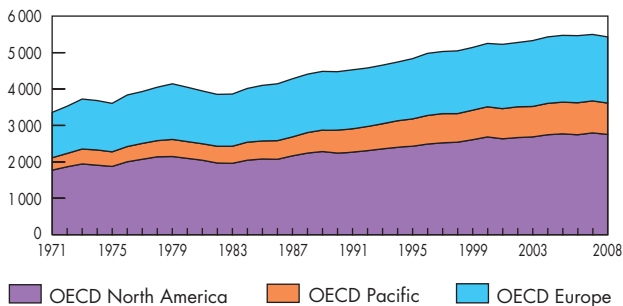
**Includes international aviation and international marine bunkers.

BY REGION

1

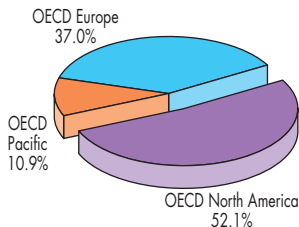
OECD

Evolution from 1971 to 2008 of OECD total primary energy supply* by region (Mtoe)



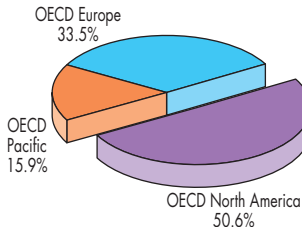
1973 and 2008 regional shares of TPES*

1973



3 724 Mtoe

2008

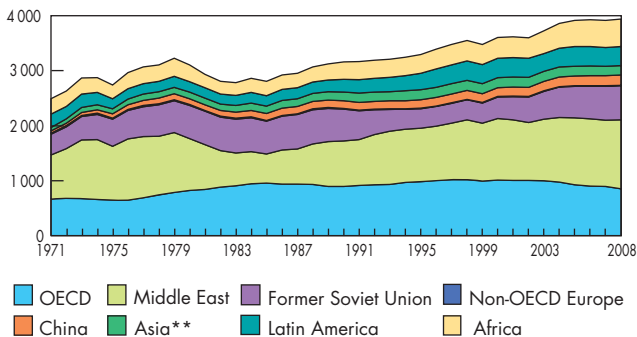


5 433 Mtoe

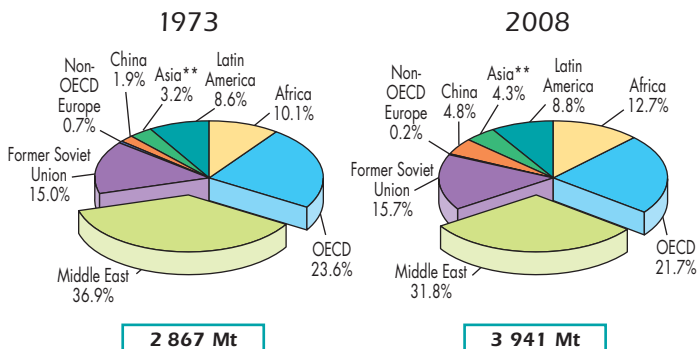
*Excludes electricity trade. Starting with this edition, international aviation bunkers are subtracted out of supply in the same way as international marine bunkers at the country and regional level.

Crude Oil Production

Evolution from 1971 to 2008 of crude oil* production by region (Mt)



1973 and 2008 regional shares of crude oil* production



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

**Asia excludes China.

Producers, net exporters and net importers of crude oil*

1



| Producers | Mt | % of world total |
|------------------------|--------------|------------------|
| Saudi Arabia | 509 | 12.9 |
| Russian Federation | 485 | 12.3 |
| United States | 300 | 7.6 |
| Islamic Rep. of Iran | 214 | 5.4 |
| People's Rep. of China | 190 | 4.8 |
| Mexico | 159 | 4.0 |
| Canada | 155 | 3.9 |
| Kuwait | 145 | 3.7 |
| Venezuela | 137 | 3.5 |
| United Arab Emirates | 136 | 3.5 |
| Rest of the world | 1 511 | 38.4 |
| World | 3 941 | 100.0 |

2008 data

| Net exporters | Mt |
|----------------------|--------------|
| Saudi Arabia | 339 |
| Russian Federation | 256 |
| Islamic Rep. of Iran | 130 |
| Nigeria | 112 |
| United Arab Emirates | 105 |
| Norway | 97 |
| Mexico | 89 |
| Angola | 83 |
| Kuwait | 82 |
| Iraq | 81 |
| Others | 583 |
| Total | 1 957 |

2007 data

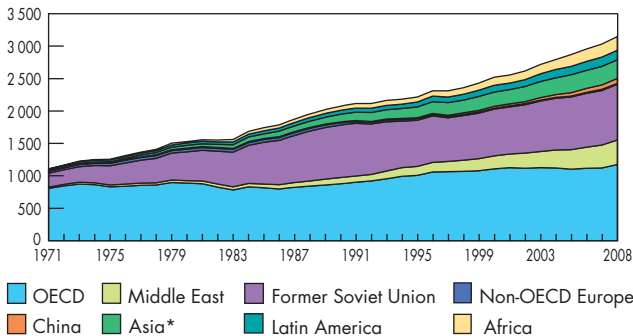
| Net importers | Mt |
|------------------------|--------------|
| United States | 573 |
| Japan | 206 |
| People's Rep. of China | 159 |
| India | 122 |
| Korea | 118 |
| Germany | 106 |
| Italy | 94 |
| France | 81 |
| Spain | 59 |
| Netherlands | 58 |
| Others | 515 |
| Total | 2 091 |

2007 data

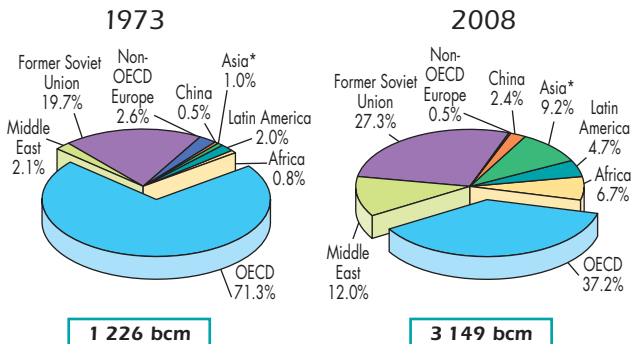
*Includes crude oil, NGL, feedstocks, additives and other hydrocarbons.

Natural Gas Production

Evolution from 1971 to 2008 of natural gas production by region (billion cubic metres)

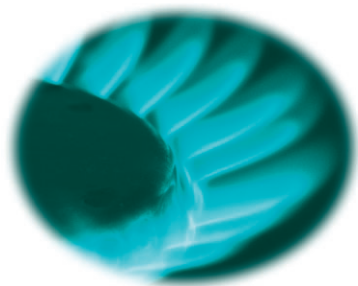


1973 and 2008 regional shares of natural gas production



*Asia excludes China.

Producers, net exporters and net importers* of natural gas



| Producers | bcm | % of world total |
|------------------------|--------------|------------------|
| Russian Federation | 657 | 20.9 |
| United States | 583 | 18.5 |
| Canada | 175 | 5.6 |
| Islamic Rep. of Iran | 121 | 3.8 |
| Norway | 103 | 3.3 |
| Netherlands | 85 | 2.7 |
| Algeria | 82 | 2.6 |
| Qatar | 79 | 2.5 |
| Indonesia | 77 | 2.4 |
| People's Rep. of China | 76 | 2.4 |
| Rest of the world | 1 111 | 35.3 |
| World | 3 149 | 100.0 |

2008 data

| Net exporters | bcm |
|--------------------|------------|
| Russian Federation | 187 |
| Norway | 96 |
| Canada | 88 |
| Qatar | 58 |
| Algeria | 58 |
| Turkmenistan | 51 |
| Netherlands | 36 |
| Indonesia | 34 |
| Malaysia | 22 |
| Nigeria | 21 |
| Others | 149 |
| Total | 800 |

2008 data

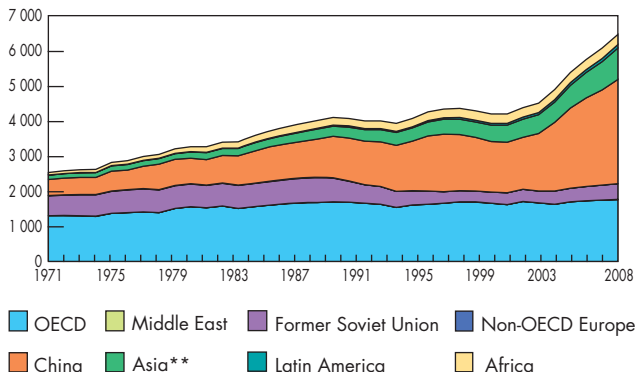
| Net importers | bcm |
|----------------|------------|
| Japan | 95 |
| United States | 84 |
| Germany | 79 |
| Italy | 77 |
| Ukraine | 53 |
| France | 44 |
| Spain | 39 |
| Turkey | 36 |
| Korea | 36 |
| United Kingdom | 26 |
| Others | 214 |
| Total | 783 |

2008 data

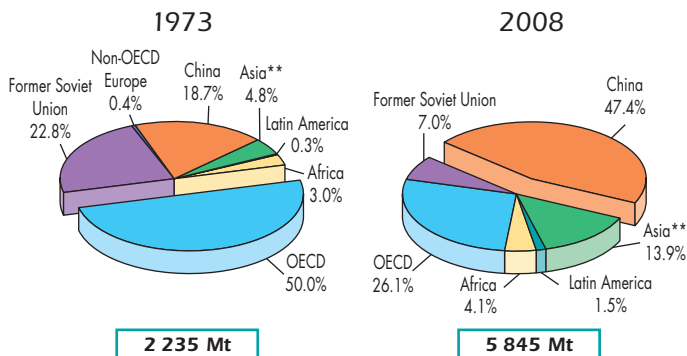
*Net exports and net imports include pipeline gas and LNG.

Hard Coal Production

Evolution from 1971 to 2008 of hard coal* production by region (Mt)



1973 and 2008 regional shares of hard coal* production



*Includes recovered coal.

**Asia excludes China.

Producers, net exporters and net importers of coal

1



| Producers | Hard coal* (Mt) | Brown coal (Mt) |
|------------------------|-----------------|-----------------|
| People's Rep. of China | 2 761 | ** |
| United States | 1 007 | 69 |
| India | 489 | 32 |
| Australia | 325 | 72 |
| Russian Federation | 247 | 76 |
| Indonesia | 246 | 38 |
| South Africa | 236 | 0 |
| Kazakhstan | 104 | 4 |
| Poland | 84 | 60 |
| Colombia | 79 | 0 |
| Rest of the world | 267 | 600 |
| World | 5 845 | 951 |

2008 data

| Net exporters | Hard coal (Mt) |
|-------------------|----------------|
| Australia | 252 |
| Indonesia | 203 |
| Russia Federation | 76 |
| Colombia | 74 |
| South Africa | 60 |
| United States | 43 |
| Kazakhstan | 27 |
| Canada | 20 |
| Vietnam | 20 |
| Venezuela | 6 |
| Others | 12 |
| Total | 793 |

2008 data

| Net importers | Hard coal (Mt) |
|----------------|----------------|
| Japan | 186 |
| Korea | 100 |
| Chinese Taipei | 66 |
| India | 58 |
| Germany | 46 |
| United Kingdom | 43 |
| Italy | 25 |
| France | 21 |
| Turkey | 19 |
| Spain | 19 |
| Others | 195 |
| Total | 778 |

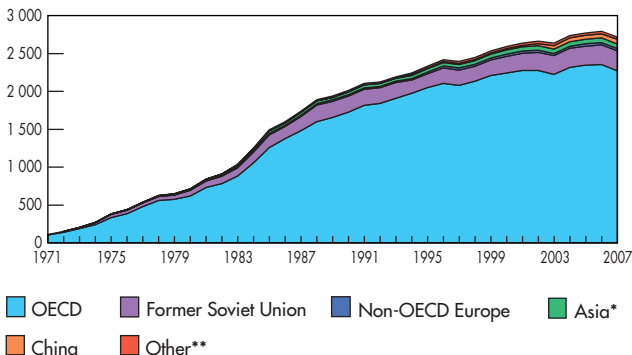
2008 data

*Includes recovered coal.

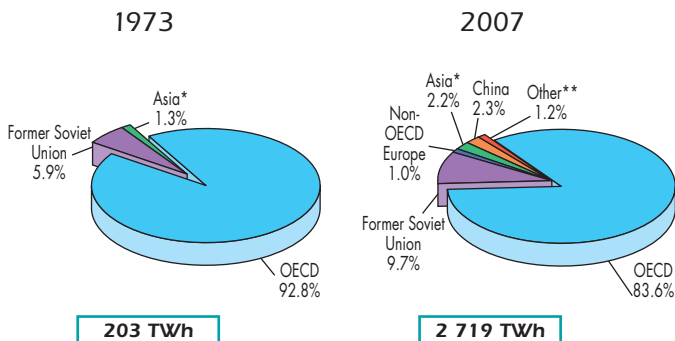
**Included in hard coal.

Nuclear Production

Evolution from 1971 to 2007 of nuclear production by region (TWh)



1973 and 2007 regional shares of nuclear production



*Asia excludes China.

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

Producers of nuclear electricity

1



| Producers | TWh | % of world total |
|--------------------|--------------|------------------|
| United States | 837 | 30.8 |
| France | 440 | 16.2 |
| Japan | 264 | 9.7 |
| Russian Federation | 160 | 5.9 |
| Korea | 143 | 5.3 |
| Germany | 141 | 5.2 |
| Canada | 93 | 3.4 |
| Ukraine | 93 | 3.4 |
| Sweden | 67 | 2.5 |
| United Kingdom | 63 | 2.3 |
| Rest of the world | 418 | 15.3 |
| World | 2 719 | 100.0 |

2007 data

| Installed capacity | GW |
|--------------------|------------|
| United States | 106 |
| France | 63 |
| Japan | 49 |
| Russian Federation | 22 |
| Germany | 20 |
| Korea | 18 |
| Ukraine | 13 |
| Canada | 13 |
| United Kingdom | 11 |
| Sweden | 9 |
| Rest of the world | 48 |
| World | 372 |

2007 data
Sources: IEA,
Commissariat à l'Énergie
Atomique (France).

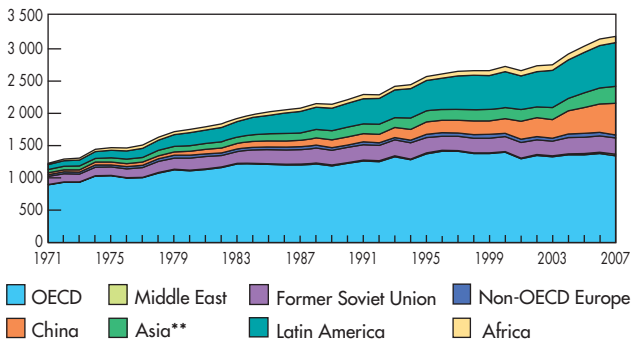
| Country (top-ten producers) | % of nuclear in total domestic electricity generation |
|-----------------------------|---|
| France | 77.9 |
| Ukraine | 47.2 |
| Sweden | 45.0 |
| Korea | 33.6 |
| Japan | 23.5 |
| Germany | 22.3 |
| United States | 19.4 |
| United Kingdom | 16.1 |
| Russian Federation | 15.8 |
| Canada | 14.6 |
| Rest of the world* | 6.6 |
| World | 13.8 |

2007 data

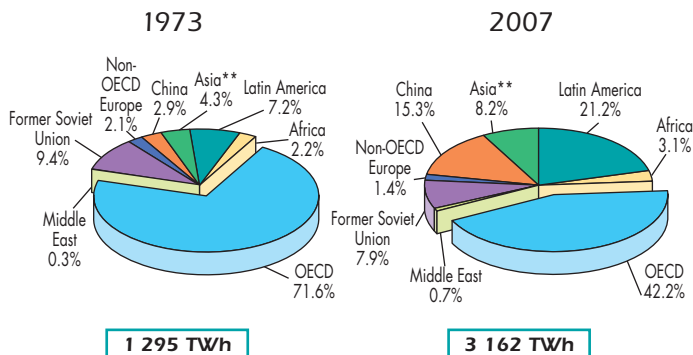
*Excludes countries with no nuclear production.

Hydro Production

Evolution from 1971 to 2007 of hydro* production by region (TWh)



1973 and 2007 regional shares of hydro* production



*Includes pumped storage.

**Asia excludes China.

Producers of hydro* electricity

1



| Producers | TWh | % of world total |
|------------------------|--------------|------------------|
| People's Rep. of China | 485 | 15.3 |
| Brazil | 374 | 11.7 |
| Canada | 369 | 11.7 |
| United States | 276 | 8.7 |
| Russian Federation | 179 | 5.7 |
| Norway | 135 | 4.3 |
| India | 124 | 3.9 |
| Japan | 84 | 2.7 |
| Venezuela | 83 | 2.6 |
| Sweden | 66 | 2.1 |
| Rest of the world | 987 | 31.3 |
| World | 3 162 | 100.0 |

2007 data

*Includes pumped storage.

**Excludes countries with no hydro production.

| Installed capacity | GW |
|------------------------|------------|
| People's Rep. of China | 126 |
| United States | 99 |
| Brazil | 73 |
| Canada | 73 |
| Japan | 47 |
| Russian Federation | 46 |
| India | 35 |
| Norway | 29 |
| France | 25 |
| Italy | 22 |
| Rest of the world | 314 |
| World | 889 |

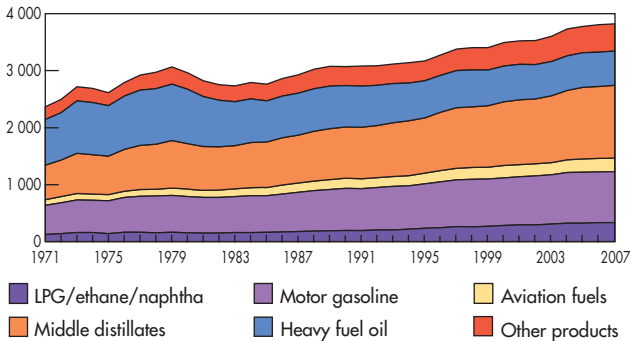
2006 data
Sources: IEA,
United Nations.

| Country (top-ten producers) | % of hydro in total domestic electricity generation |
|-----------------------------|---|
| Norway | 98.2 |
| Brazil | 84.0 |
| Venezuela | 72.3 |
| Canada | 57.6 |
| Sweden | 44.5 |
| Russian Federation | 17.6 |
| India | 15.4 |
| People's Rep. of China | 14.8 |
| Japan | 7.4 |
| United States | 6.3 |
| Rest of the world** | 13.5 |
| World | 15.9 |

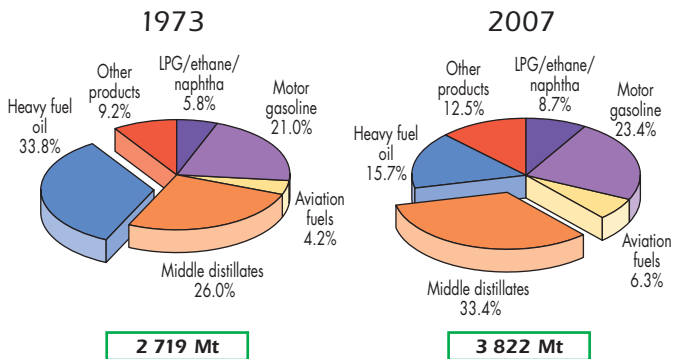
2007 data

Refining by Product

Evolution from 1971 to 2007 of world refinery production by product (Mt)



1973 and 2007 shares of refinery production by product



Producers, net exporters and net importers of petroleum products

2



| Producers | Mt | % of world total |
|------------------------|--------------|------------------|
| United States | 836 | 21.9 |
| People's Rep. of China | 316 | 8.3 |
| Russian Federation | 224 | 5.9 |
| Japan | 198 | 5.2 |
| India | 157 | 4.1 |
| Korea | 123 | 3.2 |
| Germany | 118 | 3.1 |
| Canada | 103 | 2.7 |
| Italy | 101 | 2.6 |
| Saudi Arabia | 96 | 2.5 |
| Rest of the world | 1 550 | 40.5 |
| World | 3 822 | 100.0 |

2007 data

| Net exporters | Mt |
|--------------------|------------|
| Russian Federation | 96 |
| Saudi Arabia | 48 |
| Kuwait | 35 |
| Venezuela | 29 |
| Italy | 17 |
| Algeria | 17 |
| India | 17 |
| Korea | 15 |
| Belarus | 13 |
| Norway | 12 |
| Others | 1 18 |
| Total* | 417 |

2007 data

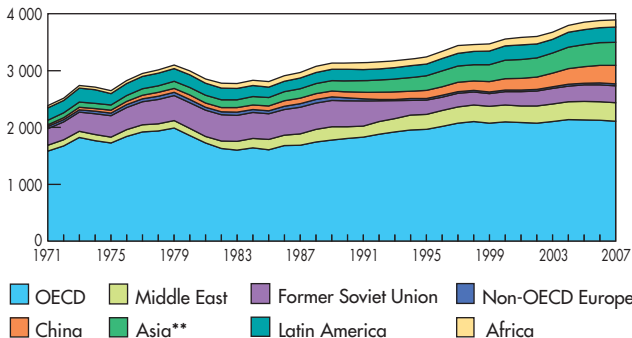
| Net importers | Mt |
|------------------------|------------|
| United States | 34 |
| Japan | 29 |
| People's Rep. of China | 24 |
| Spain | 20 |
| Mexico | 19 |
| Hong Kong (China) | 16 |
| Indonesia | 14 |
| Vietnam | 13 |
| Iraq | 11 |
| France | 10 |
| Others | 174 |
| Total* | 364 |

2007 data

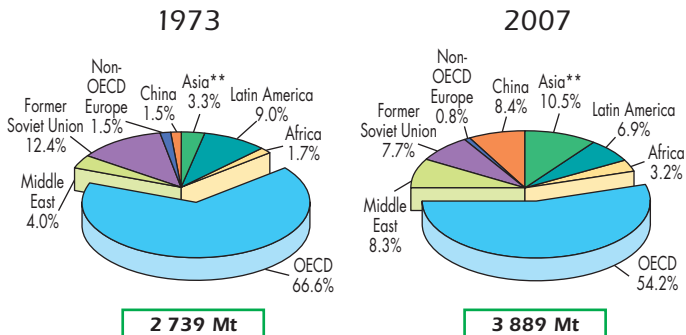
*The discrepancy between total net exports and total net imports arises from different data sources and possible misallocation of bunkers into exports for some countries.

Refining by Region

Evolution from 1971 to 2007 of world refinery throughput*
by region (Mt)



1973 and 2007 regional shares of refinery throughput*



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

**Asia excludes China.

Refinery capacity, net exporters and net importers of oil*

2



| Crude distillation capacity | kb/cd | % of world total |
|-----------------------------|---------------|------------------|
| United States | 17 610 | 20.1 |
| People's Rep. of China** | 7 770 | 8.9 |
| Former Soviet Union | 7 740 | 8.8 |
| Japan | 4 680 | 5.3 |
| India | 3 590 | 4.1 |
| Korea | 2 610 | 3.0 |
| Germany | 2 420 | 2.8 |
| Italy | 2 340 | 2.7 |
| Saudi Arabia | 2 100 | 2.4 |
| Canada | 2 040 | 2.3 |
| Rest of the world | 34 800 | 39.7 |
| World | 87 700 | 100.0 |

2008 data

| Net exporters | Mt |
|-----------------------|--------------|
| Saudi Arabia | 387 |
| Russian Federation | 351 |
| Islamic Rep. of Iran | 137 |
| Kuwait | 117 |
| Norway | 109 |
| Venezuela | 106 |
| Nigeria | 104 |
| United Arab Emirates | 104 |
| Angola | 82 |
| Libya Arab Jamahiriya | 73 |
| Others | 601 |
| Total | 2 171 |

2007 data

| Net importers | Mt |
|------------------------|--------------|
| United States | 607 |
| Japan | 235 |
| People's Rep. of China | 183 |
| Germany | 107 |
| India | 105 |
| Korea | 103 |
| France | 91 |
| Spain | 79 |
| Italy | 77 |
| Chinese Taipei | 49 |
| Others | 617 |
| Total | 2 253 |

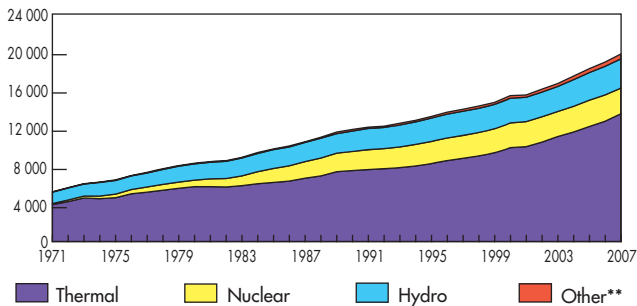
2007 data

*Crude oil and petroleum products.

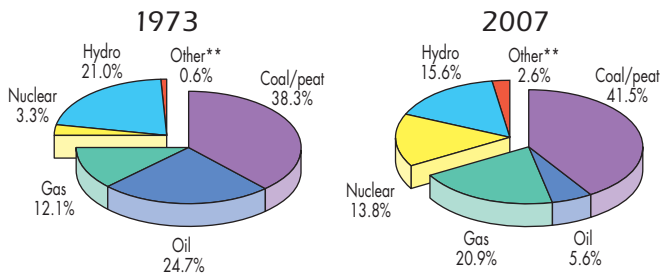
**Does not include unlisted small teapot refineries which are estimated at between 200 and 500 kb/cd (i.e. calendar day).

Electricity Generation* by Fuel

Evolution from 1971 to 2007 of world electricity generation* by fuel (TWh)



1973 and 2007 fuel shares of electricity generation*



6 116 TWh

19 771 TWh

*Excludes pumped storage.

**Other includes geothermal, solar, wind, combustible renewables & waste, and heat.

Electricity production from fossil fuels

2



| Coal/peat | TWh |
|------------------------|--------------|
| People's Rep. of China | 2 656 |
| United States | 2 118 |
| India | 549 |
| Japan | 311 |
| Germany | 311 |
| South Africa | 247 |
| Australia | 194 |
| Korea | 171 |
| Russian Federation | 170 |
| Poland | 148 |
| Rest of the world | 1 353 |
| World | 8 228 |

2007 data

| Oil | TWh |
|------------------------|--------------|
| Japan | 156 |
| Saudi Arabia | 104 |
| United States | 78 |
| Mexico | 52 |
| Indonesia | 38 |
| Italy | 35 |
| Kuwait | 35 |
| People's Rep. of China | 34 |
| India | 33 |
| Iraq | 33 |
| Rest of the world | 516 |
| World | 1 114 |

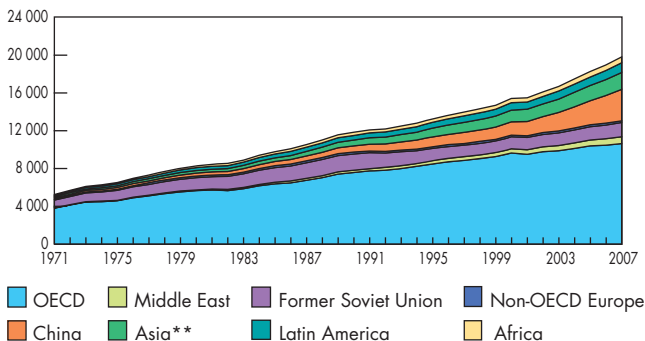
2007 data

| Gas | TWh |
|----------------------|--------------|
| United States | 915 |
| Russian Federation | 487 |
| Japan | 290 |
| Italy | 173 |
| United Kingdom | 164 |
| Islamic Rep. of Iran | 160 |
| Mexico | 126 |
| Thailand | 97 |
| Turkey | 95 |
| Spain | 93 |
| Rest of the world | 1 527 |
| World | 4 127 |

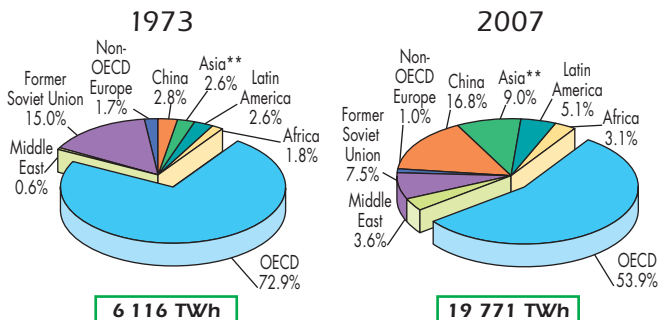
2007 data

Electricity Generation* by Region

Evolution from 1971 to 2007 of world electricity generation* by region (TWh)



1973 and 2007 regional shares of electricity generation*



*Excludes pumped storage.

**Asia excludes China.

Producers, net exporters and net importers of electricity

2



| Producers* | TWh | % of world total |
|------------------------|---------------|------------------|
| United States | 4 323 | 21.9 |
| People's Rep. of China | 3 279 | 16.6 |
| Japan | 1 123 | 5.7 |
| Russian Federation | 1 013 | 5.1 |
| India | 803 | 4.1 |
| Canada | 640 | 3.2 |
| Germany | 630 | 3.2 |
| France | 564 | 2.9 |
| Brazil | 445 | 2.3 |
| Korea | 426 | 2.2 |
| Rest of the world | 6 525 | 32.8 |
| World | 19 771 | 100.0 |

2007 data

| Net exporters | TWh |
|------------------------|------------|
| France | 57 |
| Paraguay | 45 |
| Canada | 25 |
| Germany | 17 |
| Czech Republic | 16 |
| Russian Federation | 13 |
| People's Rep. of China | 10 |
| Norway | 10 |
| Ukraine | 9 |
| Spain | 6 |
| Others | 47 |
| Total | 255 |

2007 data

| Net importers | TWh |
|-------------------|------------|
| Italy | 46 |
| Brazil | 39 |
| United States | 31 |
| Netherlands | 18 |
| Finland | 13 |
| Argentina | 8 |
| Portugal | 7 |
| Hong Kong (China) | 7 |
| Belgium | 7 |
| Austria | 7 |
| Others | 71 |
| Total | 254 |

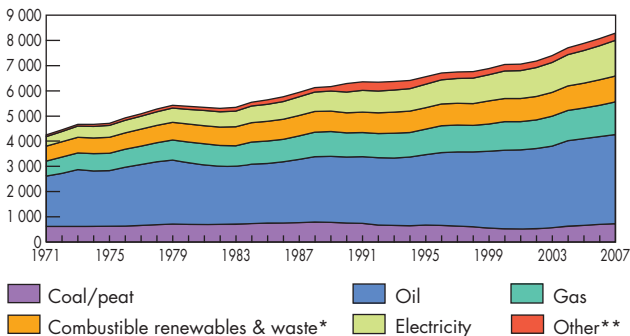
2007 data

*Gross production minus production from pumped storage plants.

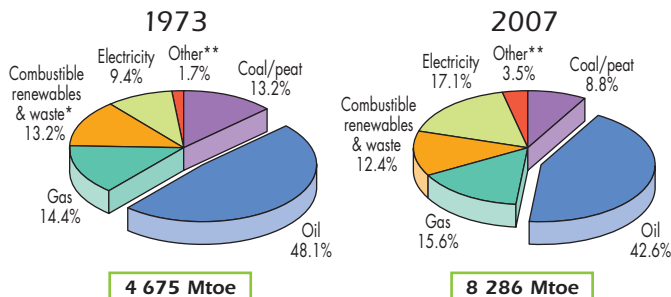
TOTAL FINAL CONSUMPTION

World

Evolution from 1971 to 2007 of world total final consumption by fuel (Mtoe)



1973 and 2007 fuel shares of total final consumption



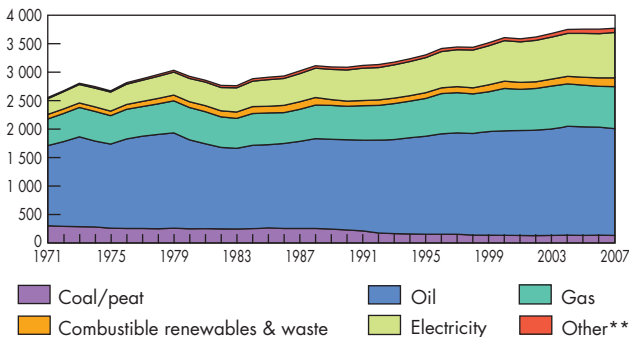
*Prior to 1994 combustible renewables & waste final consumption has been estimated.

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

BY FUEL

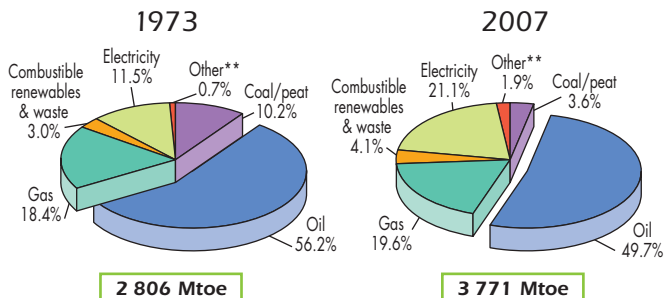
OECD

Evolution from 1971 to 2007 of OECD total final consumption* by fuel (Mtoe)



3

1973 and 2007 fuel shares of total final consumption*



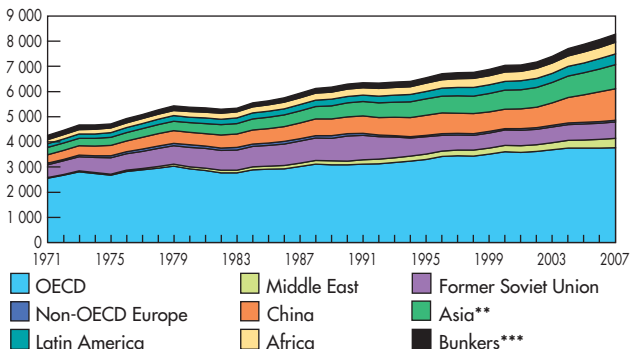
*Starting with this edition, international aviation bunkers are no longer included in the transport sector at the country and regional level.

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

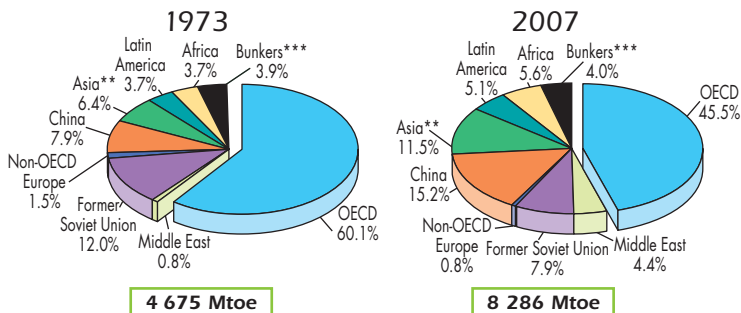
TOTAL FINAL CONSUMPTION

World

Evolution from 1971 to 2007 of world total final consumption* by region (Mtoe)



1973 and 2007 regional shares of total final consumption*



*Prior to 1994 combustible renewables & waste final consumption has been estimated.

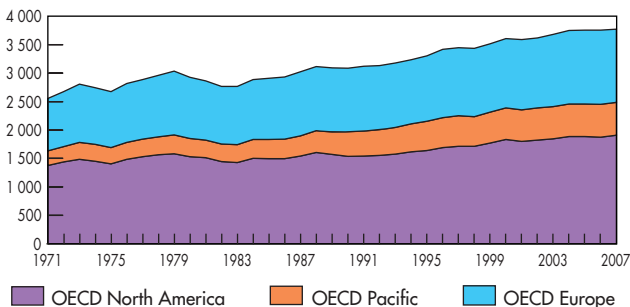
**Asia excludes China.

***Includes international aviation and international marine bunkers.

BY REGION

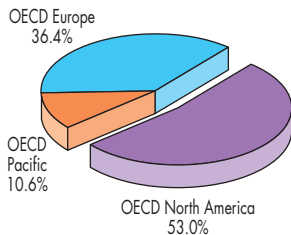
OECD

Evolution from 1971 to 2007 of OECD total final consumption* by region (Mtoe)



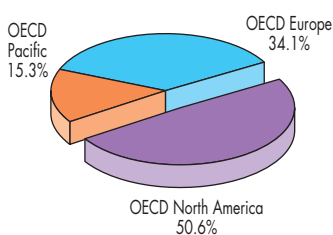
1973 and 2007 regional shares of total final consumption*

1973



2 806 Mtoe

2007



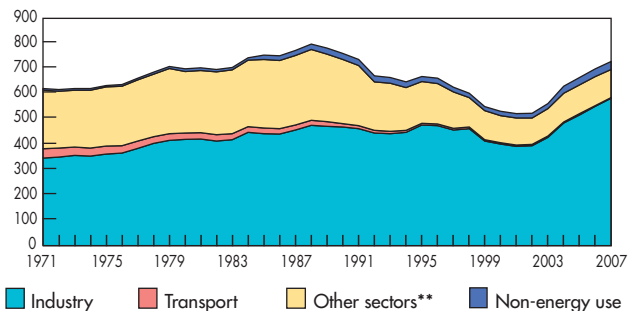
3 771 Mtoe

*Starting with this edition, international aviation bunkers are no longer included in the transport sector at the country and regional level.

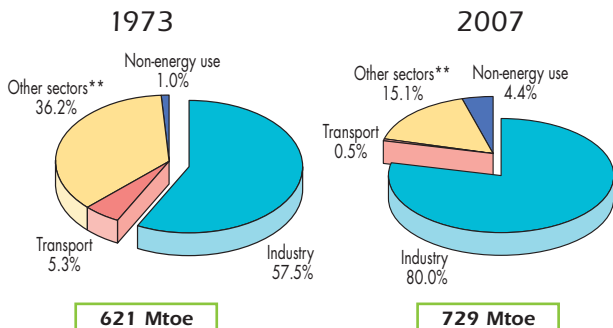
TOTAL FINAL CONSUMPTION

Coal*

Evolution from 1971 to 2007 of total final consumption by sector (Mtoe)



1973 and 2007 shares of world coal* consumption

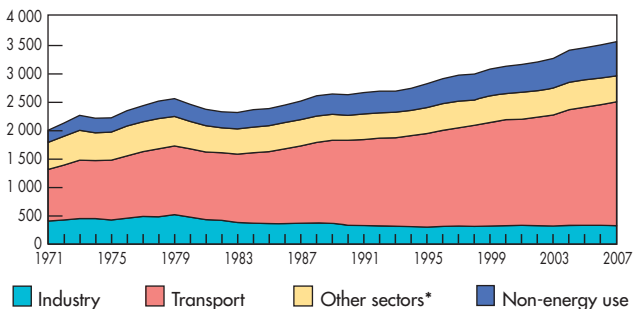


*Coal refers to coal/peat. **Includes agriculture, commercial & public services, residential and non-specified other sectors.

BY SECTOR

Oil

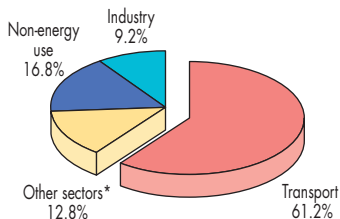
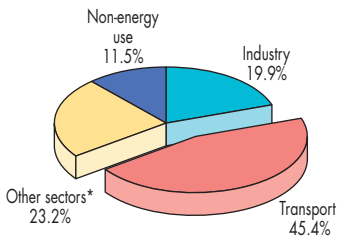
Evolution from 1971 to 2007 of total final consumption by sector (Mtoe)



1973 and 2007 shares of world oil consumption

1973

2007



2 248 Mtoe

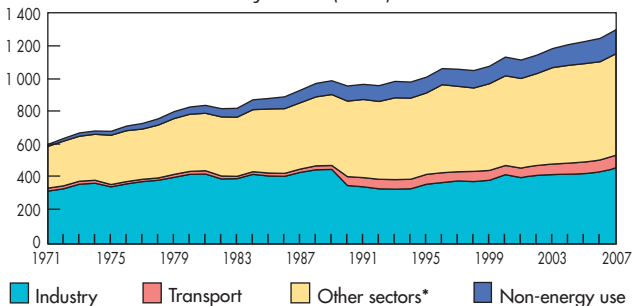
3 532 Mtoe

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

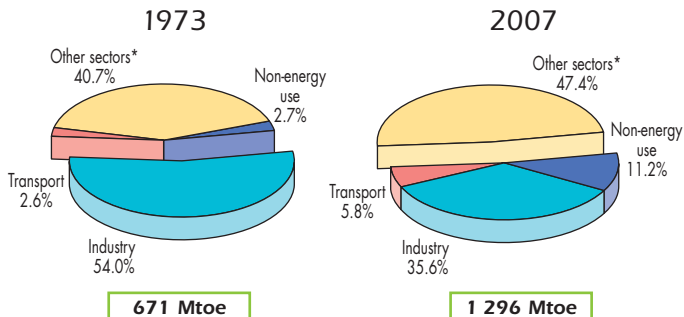
TOTAL FINAL CONSUMPTION

Gas

Evolution from 1971 to 2007 of total final consumption by sector (Mtoe)



1973 and 2007 shares of world gas consumption

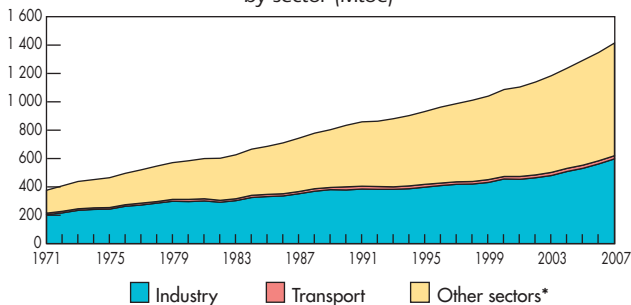


*Includes agriculture, commercial & public services, residential and non-specified other sectors.

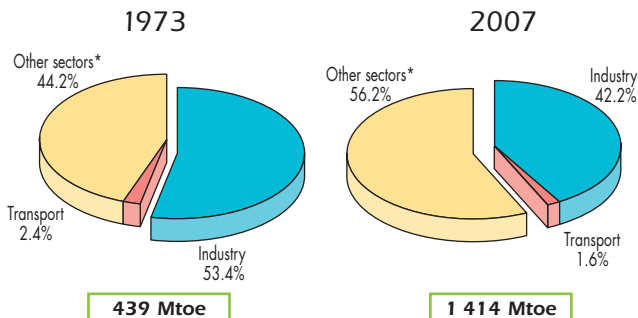
BY SECTOR

Electricity

Evolution from 1971 to 2007 of total final consumption by sector (Mtoe)



1973 and 2007 shares of world electricity consumption



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

SIMPLIFIED ENERGY

World

1973

(Mtoe)

| SUPPLY AND CONSUMPTION | Coal/ peat | Crude oil | Petroleum products | Gas | Nuclear | Hydro | Combustible renewables & waste ^(a) | Other ^(b) | Total |
|---------------------------------|----------------|----------------|-----------------------|---------------|--------------|---------------|---|----------------------|----------------|
| Production | 1479.01 | 2936.72 | - | 993.07 | 53.05 | 110.23 | 646.08 | 6.13 | 6224.29 |
| Imports | 140.04 | 1562.28 | 408.20 | 73.41 | - | - | 0.12 | 8.14 | 2192.19 |
| Exports | -130.37 | -1611.16 | -438.59 | -72.57 | - | - | -0.19 | -8.27 | -2261.16 |
| Stock changes | 12.22 | -21.59 | -15.80 | -15.00 | - | - | 0.06 | - | -40.11 |
| TPEs | 1500.90 | 2866.25 | -46.19 | 978.90 | 53.05 | 110.23 | 646.05 | 6.00 | 6115.21 |
| Transfers | - | -46.49 | 48.52 | - | - | - | - | - | 2.02 |
| Statistical diff. | 10.04 | 11.83 | -6.53 | 4.79 | - | - | -0.04 | -0.03 | 20.07 |
| Electricity plants | -559.58 | -22.55 | -319.24 | -160.01 | -52.95 | -110.23 | -2.94 | 502.69 | -724.82 |
| CHP plants | -86.31 | - | -28.26 | -50.85 | -0.10 | - | -0.75 | 100.70 | -65.56 |
| Heat plants | -7.80 | - | -0.90 | -0.69 | - | - | -0.80 | 7.11 | -3.08 |
| Gas works | -9.86 | -0.60 | -9.10 | 13.52 | - | - | - | - | -6.04 |
| Pet. refineries | - | -2783.39 | 2761.29 | - | - | - | - | - | -22.10 |
| Coal transf. | -183.63 | - | -3.40 | -0.19 | - | - | -0.08 | - | -187.30 |
| Liquefaction | -0.73 | 0.23 | - | - | - | - | - | - | -0.50 |
| Other transf. | - | 5.08 | -5.48 | -0.03 | - | - | -23.21 | - | -23.63 |
| Own use | -34.15 | -2.59 | -162.76 | -106.58 | - | - | -0.19 | -57.78 | -364.04 |
| Distribution losses | -7.41 | -7.07 | -0.27 | -7.49 | - | - | -0.29 | -43.07 | -65.60 |
| TFC | 621.48 | 20.70 | 2227.69 | 671.37 | - | - | 617.77 | 515.63 | 4674.64 |
| Industry sector | 357.29 | 16.38 | 431.93 | 362.02 | - | - | 90.96 | 286.35 | 1544.93 |
| Transport sector ^(c) | 33.00 | - | 1019.51 | 17.72 | - | - | 0.33 | 10.59 | 1081.15 |
| Other sectors | 225.18 | 0.00 | 521.07 | 273.26 | - | - | 526.48 | 218.68 | 1764.67 |
| Non-energy use | 6.02 | 4.32 | 255.19 | 18.37 | - | - | - | - | 283.89 |

(a) Combustible renewables & waste final consumption has been estimated.

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

(c) Includes international aviation and international marine bunkers.

BALANCE TABLE

World

2007

(Mtoe)

| SUPPLY AND CONSUMPTION | Coal/ peat | Crude oil | Petroleum products | Gas | Nuclear | Hydro | Combustible renewables & waste | Other ^(a) | Total |
|---------------------------------|----------------|----------------|-----------------------|----------------|---------------|---------------|--------------------------------------|----------------------|-----------------|
| Production | 3208.54 | 4000.95 | - | 2498.03 | 709.14 | 264.74 | 1175.12 | 83.01 | 11939.53 |
| Imports | 589.63 | 2350.05 | 972.51 | 757.55 | - | - | 5.58 | 53.27 | 4728.59 |
| Exports | -602.67 | -2217.49 | -1024.66 | -742.66 | - | - | -4.65 | -53.35 | -4645.48 |
| Stock changes | -9.18 | -1.54 | 10.07 | 6.94 | - | - | 0.34 | - | 6.64 |
| TPES | 3186.32 | 4131.97 | -42.08 | 2519.87 | 709.14 | 264.74 | 1176.39 | 82.93 | 12029.27 |
| Transfers | - | -146.65 | 166.61 | - | - | - | - | - | 19.96 |
| Statistical diff. | 12.77 | -7.61 | -12.31 | 13.83 | - | - | -0.25 | 0.57 | 7.00 |
| Electricity plants | -1883.67 | -27.11 | -216.90 | -609.03 | -702.82 | -264.74 | -48.34 | 1470.39 | -2282.22 |
| CHP plants | -183.29 | -0.05 | -25.86 | -295.88 | -6.32 | - | -28.29 | 322.70 | -216.98 |
| Heat plants | -99.95 | -0.71 | -12.28 | -87.43 | - | - | -7.34 | 167.93 | -39.78 |
| Gas works | -14.39 | - | -3.07 | 10.87 | - | - | - | - | -6.59 |
| Pet. refineries | - | -3959.95 | 3913.99 | -0.57 | - | - | - | - | -46.53 |
| Coal transf. | -195.02 | 0.02 | -3.07 | -0.17 | - | - | -0.00 | - | -198.24 |
| Liquefaction | -18.23 | 8.26 | - | -5.74 | - | - | - | - | -15.71 |
| Other transf. | 0.01 | 29.15 | -30.10 | -1.93 | - | - | -52.09 | - | -54.96 |
| Own use | -73.18 | -9.38 | -216.91 | -220.56 | - | - | -10.85 | -177.67 | -708.54 |
| Distribution losses | -2.66 | -3.91 | -0.32 | -27.06 | - | - | -0.24 | -166.43 | -200.62 |
| TFC | 728.71 | 14.05 | 3517.69 | 1296.19 | - | - | 1029.00 | 1700.41 | 8286.07 |
| Industry sector | 583.23 | 4.68 | 319.36 | 461.34 | - | - | 188.78 | 717.32 | 2274.72 |
| Transport sector ^(b) | 3.53 | 0.01 | 2160.94 | 74.77 | - | - | 34.15 | 23.34 | 2296.73 |
| Other sectors | 110.21 | 0.22 | 453.44 | 614.99 | - | - | 806.06 | 959.75 | 2944.68 |
| Non-energy use | 31.75 | 9.15 | 583.95 | 145.09 | - | - | 0.01 | - | 769.94 |

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

(b) Includes international aviation and international marine bunkers.

SIMPLIFIED ENERGY

OECD

1973

(Mtoe)

| SUPPLY AND CONSUMPTION | Coal/ peat | Crude oil | Petroleum products | Gas | Nuclear | Hydro | Combustible renewables & waste | Other ^(a) | Total |
|------------------------|---------------|----------------|-----------------------|---------------|--------------|--------------|--------------------------------------|----------------------|----------------|
| Production | 818.29 | 702.61 | - | 705.65 | 49.22 | 78.46 | 85.96 | 6.13 | 2446.32 |
| Imports | 121.72 | 1271.51 | 335.85 | 62.56 | - | - | 0.03 | 7.55 | 1799.22 |
| Exports | -111.07 | -63.58 | -172.35 | -50.39 | - | - | -0.01 | -7.00 | -404.41 |
| Intl. marine bunkers | - | - | -73.47 | - | - | - | - | - | -73.47 |
| Intl. aviation bunkers | - | - | -23.69 | - | - | - | - | - | -23.69 |
| Stock changes | 14.41 | -10.91 | -11.23 | -11.98 | - | - | 0.06 | - | -19.66 |
| TPES | 843.35 | 1899.63 | 55.12 | 705.83 | 49.22 | 78.46 | 86.04 | 6.67 | 3724.32 |
| Transfers | - | -41.02 | 42.21 | - | - | - | - | - | 1.19 |
| Statistical diff. | 14.85 | 13.07 | 2.56 | -5.62 | - | - | -0.00 | - | 24.85 |
| Electricity plants | -387.36 | -20.58 | -225.67 | -108.33 | -49.12 | -78.46 | -1.42 | 363.19 | -507.74 |
| CHP plants | -52.06 | - | -7.89 | -11.65 | -0.10 | - | -0.75 | 30.94 | -41.51 |
| Heat plants | -7.80 | - | -0.90 | -0.69 | - | - | -0.80 | 7.11 | -3.08 |
| Gas works | -8.40 | -0.60 | -8.65 | 13.02 | - | - | - | - | -4.62 |
| Pet. refineries | - | -1854.21 | 1857.54 | - | - | - | - | - | 3.33 |
| Coal transf. | -90.91 | - | -3.40 | -0.19 | - | - | -0.02 | - | -94.52 |
| Liquefaction | - | 0.02 | - | - | - | - | - | - | 0.02 |
| Other transf. | - | 4.88 | -5.27 | -0.03 | - | - | - | - | -0.42 |
| Own use | -23.66 | -0.99 | -128.36 | -72.86 | - | - | -0.07 | -33.37 | -259.31 |
| Distribution losses | -2.32 | - | -0.23 | -3.95 | - | - | - | -30.33 | -36.83 |
| TFC | 285.69 | 0.21 | 1577.06 | 515.53 | - | - | 82.99 | 344.21 | 2805.69 |
| Industry sector | 179.28 | 0.21 | 310.99 | 253.72 | - | - | 42.02 | 168.80 | 955.02 |
| Transport sector | 7.21 | - | 662.83 | 17.00 | - | - | 0.00 | 5.29 | 692.33 |
| Other sectors | 96.10 | - | 391.52 | 239.28 | - | - | 40.97 | 170.13 | 938.00 |
| Non-energy use | 3.10 | - | 211.71 | 5.53 | - | - | - | - | 220.34 |

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

BALANCE TABLE

OECD

2007

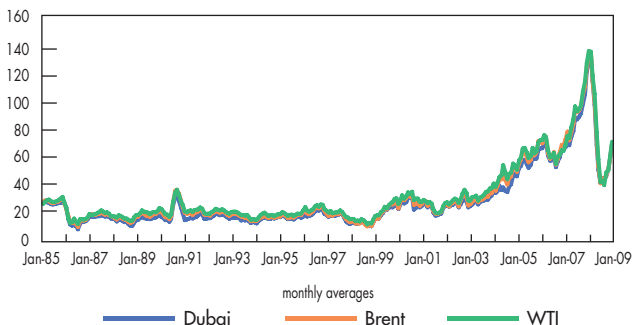
(Mtoe)

| SUPPLY AND CONSUMPTION | Coal/peat | Crude oil | Petroleum products | Gas | Nuclear | Hydro | Combustible renewables & waste | Other ^(a) | Total |
|------------------------|----------------|----------------|--------------------|----------------|---------------|---------------|--------------------------------|----------------------|----------------|
| Production | 1018.94 | 926.40 | - | 921.91 | 592.38 | 108.23 | 217.27 | 47.76 | 3832.87 |
| Imports | 383.06 | 1654.83 | 529.30 | 588.30 | - | - | 5.34 | 35.14 | 3195.97 |
| Exports | -245.61 | -388.11 | -436.55 | -268.70 | - | - | -1.32 | -34.39 | -1374.68 |
| Intl. marine bunkers | - | - | -103.11 | - | - | - | - | - | -103.11 |
| Intl. aviation bunkers | - | - | -79.75 | - | - | - | - | - | -79.75 |
| Stock changes | 1.30 | 2.13 | 5.21 | 17.40 | - | - | -0.22 | - | 25.82 |
| TPES | 1157.68 | 2195.25 | -84.90 | 1258.91 | 592.38 | 108.23 | 221.08 | 48.50 | 5497.13 |
| Transfers | - | -44.81 | 57.25 | - | - | - | - | - | 12.43 |
| Statistical diff. | -12.30 | -8.85 | -7.63 | 15.56 | - | - | -0.09 | 0.81 | -12.49 |
| Electricity plants | -847.84 | -9.80 | -72.09 | -323.17 | -589.04 | -108.23 | -37.40 | 786.11 | -1201.46 |
| CHP plants | -84.74 | - | -15.83 | -108.93 | -3.34 | - | -26.37 | 155.08 | -84.13 |
| Heat plants | -4.34 | - | -1.22 | -4.92 | - | - | -3.48 | 13.88 | -0.07 |
| Gas works | -2.30 | - | -1.96 | 3.07 | - | - | - | - | -1.19 |
| Pet. refineries | - | -2153.49 | 2147.83 | -0.57 | - | - | - | - | -6.23 |
| Coal transf. | -56.18 | 0.02 | -2.31 | -0.17 | - | - | - | - | -58.64 |
| Liquefaction | - | 0.57 | - | -1.15 | - | - | - | - | -0.58 |
| Other transf. | 0.01 | 24.03 | -24.22 | -0.17 | - | - | -0.12 | - | -0.49 |
| Own use | -14.18 | -0.08 | -123.34 | -97.56 | - | - | -0.08 | -69.58 | -304.82 |
| Distribution losses | -1.03 | - | -0.02 | -2.70 | - | - | -0.02 | -64.20 | -67.97 |
| TFC | 134.77 | 2.85 | 1871.55 | 738.20 | - | - | 153.53 | 870.59 | 3771.48 |
| Industry sector | 115.19 | 0.04 | 128.80 | 258.85 | - | - | 71.42 | 297.48 | 871.77 |
| Transport sector | 0.09 | - | 1180.62 | 23.31 | - | - | 23.48 | 9.79 | 1237.28 |
| Other sectors | 17.03 | - | 212.02 | 420.87 | - | - | 58.63 | 563.33 | 1271.88 |
| Non-energy use | 2.46 | 2.81 | 350.12 | 35.16 | - | - | - | - | 390.55 |

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

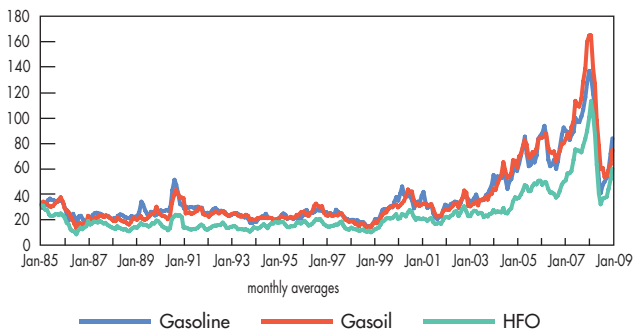
Crude Oil

Key crude oil spot prices in US dollars/barrel



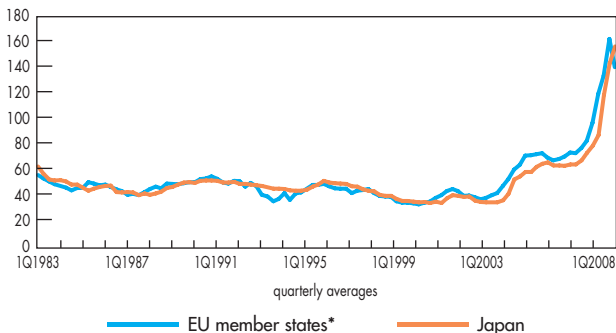
Petroleum Products

Rotterdam oil product spot prices in US dollars/barrel



Coal

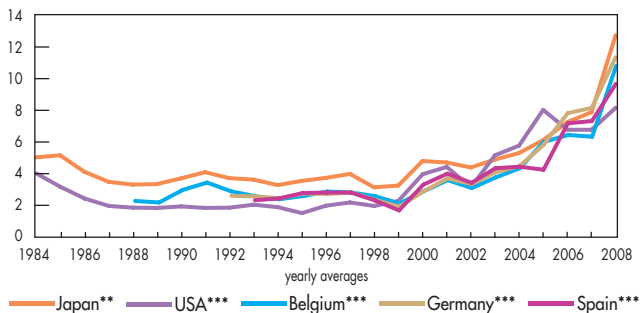
Steam coal import costs in US dollars/tonne



5

Natural Gas

Natural gas import prices in US dollars/MBtu



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

RETAIL PRICES^(a)

| | Heavy fuel oil for industry ^(b) (tonne) | Light fuel oil for households (1000 litres) | Automotive diesel oil ^(c) (litre) | Unleaded premium ^(d) (litre) |
|-----------------|--|---|--|---|
| Australia | .. | .. | .. | 0.758 |
| Austria | 358.80 | 758.09 | 0.826 | 1.228 |
| Belgium | 298.26 | 585.09 | 1.048 | 1.571 |
| Canada | 306.17 | 616.85 | 0.680 | 0.687 |
| Chinese Taipei | 298.56 | x | 0.576 | 0.681 |
| Czech Republic | 293.95 | 666.71 | 0.994 | 1.163 |
| Denmark | 390.72 | 1 166.22 | 1.027 | 1.530 |
| Finland | 391.60 | 716.45 | 1.025 | 1.529 |
| France | 315.94 | 724.19 | 1.049 | 1.455 |
| Germany | 318.24 | 614.35 | 1.145 | 1.540 |
| Greece | 369.48 | 646.07 | 1.010 | 1.125 |
| Hungary | 312.51 | x | 0.927 | 1.094 |
| India | .. | .. | .. | .. |
| Ireland | 284.02 | 792.92 | 1.049 | 1.283 |
| Italy | 364.60 | 1 310.24 | 1.132 | 1.482 |
| Japan | 371.03 | 712.02 | 0.866 | 1.164 |
| Korea | 375.84 | 654.87 | .. | 1.029 |
| Luxembourg | .. | .. | .. | .. |
| Mexico | 214.36 | .. | 0.451 | 0.522 |
| Netherlands | 267.58 | 797.61 | 1.049 | 1.633 |
| New Zealand | 449.42 | .. | 0.475 | 0.826 |
| Norway | .. | 1 015.55 | 1.220 | 1.582 |
| Poland | 365.79 | 705.23 | 0.825 | 1.055 |
| Portugal | 475.66 | 833.98 | 1.138 | 1.474 |
| Slovak Republic | 282.40 | .. | 1.174 | 1.303 |
| Spain | 359.64 | 673.77 | 0.960 | 1.161 |
| Sweden | 799.94 | 1 187.94 | 1.060 | 1.335 |
| Switzerland | 253.94 | 585.53 | 1.161 | 1.185 |
| Turkey | 637.17 | 1 314.24 | 1.486 | 1.733 |
| United Kingdom | c | 599.01 | 1.243 | 1.272 |
| United States | 291.68 | 636.32 | 0.580 | 0.499 |

(a) Prices are for 1st quarter 2009 for petroleum products, and annual 2008 for other products. (b) High sulphur fuel oil for Canada, Ireland, Mexico, New Zealand, Turkey and the United States; low sulphur fuel oil for all other countries.

(c) For commercial purposes.

IN SELECTED COUNTRIES in US dollars/unit

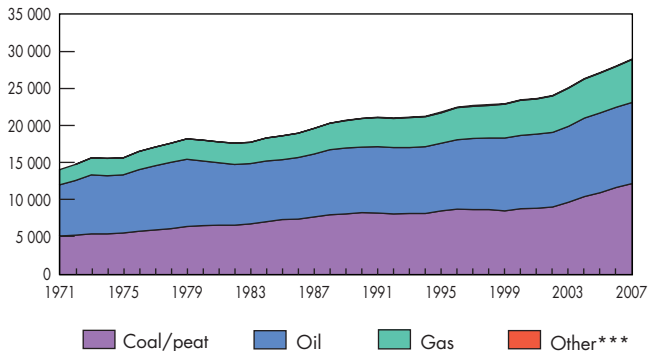
| Nat. gas for industry (10 ⁷ kcal GCV ^[e]) | Nat. gas for households (10 ⁷ kcal GCV ^[e]) | Steam coal for industry ^[f] (tonne) | Electricity for industry ^[g] (kWh) | Electricity for households ^[g] (kWh) | |
|---|---|---|--|--|-----------------|
| .. | .. | .. | .. | .. | Australia |
| .. | 1024.28 | 242.64 | 0.1541 | 0.2572 | Austria |
| c | .. | .. | .. | .. | Belgium |
| 357.00 | 512.68 | .. | .. | .. | Canada |
| 582.62 | 538.45 | .. | 0.0672 | 0.0856 | Chinese Taipei |
| 614.12 | 848.87 | c | 0.1512 | 0.1915 | Czech Republic |
| c | .. | .. | .. | 0.3960 | Denmark |
| 372.25 | 520.61 | 216.75 | 0.0969 | 0.1724 | Finland |
| 607.28 | 920.40 | .. | 0.0595 | 0.1690 | France |
| .. | .. | .. | .. | .. | Germany |
| 643.89 | 1214.18 | .. | .. | .. | Greece |
| 753.00 | 748.76 | .. | 0.1697 | 0.2234 | Hungary |
| .. | .. | 41.50 | .. | .. | India |
| 616.23 | 1033.95 | .. | 0.1859 | 0.2672 | Ireland |
| 646.48 | 1152.69 | 143.68 | 0.2898 | 0.3053 | Italy |
| .. | .. | 133.40 | .. | .. | Japan |
| 499.53 | 633.96 | 117.67 | 0.0602 | 0.0886 | Korea |
| .. | .. | .. | .. | .. | Luxembourg |
| 433.14 | 736.07 | x | 0.1260 | 0.0961 | Mexico |
| .. | 1239.93 | .. | c | 0.2426 | Netherlands |
| .. | .. | c | 0.0714 | 0.1644 | New Zealand |
| x | x | .. | 0.0636 | 0.1639 | Norway |
| 531.71 | 933.26 | 105.26 | 0.1193 | 0.1930 | Poland |
| 531.92 | 1066.38 | .. | 0.1313 | 0.2197 | Portugal |
| 622.70 | 785.56 | .. | 0.1739 | 0.2196 | Slovak Republic |
| 486.59 | 1026.80 | .. | 0.1252 | 0.2180 | Spain |
| .. | .. | .. | .. | .. | Sweden |
| 745.36 | 1093.51 | 216.41 | 0.0938 | 0.1543 | Switzerland |
| 572.88 | 659.24 | 92.60 | 0.1388 | 0.1648 | Turkey |
| 445.98 | 825.82 | 124.54 | 0.1459 | 0.2313 | United Kingdom |
| 369.11 | 525.28 | 69.99 | 0.0702 | 0.1135 | United States |

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

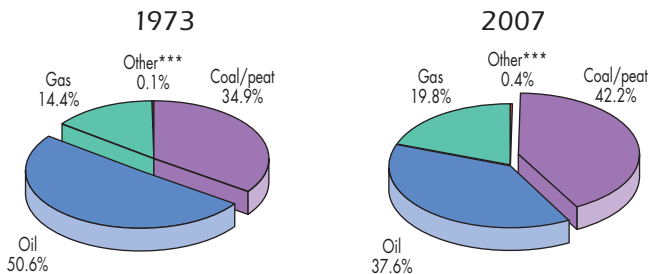
.. not available x not applicable c confidential

CO₂ Emissions by Fuel

Evolution from 1971 to 2007 of world* CO₂ emissions** by fuel (Mt of CO₂)



1973 and 2007 fuel shares of CO₂ emissions**



15 640 Mt of CO₂

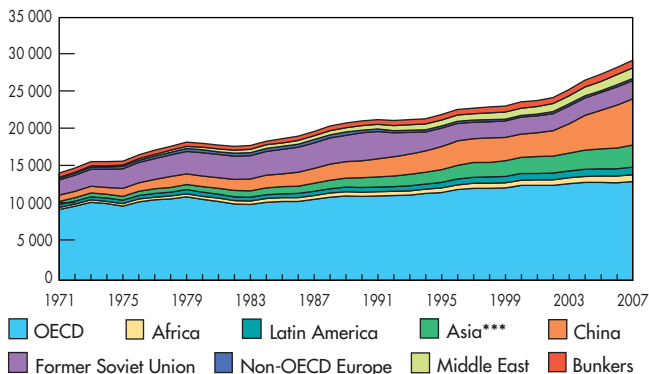
28 962 Mt of CO₂

*World includes international aviation and international marine bunkers.

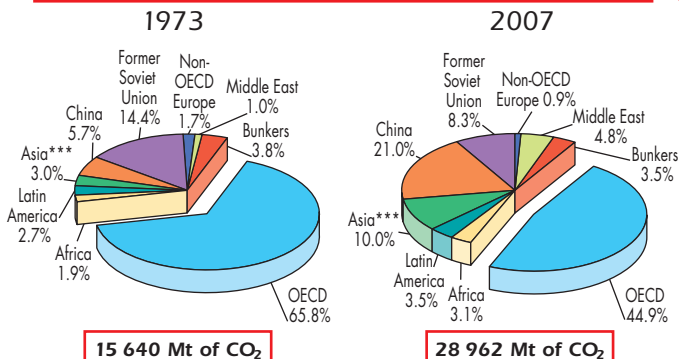
Calculated using the IEA's energy balances and the Revised 1996 IPCC Guidelines. CO₂ emissions are from fuel combustion only. *Other includes industrial waste and non-renewable municipal waste.

CO₂ Emissions by Region

Evolution from 1971 to 2007 of world* CO₂ emissions** by region (Mt of CO₂)



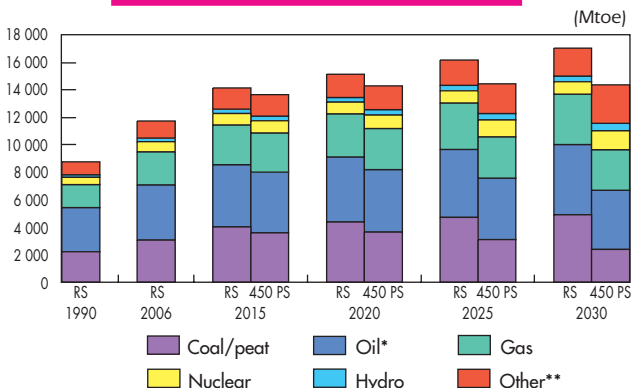
1973 and 2007 regional shares of CO₂ emissions**



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

OUTLOOK FOR WORLD TPES

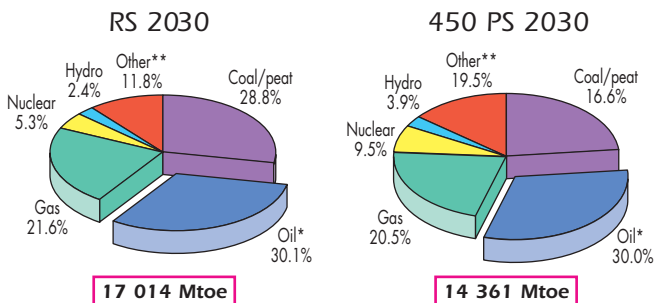
TPES Outlook by Fuel



RS: Reference Scenario
(based on current policies)

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

Fuel shares of TPES in 2030 for Reference Scenario and 450 Policy Scenario



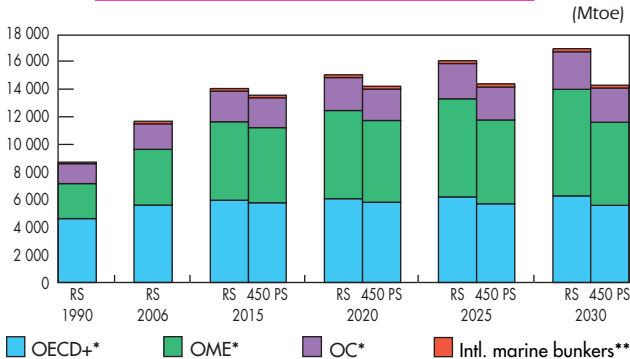
*Includes international aviation and international marine bunkers.

**Other includes combustible renewables & waste, geothermal, solar, wind, tide, etc.

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

TO 2030

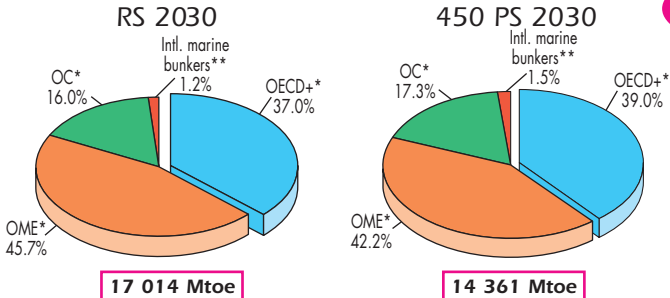
TPES Outlook by Region*



RS: Reference Scenario
(based on current policies)

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

Regional shares of TPES in 2030 for Reference Scenario and 450 Policy Scenario



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

**International aviation bunkers are included in regional totals.

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

Selected Indicators for 2007

| Region/ Country/ Economy | Popu- lation (million) | GDP (billion 2000 US\$) | GDP (PPP) (billion 2000 US\$) | Energy prod. (Mtoe) | Net imports (Mtoe) | TPES (Mtoe) | Elec. cons. ^[a] (TWh) | CO ₂ emissions ^[b] (Mt of CO ₂) |
|--------------------------------|------------------------------|-------------------------------|--|---------------------------|--------------------------|----------------------|--|--|
| World | 6609 | 39493 | 61428 | 11940 | - | 12029 ^[c] | 18187 | 28962 ^[d] |
| OECD | 1185 | 30110 | 32361 | 3833 | 1821 | 5497 | 10048 | 13001 |
| Middle East | 193 | 891 | 1552 | 1527 | -945 | 552 | 628 | 1389 |
| Former Soviet Union | 284 | 620 | 2472 | 1645 | -608 | 1019 | 1308 | 2412 |
| Non-OECD Europe | 53 | 174 | 509 | 61 | 48 | 106 | 176 | 272 |
| China | 1327 | 2623 | 10156 | 1814 | 194 | 1970 | 3114 | 6071 |
| Asia | 2148 | 2308 | 8292 | 1224 | 197 | 1377 | 1514 | 2898 |
| Latin America | 461 | 1938 | 3714 | 705 | -136 | 550 | 847 | 1016 |
| Africa | 958 | 830 | 2372 | 1129 | -488 | 629 | 554 | 882 |
| Albania | 3.18 | 5.34 | 16.48 | 1.06 | 1.26 | 2.17 | 3.72 | 4.02 |
| Algeria | 33.85 | 73.01 | 216.24 | 164.30 | -127.47 | 36.86 | 30.56 | 85.72 |
| Angola | 17.02 | 21.45 | 47.56 | 94.96 | -84.15 | 10.63 | 3.24 | 10.66 |
| Argentina | 39.50 | 369.62 | 580.36 | 81.91 | -7.47 | 73.07 | 104.99 | 162.57 |
| Armenia | 3.00 | 4.38 | 17.11 | 0.82 | 2.08 | 2.84 | 5.20 | 4.79 |
| Australia | 21.14 | 507.75 | 666.78 | 289.21 | -156.29 | 124.07 | 237.05 | 396.26 |
| Austria | 8.32 | 221.33 | 266.51 | 10.90 | 23.31 | 33.18 | 66.68 | 69.66 |
| Azerbaijan | 8.57 | 16.69 | 63.06 | 52.09 | -39.61 | 11.91 | 20.54 | 27.58 |
| Bahrain | 0.75 | 12.30 | 16.12 | 17.02 | -8.09 | 8.77 | 10.75 | 21.26 |
| Bangladesh | 158.57 | 69.63 | 294.14 | 21.26 | 4.67 | 25.76 | 22.78 | 40.01 |
| Belarus | 9.70 | 21.77 | 82.11 | 4.01 | 23.76 | 28.05 | 32.45 | 62.70 |
| Belgium | 10.62 | 265.96 | 323.58 | 14.36 | 51.87 | 57.02 | 91.54 | 105.95 |
| Benin | 9.03 | 2.96 | 9.21 | 1.77 | 1.14 | 2.88 | 0.61 | 3.13 |
| Bolivia | 9.52 | 10.72 | 25.33 | 15.06 | -9.64 | 5.44 | 4.90 | 12.31 |
| Bosnia and Herzegovina | 3.77 | 7.22 | 29.34 | 3.94 | 1.65 | 5.60 | 9.00 | 17.99 |
| Botswana | 1.88 | 8.83 | 20.94 | 1.11 | 0.93 | 2.02 | 2.72 | 4.76 |
| Brazil | 191.60 | 808.95 | 1561.26 | 215.58 | 24.81 | 235.56 | 412.69 | 347.09 |

(a) Gross production + imports - exports - transmission/distribution losses.

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

| TPES/ pop. (toe/capita) | TPES/ GDP (toe/000 2000 US\$) | TPES/ GDP (PPP) (toe/000 2000 US\$) | Elec. cons./pop. (kWh/ capita) | CO ₂ / TPES (t CO ₂ / toe) | CO ₂ / pop. (t CO ₂ / capita) | CO ₂ / GDP (kg CO ₂ / 2000 US\$) | CO ₂ / GDP (PPP) (kg CO ₂ / 2000 US\$) | Region/ Country/ Economy |
|-------------------------------|--|--|---|---|--|---|---|--------------------------------|
| 1.82 | 0.30 | 0.20 | 2752 | 2.41 | 4.38 | 0.73 | 0.47 | World |
| 4.64 | 0.18 | 0.17 | 8477 | 2.37 | 10.97 | 0.43 | 0.40 | OECD |
| 2.86 | 0.62 | 0.36 | 3252 | 2.52 | 7.19 | 1.56 | 0.89 | Middle East |
| 3.59 | 1.64 | 0.41 | 4608 | 2.37 | 8.50 | 3.89 | 0.98 | Former Soviet Union |
| 1.99 | 0.61 | 0.21 | 3302 | 2.57 | 5.10 | 1.56 | 0.53 | Non-OECD Europe |
| 1.48 | 0.75 | 0.19 | 2346 | 3.08 | 4.58 | 2.31 | 0.60 | China |
| 0.64 | 0.60 | 0.17 | 705 | 2.11 | 1.35 | 1.26 | 0.35 | Asia |
| 1.19 | 0.28 | 0.15 | 1838 | 1.85 | 2.21 | 0.52 | 0.27 | Latin America |
| 0.66 | 0.76 | 0.27 | 578 | 1.40 | 0.92 | 1.06 | 0.37 | Africa |
| 0.68 | 0.41 | 0.13 | 1168 | 1.85 | 1.27 | 0.75 | 0.24 | Albania |
| 1.09 | 0.50 | 0.17 | 903 | 2.33 | 2.53 | 1.17 | 0.40 | Algeria |
| 0.62 | 0.50 | 0.22 | 190 | 1.00 | 0.63 | 0.50 | 0.22 | Angola |
| 1.85 | 0.20 | 0.13 | 2658 | 2.22 | 4.12 | 0.44 | 0.28 | Argentina |
| 0.95 | 0.65 | 0.17 | 1733 | 1.68 | 1.60 | 1.09 | 0.28 | Armenia |
| 5.87 | 0.24 | 0.19 | 11216 | 3.19 | 18.75 | 0.78 | 0.59 | Australia |
| 3.99 | 0.15 | 0.12 | 8020 | 2.10 | 8.38 | 0.31 | 0.26 | Austria |
| 1.39 | 0.71 | 0.19 | 2397 | 2.32 | 3.22 | 1.65 | 0.44 | Azerbaijan |
| 11.65 | 0.71 | 0.54 | 14276 | 2.42 | 28.23 | 1.73 | 1.32 | Bahrain |
| 0.16 | 0.37 | 0.09 | 144 | 1.55 | 0.25 | 0.57 | 0.14 | Bangladesh |
| 2.89 | 1.29 | 0.34 | 3345 | 2.24 | 6.46 | 2.88 | 0.76 | Belarus |
| 5.37 | 0.21 | 0.18 | 8617 | 1.86 | 9.97 | 0.40 | 0.33 | Belgium |
| 0.32 | 0.97 | 0.31 | 67 | 1.09 | 0.35 | 1.06 | 0.34 | Benin |
| 0.57 | 0.51 | 0.21 | 515 | 2.26 | 1.29 | 1.15 | 0.49 | Bolivia |
| 1.49 | 0.78 | 0.19 | 2385 | 3.21 | 4.77 | 2.49 | 0.61 | Bosnia and Herzegovina |
| 1.07 | 0.23 | 0.10 | 1443 | 2.35 | 2.53 | 0.54 | 0.23 | Botswana |
| 1.23 | 0.29 | 0.15 | 2154 | 1.47 | 1.81 | 0.43 | 0.22 | Brazil |

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

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

| Region/ Country/ Economy | Popu- lation (million) | GDP (billion 2000 US\$) | GDP (PPP) (billion 2000 US\$) | Energy prod. (Mtoe) | Net imports (Mtoe) | TPES (Mtoe) | Elec. cons. ^(a) (TWh) | CO ₂ emissions ^(b) (Mt of CO ₂) |
|--------------------------------|------------------------------|-------------------------------|--|---------------------------|--------------------------|----------------|--|--|
| Brunei Darrussalam | 0.39 | 5.05 | 6.03 | 20.19 | -17.40 | 2.77 | 3.23 | 5.82 |
| Bulgaria | 7.64 | 18.39 | 71.38 | 9.97 | 10.57 | 20.23 | 34.13 | 50.24 |
| Cambodia | 14.45 | 7.15 | 43.50 | 3.62 | 1.54 | 5.13 | 1.35 | 4.43 |
| Cameroon | 18.53 | 12.91 | 35.76 | 10.17 | -2.73 | 7.29 | 4.95 | 4.64 |
| Canada | 32.98 | 869.28 | 1046.87 | 413.19 | -149.79 | 269.37 | 560.43 | 572.94 |
| Chile | 16.60 | 101.34 | 189.63 | 8.45 | 24.13 | 30.79 | 55.20 | 71.04 |
| People's Rep. of China | 1319.98 | 2387.68 | 9911.78 | 1813.98 | 166.75 | 1955.77 | 3072.67 | 6027.85 |
| Chinese Taipei | 22.86 | 416.00 | 636.32 | 12.71 | 101.58 | 109.86 | 233.53 | 276.18 |
| Colombia | 46.12 | 131.09 | 389.60 | 87.60 | -55.97 | 29.05 | 43.33 | 55.92 |
| Congo | 3.77 | 4.16 | 4.68 | 12.54 | -11.25 | 1.27 | 0.48 | 1.26 |
| Dem. Rep. of Congo | 62.40 | 5.86 | 41.00 | 18.41 | -0.17 | 18.09 | 6.08 | 2.44 |
| Costa Rica | 4.46 | 22.85 | 45.98 | 2.51 | 2.42 | 4.77 | 8.31 | 6.56 |
| Cote d'Ivoire | 19.27 | 10.67 | 27.22 | 11.25 | -1.25 | 9.98 | 3.59 | 5.06 |
| Croatia | 4.44 | 25.70 | 57.25 | 4.05 | 5.34 | 9.32 | 16.58 | 22.03 |
| Cuba | 11.26 | 42.69 | 98.51 | 5.16 | 5.08 | 9.90 | 14.67 | 26.16 |
| Cyprus | 0.79 | 11.86 | 17.25 | 0.07 | 2.88 | 2.44 | 4.65 | 7.35 |
| Czech Republic | 10.32 | 77.10 | 209.12 | 33.73 | 11.52 | 45.76 | 67.13 | 122.14 |
| Denmark | 5.46 | 178.98 | 171.82 | 27.04 | -5.51 | 19.65 | 36.43 | 50.46 |
| Dominican Republic | 9.75 | 28.10 | 79.46 | 1.54 | 6.43 | 7.89 | 13.52 | 19.28 |
| Ecuador | 13.34 | 22.14 | 55.20 | 28.91 | -16.13 | 11.80 | 10.52 | 27.00 |
| Egypt | 75.47 | 135.87 | 322.98 | 82.27 | -13.19 | 67.25 | 110.82 | 168.70 |
| El Salvador | 6.85 | 16.01 | 35.19 | 2.83 | 2.24 | 4.88 | 5.73 | 6.22 |
| Eritrea | 4.84 | 0.72 | 4.14 | 0.53 | 0.16 | 0.72 | 0.25 | 0.51 |
| Estonia | 1.34 | 9.63 | 22.03 | 4.40 | 1.54 | 5.63 | 8.42 | 18.05 |
| Ethiopia | 79.09 | 13.76 | 91.24 | 20.86 | 1.98 | 22.81 | 3.17 | 5.96 |
| Finland | 5.29 | 151.26 | 164.81 | 15.95 | 19.98 | 36.47 | 90.76 | 64.44 |
| France | 63.57 | 1505.62 | 1737.96 | 135.45 | 135.86 | 263.72 | 481.41 | 369.31 |
| Gabon | 1.33 | 5.90 | 8.66 | 11.99 | -10.03 | 1.85 | 1.52 | 2.56 |
| Georgia | 4.40 | 5.36 | 16.52 | 1.07 | 2.32 | 3.34 | 7.06 | 5.12 |
| Germany | 82.26 | 2065.35 | 2315.34 | 137.03 | 201.58 | 331.26 | 591.03 | 798.44 |
| Ghana | 23.46 | 7.20 | 55.23 | 6.47 | 3.15 | 9.50 | 5.93 | 9.00 |

(a) Gross production + imports - exports - transmission/distribution losses.

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

| TPES/ pop. (toe/capita) | TPES/ GDP (toe/000 2000 US\$) | TPES/ GDP (PPP) (toe/000 2000 US\$) | Elec. cons./pop. (kWh/ capita) | CO ₂ / TPES (t CO ₂ / toe) | CO ₂ / pop. (t CO ₂ / capita) | CO ₂ / GDP (kg CO ₂ / 2000 US\$) | CO ₂ / GDP (PPP) (kg CO ₂ / 2000 US\$) | Region/ Country/ Economy |
|-------------------------------|--|--|---|---|--|---|---|--------------------------------|
| 7.11 | 0.55 | 0.46 | 8303 | 2.10 | 14.97 | 1.15 | 0.97 | Brunei Darrussalam |
| 2.65 | 1.10 | 0.28 | 4466 | 2.48 | 6.57 | 2.73 | 0.70 | Bulgaria |
| 0.36 | 0.72 | 0.12 | 93 | 0.86 | 0.31 | 0.62 | 0.10 | Cambodia |
| 0.39 | 0.56 | 0.20 | 267 | 0.64 | 0.25 | 0.36 | 0.13 | Cameroon |
| 8.17 | 0.31 | 0.26 | 16995 | 2.13 | 17.37 | 0.66 | 0.55 | Canada |
| 1.86 | 0.30 | 0.16 | 3326 | 2.31 | 4.28 | 0.70 | 0.37 | Chile |
| 1.48 | 0.82 | 0.20 | 2328 | 3.08 | 4.57 | 2.52 | 0.61 | People's Rep. of China |
| 4.81 | 0.26 | 0.17 | 10216 | 2.51 | 12.08 | 0.66 | 0.43 | Chinese Taipei |
| 0.63 | 0.22 | 0.07 | 940 | 1.93 | 1.21 | 0.43 | 0.14 | Colombia |
| 0.34 | 0.30 | 0.27 | 127 | 1.00 | 0.34 | 0.30 | 0.27 | Congo |
| 0.29 | 3.09 | 0.44 | 97 | 0.13 | 0.04 | 0.42 | 0.06 | Dem. Rep. of Congo |
| 1.07 | 0.21 | 0.10 | 1861 | 1.38 | 1.47 | 0.29 | 0.14 | Costa Rica |
| 0.52 | 0.94 | 0.37 | 186 | 0.51 | 0.26 | 0.47 | 0.19 | Cote d'Ivoire |
| 2.10 | 0.36 | 0.16 | 3736 | 2.36 | 4.96 | 0.86 | 0.38 | Croatia |
| 0.88 | 0.23 | 0.10 | 1303 | 2.64 | 2.32 | 0.61 | 0.27 | Cuba |
| 3.10 | 0.21 | 0.14 | 5903 | 3.02 | 9.34 | 0.62 | 0.43 | Cyprus |
| 4.43 | 0.59 | 0.22 | 6503 | 2.67 | 11.83 | 1.58 | 0.58 | Czech Republic |
| 3.60 | 0.11 | 0.11 | 6671 | 2.57 | 9.24 | 0.28 | 0.29 | Denmark |
| 0.81 | 0.28 | 0.10 | 1387 | 2.44 | 1.98 | 0.69 | 0.24 | Dominican Republic |
| 0.88 | 0.53 | 0.21 | 788 | 2.29 | 2.02 | 1.22 | 0.49 | Ecuador |
| 0.89 | 0.49 | 0.21 | 1468 | 2.51 | 2.24 | 1.24 | 0.52 | Egypt |
| 0.71 | 0.31 | 0.14 | 836 | 1.27 | 0.91 | 0.39 | 0.18 | El Salvador |
| 0.15 | 1.00 | 0.17 | 51 | 0.71 | 0.11 | 0.71 | 0.12 | Eritrea |
| 4.20 | 0.58 | 0.26 | 6271 | 3.20 | 13.45 | 1.87 | 0.82 | Estonia |
| 0.29 | 1.66 | 0.25 | 40 | 0.26 | 0.08 | 0.43 | 0.07 | Ethiopia |
| 6.90 | 0.24 | 0.22 | 17164 | 1.77 | 12.19 | 0.43 | 0.39 | Finland |
| 4.15 | 0.18 | 0.15 | 7573 | 1.40 | 5.81 | 0.25 | 0.21 | France |
| 1.39 | 0.31 | 0.21 | 1140 | 1.38 | 1.92 | 0.43 | 0.30 | Gabon |
| 0.76 | 0.62 | 0.20 | 1606 | 1.53 | 1.17 | 0.96 | 0.31 | Georgia |
| 4.03 | 0.16 | 0.14 | 7185 | 2.41 | 9.71 | 0.39 | 0.34 | Germany |
| 0.41 | 1.32 | 0.17 | 253 | 0.95 | 0.38 | 1.25 | 0.16 | Ghana |

| Region/ Country/ Economy | Popu- lation (million) | GDP (billion 2000 US\$) | GDP (PPP) (billion 2000 US\$) | Energy prod. (Mtoe) | Net imports (Mtoe) | TPES (Mtoe) | Elec. cons. ^(a) (TWh) | CO ₂ emissions ^(b) (Mt of CO ₂) |
|--------------------------------|------------------------------|-------------------------------|--|---------------------------|--------------------------|----------------|--|--|
| Gibraltar | 0.03 | 0.88 | 0.92 | 0.00 | 1.36 | 0.15 | 0.16 | 0.47 |
| Greece | 11.19 | 169.74 | 268.13 | 12.15 | 24.38 | 32.18 | 62.99 | 97.84 |
| Guatemala | 13.35 | 24.93 | 58.43 | 5.33 | 3.31 | 8.28 | 7.45 | 11.70 |
| Haiti | 9.61 | 3.95 | 13.20 | 2.01 | 0.79 | 2.78 | 0.29 | 2.31 |
| Honduras | 7.09 | 10.08 | 31.21 | 2.12 | 2.53 | 4.74 | 4.96 | 8.17 |
| Hong Kong (China) | 6.93 | 235.73 | 244.06 | 0.05 | 26.76 | 13.75 | 40.86 | 43.38 |
| Hungary | 10.06 | 62.13 | 162.30 | 10.22 | 16.55 | 26.73 | 39.99 | 53.93 |
| Iceland | 0.31 | 11.63 | 10.83 | 3.95 | 1.17 | 4.89 | 11.48 | 2.34 |
| India | 1123.32 | 771.09 | 4024.89 | 450.92 | 150.03 | 594.91 | 609.74 | 1324.05 |
| Indonesia | 225.63 | 233.20 | 846.86 | 331.10 | -139.59 | 190.65 | 127.17 | 377.18 |
| Islamic Rep. of Iran | 71.02 | 151.80 | 554.02 | 323.07 | -137.79 | 184.94 | 165.12 | 465.90 |
| Iraq | 27.50 | 20.86 | 28.52 | 104.83 | -70.88 | 33.09 | 32.34 | 91.45 |
| Ireland | 4.36 | 141.90 | 159.91 | 1.41 | 14.18 | 15.06 | 27.29 | 44.14 |
| Israel | 7.17 | 152.46 | 191.09 | 2.66 | 20.37 | 21.96 | 50.28 | 65.89 |
| Italy | 59.32 | 1183.77 | 1570.36 | 26.38 | 157.99 | 178.16 | 339.20 | 437.56 |
| Jamaica | 2.68 | 8.27 | 9.60 | 0.50 | 4.79 | 4.96 | 6.80 | 12.69 |
| Japan | 127.76 | 5205.02 | 3620.16 | 90.47 | 434.68 | 513.52 | 1082.72 | 1236.34 |
| Jordan | 5.72 | 12.86 | 30.61 | 0.28 | 7.33 | 7.20 | 11.18 | 19.17 |
| Kazakhstan | 15.48 | 36.11 | 127.68 | 135.99 | -69.74 | 66.46 | 68.88 | 190.45 |
| Kenya | 37.53 | 17.25 | 43.04 | 14.72 | 3.63 | 18.30 | 5.71 | 11.43 |
| Korea | 48.46 | 705.65 | 1065.75 | 42.48 | 190.28 | 222.20 | 411.97 | 488.71 |
| DPR of Korea | 23.78 | 11.38 | 40.03 | 19.69 | -1.31 | 18.38 | 18.12 | 62.32 |
| Kuwait | 2.66 | 62.16 | 70.73 | 146.57 | -120.24 | 25.20 | 43.13 | 66.83 |
| Kyrgyzstan | 5.24 | 1.84 | 9.88 | 1.43 | 1.49 | 2.91 | 9.28 | 5.71 |
| Latvia | 2.28 | 14.37 | 34.71 | 1.80 | 3.03 | 4.67 | 6.97 | 8.34 |
| Lebanon | 4.10 | 20.94 | 20.20 | 0.21 | 3.92 | 3.99 | 8.97 | 11.35 |
| Libyan Arab Jamahiriya | 6.16 | 49.61 | 67.42 | 101.59 | -83.49 | 17.82 | 23.88 | 43.13 |
| Lithuania | 3.38 | 19.49 | 52.07 | 3.80 | 5.73 | 9.25 | 11.53 | 14.44 |
| Luxembourg | 0.48 | 27.05 | 31.20 | 0.08 | 4.54 | 4.22 | 7.83 | 10.73 |
| FYR of Macedonia | 2.04 | 4.20 | 14.25 | 1.50 | 1.47 | 3.02 | 7.71 | 9.12 |

(a) Gross production + imports - exports - transmission/distribution losses.

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

| TPES/ pop. (toe/capita) | TPES/ GDP (toe/000 2000 US\$) | TPES/ GDP (PPP) (toe/000 2000 US\$) | Elec. cons./pop. (kWh/ capita) | CO ₂ / TPES (t CO ₂ / toe) | CO ₂ / pop. (t CO ₂ / capita) | CO ₂ / GDP (kg CO ₂ / 2000 US\$) | CO ₂ / GDP (PPP) (kg CO ₂ / 2000 US\$) | Region/ Country/ Economy |
|-------------------------------|--|--|---|---|--|---|---|--------------------------------|
| 5.49 | 0.17 | 0.17 | 5536 | 3.06 | 16.79 | 0.53 | 0.51 | Gibraltar |
| 2.88 | 0.19 | 0.12 | 5628 | 3.04 | 8.74 | 0.58 | 0.36 | Greece |
| 0.62 | 0.33 | 0.14 | 558 | 1.41 | 0.88 | 0.47 | 0.20 | Guatemala |
| 0.29 | 0.70 | 0.21 | 31 | 0.83 | 0.24 | 0.59 | 0.18 | Haiti |
| 0.67 | 0.47 | 0.15 | 700 | 1.72 | 1.15 | 0.81 | 0.26 | Honduras |
| 1.98 | 0.06 | 0.06 | 5899 | 3.16 | 6.26 | 0.18 | 0.18 | Hong Kong (China) |
| 2.66 | 0.43 | 0.16 | 3976 | 2.02 | 5.36 | 0.87 | 0.33 | Hungary |
| 15.74 | 0.42 | 0.45 | 36920 | 0.48 | 7.53 | 0.20 | 0.22 | Iceland |
| 0.53 | 0.77 | 0.15 | 543 | 2.23 | 1.18 | 1.72 | 0.33 | India |
| 0.84 | 0.82 | 0.23 | 564 | 1.98 | 1.67 | 1.62 | 0.45 | Indonesia |
| 2.60 | 1.22 | 0.33 | 2325 | 2.52 | 6.56 | 3.07 | 0.84 | Islamic Rep. of Iran |
| 1.20 | 1.59 | 1.16 | 1176 | 2.76 | 3.33 | 4.38 | 3.21 | Iraq |
| 3.46 | 0.11 | 0.09 | 6263 | 2.93 | 10.13 | 0.31 | 0.28 | Ireland |
| 3.06 | 0.14 | 0.11 | 7010 | 3.00 | 9.19 | 0.43 | 0.34 | Israel |
| 3.00 | 0.15 | 0.11 | 5718 | 2.46 | 7.38 | 0.37 | 0.28 | Italy |
| 1.85 | 0.60 | 0.52 | 2541 | 2.56 | 4.74 | 1.53 | 1.32 | Jamaica |
| 4.02 | 0.10 | 0.14 | 8475 | 2.41 | 9.68 | 0.24 | 0.34 | Japan |
| 1.26 | 0.56 | 0.24 | 1956 | 2.66 | 3.35 | 1.49 | 0.63 | Jordan |
| 4.29 | 1.84 | 0.52 | 4449 | 2.87 | 12.30 | 5.27 | 1.49 | Kazakhstan |
| 0.49 | 1.06 | 0.43 | 152 | 0.62 | 0.30 | 0.66 | 0.27 | Kenya |
| 4.59 | 0.31 | 0.21 | 8502 | 2.20 | 10.09 | 0.69 | 0.46 | Korea |
| 0.77 | 1.61 | 0.46 | 762 | 3.39 | 2.62 | 5.48 | 1.56 | DPR of Korea |
| 9.46 | 0.41 | 0.36 | 16198 | 2.65 | 25.09 | 1.08 | 0.94 | Kuwait |
| 0.56 | 1.58 | 0.29 | 1769 | 1.96 | 1.09 | 3.10 | 0.58 | Kyrgyzstan |
| 2.05 | 0.32 | 0.13 | 3064 | 1.79 | 3.66 | 0.58 | 0.24 | Latvia |
| 0.97 | 0.19 | 0.20 | 2188 | 2.84 | 2.77 | 0.54 | 0.56 | Lebanon |
| 2.90 | 0.36 | 0.26 | 3880 | 2.42 | 7.01 | 0.87 | 0.64 | Libyan Arab Jamahiriya |
| 2.74 | 0.47 | 0.18 | 3414 | 1.56 | 4.28 | 0.74 | 0.28 | Lithuania |
| 8.79 | 0.16 | 0.14 | 16315 | 2.54 | 22.35 | 0.40 | 0.34 | Luxembourg |
| 1.48 | 0.72 | 0.21 | 3785 | 3.02 | 4.48 | 2.17 | 0.64 | FYR of Macedonia |

| Region/ Country/ Economy | Popu- lation (million) | GDP (billion 2000 US\$) | GDP (PPP) (billion 2000 US\$) | Energy prod. (Mtoe) | Net imports (Mtoe) | TPES (Mtoe) | Elec. cons. ^(a) (TWh) | CO ₂ emissions ^(b) (Mt of CO ₂) |
|--------------------------------|------------------------------|-------------------------------|--|---------------------------|--------------------------|----------------|--|--|
| Malaysia | 26.55 | 132.99 | 290.31 | 94.35 | -19.76 | 72.59 | 97.39 | 177.38 |
| Malta | 0.41 | 4.35 | 7.72 | 0.00 | 1.80 | 0.87 | 1.98 | 2.72 |
| Mexico | 105.68 | 755.11 | 1169.19 | 251.05 | -62.16 | 184.26 | 214.34 | 437.92 |
| Republic of Moldova | 3.79 | 1.96 | 8.58 | 0.09 | 3.29 | 3.34 | 4.84 | 7.50 |
| Mongolia | 2.61 | 1.78 | 6.92 | 3.55 | -0.40 | 3.09 | 3.58 | 11.28 |
| Morocco | 30.86 | 52.24 | 157.80 | 0.65 | 14.08 | 14.36 | 22.08 | 40.84 |
| Mozambique | 21.37 | 7.47 | 28.31 | 10.99 | -1.74 | 9.15 | 10.32 | 1.97 |
| Myanmar | 48.78 | 18.33 | 110.86 | 23.94 | -8.15 | 15.65 | 4.62 | 12.37 |
| Namibia | 2.07 | 4.70 | 15.22 | 0.33 | 1.23 | 1.56 | 3.22 | 3.18 |
| Nepal | 28.11 | 6.92 | 40.85 | 8.53 | 1.10 | 9.55 | 2.27 | 3.21 |
| Netherlands | 16.38 | 439.76 | 534.06 | 61.45 | 38.57 | 80.42 | 116.26 | 182.20 |
| Netherlands Antilles | 0.19 | 1.31 | 2.95 | 0.00 | 4.06 | 2.18 | 1.09 | 4.50 |
| New Zealand | 4.19 | 66.38 | 101.07 | 14.00 | 4.33 | 16.77 | 40.69 | 35.47 |
| Nicaragua | 5.61 | 4.96 | 19.40 | 2.06 | 1.49 | 3.47 | 2.49 | 4.40 |
| Nigeria | 147.98 | 69.63 | 159.92 | 231.71 | -124.25 | 106.68 | 20.27 | 51.38 |
| Norway | 4.71 | 198.09 | 190.75 | 213.91 | -186.78 | 26.86 | 117.64 | 36.93 |
| Oman | 2.60 | 28.86 | 44.73 | 59.27 | -41.63 | 15.48 | 12.22 | 35.85 |
| Pakistan | 162.39 | 106.21 | 376.24 | 63.64 | 20.22 | 83.27 | 77.09 | 138.42 |
| Panama | 3.34 | 17.37 | 26.67 | 0.70 | 1.99 | 2.82 | 5.32 | 6.49 |
| Paraguay | 6.12 | 8.94 | 28.15 | 7.14 | -2.91 | 4.20 | 5.87 | 3.70 |
| Peru | 27.90 | 76.74 | 176.54 | 12.21 | 3.77 | 14.08 | 27.39 | 30.32 |
| Philippines | 87.89 | 106.78 | 429.74 | 22.40 | 18.64 | 39.98 | 52.00 | 71.77 |
| Poland | 38.12 | 225.85 | 532.45 | 72.65 | 25.30 | 97.11 | 139.58 | 304.69 |
| Portugal | 10.61 | 121.57 | 188.34 | 4.62 | 21.82 | 25.07 | 51.56 | 55.20 |
| Qatar | 0.84 | 32.40 | 29.02 | 102.99 | -79.99 | 22.19 | 14.69 | 48.49 |
| Romania | 21.55 | 55.93 | 199.67 | 27.55 | 12.09 | 38.91 | 52.83 | 91.93 |
| Russian Federation | 141.64 | 406.18 | 1603.73 | 1230.63 | -544.40 | 672.14 | 897.68 | 1587.36 |
| Saudi Arabia | 24.20 | 242.05 | 360.74 | 551.30 | -396.05 | 150.33 | 175.07 | 357.90 |
| Senegal | 12.41 | 6.32 | 21.33 | 1.26 | 1.89 | 2.67 | 1.52 | 4.24 |
| Serbia | 7.39 | 13.14 | 48.37 | 9.75 | 6.05 | 15.81 | 30.67 | 49.71 |
| Singapore | 4.59 | 132.91 | 135.88 | 0.00 | 54.03 | 26.75 | 39.07 | 44.97 |

(a) Gross production + imports - exports - transmission/distribution losses.

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

| TPES/ pop. (toe/capita) | TPES/ GDP (toe/000 2000 US\$) | TPES/ GDP (PPP) (toe/000 2000 US\$) | Elec. cons./pop. (kWh/ capita) | CO ₂ / TPES (t CO ₂ / toe) | CO ₂ / pop. (t CO ₂ / capita) | CO ₂ / GDP (kg CO ₂ / 2000 US\$) | CO ₂ / GDP (PPP) (kg CO ₂ / 2000 US\$) | Region/ Country/ Economy |
|-------------------------------|--|--|---|---|--|---|---|--------------------------------|
| 2.73 | 0.55 | 0.25 | 3668 | 2.44 | 6.68 | 1.33 | 0.61 | Malaysia |
| 2.12 | 0.20 | 0.11 | 4846 | 3.14 | 6.65 | 0.63 | 0.35 | Malta |
| 1.74 | 0.24 | 0.16 | 2028 | 2.38 | 4.14 | 0.58 | 0.37 | Mexico |
| 0.88 | 1.71 | 0.39 | 1276 | 2.25 | 1.98 | 3.83 | 0.87 | Republic of Moldova |
| 1.18 | 1.73 | 0.45 | 1369 | 3.65 | 4.32 | 6.32 | 1.63 | Mongolia |
| 0.47 | 0.27 | 0.09 | 715 | 2.84 | 1.32 | 0.78 | 0.26 | Morocco |
| 0.43 | 1.22 | 0.32 | 483 | 0.22 | 0.09 | 0.26 | 0.07 | Mozambique |
| 0.32 | 0.85 | 0.14 | 95 | 0.79 | 0.25 | 0.67 | 0.11 | Myanmar |
| 0.75 | 0.33 | 0.10 | 1552 | 2.05 | 1.54 | 0.68 | 0.21 | Namibia |
| 0.34 | 1.38 | 0.23 | 81 | 0.34 | 0.11 | 0.46 | 0.08 | Nepal |
| 4.91 | 0.18 | 0.15 | 7099 | 2.27 | 11.13 | 0.41 | 0.34 | Netherlands |
| 11.39 | 1.66 | 0.74 | 5691 | 2.07 | 23.57 | 3.44 | 1.53 | Netherlands Antilles |
| 4.01 | 0.25 | 0.17 | 9722 | 2.12 | 8.48 | 0.53 | 0.35 | New Zealand |
| 0.62 | 0.70 | 0.18 | 445 | 1.27 | 0.79 | 0.89 | 0.23 | Nicaragua |
| 0.72 | 1.53 | 0.67 | 137 | 0.48 | 0.35 | 0.74 | 0.32 | Nigeria |
| 5.71 | 0.14 | 0.14 | 24997 | 1.37 | 7.85 | 0.19 | 0.19 | Norway |
| 5.95 | 0.54 | 0.35 | 4702 | 2.32 | 13.79 | 1.24 | 0.80 | Oman |
| 0.51 | 0.78 | 0.22 | 475 | 1.66 | 0.85 | 1.30 | 0.37 | Pakistan |
| 0.85 | 0.16 | 0.11 | 1594 | 2.30 | 1.94 | 0.37 | 0.24 | Panama |
| 0.69 | 0.47 | 0.15 | 959 | 0.88 | 0.60 | 0.41 | 0.13 | Paraguay |
| 0.50 | 0.18 | 0.08 | 982 | 2.15 | 1.09 | 0.40 | 0.17 | Peru |
| 0.45 | 0.37 | 0.09 | 592 | 1.80 | 0.82 | 0.67 | 0.17 | Philippines |
| 2.55 | 0.43 | 0.18 | 3662 | 3.14 | 7.99 | 1.35 | 0.57 | Poland |
| 2.36 | 0.21 | 0.13 | 4861 | 2.20 | 5.20 | 0.45 | 0.29 | Portugal |
| 26.54 | 0.68 | 0.76 | 17573 | 2.19 | 58.01 | 1.50 | 1.67 | Qatar |
| 1.81 | 0.70 | 0.19 | 2452 | 2.36 | 4.27 | 1.64 | 0.46 | Romania |
| 4.75 | 1.65 | 0.42 | 6338 | 2.36 | 11.21 | 3.91 | 0.99 | Russian Federation |
| 6.21 | 0.62 | 0.42 | 7236 | 2.38 | 14.79 | 1.48 | 0.99 | Saudi Arabia |
| 0.22 | 0.42 | 0.13 | 122 | 1.59 | 0.34 | 0.67 | 0.20 | Senegal |
| 2.14 | 1.20 | 0.33 | 4153 | 3.14 | 6.73 | 3.78 | 1.03 | Serbia |
| 5.83 | 0.20 | 0.20 | 8513 | 1.68 | 9.80 | 0.34 | 0.33 | Singapore |

| Region/ Country/ Economy | Popu- lation (million) | GDP (billion 2000 US\$) | GDP (PPP) (billion 2000 US\$) | Energy prod. (Mtoe) | Net imports (Mtoe) | TPES (Mtoe) | Elec. cons. ^(a) (TWh) | CO ₂ emissions ^(b) (Mt of CO ₂) |
|--------------------------------|------------------------------|-------------------------------|--|---------------------------|--------------------------|----------------|--|--|
| Slovak Republic | 5.40 | 31.05 | 90.15 | 5.98 | 12.34 | 17.85 | 28.34 | 36.80 |
| Slovenia | 2.02 | 26.91 | 46.66 | 3.46 | 3.88 | 7.33 | 14.41 | 15.92 |
| South Africa | 47.59 | 178.01 | 516.63 | 159.59 | -21.86 | 134.34 | 238.56 | 345.77 |
| Spain | 44.87 | 734.34 | 1084.35 | 30.33 | 123.77 | 143.95 | 282.54 | 344.70 |
| Sri Lanka | 19.95 | 22.81 | 93.09 | 5.08 | 4.37 | 9.28 | 8.34 | 12.83 |
| Sudan | 38.56 | 20.31 | 81.40 | 34.63 | -18.80 | 14.67 | 3.64 | 10.87 |
| Sweden | 9.15 | 297.82 | 298.31 | 33.58 | 19.00 | 50.42 | 139.40 | 46.20 |
| Switzerland | 7.51 | 284.50 | 259.18 | 12.62 | 14.14 | 25.72 | 61.64 | 42.18 |
| Syrian Arab Republic | 19.89 | 26.62 | 73.24 | 24.36 | -4.47 | 19.64 | 29.49 | 53.73 |
| Tajikistan | 6.74 | 1.55 | 7.91 | 1.58 | 2.32 | 3.90 | 14.64 | 6.90 |
| United Rep. of Tanzania | 40.43 | 14.32 | 27.81 | 16.90 | 1.50 | 18.28 | 3.37 | 5.42 |
| Thailand | 63.83 | 173.15 | 547.96 | 59.37 | 47.95 | 103.99 | 137.68 | 225.75 |
| Togo | 6.58 | 1.57 | 8.58 | 2.10 | 0.35 | 2.46 | 0.61 | 0.90 |
| Trinidad and Tobago | 1.33 | 14.21 | 20.35 | 36.98 | -21.62 | 15.28 | 7.49 | 29.13 |
| Tunisia | 10.25 | 27.12 | 83.75 | 7.90 | 1.14 | 8.84 | 12.77 | 20.44 |
| Turkey | 73.90 | 371.84 | 821.01 | 27.27 | 75.79 | 100.01 | 163.35 | 265.00 |
| Turkmenistan | 4.96 | 7.08 | 38.18 | 66.09 | -48.01 | 18.07 | 11.34 | 45.31 |
| Ukraine | 46.38 | 52.22 | 331.61 | 81.60 | 59.61 | 137.34 | 164.13 | 313.96 |
| United Arab Emirates | 4.37 | 115.24 | 113.85 | 178.35 | -108.94 | 51.64 | 70.54 | 130.58 |
| United Kingdom | 60.78 | 1765.77 | 1832.63 | 176.23 | 44.88 | 211.31 | 373.36 | 523.01 |
| United States | 302.09 | 11468.00 | 11468.00 | 1665.18 | 713.97 | 2339.94 | 4113.07 | 5769.31 |
| Uruguay | 3.32 | 24.88 | 35.23 | 1.21 | 2.19 | 3.17 | 7.30 | 5.73 |
| Uzbekistan | 26.87 | 21.04 | 56.45 | 60.05 | -11.34 | 48.68 | 44.56 | 113.37 |
| Venezuela | 27.47 | 158.96 | 189.96 | 183.83 | -118.74 | 63.75 | 84.55 | 143.79 |
| Vietnam | 85.14 | 52.56 | 267.04 | 73.93 | -19.96 | 55.79 | 61.97 | 93.59 |
| Yemen | 22.38 | 12.42 | 19.39 | 16.50 | -8.79 | 7.21 | 4.50 | 20.55 |
| Zambia | 11.92 | 4.60 | 11.95 | 6.83 | 0.74 | 7.44 | 8.87 | 2.37 |
| Zimbabwe | 13.40 | 5.02 | 21.37 | 8.67 | 0.77 | 9.45 | 11.18 | 9.32 |

(a) Gross production + imports - exports - transmission/distribution losses.

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

| TPES/ pop. (toe/capita) | TPES/ GDP (toe/000 2000 US\$) | TPES/ GDP (PPP) (toe/000 2000 US\$) | Elec. cons./pop. (kWh/ capita) | CO ₂ / TPES (t CO ₂ / toe) | CO ₂ / pop. (t CO ₂ / capita) | CO ₂ / GDP (kg CO ₂ / 2000 US\$) | CO ₂ / GDP (PPP) (kg CO ₂ / 2000 US\$) | Region/ Country/ Economy |
|-------------------------------|--|--|---|---|--|---|---|--------------------------------|
| 3.31 | 0.57 | 0.20 | 5251 | 2.06 | 6.82 | 1.18 | 0.41 | Slovak Republic |
| 3.63 | 0.27 | 0.16 | 7138 | 2.17 | 7.89 | 0.59 | 0.34 | Slovenia |
| 2.82 | 0.75 | 0.26 | 5013 | 2.57 | 7.27 | 1.94 | 0.67 | South Africa |
| 3.21 | 0.20 | 0.13 | 6296 | 2.39 | 7.68 | 0.47 | 0.32 | Spain |
| 0.47 | 0.41 | 0.10 | 418 | 1.38 | 0.64 | 0.56 | 0.14 | Sri Lanka |
| 0.38 | 0.72 | 0.18 | 94 | 0.74 | 0.28 | 0.54 | 0.13 | Sudan |
| 5.51 | 0.17 | 0.17 | 15238 | 0.92 | 5.05 | 0.16 | 0.15 | Sweden |
| 3.42 | 0.09 | 0.10 | 8209 | 1.64 | 5.62 | 0.15 | 0.16 | Switzerland |
| 0.99 | 0.74 | 0.27 | 1483 | 2.74 | 2.70 | 2.02 | 0.73 | Syrian Arab Republic |
| 0.58 | 2.51 | 0.49 | 2172 | 1.77 | 1.02 | 4.45 | 0.87 | Tajikistan |
| 0.45 | 1.28 | 0.66 | 83 | 0.30 | 0.13 | 0.38 | 0.19 | United Rep. of Tanzania |
| 1.63 | 0.60 | 0.19 | 2157 | 2.17 | 3.54 | 1.30 | 0.41 | Thailand |
| 0.37 | 1.57 | 0.29 | 92 | 0.36 | 0.14 | 0.57 | 0.10 | Togo |
| 11.46 | 1.08 | 0.75 | 5622 | 1.91 | 21.85 | 2.05 | 1.43 | Trinidad and Tobago |
| 0.86 | 0.33 | 0.11 | 1246 | 2.31 | 1.99 | 0.75 | 0.24 | Tunisia |
| 1.35 | 0.27 | 0.12 | 2210 | 2.65 | 3.59 | 0.71 | 0.32 | Turkey |
| 3.64 | 2.55 | 0.47 | 2285 | 2.51 | 9.13 | 6.40 | 1.19 | Turkmenistan |
| 2.96 | 2.63 | 0.41 | 3539 | 2.29 | 6.77 | 6.01 | 0.95 | Ukraine |
| 11.83 | 0.45 | 0.45 | 16161 | 2.53 | 29.91 | 1.13 | 1.15 | United Arab Emirates |
| 3.48 | 0.12 | 0.12 | 6142 | 2.48 | 8.60 | 0.30 | 0.29 | United Kingdom |
| 7.75 | 0.20 | 0.20 | 13616 | 2.47 | 19.10 | 0.50 | 0.50 | United States |
| 0.95 | 0.13 | 0.09 | 2200 | 1.81 | 1.73 | 0.23 | 0.16 | Uruguay |
| 1.81 | 2.31 | 0.86 | 1658 | 2.33 | 4.22 | 5.39 | 2.01 | Uzbekistan |
| 2.32 | 0.40 | 0.34 | 3078 | 2.26 | 5.24 | 0.90 | 0.76 | Venezuela |
| 0.66 | 1.06 | 0.21 | 728 | 1.68 | 1.10 | 1.78 | 0.35 | Vietnam |
| 0.32 | 0.58 | 0.37 | 201 | 2.85 | 0.92 | 1.65 | 1.06 | Yemen |
| 0.62 | 1.62 | 0.62 | 744 | 0.32 | 0.20 | 0.51 | 0.20 | Zambia |
| 0.70 | 1.88 | 0.44 | 834 | 0.99 | 0.70 | 1.86 | 0.44 | Zimbabwe |

Sources: Energy data: IEA

Population: OECD/World Bank

GDP and GDP(PPP) (in 2000 US\$): OECD/World Bank/CEPII (Paris)

General conversion factors for energy

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

Conversion factors for mass

| To: | kg | t | lt | st | lb |
|----------------|---------------------|-----------------------|-----------------------|------------------------|--------|
| From: | <i>multiply by:</i> | | | | |
| kilogram (kg) | 1 | 0.001 | 9.84×10^{-4} | 1.102×10^{-3} | 2.2046 |
| tonne (t) | 1000 | 1 | 0.984 | 1.1023 | 2204.6 |
| long ton (lt) | 1016 | 1.016 | 1 | 1.120 | 2240.0 |
| short ton (st) | 907.2 | 0.9072 | 0.893 | 1 | 2000.0 |
| pound (lb) | 0.454 | 4.54×10^{-4} | 4.46×10^{-4} | 5.0×10^{-4} | 1 |

Conversion factors for volume

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

Selected country-specific net calorific values

Coal*

| | toe/tonne |
|------------------------|-----------|
| People's Rep. of China | 0.531 |
| United States | 0.635 |
| India | 0.441 |
| Australia | 0.614 |
| Russian Federation | 0.545 |
| Indonesia | 0.616 |
| South Africa | 0.564 |
| Kazakhstan | 0.444 |
| Poland | 0.548 |
| Colombia | 0.650 |

*steam coal for the top-ten producers in 2008.

Crude oil*

| | toe/tonne |
|------------------------|-----------|
| Saudi Arabia | 1.016 |
| Russian Federation | 1.005 |
| United States | 1.033 |
| Islamic Rep. of Iran | 1.019 |
| People's Rep. of China | 1.000 |
| Mexico | 1.041 |
| Canada | 1.022 |
| Kuwait | 1.016 |
| Venezuela | 1.069 |
| United Arab Emirates | 1.018 |

*for the top-ten producers in 2008.

Default net calorific values

Petroleum products

| | OECD Europe* | OECD North America | OECD Pacific | 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 |
| Residual 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 petroleum products | 0.955 | 0.955 | 0.955 | 0.955 |

*Defaults for OECD Europe were also applied to non-OECD Europe and Former Soviet Union countries.

Selected country-specific gross calorific values

Natural gas*

| | kJ/m ³ |
|------------------------|-------------------|
| Russian Federation | 37578 |
| United States | 38341 |
| Canada | 38110 |
| Islamic Rep. of Iran | 39356 |
| Norway | 39668 |
| Netherlands | 33339 |
| Algeria | 42000 |
| Qatar | 41400 |
| Indonesia | 40600 |
| People's Rep. of China | 38931 |

*for the top-ten producers in 2008.

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

Conventions for electricity

Figures for electricity production, trade, and final consumption are calculated using the energy content of the electricity (i.e. at a rate of 1 TWh = 0.086 Mtoe). Hydro-electricity production (excluding pumped storage) and electricity produced by other non-thermal means (wind, tide/wave/ocean, photovoltaic, etc.) are accounted for similarly using 1 TWh = 0.086 Mtoe. However, the primary energy equivalent of nuclear electricity is calculated from the gross generation by assuming a 33% conversion efficiency, i.e. 1 TWh = (0.086 ÷ 0.33) Mtoe. In the case of electricity produced from geothermal heat, if the actual geothermal efficiency is not known, then the primary equivalent is calculated assuming an efficiency of 10%, so 1 TWh = (0.086 ÷ 0.1) Mtoe.

| | |
|---|---|
| Coal/peat | <i>Coal/peat</i> includes all coal, both primary (including hard coal and lignite/brown coal) and derived fuels (including patent fuel, coke oven coke, gas coke, BKB, coke oven gas, blast furnace gas and oxygen steel furnace gas). Peat is also included in this category. |
| Crude oil | <i>Crude oil</i> comprises crude oil, natural gas liquids, refinery feedstocks and additives as well as other hydrocarbons. |
| Petroleum products | <i>Petroleum products</i> comprises refinery gas, ethane, LPG, aviation gasoline, motor gasoline, jet fuels, kerosene, gas/diesel oil, heavy fuel oil, naphtha, white spirit, lubricants, bitumen, paraffin waxes, petroleum coke and other petroleum products. |
| Gas | <i>Gas</i> includes natural gas (excluding natural gas liquids) and gas works gas. The latter appears as a positive figure in the "gas works" row but is not part of indigenous production. |
| Nuclear | <i>Nuclear</i> shows the primary heat equivalent of the electricity produced by a nuclear power plant with an average thermal efficiency of 33 per cent. |
| Hydro | <i>Hydro</i> shows the energy content of the electricity produced in hydro power plants. Hydro output excludes output from pumped storage plants. |
| Combustible renewables & waste | <i>Combustible renewables & waste</i> comprises solid biomass, liquid biomass, biogas, industrial waste and municipal waste. Biomass is 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 sulfite lyes. Municipal waste comprises wastes produced by the residential, commercial and public service sectors that are collected by local authorities for disposal in a central location for the production of heat and/or power. |
| Other | <i>Other</i> includes geothermal, solar, wind, tide/wave/ocean energy, electricity and heat. Unless the actual efficiency of the geothermal process is known, the quantity of geothermal energy entering electricity generation is inferred from the electricity production at geothermal plants assuming an average thermal efficiency of 10 per cent. For solar, wind and tide/wave/ocean energy, the quantities entering electricity generation are equal to the electrical energy generated. Direct use of geothermal and solar heat is also included here. Electricity is accounted for at the same heat value as electricity in final consumption (i.e. 1 GWh = 0.000086 Mtoe). Heat includes heat that is produced for sale and is accounted for in the transformation sector. |

Production

Production is the production of primary energy, i.e. hard coal, lignite/brown coal, peat, crude oil, NGLs, natural gas, combustible renewables 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.

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 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.

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| Stock changes | <i>Stock changes</i> reflects the difference between opening stock levels on the first day of the year and closing levels on the last day of the year of stocks on national territory held by producers, importers, energy transformation industries and large consumers. A stock build is shown as a negative number, and a stock draw as a positive number. |
| Total primary energy supply (TPES) | <i>Total primary energy supply (TPES)</i> is made up of production + imports – exports – international marine bunkers – international aviation bunkers ± stock changes. For the world total, international marine bunkers and international aviation bunkers are not subtracted from TPES. |
| Transfers | <i>Transfers</i> includes both interproduct transfers, products transferred and recycled products. |
| Statistical differences | <i>Statistical differences</i> includes the sum of the unexplained statistical differences for individual fuels, as they appear in the basic energy statistics. It also includes the statistical differences that arise because of the variety of conversion factors in the coal and oil columns. |
| Electricity plants | <i>Electricity plants</i> refers to plants which are designed to produce electricity only. If one or more units of the plant is a CHP unit (and the inputs and outputs can not be distinguished on a unit basis) then the whole plant is designated as a CHP plant. Both main activity producers and autoproducer plants are included here. |
| Combined heat and power plants | <i>Combined heat and power plants</i> refers to plants which are designed to produce both heat and electricity, sometimes referred as co-generation power stations. If possible, fuel inputs and electricity/heat outputs are on a unit basis rather than on a plant basis. However, if data are not available on a unit basis, the convention for defining a CHP plant noted above is adopted. Both main activity producers and autoproducer plants are included here. |
| Heat plants | <i>Heat plants</i> refers to plants (including heat pumps and electric boilers) designed to produce heat only, which is sold to a third party under the provisions of a contract. Both main activity producers and autoproducer plants are included here. |
| Gas works | <i>Gas works</i> is treated similarly to electricity generation, with the quantity produced appearing as a positive figure in the gas column, inputs as negative entries in the coal and petroleum products columns, and conversion losses appearing in the total column. |

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| Petroleum refineries | <i>Petroleum refineries</i> shows the use of primary energy for the manufacture of finished petroleum 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 the petroleum products. |
| Coal transformation | <i>Coal transformation</i> contains losses in transformation of coal from primary to secondary fuels and from secondary to tertiary fuels (hard coal to coke, coke to blast furnace gas, lignite to BKB, etc.). |
| Liquefaction | <i>Liquefaction</i> includes diverse liquefaction processes, such as coal liquefaction plants and gas-to-liquid plants. |
| Other transformation | <i>Other transformation</i> covers non-specified transformation not shown elsewhere. It also includes backflows from the petrochemical sector. |
| Own use | <i>Own use</i> contains the primary and secondary energy consumed by transformation industries for heating, pumping, traction and lighting purposes [International Standard Industrial Classification (ISIC) Divisions 10-12, 23 and 40]. These quantities are shown as negative figures. Included here are, for example, coal mines' own use of energy, power plants' own consumption (which includes net electricity consumed for pumped storage), and energy used for oil and gas extraction. |
| Distribution and transmission losses | <i>Distribution and transmission losses</i> includes losses in gas distribution, electricity transmission and coal transport. |
| Total final consumption (TFC) | <i>Total final consumption (TFC)</i> is the sum of consumption by the different end-use sectors. Backflows from the petrochemical industry are not included in final consumption. |
| Industry sector | <i>Industry sector</i> consumption is specified in the following subsectors (energy used for transport by industry is not included here but reported under transport): <ul style="list-style-type: none">■ <i>Iron and steel industry</i> [ISIC Group 271 and Class 2731];■ <i>Chemical and petrochemical industry</i> [ISIC Division 24] excluding petrochemical feedstocks;■ <i>Non-ferrous metals</i> basic industries [ISIC Group 272 and Class 2732];■ <i>Non-metallic mineral products</i> such as glass, ceramic, cement, etc. [ISIC Division 26];■ <i>Transport equipment</i> [ISIC Divisions 34 and 35];■ <i>Machinery</i> comprises fabricated metal products, machinery and equipment other than transport equipment [ISIC Divisions 28 to 32]; |

Industry sector (ctd.)

- *Mining (excluding fuels) and quarrying* [ISIC Divisions 13 and 14];
- *Food and tobacco* [ISIC Divisions 15 and 16];
- *Paper, pulp and printing* [ISIC Divisions 21 and 22];
- *Wood and wood products* (other than pulp and paper) [ISIC Division 20];
- *Construction* [ISIC Division 45];
- *Textile and leather* [ISIC Divisions 17 to 19];
- *Non-specified* (any manufacturing industry not included above) [ISIC Divisions 25, 33, 36 and 37].

Transport sector

Transport sector includes all fuels used for transport [ISIC Divisions 60 to 62]. It includes transport in the industry sector and covers road, railway, domestic aviation, domestic navigation, fuels used for transport of materials by pipeline and non-specified transport. Fuel used for ocean, coastal and inland fishing should be included in fishing (other sectors). Please note that international marine bunkers and international aviation bunkers are also included here for world total.

Other sectors

Other sectors covers residential, commercial and public services [ISIC Divisions 41, 50-52, 55, 63-67, 70-75, 80, 85, 90-93, 95 and 99], agriculture/forestry [ISIC Divisions 01 and 02], fishing [ISIC Division 05] and non-specified consumption.

Non-energy use

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

Unit abbreviations

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

GEOGRAPHICAL COVERAGE

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

*Includes Montenegro until 2004 and Kosovo until 1999.

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

Ten Annual Publications

Energy Statistics of OECD Countries

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, combustible renewables/wastes and products derived from these primary fuels, as well as for electricity and heat. Data are presented in detailed supply and consumption tables. 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.

Price: €120

Energy Balances of OECD Countries

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, gas, nuclear, hydro, geothermal/solar, combustible renewables/wastes, 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. 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.

Price: €120

Energy Statistics of Non-OECD Countries

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

Price: € 120

Energy Balances of Non-OECD Countries

A companion volume to the publication *Energy Statistics of Non-OECD Countries*, this publication presents energy balances in million 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 a description of the content, please see *Energy Balances of OECD Countries* above.

Price: € 120

Electricity Information

This reference document provides essential statistics on electricity and heat for each OECD member country by bringing together information on production, installed capacity, input energy mix to electricity and heat production, input fuel prices, consumption, end-user electricity prices and electricity trades. The document also presents selected non-OECD country statistics on the main electricity and heat flows. It is an essential document for electricity and heat market and policy analysts.

Price: € 150

Coal Information

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.

Price: € 165

Natural Gas Information

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: North America, Europe and Asia-Pacific, as well as a breakdown of gas consumption by end-user. Import and export data are reported by source and destination.

Price: € 165

Oil Information

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.

Price: € 165

Renewables Information

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. It also includes a selection of indicators for non-OECD countries. This report provides a strong foundation for renewables energy policy and market analysis to assess progress towards domestic and international objectives.

Price: € 110

CO₂ Emissions from Fuel Combustion

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

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.

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 prices at all market levels for OECD countries and certain non-OECD countries: import prices, industry prices and consumer prices. The statistics cover the main petroleum products, gas, coal and electricity, giving for imported products an average price both for importing country and country of origin. Every issue includes full notes on sources and methods and a description of price mechanisms in each country.

Price: € 120 (Annual subscription: €380)

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To complement its publications, the Energy Statistics Division produces CD-ROMs containing the complete databases which are used for preparing the statistics publications. State-of-the-art software allows you to access and manipulate all these data in a very user-friendly manner and includes graphic facilities.

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| ■ Energy Statistics of OECD Countries, 1960-2008 | Price: €550 |
| ■ Energy Balances of OECD Countries, 1960-2008 | Price: €550 |
| ■ Energy Statistics of Non-OECD Countries, 1971-2007 | Price: €550 |
| ■ Energy Balances of Non-OECD Countries, 1971-2007 | Price: €550 |
| ■ <i>Combined subscription of the above four series</i> | <i>Price: €1 400</i> |
| | |
| ■ Electricity Information 2009 | Price: €550 |
| ■ Coal Information 2009 | Price: €550 |
| ■ Natural Gas Information 2009 | Price: €550 |
| ■ Oil Information 2009 | Price: €550 |
| ■ Renewables Information 2009 | Price: €400 |
| ■ CO ₂ Emissions from Fuel Combustion, 1971-2007 | Price: €550 |

■ Quarterly CD-ROMs

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|---------------------------|-----------------------------|
| ■ Energy Prices and Taxes | Price: (four quarters) €900 |
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Furthermore, the *IEA Monthly Oil Data Service* and a *Monthly Gas Data Service* (see next page) can also be accessed over the Internet.

Other Online Services

The Monthly Oil Data Service

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

The packages include:

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|---------------------------------------|---------------|
| ■ Supply, Demand, Balances and Stocks | Price: €6 000 |
| ■ Trade | Price: €2 000 |
| ■ Field-by-Field Supply | Price: €3 000 |
| ■ <i>Complete Service</i> | Price: €9 000 |

A description of this service is available on our website
<http://modsinfo.iea.org>.

The Monthly Gas Data Service

The Monthly Gas Data Service provides for OECD countries historical and current data on natural gas supply and demand, as well as detailed information on trade origins and destinations.

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| ■ Natural Gas Balances & Trade <i>Historical plus 12 monthly updates</i> | Price: €500 |
| ■ Natural Gas Balances & Trade <i>Historical</i> | Price: €400 |

A description of this service is available on our website
<http://data.iea.org>.

Moreover, the IEA statistics website contains key energy indicators by country, graphs on the world and OECD's energy situation evolution from 1971 to the most recent year available, as well as selected databases for demonstration.

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Phone: 33 (0)1 40 57 66 25.

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- **Prospects for global natural gas markets.** How hard will the credit crisis and economic recession hit gas demand and investment in gas supply? How will geology and geo-politics affect future gas supplies? Through field-by-field analysis of production trends of the world's key gas fields, and a bottom-up analysis of upstream costs and investment, *WEO-2009* takes a hard look at future global gas supply.
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