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Contacts

The *International Energy Annual* is prepared by the Energy Information Administration (EIA). General direction is provided by W. Calvin Kilgore, Director, Office of Energy Markets and End Use (202/586-1617) and Arthur T. Andersen, Director, Energy Markets and Contingency Information Division (202/586-1441); with supervision by Louis D. DeMouy, Chief of the International Statistics Branch (202/586-6557).

Questions concerning the contents of this report may be referred to the following people:

Project Manager Michael J. Maloney
(202/586-9415)

Petroleum Patricia Lott Smith
(202/586-6925)

Joel Lou
(202/586-1457)

Michael J. Maloney
(202/586-9415)

Natural Gas Karen Elwell
(202/586-2867)

Coal Vicky McLaine
(202/586-9412)

Electricity Patricia Lott Smith
(202/586-6925)

Prices Karen Elwell
(202/586-2867)

The following individuals contributed to the **1992 International Energy Developments**: Energy Profile of the Former U.S.S.R., Erik Kreil, and Energy Markets in the Far East and Oceania, Larry Dewey. Lowell Feld contributed the 1992 Energy Chronology. Kenneth Chuck Wade provided the discussion of commercial nuclear power. Gary Long contributed the discussion of oil and gas reserves.

Preface

The *International Energy Annual* presents an overview of key international energy topics, as well as current data and trends for production, consumption, imports, and exports of primary energy commodities in more than 190 countries, dependencies, and areas of special sovereignty. Also included are prices for crude oil and petroleum products in selected countries. Renewable energy reported in the *International Energy Annual* includes hydroelectric power and geothermal power and alcohol for fuel. Other forms of renewable energy (e.g., solar, wind, and fuelwood) are not included at this time.

This report is published to keep the public and other interested parties fully informed of primary energy supplies on a global basis. The data presented have been largely derived from published sources and from reports from U.S. Embassy personnel in foreign posts. The data have been converted to units of measurement and thermal values (Appendices A and B) familiar to the American public.

Although EIA has mandatory data collection authority for collecting energy information within the United States, it has no authority to require reporting of data from foreign countries. Data for the *International Energy Annual* must be researched and collected from the most authoritative available sources outside EIA. Because EIA does not have access to the statistical surveys in other countries, it is not able to develop error estimates or revision errors such as might be developed in EIA's domestic surveys.

EIA attempts to identify and collect the best data available for foreign countries. The most authoritative sources are usually the official national statistical reports of a country. However, data from official sources are not always available. Therefore, EIA also uses data from reputable secondary sources such as the international organizations—the United Nations, the International Energy Agency, the World Bank, and others. In addition, EIA uses industry reports, academic studies, trade publications, and other sources.

Many factors beyond EIA's control affect the reliability and integrity of foreign country data. These include a country's level of economic development, commitment to statistical programs, openness with information, and other considerations.

In practice, EIA usually finds statistical information for the industrialized countries available from official country sources, secondary sources, and other various reports. Information is usually detailed and timely. Data are also available from the Organization for Economic Cooperation and Development (OECD). The OECD includes Germany, Japan, and many of the world's more-developed economies. Outside the OECD many of the newly industrialized countries (including South Korea, Taiwan, Hong Kong, and Singapore) are developing comparable energy statistics programs.

The countries of Eastern Europe and the former Soviet Union are in a state of transition. Until recent years most of the governments of these countries suppressed dissemination of statistical information about their economic development and energy systems. As these countries move towards market economies and more open forms of government, better information is becoming available and historical series are being revised.

The remaining developing countries fall into the group least likely to regularly publish energy statistics. For this group EIA uses country sources (when available), United Nations data, trade reports, special studies by international organizations, and estimates based on historical data series.

Within this context, revisions to international energy data take on a different character compared to the standardized EIA statistical surveys of domestic energy markets. The line of distinction between final data and preliminary data is often difficult to establish. Some countries operate sophisticated statistical systems, while many other countries collect only minimal amounts of energy information and publish only irregularly. In some

instances, countries may not release official statistics for a period of years. This can occur as a result of changes in government, national budget cutbacks, and other reasons. Each year EIA makes revisions to its international energy information according to what new information becomes available. In order to help establish and maintain authoritative international energy data series, each year EIA reviews each country's data, makes comparisons with other sources, and discusses the information with other experts. In addition, the data are checked for reasonableness through the development of time series for all data items and supply and demand balances for the primary fuels. Thus, through a series of updates, checks, and

reviews, the international energy data are regularly monitored to help ensure the publication of authoritative information in the *International Energy Annual*.

Publication of this report is in keeping with responsibilities given the Energy Information Administration (EIA) in Public Law 95-91/Section 205(a) that states:

The Administrator shall be responsible for carrying out a central, comprehensive, and unified energy data and information program which will collect, evaluate, assemble, analyze, and disseminate data and information....

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Executive Summary

This report is prepared annually and presents the latest information and trends on world energy production and consumption for petroleum, natural gas, coal, and electricity. Trade and reserves are shown for petroleum, natural gas, and coal. Prices are included for selected petroleum products. Production and consumption data are reported in standard units as well as British thermal units (Btu) and joules.

World Primary Energy Production Trends

Since 1983, the world's total output of primary energy—petroleum, natural gas, coal, hydroelectricity, and nuclear electricity—has increased steadily at an average annual rate of 2.3 percent (Table A1). World production increased from 279 quadrillion Btu in 1983 to 343 quadrillion Btu in 1992 (Figure ES1).

Figure ES1. World Production by Type of Energy

Source: Table A8

In 1992, world production of petroleum was about 67 million barrels per day, or 137 quadrillion Btu (Tables A8 and D2).

Over the period from 1983 to 1992, petroleum has been the world's most heavily used form of energy. Between 1983 and 1992, petroleum production increased by nearly 9 million barrels per day (Table D1). The Middle East had the largest production gain, followed by Africa, and the Far East and Oceania. Their combined

gains over the period from 1983 to 1992 were about 10 million barrels per day. In North America, and in the Eastern Europe and Former U.S.S.R region, average daily production fell by 0.8 and 3.6 million barrels per day, respectively. Production by the Organization of Petroleum Exporting Countries (OPEC) increased by 7.9 million barrels per day (Table 7). In North America, declines in oil production in the United States were largely offset by production increases in Canada and Mexico (Table D1).

World coal production totaled 5.0 billion short tons—88 quadrillion Btu—in 1992, up 15.3 percent from the 1983 level of 4.3 billion short tons (Tables 4 and A5).

Dry natural gas ranks third as a primary energy source. Production of dry natural gas was 75.0 trillion cubic feet, or 74.3 quadrillion Btu, in 1992. Production increased by 20.6 trillion cubic feet from 54.4 trillion cubic feet in 1983—a gain of 38 percent (Tables 3 and A4).

Nuclear and hydroelectric power generation reached a combined total of 4.2 trillion kilowatthours, or 44 quadrillion Btu, in 1992. Nuclear power generation increased significantly between 1983 and 1992, rising from 982 billion kilowatthours to 2.0 trillion kilowatthours, a 105-percent increase (Tables 6 and A7). Hydroelectricity contributed 2.2 trillion kilowatthours in 1992, up from 1.9 trillion kilowatthours in 1983 (Tables 5 and A6).

Major Energy Producers and Consumers

In 1992, three countries—the United States, Russia, and China—were the leading producers and consumers of world energy (Tables ES1 and ES2 and Figure ES8). These three countries produced 42 percent and consumed 42 percent of the world's total energy (Tables A1 and A9).

Russia and the United States were the world's largest producers of energy in 1992, supplying 33 percent of the world's total energy (Table A1). The United States consumed 24 percent of the world's total energy—more than any other country (Table A9 and Figure ES9). Russia produced over 28 percent of the world's natural gas, followed by the United States with approximately 25 percent (Table A4).

The world's leading coal producers were China and the United States (Table A5). They produced 22.2, and 21.6 quadrillion Btu respectively—50 percent of the world's total coal.

While Russia and China produced more energy than they consumed, the United States consumed 23 percent more than it produced or an imbalance of 15.5 quadrillion Btu of energy (Tables A1 and A9).

Comparisons of energy supply and demand by region also help to highlight key energy trends since 1983 (Figures ES2 and ES3).

In North America, overall production of energy rose by about 10.0 quadrillion Btu between 1983 and 1992 (Table A1). The supply of coal and nuclear electricity increased significantly—27 percent and 102 percent, respectively (Tables A5 and A7 and Figures ES6 and ES7).

Figure ES2. World Energy Production by Selected Region

Source: Table A1

Central and South America have shown gradual increases in production and consumption of energy since 1983 (Tables A1 and A9). Brazil and Colombia had important increases in their crude oil production (Table A2). Together they boosted production by 118 percent.

Energy production in Western Europe increased slightly in 1992 from 1991 levels, however, since 1983, production has increased by about 6.3 quadrillion Btu (Table A1). Gains over the period from 1983 to 1992 have been greatest for nuclear power, which grew at an annual rate of 7.8 percent (Table A7).

Between 1991 and 1992, in the Eastern Europe and Former U.S.S.R. region, energy production declined by 5.4 percent and consumption declined by 6.2 percent. Since 1983, growth in production

and consumption in this region has been principally in natural gas and nuclear power. Natural gas production grew at an annual rate of 3.5 percent and nuclear power grew at an annual rate of 7.4 percent (Tables A4 and A7). Since 1983, total energy production decreased by 3.4 quadrillion Btu, and total energy consumption decreased by 1.9 quadrillion Btu (Tables A1 and A9).

Figure ES3. World Energy Consumption by Selected Region

Source: Table A9

Between 1991 and 1992, energy production in the Middle East increased by 9.2 percent (Table A1). Since 1983, total energy production increased by 16.7 quadrillion Btu. Dry natural gas accounted for 18 percent of the gain—its growth averaged 14.0 percent per year since 1983 (Table A4). Crude oil production rose by 12.9 quadrillion Btu (Table A2).

Between 1991 and 1992, energy production in Africa increased by 1.3 percent (Table A1). Since 1983, total energy production increased by 7.6 quadrillion Btu. Crude oil accounted for 60 percent of the gain—its growth averaged 4.2 percent per year over the period from 1983 to 1992 (Table A2). Natural gas production grew at an annual rate of 5.6 percent (Table A4).

Between 1991 and 1992, energy production in the Far East and Oceania increased by 3.0 percent (Table A1). Since 1983, total energy production increased by 21.1 quadrillion Btu. Coal accounted for 53 percent of the gain—its growth averaged 4.5 percent per year over the period from 1983 to 1992 (Table A5). Natural gas production grew at an annual rate of 8.8 percent.

Petroleum

Global production of petroleum increased by 17.5 quadrillion Btu between 1983 and 1992 (Figure ES4). This represents an annual rate of growth of 1.5 percent (Tables A2 and A3).

The former U.S.S.R. and the United States accounted for about 36 percent of the world's petroleum production between 1983 and 1991. In 1992, Russia and the United States accounted for about 24 percent of the world's petroleum production.

Figure ES4. World Petroleum Production by Selected Groups of Countries

Source: Table D1

In 1992, the United States consumed 17.0 million barrels per day—26 percent of world consumption (Table 8). The United States produced 7.2 million barrels of crude oil per day—12 percent of world production (Table 1). Japan ranked second in consumption with 5.5 million barrels per day (Table 8).

Natural Gas

Production of dry natural gas has grown steadily over the period from 1983 to 1992 (Table 3 and Figure ES5). Its rate of growth since 1983, 3.7 percent per year, was exceeded only by nuclear power. Russia

Figure ES5. World Natural Gas Production by Selected Region

Source: Table 3

and the United States produced 40 trillion cubic feet of dry natural gas in 1992, about 54 percent of the world total. The United States and Russia consumed 36 trillion cubic feet of dry natural gas in 1992, about 48 percent of the world total (Table 9). Russia was the leading producer and consumer of dry natural gas in 1992, with 23 trillion cubic feet produced and 16 trillion cubic feet consumed (Tables 3 and 9). The United States ranked second in production and consumption in 1992, producing 18 trillion cubic feet, and consuming 20 trillion cubic feet (Tables 3 and 9).

Coal

In 1983 and in every year since 1985, China has produced more coal than any other country. In 1984, China ranked second behind the United States. In the period from 1983 to 1992, China's coal production has grown at an annual rate of 5.0 percent (Table 4).

Figure ES6. World Coal Production by Selected Region

Source: Table 4

In 1992, China produced 1.2 billion short tons—equivalent to 22.2 quadrillion Btu. The United States followed with 1.0 billion short tons produced—equivalent to 21.6 quadrillion Btu. Although China produced more coal in nine of the last ten years, coal produced in the United States had a higher heat value (Tables 4 and A5). Russia ranked third, producing 372 million short tons—equivalent to 5.1 quadrillion Btu. Their combined production was 52 percent of the world's 1992 production of 5.0 billion short tons. They accounted for 49 percent of 1992 world coal consumption (Tables 4 and 10).

Hydroelectric Power

World production of hydroelectricity in 1992 was essentially unchanged from 1991 (Figure ES7). The

average yearly growth rate from 1983 to 1992 was 1.6 percent. Canada, the United States, Brazil, and Russia were the four largest producers of hydroelectricity in 1992. Their combined 1992 hydroelectric production accounted for 43 percent of the world total. Canada led the world with 312 billion

kilowatthours or 3.3 quadrillion Btu. The United States was second with 243 billion kilowatthours or 2.5 quadrillion Btu. Brazil ranked third with 225 billion kilowatthours or 2.3 quadrillion Btu. Russia was fourth with 170 billion kilowatthours or 1.8 quadrillion Btu—40 billion kilowatthours more than fifth ranked China (Tables 5 and A6).

Figure ES7. World Hydro & Nuclear Power Production

Source: Tables 5 and 6

Nuclear Power

Nuclear power generation rose by 26.6 billion kilowatthours in 1992 (Table 6 and Figure ES7). Growth over the period from 1983 to 1992 has been at an average annual rate of 8.3 percent.

The United States led the world in nuclear power production in 1992 with 619 billion kilowatthours or 6.7 quadrillion Btu (Tables 6 and A7). France was second in 1992 with 322 billion kilowatthours or 3.3 quadrillion Btu. Japan ranked third in 1992 with 207 billion kilowatthours or 2.1 quadrillion Btu.

In 1992, these three countries produced 57 percent of the world's nuclear power.

Table ES1. World Primary Energy Production, 1992
(Quadrillion (10¹⁵) Btu)

Region Country	Crude Oil ¹	Natural Gas Plant Liquids	Dry Natural Gas	Coal ²	Net Hydroelectric Power ³	Net Nuclear Power ³	Total
North America							
Canada ⁴	3.40	0.67	4.56	1.61	3.25	0.88	14.36
Mexico	5.87	0.59	0.89	0.12	0.25	0.04	7.76
United States	15.22	2.36	18.31	21.62	2.51	6.65	66.68
Total	24.49	3.62	23.76	23.35	6.01	7.56	88.80
Central & South America							
Argentina	1.21	0.05	0.57	0.01	0.17	0.08	2.08
Brazil	1.35	0.04	0.14	0.11	2.34	0.02	4.00
Chile	0.03	0.01	0.05	0.05	0.11	0.00	0.26
Colombia	0.97	0.01	0.17	0.61	0.29	0.00	2.05
Cuba	0.04	(s)	0.00	0.00	(s)	0.00	0.04
Ecuador	0.70	(s)	(s)	0.00	0.05	0.00	0.76
Panama Republic	0.00	0.00	0.00	0.00	0.02	0.00	0.02
Peru	0.25	(s)	0.02	(s)	0.12	0.00	0.40
Trinidad and Tobago	0.30	0.01	0.20	0.00	0.00	0.00	0.51
Venezuela	5.24	0.17	0.96	0.08	0.34	0.00	6.80
Other	0.07	0.01	0.10	0.00	0.51	0.00	0.69
Total	10.16	0.31	2.21	0.87	3.95	0.10	17.60
Western Europe							
Austria	0.06	(s)	0.05	0.02	0.37	0.00	0.50
Belgium	0.00	0.00	0.00	0.02	0.01	0.43	0.46
Denmark	0.33	0.00	0.15	0.00	(s)	0.00	0.47
Finland	0.00	0.00	0.00	0.00	0.15	0.19	0.34
France	0.12	0.01	0.13	0.30	0.75	3.34	4.66
Germany	0.15	0.00	0.60	3.63	0.22	1.54	6.14
Greece	0.03	(s)	0.01	0.32	0.02	0.00	0.39
Ireland	0.00	0.00	0.09	(s)	0.01	0.00	0.09
Italy	0.19	(s)	0.65	0.01	0.47	0.00	1.32
Luxembourg	0.00	0.00	0.00	0.00	0.01	0.00	0.01
Netherlands	0.12	0.02	2.73	0.00	(s)	0.04	2.91
Norway	4.37	0.15	1.07	0.01	1.21	0.00	6.80
Portugal	0.00	0.00	0.00	(s)	0.05	0.00	0.06
Spain	0.04	0.02	0.05	0.48	0.22	0.54	1.35
Sweden	0.00	0.00	0.00	(s)	0.77	0.61	1.38
Switzerland	0.00	0.00	0.00	0.00	0.35	0.23	0.59
Turkey	0.18	0.00	0.01	1.12	0.27	0.00	1.58
United Kingdom	3.88	0.26	1.98	2.12	0.07	0.92	9.23
Former Yugoslavia	0.04	0.01	0.10	0.62	0.18	0.04	1.00
Other	0.00	0.00	0.00	0.00	0.05	0.00	0.05
Total	9.50	0.48	7.60	8.68	5.18	7.88	39.31
Eastern Europe & Former U.S.S.R.							
Albania	0.05	0.00	0.01	(s)	0.02	0.00	0.08
Bulgaria	0.01	0.00	0.00	0.26	0.02	0.12	0.42
Former Czechoslovakia	0.01	(s)	0.01	1.28	0.03	0.29	1.61
Hungary	0.08	0.02	0.19	0.15	(s)	0.13	0.58
Kazakhstan	1.10	0.14	0.29	2.31	0.06	0.00	3.91
Poland	(s)	(s)	0.15	3.56	0.04	0.00	3.74
Romania	0.29	0.01	0.88	0.26	0.15	0.00	1.59
Russia	15.89	0.48	21.08	5.13	1.77	1.31	45.66
Ukraine	0.18	0.05	0.69	2.42	0.07	0.76	4.18
Other	0.88	0.12	3.56	0.08	0.42	0.17	5.23
Total	18.49	0.83	26.85	15.47	2.58	2.79	67.01
Middle East							
Bahrain	0.08	0.01	0.26	0.00	0.00	0.00	0.35
Iran	7.39	0.10	0.93	0.04	0.07	0.00	8.53
Iraq	0.96	0.00	0.05	0.00	(s)	0.00	1.01
Kuwait	2.23	0.02	0.23	0.00	0.00	0.00	2.48
Oman	1.58	0.01	0.15	0.00	0.00	0.00	1.74
Qatar	0.84	0.07	0.22	0.00	0.00	0.00	1.13
Saudi Arabia	18.25	1.12	1.26	0.00	0.00	0.00	20.63
Syria	1.20	(s)	0.18	0.00	0.07	0.00	1.45
United Arab Emirates	4.93	0.27	1.03	0.00	0.00	0.00	6.23
Other	0.38	0.00	0.00	0.00	0.01	0.00	0.39
Total	37.84	1.60	4.31	0.04	0.15	0.00	43.94

See footnotes at end of table.

Table ES1. World Primary Energy Production, 1992 (Continued)
(Quadrillion (10¹⁵) Btu)

Region Country	Crude Oil ¹	Natural Gas Plant Liquids	Dry Natural Gas	Coal ²	Net Hydroelectric Power ³	Net Nuclear Power ³	Total
Africa							
Algeria	2.47	0.27	2.09	(s)	(s)	0.00	4.83
Angola	1.13	0.00	0.01	0.00	0.01	0.00	1.15
Egypt	1.91	0.08	0.36	0.00	0.10	0.00	2.45
Gabon	0.64	0.00	(s)	0.00	0.01	0.00	0.65
Kenya	0.00	0.00	0.00	0.00	0.03	0.00	0.03
Libya	3.13	0.06	0.26	0.00	0.00	0.00	3.46
Morocco	(s)	0.00	(s)	0.02	0.01	0.00	0.03
Nigeria	4.26	0.00	0.20	(s)	0.02	0.00	4.49
South Africa	0.00	0.00	0.00	4.96	0.01	0.09	5.06
Tunisia	0.23	0.01	0.00	0.00	(s)	0.00	0.23
Other	0.77	0.00	0.00	0.20	0.33	0.00	1.30
Total	14.56	0.42	2.92	5.18	0.53	0.09	23.70
Far East & Oceania							
Australia	1.10	0.10	0.88	4.42	0.16	0.00	6.66
Brunei	0.35	0.02	0.31	0.00	0.00	0.00	0.69
China	6.11	0.00	0.52	22.20	1.35	0.00	30.18
Hong Kong	0.00	0.00	0.00	0.00	0.00	0.00	0.00
India	1.17	0.02	0.48	4.50	0.70	0.07	6.94
Indonesia	3.29	0.11	2.00	0.60	0.09	0.00	6.09
Japan	0.04	(s)	0.08	0.19	1.00	2.12	3.43
Korea, North	0.00	0.00	0.00	1.31	0.33	0.00	1.65
Korea, South	0.00	0.00	0.00	0.21	0.05	0.54	0.81
Malaysia	1.36	0.02	0.95	(s)	0.05	0.00	2.38
New Zealand	0.08	0.01	0.20	0.07	0.24	0.00	0.59
Pakistan	0.16	(s)	0.56	0.07	0.20	0.01	1.00
Philippines	0.03	0.00	0.00	0.04	0.05	0.00	0.11
Taiwan	(s)	(s)	0.04	0.01	0.09	0.32	0.46
Thailand	0.12	0.04	0.27	0.17	0.05	0.00	0.65
Other	0.38	(s)	0.32	0.24	0.16	0.00	1.11
Total	14.19	0.33	6.62	34.04	4.51	3.06	62.75
World Total	129.22	7.60	74.27	87.63	22.90	21.47	343.10

¹ Crude oil includes condensate.

² Coal includes anthracite, subanthracite, subbituminous, bituminous, lignite, and brown coal.

³ Generation data consist of both utility and nonutility sources. Net generation excludes energy consumed by the generating unit.

⁴ Includes petroleum processed from Athabasca Tar Sands.

(s)=Value less than 5 trillion Btu.

Figure ES8. World's Major Producers of Primary Energy, 1992

Source: Table ES1

Table ES2. World Primary Energy Consumption, 1992
(Quadrillion (10¹⁵) Btu)

Region Country	Petroleum	Dry Natural Gas	Coal ¹	Net Hydroelectric Power ²	Net Nuclear Power ²	Total
North America						
Canada	3.28	2.61	1.25	2.95	0.88	10.97
Mexico	3.72	0.98	0.12	0.25	0.04	5.12
United States	33.51	20.34	18.88	2.81	6.65	82.19
Other	0.01	0.00	0.00	0.00	0.00	0.01
Total	40.53	23.92	20.26	6.01	7.56	98.29
Central & South America						
Argentina	0.85	0.64	0.02	0.18	0.08	1.77
Brazil	2.85	0.13	0.45	2.62	0.02	6.07
Chile	0.30	0.05	0.09	0.11	0.00	0.55
Colombia	0.43	0.17	0.22	0.29	0.00	1.12
Cuba	0.35	0.00	0.01	(s)	0.00	0.36
Ecuador	0.21	(s)	0.00	0.05	0.00	0.27
Panama Republic	0.07	0.00	(s)	0.02	(s)	0.10
Peru	0.23	0.02	0.01	0.12	0.00	0.38
Trinidad and Tobago	0.04	0.23	0.00	0.00	0.00	0.27
Venezuela	0.85	0.96	0.03	0.34	0.00	2.18
Other	1.31	0.03	0.01	0.22	0.00	1.57
Total	7.50	2.23	0.85	3.95	0.10	14.63
Western Europe						
Austria	0.48	0.24	0.13	0.34	0.03	1.22
Belgium	1.08	0.38	0.39	0.02	0.41	2.28
Denmark	0.40	0.08	0.31	0.01	0.01	0.82
Finland	0.46	0.11	0.12	0.17	0.21	1.08
France	3.97	1.29	0.86	0.67	2.92	9.71
Germany	5.86	2.39	4.04	0.27	1.56	14.11
Greece	0.70	0.01	0.38	0.03	0.01	1.12
Ireland	0.22	0.09	0.09	0.01	0.00	0.40
Italy	4.06	1.75	0.50	0.55	0.14	7.00
Luxembourg	0.08	0.02	0.04	0.01	0.02	0.17
Netherlands	1.59	1.52	0.31	0.02	0.08	3.52
Norway	0.36	0.10	0.04	1.15	0.01	1.67
Portugal	0.58	0.00	0.12	0.05	0.01	0.76
Spain	2.28	0.26	1.33	0.22	0.54	4.62
Sweden	0.70	0.03	0.08	0.75	0.60	2.15
Switzerland	0.59	0.10	(s)	0.26	0.22	1.18
Turkey	1.02	0.17	1.26	0.27	(s)	2.72
United Kingdom	3.67	2.19	2.72	0.11	0.98	9.68
Former Yugoslavia	0.32	0.21	0.65	0.18	0.04	1.41
Other	0.07	0.00	0.01	0.05	0.00	0.12
Total	28.48	10.91	13.38	5.14	7.79	65.71
Eastern Europe & Former U.S.S.R.						
Albania	0.03	0.01	0.01	0.02	0.00	0.06
Bulgaria	0.16	0.21	0.32	0.03	0.13	0.84
Former Czechoslovakia	0.44	0.48	1.28	0.04	0.30	2.53
Hungary	0.29	0.38	0.20	0.02	0.16	1.05
Kazakhstan	0.74	0.59	1.58	0.06	0.00	2.98
Poland	0.47	0.40	3.02	0.05	0.03	3.98
Romania	0.59	1.00	0.39	0.16	0.03	2.17
Russia	8.96	15.03	5.69	1.74	1.29	32.72
Ukraine	1.66	3.67	2.58	0.07	0.76	8.75
Other	2.59	3.18	0.37	0.42	0.17	6.73
Total	15.93	24.95	15.44	2.62	2.87	61.81
Middle East						
Bahrain	0.05	0.26	0.00	0.00	0.00	0.32
Iran	2.35	0.91	0.05	0.07	0.00	3.38
Iraq	0.76	0.05	(s)	(s)	0.00	0.81
Kuwait	0.21	0.23	0.00	0.00	0.00	0.44
Oman	0.08	0.15	0.00	0.00	0.00	0.23
Qatar	0.08	0.22	0.00	0.00	0.00	0.30
Saudi Arabia	2.26	1.26	0.00	0.00	0.00	3.52
Syria	0.37	0.18	0.00	0.07	0.00	0.62
United Arab Emirates	0.73	0.89	0.00	0.00	0.00	1.62
Other	0.86	0.00	0.15	0.01	0.00	1.01
Total	7.75	4.15	0.20	0.15	0.00	12.25

See footnotes at end of table.

Table ES2. World Primary Energy Consumption, 1992 (Continued)
(Quadrillion (10¹⁵) Btu)

Region Country	Petroleum	Dry Natural Gas	Coal ¹	Net Hydroelectric Power ²	Net Nuclear Power ²	Total
Africa						
Algeria	0.41	0.81	0.04	(s)	0.00	1.26
Angola	0.05	0.01	0.00	0.01	0.00	0.07
Egypt	1.05	0.36	0.03	0.10	0.00	1.55
Gabon	0.03	0.01	0.00	0.01	0.00	0.05
Kenya	0.07	0.00	(s)	0.03	0.00	0.10
Libya	0.36	0.21	0.00	0.00	0.00	0.57
Morocco	0.24	(s)	0.05	0.01	0.00	0.31
Nigeria	0.61	0.20	(s)	0.02	0.00	0.83
South Africa	0.84	0.00	3.53	0.01	0.09	4.47
Tunisia	0.15	0.04	(s)	(s)	0.00	0.19
Other	0.83	0.00	0.21	0.33	0.00	1.37
Total	4.66	1.63	3.87	0.53	0.09	10.77
Far East & Oceania						
Australia	1.43	0.62	1.72	0.16	0.00	3.93
Brunei	0.02	0.02	0.00	0.00	0.00	0.04
China	5.55	0.52	21.78	1.36	(s)	29.22
Hong Kong	0.31	0.00	0.25	0.00	0.00	0.56
India	2.61	0.48	4.65	0.71	0.07	8.51
Indonesia	1.61	0.68	0.19	0.09	0.00	2.57
Japan	11.07	2.10	2.71	1.00	2.12	19.01
Korea, North	0.16	0.00	1.31	0.33	0.00	1.81
Korea, South	3.17	0.18	0.99	0.05	0.54	4.94
Malaysia	0.60	0.47	0.05	0.05	(s)	1.17
New Zealand	0.22	0.20	0.05	0.24	0.00	0.71
Pakistan	0.52	0.56	0.09	0.20	0.01	1.38
Philippines	0.50	0.00	0.07	0.05	0.00	0.62
Taiwan	1.22	0.12	0.61	0.09	0.32	2.35
Thailand	1.00	0.27	0.18	0.05	(s)	1.50
Other	1.46	0.29	0.23	0.14	0.00	2.12
Total	31.46	6.50	34.90	4.51	3.06	80.43
World Total	136.31	74.31	88.90	22.90	21.47	343.90

¹ Coal includes anthracite, subanthracite, subbituminous, bituminous, lignite, and brown coal.

² Generation data consist of both utility and nonutility sources. Net generation excludes energy consumed by the generating unit.

(s)=Value less than 5 trillion Btu.

Figure ES9. World's Major Consumers of Primary Energy, 1992

Source: Table ES2

1992 International Energy Developments

This summary of international energy developments profiles energy resources and facilities in the 15 republics of the former U.S.S.R. and describes petroleum markets in the Far East and Oceania.

Energy Profile of the Former U.S.S.R.

The 15 republics of the former U.S.S.R. (Figure ED1) ended over 70 years of political and economic dependency in August 1991. Following the breakup of the U.S.S.R., Armenia, Azerbaijan, Belarus, Kazakhstan, Kyrgyzstan, Moldova, Russia, Tajikistan, Turkmenistan, Ukraine, and Uzbekistan joined together in the Commonwealth of Independent States (CIS), a loose confederation of independent states (Azerbaijan subsequently withdrew, then rejoined the CIS). However, economic ties will be much harder to untangle. Although the republics vary widely in their energy production and consumption patterns, the degree of economic interdependence is so extensive that any sudden attempt to sever the ties could lead to the disruption of energy supplies and export markets for the republics. For example, Russia, the dominant energy producer, is heavily dependent on oil production equipment produced in other republics, and its oil and gas export pipelines to Europe traverse the territories of Ukraine and Belarus.

Overall, oil production in the former U.S.S.R. fell rapidly in 1992 (Table 1). Nearly all of the decline came from Russia, with the other republics (as a group) holding relatively steady. At the same time, former U.S.S.R. oil consumption fell almost as quickly (Table 8). Although Russian consumption accounts for much of the decline, other republics have also experienced dramatic reductions. Energy profiles of the 15 republics, including the newly independent Baltic states and non-CIS member Georgia, are presented below.

Armenia

Armenia possesses virtually no indigenous fossil fuel resources, and is, therefore, totally dependent on imports for its oil, gas, and coal supplies. However, Armenia has had most of these imports cut off by both ethnic unrest in Georgia and the economic blockade by neighboring Azerbaijan, through which

much of Armenia's energy imports must pass. With these imports curtailed, Armenian industry has almost come to a halt. Desperate for energy, Armenia has decided to restart the Yerevan nuclear power plant at Metsamor, closed because of damage incurred during a devastating earthquake in late 1988.

Azerbaijan

Unlike its western neighbor Armenia, Azerbaijan is rich in oil resources and produces some natural gas as well. Azerbaijan is only one of four republics (along with Russia, Kazakhstan, and Turkmenistan) that is self-sufficient in petroleum. Almost all of Azerbaijan's oil production is offshore in the Caspian Sea. The State Oil Company of Azerbaijan has planned for the joint development of the largest offshore fields using a common infrastructure. However, development plans were suspended pending approval by the new government, which took power in June 1993.

Azerbaijan made several agreements to build pipelines to enable it to export its oil. Azerbaijan announced plans to join the Caspian Pipeline Consortium, which would carry oil from the Caspian Sea or to the Russian Black Sea port of Novorossiysk. Azerbaijan and Turkey also signed a deal to build a pipeline to carry crude oil via Iran (bypassing Armenia) and connecting with the existing Iraq-Turkey pipeline running to the Mediterranean. In another major pipeline project, Azerbaijan agreed to a partnership with Ukraine and Iran in building natural gas pipelines from Iran through Azerbaijan en route to Ukraine and Europe. Azerbaijan is also developing modernization plans for its refineries; it was once a major U.S.S.R. and world refining center. Furthermore, it was the center of the former U.S.S.R.'s oil field equipment industry and is expected to maintain this role in the future. Azerbaijan has already agreed to participate in the revival of the Russian oil and gas industry by sending its gas and oil field equipment to Russia in exchange for a share of Russian production.

Belarus

Belarus produces only a small portion of its energy requirements, and has traditionally relied on Russian oil and gas imports from the Volga-Urals and West Siberian fields. The only strategic energy resources in Belarus are its refineries at Novopolotsk

Figure ED1. The Former U.S.S.R.

(one of the world's largest) and Mozyr and its usefulness as a transit center for oil and gas shipments via pipelines from Russia to Europe. Cutbacks in Russian crude oil exports to Belarus have caused the refineries to operate at significantly reduced rates and have harmed the country's economy.

Estonia

Estonia is the only Baltic republic with sizable fossil fuel resources, with oil shale, wood, and peat satisfying the majority of its primary energy demand. Most of the oil shale is burned in two power plants, enabling Estonia to generate a surplus of electricity that is exported to Latvia and Russia. These exports could decrease because of severe environmental problems associated with the mining and burning of oil shale. In addition, Estonia must import all of its oil, natural gas, and coal, primarily from Russia. With the opening of oil import terminals for refined products, however, Estonia has developed an alternative to total dependence on Russia for oil.

Georgia

Georgia is dependent upon other former U.S.S.R. republics for about three-fourths of its domestic

energy requirements, mostly imported refined oil products from Azerbaijan and Russian natural gas and electricity. These imports have been disrupted by ethnic strife in both Georgia and in neighboring republics, through which imports must pass. Georgia's major energy resources are its hydropower potential, a small refinery, and its ports located on the Black Sea. It is hoping to capitalize on the latter to become a major energy hub for oil produced in the Central Asian republics and Azerbaijan that is destined for Ukraine and Europe.

Kazakhstan

Kazakhstan is the second largest of the former U.S.S.R. republics in area, fourth largest in population, third largest in the size of its economy, and third largest in both energy production and consumption. It is one of only three former U.S.S.R. republics (along with Russia and Turkmenistan) that is a net exporter of energy. It is a large coal exporter and the only former U.S.S.R. republic in which coal is the dominant fuel, although it is only the third largest producer. In addition, it has the world's twelfth largest oil reserves (14 billion barrels) and sizable

natural gas reserves.¹ To increase oil and gas production, it has entered into over 20 energy-related joint ventures. In terms of development, Kazakhstan has attracted a disproportionate amount of interest because it has both large, underdeveloped energy reserves and a favorable political/legal environment relative to the other republics, especially Russia.

In April 1993, Kazakhstan signed a \$20-billion deal to develop the Tengiz oil field, believed to be the largest field found since the discovery of the large Mexican fields in the mid-1970's. To export its oil, Kazakhstan joined the Caspian Pipeline Consortium in 1992 to construct a pipeline to transport oil from Tengiz and other fields to world markets. Kazakhstan has also signed deals to develop its large natural gas reserve, and awarded a \$6- to \$7-billion contract to develop its Karachaganak field.

Kyrgyzstan

Kyrgyzstan's economy is focused on agriculture; it consumes relatively small amounts of energy, most of which must be imported. It is self-sufficient in electricity because of its hydropower resources and also produces about two-thirds of its coal requirements.

Latvia

Latvia has no fossil fuel resources and must import almost all of its energy supplies. Its major energy assets consist of a cascade of three hydroelectric plants on the Daugava River, a gas storage facility, and the oil export port at Ventspils. This port had been the second largest export point for U.S.S.R. oil, and Latvian transit fees for use of the port had been an important source of hard currency earnings. However, Russia has shifted much of its exports to its own ports for strategic and financial reasons (including disputes over transit fees), and Ventspils is not as vital as before.

Lithuania

Lithuania must also import almost all of its primary energy from the other former U.S.S.R. republics and Poland. However, it contains the only refinery and second largest oil export port in the Baltic region and generates a surplus of electricity for export from its thermal power and nuclear power plants. The twin 1,500-megawatt nuclear reactors at Ignalina are the largest in the world; however, the safety and reliability of the reactors, which are similar in design to those at Chernobyl, are cause for concern. In addition, energy security is also a concern, as oil supply

curtailments have disrupted the refinery's operations as well as the rest of Lithuania. The curtailments were the result of disputes by Russia over payments for energy supplies and over transit fees charged by Lithuania for the use of the Lithuanian port and pipelines.

Moldova

Primarily an agricultural region, Moldova is among the least energy-intensive of the former U.S.S.R. republics. It is dependent on imports from Russia and Ukraine for all of its oil, natural gas, and coal requirements. Moldova has been harmed by its conflict with a separatist movement in the Dneister region, which accounts for about one-third of its industrial production.

Russia

Russia is rich in energy resources and produced 7 million barrels per day of oil (ranks second in the world to Saudi Arabia) (Table 1), 23 trillion cubic feet of natural gas (ranks first in the world) (Table 3), and about 372 million short tons of coal (ranks third in the world) (Table 4) in 1992. Following the breakup of the U.S.S.R., Russia's economy declined sharply, and energy production fell. The bulk of the decline in energy production has come in the oil and coal industries.

The Russian government has made the energy sector a top priority, particularly given its importance as a source of hard currency. An energy policy approved in late 1992 encompasses new energy legislation, re-equipping of the oil industry, and a fiscal structure approaching market conditions. Existing oil-producing associations are required to reorganize into joint-stock oil companies in an effort to make them more responsive to free-market conditions. There have also been attempts to free prices from government regulation. Progress regarding joint ventures has been slow because of uncertainty regarding ownership of natural resources and the general legal/political climate for conducting business. Russia has also met with other former U.S.S.R. republics to encourage investment in its oil and gas sector in exchange for Russian oil and gas.

Tajikistan

The republic of Tajikistan is mainly agricultural and produces and consumes little energy except for hydroelectric power, which is plentiful. The economy has been ravaged by a civil war which has disrupted

¹PlanEcon Energy Report, January 1993 (Washington DC: PlanEcon, Inc.).

the two main industries, aluminum production and cotton farming.

Turkmenistan

Turkmenistan produces far more energy than it consumes, largely because it is a major producer of natural gas (ranking second in the CIS behind Russia). It is a major exporter of gas within the former U.S.S.R. and is the only republic, besides Russia, to export gas to Europe. Gas production declined in 1992 because it priced natural gas higher than its chief competitor, Russia, and because of pricing and payment disputes with other former U.S.S.R. republics. Turkmenistan hopes to expand the list of customers beyond the CIS and is developing plans to build a gas pipeline to Europe. It also produces small amounts of oil, but more than enough to meet its own needs.

Ukraine

Ukraine's primary energy significance comes from its role in transporting oil and gas between Russia and Europe. Almost all Russian natural gas exports pass through Ukraine, as well as much of its oil exports to countries outside the CIS. Ukraine has been confronted with many challenges from Russia concerning trade and transport of Russian oil and gas, as well as payment for those fuels consumed within Ukraine. On several occasions, gas shipments were curtailed pending resolution of those disputes.

Ukraine also ranks second only to Russia in total energy production in the CIS, yet is a net importer of energy because its production meets only a fraction of its oil and gas needs. To meet these needs and diversify its sources of supply, Ukraine has signed agreements with Iran for the construction of a natural gas pipeline from Iran to Ukraine and for oil pipelines from Kazakhstan and Iran. Ukraine is also important for CIS energy because it is a major refining center and producer of pipes and oil production machinery and contains a major (though declining) coal basin.

Uzbekistan

Uzbekistan is the third largest producer of natural gas within the CIS behind Russia and Turkmenistan and also produces small amounts of oil and coal. Because of its relatively large population and industrial base, it is a net importer of energy, consuming slightly more than it produces.

Petroleum Markets in the Far East and Oceania

Strong economic growth in the Far East and Oceania has brought international attention to the region. Recent data for the area indicate that the 1990's will see a continuation of upward economic performance established in the 1980's. China, the world's fastest growing major economy, registered an increase in gross domestic product (GDP) of 12 percent in 1992. In contrast, the United States reported a 3-percent growth rate in GDP for 1992. A recession in Japan resulted in an unusually weak increase in GDP of 1.3 percent in 1992. Even if economic growth in Japan is slow, the total GDP in the Far East and Oceania region will probably exceed the GDP of the United States by the latter part of the 1990's. The region's economic growth is strongly influenced by socialist economies. China, Vietnam, Laos, Mongolia, North Korea, and Burma represent about 44 percent of the Far East and Oceania's population. Each is introducing free markets and global trade.

Demand for petroleum products in the Far East and Oceania expanded at about 6 percent in 1992, to 15.2 million barrels per day (Table 8). This level is about 0.9 million barrels per day higher than in 1991. No other region in the world experienced such growth; the rest of the world experienced a decline of 0.9 million barrels per day last year. This region has experienced high oil demand growth since the mid-1980's and accounted for over two-thirds of the world's oil demand growth between 1985 and 1992. In fact, the Far East and Oceania region showed the highest rate of growth of all consuming regions (5.1 percent) over this period.

The increase in petroleum requirements in the Far East and Oceania region has been partially met by higher oil production in the region by countries that are not members of the Organization of Petroleum Exporting Countries (OPEC). Thailand, Papua New Guinea, Vietnam, and Myanmar reported new crude oil reserve discoveries that should enhance production in the latter part of the 1990's. The region's crude oil production increased only slightly between 1991 and 1992 (Table 1). However, Papua New Guinea's new crude oil output of almost 60,000 barrels per day was an important new source of supply.

International Trade

Regardless of modest increases in oil production and new reserve discoveries, continued rapid growth in this region is expected to require greater dependence on Middle East crude oil. Current consumption is about 6 million barrels per day from the Persian Gulf. The Far East and Oceania market currently

uses about 2 million barrels per day of regional crude exports (Table 20). The region's net oil imports satisfy about one-half of the oil demand. The Far East and Oceania nations are more dependent on the Persian Gulf for oil supply than the United States and Europe.

The Far East and Oceania's economic success has contributed to the development of the Singapore oil refining and trading area. The strong rise in the total volume of petroleum consumed in this region can be attributed to the combination of dynamic economic growth and weak oil prices. Countries with strong currencies, such as China, Japan, and South Korea, have experienced lower crude oil costs in recent years, because crude oil is purchased in U.S. dollars.

Refining Construction Activities

Growth in petroleum consumption in the Far East and Oceania region has encouraged investment in expansion of existing refinery capacity and construction of new refineries. New stringent environmental requirements for lower sulfur fuel oils are major considerations for capacity expansions and additions. Crude distillation capacity additions of 200,000 barrels per day led refinery construction activity in 1992.

Increases in reforming capacity have also been important. The reforming process in new capacity expansion will be used to produce high octane gasoline blending components. In addition, hydrogen from the reforming process can be used in desulfurization units. The environmental policies of many countries to reduce the sulfur content in distillates will encourage future investment in reforming.

The Far East and Oceania accounted for about 18 percent of world refining capacity in 1992, following North America at 25 percent and Western Europe at 21 percent (Table 21). It is estimated that the top five international oil companies active in this region—Royal Dutch/Shell, Exxon, Mobil, Caltex, and British Petroleum—have committed \$10 billion in refinery investments.²

Energy Growth and Environmental Concerns

The economic growth in the Far East and Oceania has had an adverse impact on the environment. Strong economic and population growth has accelerated the increased utilization of fossil fuels throughout the region. In response to the concern that these emissions have the potential to cause significant

damage to the region, a group of international specialists has established a project on acid rain and carbon dioxide emissions. In 1992, the initial phase of this project started development of an integrated assessment model to assist policy makers in evaluating options to reduce carbon dioxide emissions and to stimulate international dialogue on acid rain policy.

The majority of the nations in this region are confronted by infrastructure and environmental problems. The Far East and Oceania region has the highest amount of annual carbon dioxide emissions from coal use in the world. Environmental problems from industrial waste and energy fuel emissions, such as soil erosion, deforestation, and drinking water pollution, will require increased infrastructure investment. These investment requirements will have to compete for funds intended for the expansion of the energy infrastructure needed to meet growing demand for petroleum.

Below are brief country-by-country summaries of important developments in the petroleum industry within the Far East and Oceania region.³

Australia

In 1992, crude oil production (including condensate) averaged 538,000 barrels per day (Table 1). At year-end, there were 1,127 producing wells. Australian year-end reserves were estimated to be between 1.8 and 3.2 billion barrels of crude oil (Table 36). Drilling activity for the year recorded mixed results. Completions totaled 174 wells, including 42 producing oil wells, 37 gas producers, and 90 dry wells.

China

Crude oil reserves in China were about 24 to 30 billion barrels in 1992, which accounted for 2 to 3 percent of the world's total reserves (Table 36). Production reached 2.8 million barrels per day (Table 1). Although China has a comparatively short production history for petroleum, their production has increased rapidly from the latter part of the 1970's. They are one of the largest oil producing countries, ranking fifth in the world. However, the coal industry in China has the most important role in the overall energy mix, as almost 75 percent of their energy comes from domestic coal (Table ES1).

India

The Indian government moved closer to allowing partial privatization of the petroleum industry to

²*Petroleum Intelligence Weekly*, September 27, 1993, Page 7.

³All exploration and drilling statistics shown below are from "World Oil," August 1993 (Houston: Gulf Publishing Co.) and "Oil and Gas Journal," May 10, 1993 (Tulsa: PennWell Publishing Co.).

obtain the capital necessary for new resource development, pipelines, and facilities to utilize domestic suppliers. In 1992, the Indian government requested bids from foreign and domestic companies in the development of 43 oil and gas fields. Crude oil production averaged 558,000 barrels per day from approximately 2,800 wells, a decline of 9 percent compared to 1991 (Table 1). Estimated proved reserves for crude oil as of January 1, 1993, were about 6 billion barrels (Table 36).

Indonesia

Indonesia has estimated proved crude oil reserves of between 5.8 and 8.4 billion barrels (Table 36). Crude oil production in 1992 totaled 1.566 million barrels per day, about a 2-percent decrease from the 1991 production level (Table 1). During 1992, 22 wildcat wells were successfully completed. However, the majority of the 711 wells drilled were in support of production maintenance in existing fields.

Japan

Crude oil production for the year 1992 averaged 17,000 barrels per day, 13 percent greater than in 1991. Crude oil reserves totaled about 60 million barrels in 1992. Future exploration is expected to concentrate on offshore areas near the Sea of Japan.

Malaysia

There were 464 producing oil wells in 1992. This is an increase of 87 from the 1991 total. Crude oil production averaged 653,000 barrels per day, an increase of 7,000 barrels per day from the 1991 level (Table 1). Total crude oil reserves at the end of 1992

were between 3.7 and 4.3 billion barrels (Table 36). The increase in crude oil production is from development of proven fields. There were 35 oil companies operating in Malaysia, with 16 offshore rigs and one onshore rig active at the end of 1992.

Pakistan

In 1992, 37 wells were drilled; 19 were wildcat and 18 were development wells. Pakistan's crude oil production rose from 62,000 barrels per day in 1991 to 76,000 barrels per day in 1992. Crude oil reserves were between 0.1 and 0.4 billion barrels, including condensate (Table 36). Total wells drilled in 1992 rose to 37, compared to 33 in 1991.

South Korea

Energy demand in South Korea has increased rapidly since the mid-1980's because of low crude oil prices and an economic boom that continued through 1992. Neither North nor South Korea has any indigenous production. South Korea imports about 75 percent of its oil from the Middle East. However, South Korean companies have earned production rights from their foreign crude oil exploration partnerships. In 1992, oil accounted for more than 60 percent of total energy consumption (Table ES2).

Other Areas

Papua New Guinea and Vietnam each asserted themselves as important producers of crude oil in 1992. Papua New Guinea produced 60,000 barrels per day, while Vietnam produced 104,000 barrels per day.

World Primary Energy Production

1. World Primary Energy Production

Crude Oil

World production of crude oil rose from 53.3 million barrels per day in 1983 to 60.3 million barrels per day in 1992 (Table 1 and Figure 1). The four largest producers, each with at least 3 million barrels per day produced, accounted for 44 percent of total crude oil production as follows:

- Saudi Arabia—14.0 percent
- Russia—12.3 percent
- United States—11.9 percent
- Iran—5.7 percent.

Regionally, the Middle East had the largest relative gain between 1983 and 1992—51 percent or 5.9 million barrels per day (Figure 2). North America and the Eastern Europe and Former U.S.S.R. region had average annual rates of decline, 1.2 percent and 3.9 percent respectively. The average annual

growth rate for the remaining five regions, in order of 1992 total crude oil production, was:

- Middle East—4.7 percent
- Africa—4.2 percent
- Far East and Oceania—3.3 percent
- Central and South America—3.3 percent
- Western Europe—3.2 percent.

Natural Gas Plant Liquids

World production of natural gas plant liquids rose from 3.6 million barrels per day in 1983 to 5.1 million barrels per day in 1992 (Table 2 and Figure 3). The three largest producers, each with at least 0.45 million barrels per day produced, accounted for 56 percent of total natural gas plant liquids production as follows:

- United States—33.2 percent
- Saudi Arabia—14.1 percent
- Canada—9.0 percent.

Construction of a plant to extract sulphur from crude oil in Abu Dhabi in the United Arab Emirates.

Regionally, Africa had the largest relative gain between 1983 and 1992—112 percent or 0.12 million barrels per day (Figure 4). The average annual growth rate for the regions, in order of 1992 total natural gas liquids production, was:

- North America—2.2 percent
- Middle East—7.0 percent
- Eastern Europe and Former U.S.S.R.—4.5 percent
- Western Europe—5.3 percent
- Africa—8.7 percent
- Far East and Oceania—1.6 percent
- Central and South America—8.4 percent.

Dry Natural Gas

World production of dry natural gas rose from 54.4 trillion cubic feet in 1983 to 75.0 trillion cubic feet in 1992 (Table 3 and Figure 5). The four largest producers, each with at least 2 trillion cubic feet produced, accounted for 64 percent of total dry natural gas production in 1992 as follows:

- Russia—30.2 percent
- United States—23.7 percent
- Canada—6.0 percent
- Netherlands—4.1 percent.

Regionally, the Middle East had the largest relative gain between 1983 and 1992—225 percent or 2.8 trillion cubic feet (Figure 6). The average annual growth rate for the regions, in order of 1992 total dry natural gas production, was:

- Eastern Europe and Former U.S.S.R.—3.6 percent
- North America—1.8 percent
- Western Europe—2.1 percent
- Far East and Oceania—8.9 percent
- Middle East—14.0 percent
- Africa—5.6 percent
- Central and South America—4.0 percent.

Coal

World production of coal rose from 4.3 billion short tons in 1983 to 5.0 billion short tons in 1992 (Table 4 and Figure 7). The four largest producers, each with at least 0.3 billion short tons produced, accounted for 59 percent of total coal production as follows:

- China—24.6 percent
- United States—20.1 percent
- Russia—7.5 percent.
- Germany—7.0 percent.

Regionally, Central and South America had the largest relative gain between 1983 and 1992—146 percent or 0.02 billion short tons (Figure 8). The Eastern Europe and Former U.S.S.R. and Western Europe regions had average annual rates of decline, 1.1 percent and 2.8 percent respectively. The average annual growth rate for the remaining five regions, in order of 1992 total coal production, was:

- Far East and Oceania—5.1 percent
- North America—2.8 percent
- Africa—2.1 percent
- Central and South America—10.5 percent
- Middle East—5.2 percent.

Hydroelectric Power

World generation of hydroelectric power rose from 1.9 trillion kilowatthours in 1983 to 2.2 trillion kilowatthours in 1992 (Table 5 and Figure 9). The three largest producers, each with at least 0.2 trillion kilowatthours generated, accounted for 35 percent of total hydroelectric power generation as follows:

- Canada—14.2 percent
- United States—11.0 percent
- Brazil—10.2 percent.

Regionally, Central and South America had the largest relative gain between 1983 and 1992—58 percent or 0.14 trillion kilowatthours (Figure 10). North America had an average annual rate of decline of approximately 0.7 percent. The average annual growth rate for the remaining regions, in order of 1992 total net hydroelectric power generation, was:

- Western Europe—0.7 percent
- Far East and Oceania—3.4 percent
- Central and South America—5.2 percent
- Eastern Europe and Former U.S.S.R.—2.2 percent
- Africa—0.1 percent
- Middle East—4.5 percent.

Nuclear Electric Power

World generation of nuclear electric power rose from 1.0 trillion kilowatthours in 1983 to 2.0 trillion kilowatthours in 1992 (Table 6 and Figure 11). The three largest producers, each with at least 0.19 trillion kilowatthours generated, accounted for 57 percent of total nuclear electric power generation as follows:

- United States—30.7 percent
- France—15.9 percent
- Japan—10.3 percent

Regionally, Central and South America had the largest relative gain between 1983 and 1992—147 percent or 5 billion kilowatthours (Figure 12). The Middle East had no nuclear electric power generation. The average annual growth rate for the remaining six regions, in order of 1992 total nuclear electric power generation, was:

- Western Europe—8.1 percent
- North America—8.3 percent
- Far East and Oceania—9.2 percent
- Eastern Europe and Former U.S.S.R.—7.7 percent
- Africa—11.3 percent (1984-1992)
- Central and South America—10.6 percent.

Key Organizations

Among the international organizations, the Organization of Petroleum Exporting Countries had an increase in total petroleum production (crude oil, natural gas liquids, refinery gain, and other liquids) from 18.5 million barrels per day in 1983 to 26.4 million barrels per day in 1992 (Table 7). The growth rate of petroleum production in these countries averaged 4.0 percent per year during this period. The Organization for Economic Cooperation and Development had an increase in nuclear electric generation from 815 billion kilowatthours in 1983 to 1,647 billion kilowatthours in 1992. The growth rate for nuclear generation in these countries averaged 8.1 percent per year.

Table 1. World Crude Oil¹ Production, 1983-1992
(Thousand Barrels per Day)

Region Country	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992 ²
North America										
Canada	1,356	1,438	1,471	1,474	1,535	1,616	1,560	1,553	1,548	1,598
Mexico	2,689	2,780	2,745	2,435	2,548	2,512	2,520	2,553	2,680	2,668
United States	8,688	8,879	8,971	8,680	8,349	8,140	7,613	7,355	7,417	7,171
Total	12,733	13,097	13,187	12,589	12,432	12,268	11,693	11,461	11,644	11,438
Central & South America										
Argentina	491	478	460	434	428	449	460	483	485	553
Brazil	339	475	564	572	566	554	596	631	630	626
Colombia	152	168	176	305	385	378	403	440	419	438
Ecuador	237	258	281	293	174	302	279	285	299	318
Peru	171	184	190	178	164	141	130	129	115	116
Trinidad and Tobago	160	170	175	168	157	157	154	150	151	137
Venezuela	1,801	1,798	1,677	1,787	1,752	1,903	1,907	2,137	2,375	2,334
Other	81	81	79	76	74	66	66	64	61	62
Total	3,432	3,612	3,602	3,813	3,700	3,950	3,995	4,318	4,535	4,585
Western Europe										
Denmark	45	46	58	76	97	99	117	121	143	157
Germany	82	80	82	81	75	79	76	72	71	69
Italy	45	45	45	49	67	90	82	87	80	84
Netherlands	53	61	76	93	87	77	64	70	74	53
Norway	614	697	788	870	1,022	1,158	1,554	1,704	1,890	2,122
Spain	58	46	44	38	34	30	21	16	22	20
United Kingdom	2,291	2,480	2,530	2,539	2,406	2,232	1,802	1,820	1,797	1,825
Former Yugoslavia	83	80	86	84	79	75	70	64	60	20
Other	128	125	138	153	161	161	161	171	189	179
Total	3,399	3,660	3,847	3,983	4,028	4,001	3,947	4,125	4,326	4,530
Eastern Europe & Former U.S.S.R.										
Romania	240	237	220	221	215	193	180	163	140	138
Russia	--	--	--	--	--	--	--	--	--	7,386
Former U.S.S.R.	11,972	11,861	11,585	11,895	11,985	11,978	11,625	10,880	9,887	--
Other	124	105	104	105	101	93	94	78	62	1,066
Total	12,336	12,203	11,909	12,221	12,301	12,264	11,899	11,121	10,089	8,590
Middle East										
Iran	2,440	2,174	2,250	2,035	2,298	2,240	2,810	3,088	3,312	3,429
Iraq	1,005	1,209	1,433	1,690	2,079	2,685	2,897	2,040	305	450
Kuwait	1,064	1,157	1,023	1,419	1,585	1,492	1,783	1,175	190	1,029
Oman	375	414	498	560	582	617	641	685	700	738
Qatar	295	394	301	308	293	346	380	406	395	396
Saudi Arabia	5,086	4,663	3,388	4,870	4,265	5,086	5,064	6,410	8,115	8,438
Syria	167	170	178	194	230	265	340	388	492	531
United Arab Emirates	1,149	1,146	1,193	1,330	1,541	1,565	1,860	2,117	2,386	2,325
Other	43	42	43	56	63	217	238	236	235	219
Total	11,624	11,369	10,307	12,462	12,936	14,513	16,013	16,545	16,130	17,555
Africa										
Algeria	968	1,014	1,037	945	1,048	1,040	1,095	1,175	1,230	1,217
Angola	177	208	231	282	360	452	455	475	500	532
Cameroon	114	135	185	177	174	163	170	161	153	140
Congo	87	121	120	119	123	144	164	165	156	185
Egypt	727	822	887	813	896	848	865	873	874	881
Gabon	157	157	172	166	155	159	208	270	294	298
Libya	1,105	1,087	1,059	1,034	972	1,175	1,150	1,375	1,483	1,483
Nigeria	1,241	1,388	1,495	1,467	1,341	1,450	1,716	1,810	1,892	1,982
Tunisia	120	120	114	111	106	103	105	93	104	109
Other	55	69	71	61	57	47	34	35	34	36
Total	4,751	5,121	5,371	5,175	5,232	5,581	5,962	6,432	6,721	6,862
Far East & Oceania										
Australia	416	492	575	520	547	538	490	575	545	538
Brunei	162	160	153	166	139	137	132	150	161	165
China	2,120	2,296	2,505	2,620	2,690	2,730	2,757	2,774	2,835	2,838
India	480	519	620	630	609	635	700	660	615	558
Indonesia	1,343	1,412	1,325	1,390	1,343	1,342	1,409	1,462	1,592	1,566
Malaysia	365	440	440	504	497	540	585	619	646	653
Other	94	107	140	154	147	163	192	228	265	376
Total	4,980	5,426	5,758	5,984	5,972	6,085	6,264	6,468	6,660	6,695
World Total	53,255	54,488	53,981	56,227	56,661	58,662	59,773	60,471	60,105	60,255

¹ Crude oil includes lease condensate.

² Preliminary.

--=Not applicable.

Note: Sum of components may not equal total due to independent rounding.

Sources: See sources at the end of Chapter 3.

Figure 1. World Crude Oil Production, 1983-1992

Source: Table 1.

Figure 2. World Crude Oil Production by Region, 1983 and 1992

Source: Table 1.

Table 2. World Natural Gas Plant Liquids Production, 1983-1992
(Thousand Barrels per Day)

Region Country	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992 ¹
North America										
Canada	309	336	337	328	367	381	410	426	431	459
Mexico	265	257	271	352	338	370	384	428	457	446
United States	1,559	1,630	1,609	1,551	1,595	1,625	1,546	1,559	1,659	1,697
Total	2,133	2,223	2,217	2,231	2,300	2,376	2,340	2,413	2,548	2,602
Central & South America										
Argentina	8	15	20	31	36	35	27	27	30	35
Bolivia	6	6	6	5	4	5	5	5	5	7
Brazil	11	15	17	20	25	25	22	20	22	25
Chile	10	11	11	10	10	10	10	8	7	8
Colombia	4	4	4	5	6	4	8	8	6	8
Cuba	1	1	2	2	2	2	2	2	2	2
Peru	1	1	1	1	1	1	(s)	1	1	1
Trinidad and Tobago	0	0	0	0	0	0	0	0	3	5
Venezuela	57	57	63	97	94	98	108	114	117	113
Other	2	2	2	2	2	2	2	2	2	3
Total	100	112	126	173	180	182	184	187	195	207
Western Europe										
Austria	1	1	1	1	1	1	1	1	1	1
France	20	20	17	14	12	12	12	11	10	9
Greece	2	2	2	2	2	2	2	2	1	1
Italy	1	1	1	1	1	1	1	1	1	1
Netherlands	9	9	11	11	11	11	13	14	10	11
Norway	38	36	41	53	55	75	74	78	94	95
United Kingdom	111	136	145	152	162	159	140	108	141	160
Former Yugoslavia	4	4	4	4	11	11	8	10	8	6
Other	0	0	0	7	6	7	9	11	11	11
Total	186	209	222	245	260	279	260	236	277	295
Eastern Europe & Former U.S.S.R.										
Kazakhstan	--	--	--	--	--	--	--	--	--	93
Romania	15	15	15	15	15	13	13	8	8	7
Russia	--	--	--	--	--	--	--	--	--	318
Former U.S.S.R.	330	340	350	440	495	525	515	520	525	--
Other	22	23	26	26	23	24	16	16	14	128
Total	367	378	391	481	533	562	544	544	547	546
Middle East										
Bahrain	9	9	6	8	9	9	8	5	5	7
Iran	8	10	10	15	20	20	27	35	50	60
Iraq	5	5	10	10	10	20	54	30	0	0
Kuwait	55	67	54	75	95	100	105	65	0	15
Qatar	25	28	30	22	24	30	24	40	50	50
Saudi Arabia	330	355	375	385	418	499	503	620	680	720
United Arab Emirates	120	130	160	185	145	130	130	135	165	161
Other	2	3	4	5	7	7	12	12	10	8
Total	554	607	649	705	728	815	863	942	960	1,021
Africa										
Algeria	56	105	120	120	140	120	130	130	140	145
Egypt	25	25	27	24	25	35	45	40	45	45
Libya	30	37	26	30	30	30	35	35	40	40
Tunisia	0	0	0	0	0	0	3	5	5	5
Total	111	167	173	174	198	190	215	210	230	235
Far East & Oceania										
Australia	52	54	65	60	65	67	65	63	61	64
Brunei	25	15	15	15	11	11	10	10	10	12
Indonesia	94	75	44	30	30	30	72	77	70	76
Malaysia	0	10	10	9	11	11	11	12	12	13
New Zealand	2	2	3	3	3	4	4	4	5	5
Other	11	17	23	24	24	29	25	37	41	42
Total	184	173	160	141	144	152	187	203	199	212
World Total²	3,635	3,869	3,938	4,150	4,344	4,556	4,593	4,735	4,955	5,118

¹ Preliminary.

² Does not include China for which data are unavailable.

--=Not applicable.

(s)=Value less than 500 barrels per day.

Note: Sum of components may not equal total due to independent rounding.

Sources: See sources at the end of Chapter 3.

Figure 3. World Natural Gas Plant Liquids Production, 1983-1992

Source: Table 2.

Figure 4. World Natural Gas Plant Liquids Production by Region, 1983 and 1992

Source: Table 2.

Table 3. World Dry Natural Gas Production, 1983-1992
(Trillion Cubic Feet)

Region Country	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992 ¹
North America										
Canada	2.52	2.61	2.98	2.81	3.03	3.58	3.80	3.89	4.12	4.49
Mexico	1.10	1.04	0.95	0.92	0.86	0.92	0.93	0.94	0.94	0.93
United States	16.09	17.47	16.45	16.06	16.62	17.10	17.31	17.81	17.75	17.78
Total	19.71	21.12	20.39	19.79	20.51	21.60	22.03	22.64	22.81	23.20
Central & South America										
Argentina	0.45	0.49	0.50	0.55	0.53	0.63	0.72	0.63	0.64	0.61
Colombia	0.10	0.14	0.14	0.14	0.14	0.15	0.15	0.15	0.16	0.15
Trinidad and Tobago	0.13	0.19	0.22	0.15	0.14	0.15	0.16	0.18	0.20	0.19
Venezuela	0.58	0.61	0.62	0.67	0.66	0.66	0.77	0.86	0.83	0.84
Other	0.24	0.27	0.28	0.26	0.27	0.28	0.33	0.29	0.30	0.31
Total	1.49	1.71	1.76	1.78	1.74	1.87	2.13	2.12	2.12	2.11
Western Europe										
France	0.24	0.23	0.19	0.16	0.13	0.11	0.11	0.10	0.10	0.11
Germany	0.78	0.82	0.77	0.71	0.80	0.74	0.71	0.66	0.67	0.67
Italy	0.46	0.49	0.50	0.56	0.58	0.59	0.60	0.61	0.61	0.64
Netherlands	2.58	2.65	2.73	2.76	2.77	2.45	2.67	2.69	3.04	3.06
Norway	0.86	0.93	0.94	0.99	1.06	1.05	1.09	0.98	0.96	0.98
United Kingdom	1.40	1.42	1.52	1.60	1.68	1.62	1.58	1.80	2.01	1.97
Former Yugoslavia	0.06	0.07	0.08	0.09	0.08	0.11	0.10	0.09	0.09	0.10
Other	0.13	0.15	0.19	0.20	0.23	0.24	0.30	0.30	0.33	0.32
Total	6.50	6.76	6.91	7.07	7.31	6.90	7.16	7.24	7.82	7.85
Eastern Europe & Former U.S.S.R.										
Hungary	0.23	0.24	0.26	0.25	0.22	0.22	0.22	0.16	0.18	0.17
Poland	0.19	0.22	0.23	0.21	0.20	0.20	0.19	0.14	0.15	0.14
Romania	1.40	1.34	1.27	1.34	1.32	1.28	1.13	1.03	0.88	0.78
Russia	--	--	--	--	--	--	--	--	--	22.62
Turkmenistan	--	--	--	--	--	--	--	--	--	2.12
Ukraine	--	--	--	--	--	--	--	--	--	0.74
Former U.S.S.R.	18.93	20.74	22.71	24.19	25.36	27.19	28.11	28.78	28.62	--
Uzbekistan	--	--	--	--	--	--	--	--	--	1.41
Other	0.04	0.04	0.04	0.04	0.04	0.06	0.05	0.03	0.03	0.62
Total	20.78	22.58	24.50	26.03	27.14	28.95	29.70	30.14	29.85	28.60
Middle East										
Bahrain	0.14	0.13	0.16	0.18	0.22	0.18	0.19	0.21	0.23	0.25
Iran	0.31	0.48	0.60	0.54	0.57	0.71	0.78	0.84	0.92	0.88
Kuwait	0.12	0.14	0.14	0.17	0.19	0.23	0.29	0.19	0.02	0.22
Qatar	0.17	0.21	0.19	0.19	0.20	0.21	0.22	0.28	0.21	0.21
Saudi Arabia	0.19	0.62	0.72	0.89	0.95	1.03	1.05	1.08	1.13	1.20
United Arab Emirates	0.27	0.34	0.48	0.54	0.68	0.66	0.81	0.78	0.92	0.99
Other	0.05	0.08	0.09	0.13	0.24	0.29	0.35	0.35	0.29	0.36
Total	1.27	2.00	2.38	2.63	3.03	3.31	3.69	3.71	3.71	4.11
Africa										
Algeria	1.31	1.36	1.36	1.33	1.52	1.63	1.71	1.79	1.93	1.97
Egypt	0.11	0.14	0.18	0.20	0.22	0.24	0.27	0.29	0.32	0.35
Libya	0.14	0.16	0.18	0.20	0.19	0.19	0.21	0.22	0.24	0.25
Nigeria	0.08	0.10	0.11	0.12	0.13	0.13	0.17	0.13	0.17	0.19
Other	0.04	0.04	0.03	0.03	0.04	0.04	0.03	0.04	0.01	0.01
Total	1.69	1.80	1.86	1.88	2.10	2.24	2.39	2.46	2.67	2.76
Far East & Oceania										
Australia	0.39	0.40	0.45	0.52	0.53	0.56	0.57	0.72	0.76	0.83
Bangladesh	0.07	0.10	0.10	0.11	0.13	0.15	0.16	0.16	0.17	0.19
Brunei	0.33	0.30	0.30	0.29	0.31	0.30	0.31	0.32	0.28	0.28
China	0.43	0.44	0.46	0.48	0.49	0.49	0.51	0.51	0.53	0.50
India	0.11	0.11	0.14	0.18	0.23	0.31	0.32	0.40	0.45	0.46
Indonesia	0.78	1.06	1.23	1.18	1.29	1.34	1.42	1.53	1.72	1.91
Japan	0.07	0.09	0.09	0.07	0.08	0.07	0.07	0.07	0.08	0.08
Malaysia	0.15	0.33	0.44	0.53	0.55	0.58	0.61	0.65	0.75	0.92
New Zealand	0.09	0.10	0.12	0.16	0.15	0.17	0.17	0.17	0.19	0.20
Pakistan	0.34	0.35	0.37	0.39	0.42	0.44	0.47	0.42	0.53	0.58
Thailand	0.06	0.07	0.13	0.11	0.13	0.19	0.18	0.21	0.24	0.26
Other	0.15	0.16	0.18	0.18	0.18	0.17	0.19	0.22	0.15	0.16
Total	2.96	3.50	3.98	4.21	4.50	4.78	4.98	5.37	5.84	6.38
World Total	54.40	59.46	61.78	63.40	66.33	69.65	72.09	73.68	74.81	75.00

¹ Preliminary.

--=Not applicable.

Note: Sum of components may not equal total due to independent rounding.

Sources: See sources at the end of Chapter 4.

Figure 5. World Dry Natural Gas Production, 1983-1992

Source: Table 3.

Figure 6. World Dry Natural Gas Production by Region, 1983 and 1992

Source: Table 3.

Table 4. World Coal¹ Production, 1983-1992
(Million Short Tons)

Region Country	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992 ²
North America										
Canada	50	63	67	64	67	78	78	75	78	72
Mexico	5	5	5	4	5	5	5	5	5	6
United States	782	896	884	890	919	950	981	1,029	996	998
Total	836	964	956	958	991	1,033	1,063	1,109	1,080	1,076
Central & South America										
Brazil	7	8	9	8	8	7	7	5	6	6
Chile	1	1	2	2	2	2	2	2	3	2
Colombia	6	8	10	12	15	17	21	23	26	26
Other	1	1	1	1	1	2	3	3	3	4
Total	16	18	20	23	26	28	33	33	38	38
Western Europe										
Austria	3	3	3	3	3	3	3	3	2	2
Belgium	7	7	8	6	6	4	3	1	2	1
France	22	21	19	18	17	17	17	15	14	13
Germany	545	560	575	565	541	549	538	504	388	346
Greece	33	35	40	42	49	51	57	57	58	60
Italy	2	2	2	2	1	2	2	1	1	1
Norway	1	(s)	1	(s)	(s)	(s)	(s)	(s)	(s)	(s)
Spain	44	44	44	42	40	43	46	46	32	37
Turkey	32	38	43	51	52	43	44	53	59	54
United Kingdom	127	55	104	119	115	117	111	98	106	94
Former Yugoslavia	65	72	75	77	78	78	82	84	74	74
Other	(s)	(s)	(s)	(s)	(s)	(s)	(s)	(s)	(s)	(s)
Total	880	836	914	927	904	906	903	863	738	682
Eastern Europe & Former U.S.S.R.										
Albania	2	2	2	3	3	3	3	2	1	(s)
Bulgaria	36	36	34	35	39	38	38	35	31	39
Former Czechoslovakia	140	143	140	139	137	137	130	119	111	102
Hungary	28	28	27	25	24	23	22	19	19	17
Kazakhstan	--	--	--	--	--	--	--	--	--	139
Poland	258	267	275	286	290	294	275	237	231	227
Romania	39	49	51	52	50	58	68	42	36	38
Russia	--	--	--	--	--	--	--	--	--	372
Ukraine	--	--	--	--	--	--	--	--	--	148
Former U.S.S.R.	707	700	714	741	750	761	761	775	624	--
Other	(s)	0	(s)	0	(s)	(s)	0	0	(s)	8
Total	1,209	1,224	1,243	1,282	1,291	1,312	1,296	1,229	1,053	1,092
Middle East										
Iran	1	1	1	1	1	1	1	1	2	2
Total	1	1	1	1	1	1	1	1	2	2
Africa										
Morocco	1	1	1	1	1	1	1	1	1	1
South Africa	161	179	192	195	195	200	194	191	197	192
Zimbabwe (Rhodesia)	4	3	3	4	5	6	6	6	6	6
Other	2	2	2	1	2	2	2	2	2	2
Total	167	184	198	201	202	208	202	200	205	201
Far East & Oceania										
Australia	146	153	186	187	209	198	216	231	236	249
China	787	870	961	985	1,023	1,080	1,162	1,162	1,213	1,226
India	158	168	173	188	207	208	230	250	249	263
Indonesia	1	1	2	3	3	5	10	12	15	25
Japan	19	18	18	18	14	12	11	9	10	9
Korea, North	50	51	53	54	57	58	59	59	58	58
Korea, South	21	23	26	28	25	24	23	19	17	13
Mongolia	6	6	7	7	9	8	9	9	9	9
New Zealand	2	3	3	3	3	3	3	3	3	3
Pakistan	2	2	2	2	3	3	3	3	3	4
Thailand	2	3	6	6	9	7	19	14	16	17
Vietnam	7	6	6	6	6	6	6	6	6	6
Other	4	4	4	4	3	3	3	2	2	2
Total	1,205	1,307	1,447	1,489	1,571	1,616	1,753	1,778	1,837	1,884
World Total	4,314	4,534	4,779	4,882	4,987	5,105	5,252	5,214	4,952	4,975

¹ Coal includes anthracite, subanthracite, bituminous, subbituminous, lignite, and brown coal.

² Preliminary.

--=Not applicable.

(s)=Value less than 500 thousand short tons.

Note: Sum of components may not equal total due to independent rounding.

Sources: See sources at the end of Chapter 5.

Figure 7. World Coal Production, 1983-1992

Source: Table 4.

Figure 8. World Coal Production by Region, 1983 and 1992

Source: Table 4.

Table 5. World Net Hydroelectric Power Generation,¹ 1983-1992
(Billion Kilowatthours)

Region Country	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992 ²
North America										
Canada	263.4	283.4	300.8	307.7	313.2	303.5	287.6	292.6	304.3	312.1
Mexico	20.5	23.4	26.0	19.8	18.2	21.0	24.4	23.5	24.3	24.5
United States	335.3	324.3	284.3	294.0	252.9	226.1	268.2	283.1	278.7	242.7
Total	619.2	631.0	611.1	621.5	584.3	550.5	580.3	599.2	607.3	579.4
Central & South America										
Argentina	18.4	19.9	20.4	20.8	21.8	15.6	13.2	18.0	16.3	16.0
Brazil	149.9	164.8	176.5	180.7	183.7	197.1	202.6	204.6	215.6	225.0
Chile	8.9	9.3	10.4	11.3	12.0	11.4	9.5	9.0	10.1	10.2
Colombia	18.0	20.0	21.6	25.0	21.3	24.3	26.4	27.2	27.4	28.0
Peru	8.1	8.6	9.4	10.1	10.8	10.3	10.3	10.4	11.2	12.0
Uruguay	7.1	7.0	6.4	7.2	7.2	5.4	3.9	6.9	6.1	5.9
Venezuela	18.3	19.5	21.8	26.7	31.4	34.3	36.5	33.0	34.0	33.0
Other	12.1	14.3	19.2	28.7	35.1	37.5	43.2	46.8	49.1	50.0
Total	240.8	263.5	285.7	310.5	323.3	335.9	345.5	356.0	369.7	380.1
Western Europe										
Austria	30.1	29.0	31.0	31.1	36.1	35.9	35.5	32.0	32.2	35.7
Finland	13.4	13.1	12.2	12.3	13.7	13.2	12.9	10.8	13.0	14.9
France	70.8	67.4	63.6	64.6	71.7	77.4	50.1	56.6	60.7	71.8
Germany	20.6	20.2	19.4	20.3	22.3	22.4	20.5	19.5	18.2	20.9
Iceland	3.6	3.7	3.7	3.8	3.9	4.2	4.2	4.2	4.2	4.3
Italy	43.7	44.9	44.1	43.9	42.1	43.0	37.0	34.6	45.1	45.1
Norway	106.0	106.3	102.9	96.7	102.8	108.6	117.7	120.0	109.5	116.1
Portugal	8.0	9.7	10.7	8.5	9.0	12.1	6.0	9.1	9.0	5.0
Spain	28.9	33.4	32.8	27.1	27.8	35.7	19.7	25.8	27.9	20.7
Sweden	62.6	66.9	69.8	59.9	70.9	69.6	71.1	72.3	62.9	73.6
Switzerland	35.6	30.6	32.3	33.2	35.0	36.4	30.5	30.7	33.1	33.7
Turkey	11.2	13.3	11.9	11.7	18.3	28.6	17.6	22.7	22.3	26.3
United Kingdom	4.0	3.4	3.3	3.9	3.4	6.9	6.5	7.0	5.9	7.1
Former Yugoslavia	21.6	25.6	24.4	27.5	26.0	25.6	23.5	19.9	18.9	17.5
Other	5.2	5.7	5.9	6.6	6.1	5.8	5.0	4.9	6.0	5.0
Total	465.5	473.2	468.0	451.2	489.3	525.6	457.7	470.1	468.9	497.6
Eastern Europe & Former U.S.S.R.										
Former Czechoslovakia	3.9	3.2	4.3	4.0	4.9	4.4	4.2	3.9	3.1	2.5
Poland	3.3	3.3	3.9	3.7	4.0	4.2	3.7	3.3	3.4	3.6
Romania	9.9	11.2	11.8	10.7	11.1	13.5	12.5	10.9	14.1	14.0
Russia	--	--	--	--	--	--	--	--	--	170.0
Former U.S.S.R.	180.2	203.2	205.0	213.5	217.5	228.5	221.0	230.7	232.7	--
Other	6.6	6.6	5.7	5.8	6.0	6.2	6.4	4.8	5.1	58.1
Total	203.9	227.5	230.7	237.7	243.4	256.7	247.8	253.6	258.4	248.1
Middle East										
Iran	6.1	6.3	6.3	6.1	6.3	6.4	6.6	6.5	6.5	6.6
Other	3.3	3.1	3.2	2.8	3.3	6.1	5.8	6.8	7.1	7.4
Total	9.4	9.4	9.5	8.9	9.6	12.5	12.4	13.3	13.6	14.0
Africa										
Egypt	10.1	9.9	8.0	7.9	8.2	7.8	7.9	9.9	9.8	9.7
Zaire	4.4	4.6	5.0	5.2	5.2	5.2	5.9	5.9	5.9	6.0
Zambia	9.9	9.8	9.9	9.7	8.4	8.3	6.7	7.7	7.7	5.6
Other	25.6	20.7	22.9	24.0	24.5	25.2	26.9	27.9	29.1	29.3
Total	50.1	45.0	45.7	46.8	46.2	46.5	47.4	51.4	52.5	50.7
Far East & Oceania										
Australia	12.5	12.1	13.9	14.6	13.5	14.1	15.0	14.6	16.0	15.6
China	86.4	86.8	92.4	94.5	100.2	108.0	117.1	125.4	123.8	129.8
India	49.9	53.4	50.5	53.3	47.0	57.3	61.5	65.4	66.8	67.5
Japan	87.1	76.0	87.1	85.2	80.0	95.5	96.9	94.9	104.5	96.3
Korea, North	25.7	26.7	27.7	28.7	28.8	31.2	31.4	31.4	31.4	32.0
Korea, South	2.7	2.4	3.6	4.0	5.3	3.5	4.5	6.3	5.0	4.8
New Zealand	19.6	20.2	19.5	21.9	22.1	23.1	21.9	23.1	22.9	22.7
Pakistan	11.3	12.7	12.1	13.7	15.1	16.5	16.8	16.8	18.1	19.0
Philippines	2.9	5.1	5.5	6.0	5.2	6.2	6.4	6.0	5.1	4.5
Thailand	3.6	4.0	3.7	5.5	4.0	3.7	5.5	4.9	4.5	4.8
Other	19.2	22.2	25.8	27.7	29.1	30.7	33.9	36.7	33.9	36.6
Total	320.8	321.6	341.8	355.0	350.3	389.8	411.0	425.6	432.2	433.6
World Total	1,909.7	1,971.2	1,992.4	2,031.6	2,046.4	2,117.4	2,102.1	2,169.1	2,202.7	2,203.5

¹ Generation data consist of both utility and nonutility sources. Data are reported as net generation as opposed to gross. Net generation excludes the energy consumed by the generating unit and excludes generation from pumped storage.

² Preliminary.

--Not applicable.

Note: Sum of components may not equal total due to independent rounding.

Sources: See sources at the end of Chapter 6.

Figure 9. World Net Hydroelectric Power Generation, 1983-1992

Source: Table 5.

Figure 10. World Net Hydroelectric Power Generation by Region, 1983 and 1992

Source: Table 5.

Table 6. World Net Nuclear Electric Power Generation,¹ 1983-1992
(Billion Kilowatthours)

Region Country	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992 ²
North America										
Canada	46.2	49.3	57.1	67.2	72.9	78.2	75.4	68.8	80.1	76.0
Mexico	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	4.0	3.7
United States	293.7	327.6	383.7	414.0	455.3	527.0	529.4	576.9	612.6	618.8
Total	339.9	376.9	440.8	481.3	528.2	605.1	604.7	647.7	696.7	698.5
Central & South America										
Argentina	3.2	4.3	5.4	5.4	6.1	4.8	4.8	7.0	7.7	6.7
Brazil	0.2	2.7	2.9	0.1	0.9	0.3	1.5	1.9	1.4	1.7
Total	3.4	7.0	8.4	5.5	7.1	5.2	6.3	9.0	9.1	8.4
Western Europe										
Belgium	22.8	26.4	32.7	37.3	39.8	40.9	39.1	40.6	40.6	41.3
Finland	16.7	17.8	18.0	18.0	18.5	18.4	18.0	18.1	18.4	18.0
France	136.0	180.5	211.2	239.6	249.3	260.3	288.7	297.7	315.0	321.5
Germany	77.4	104.3	138.6	130.5	141.2	156.1	151.5	145.1	139.4	150.9
Italy	5.5	6.5	6.6	8.3	(s)	0.0	0.0	0.0	0.0	0.0
Netherlands	3.4	3.5	3.7	4.0	3.4	3.5	3.8	3.3	3.1	3.8
Spain	10.7	23.1	28.0	37.5	41.3	48.3	53.7	51.9	53.2	53.0
Sweden	39.1	48.5	55.8	66.9	64.3	65.6	62.8	65.2	73.5	60.6
Switzerland	14.0	16.4	20.1	20.1	20.5	21.5	21.5	22.4	21.7	22.3
United Kingdom	43.9	47.3	53.8	51.8	48.2	55.6	63.6	58.7	62.8	73.8
Former Yugoslavia	3.7	4.2	4.0	4.0	4.2	3.9	4.5	4.4	4.2	3.8
Total	373.0	478.4	572.5	617.8	630.6	674.2	707.3	707.4	731.9	748.8
Eastern Europe & Former U.S.S.R.										
Bulgaria	11.6	12.0	12.4	11.4	11.7	15.1	14.6	13.5	12.4	11.0
Former Czechoslovakia	6.2	7.3	11.9	17.9	20.9	21.9	23.2	23.4	22.5	23.3
Hungary	2.3	3.5	6.1	7.0	10.4	12.7	13.1	13.1	13.1	13.3
Lithuania	--	--	--	--	--	--	--	--	--	15.8
Russia	--	--	--	--	--	--	--	--	--	118.9
Ukraine	--	--	--	--	--	--	--	--	--	70.1
Former U.S.S.R.	109.7	141.9	170.0	151.6	176.3	203.7	212.7	201.3	201.5	--
Total	129.9	164.8	200.3	187.8	219.3	253.4	263.5	251.4	249.5	252.3
Middle East	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Africa										
South Africa	0.0	4.0	5.5	8.9	6.3	10.5	11.1	8.5	9.2	9.4
Total	0.0	4.0	5.5	8.9	6.3	10.5	11.1	8.5	9.2	9.4
Far East & Oceania										
India	3.5	3.8	4.7	4.7	4.7	5.2	3.8	5.6	5.2	6.0
Japan	105.2	127.0	149.7	158.8	188.6	173.9	174.5	182.3	201.4	207.2
Korea, South	8.4	11.1	15.8	26.7	37.1	37.8	45.0	50.2	53.5	53.7
Pakistan	0.2	0.3	0.3	0.4	0.5	0.2	0.1	0.4	0.4	0.5
Taiwan	18.1	23.6	27.8	25.8	31.8	29.4	27.1	31.6	33.5	32.1
Total	135.5	165.9	198.2	216.4	262.7	246.5	250.5	270.1	294.0	299.6
World Total	981.7	1,196.9	1,425.7	1,517.7	1,654.1	1,794.9	1,843.4	1,894.0	1,990.4	2,017.0

¹ Generation data consist of both utility and nonutility sources. Data are reported as net generation as opposed to gross. Net generation excludes the energy consumed by the generating unit.

² Preliminary.

--=Not applicable.

(s)=Value less than 50 million kilowatthours.

Note: Sum of components may not equal total due to independent rounding.

Sources: See sources at the end of Chapter 6.

Figure 11. World Net Nuclear Electric Power Generation, 1983-1992

Source: Table 6.

Figure 12. World Net Nuclear Electric Power Generation by Region, 1983 and 1992

Source: Table 6.

Table 7. Production of Primary Energy Sources by Selected Country Groups, 1983-1992

Type of Energy Country Groups	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992 ¹
Petroleum (thousand barrels per day)²										
World Total	58,056	59,845	59,264	61,771	62,410	64,673	65,854	66,722	66,623	67,067
OECD ³	18,758	17,599	18,022	17,857	17,796	17,714	16,989	17,031	17,455	17,685
Non OECD	41,298	42,046	41,242	43,914	44,614	46,959	48,865	49,691	49,168	49,382
Other Groups:										
OECD Europe	3,741	4,056	4,255	4,428	4,485	4,485	4,415	4,576	4,815	5,077
OPEC ⁴	18,510	18,547	17,324	19,477	19,745	21,625	23,532	24,807	24,933	26,379
EEC ⁵	3,005	3,243	3,348	3,420	3,322	3,164	2,693	2,684	2,702	2,738
IEA ⁶	18,758	17,599	18,022	17,857	17,796	17,714	16,989	17,031	17,455	17,685
Natural Gas (trillion cubic feet)										
World Total	54.40	59.46	61.78	63.40	66.33	69.65	72.09	73.68	74.81	75.00
OECD ³	25.61	27.34	26.92	26.60	27.64	28.27	28.98	29.81	30.62	31.13
Non OECD	28.79	32.12	34.86	36.80	38.69	41.38	43.11	43.88	44.20	43.87
Other Groups:										
OECD Europe	6.45	6.69	6.83	6.98	7.23	6.79	7.06	7.15	7.72	7.76
OPEC ⁴	3.98	5.11	5.65	5.87	6.51	6.99	7.65	7.83	8.12	8.70
EEC ⁵	5.54	5.71	5.85	5.94	6.13	5.69	5.92	6.12	6.71	6.72
IEA ⁶	25.61	27.34	26.92	26.60	27.64	28.27	28.98	29.81	30.62	31.13
Coal (million short tons)										
World Total	4,314	4,534	4,779	4,882	4,987	5,105	5,252	5,214	4,952	4,975
OECD ³	1,814	1,898	1,996	2,011	2,038	2,069	2,109	2,127	1,986	1,939
Non OECD	2,500	2,636	2,782	2,870	2,949	3,036	3,143	3,087	2,966	3,036
Other Groups:										
OECD Europe	815	764	839	850	825	828	821	780	663	608
OPEC ⁴	2	2	3	4	5	8	13	16	20	30
EEC ⁵	780	723	792	795	770	781	774	724	602	552
IEA ⁶	1,814	1,898	1,996	2,011	2,038	2,069	2,109	2,127	1,986	1,939
Hydroelectric Power (billion kilowatthours)										
World Total	1,909.7	1,971.2	1,992.4	2,031.6	2,046.4	2,117.4	2,102.1	2,169.1	2,202.7	2,203.5
OECD ³	1,161.7	1,163.6	1,149.4	1,147.3	1,145.2	1,162.4	1,124.1	1,158.7	1,176.6	1,169.8
Non OECD	748.0	807.6	843.0	884.3	901.2	955.0	978.0	1,010.4	1,026.1	1,033.7
Other Groups:										
OECD Europe	443.8	447.5	443.6	423.7	463.2	499.9	434.1	450.2	449.9	480.1
OPEC ⁴	33.1	35.8	38.2	43.5	49.3	52.7	55.3	52.0	52.5	51.4
EEC ⁵	181.1	184.6	179.8	174.9	182.4	203.3	144.7	157.5	172.8	175.6
IEA ⁶	1,158.1	1,159.9	1,145.7	1,143.5	1,141.2	1,158.2	1,119.9	1,154.6	1,172.5	1,165.5
Nuclear Electric Power (billion kilowatthours)										
World Total	981.7	1,196.9	1,425.7	1,517.7	1,654.1	1,794.9	1,843.4	1,894.0	1,990.4	2,017.0
OECD ³	814.5	978.1	1,158.9	1,253.8	1,343.2	1,449.3	1,482.0	1,531.0	1,621.8	1,647.0
Non OECD	167.3	218.8	266.8	263.9	310.9	345.6	361.4	363.0	368.6	370.0
Other Groups:										
OECD Europe	369.3	474.2	568.5	613.8	626.4	670.3	702.8	703.0	727.8	745.0
OPEC ⁴	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EEC ⁵	299.6	391.5	474.6	508.8	523.1	564.7	600.5	597.3	614.2	644.0
IEA ⁶	814.5	978.1	1,158.9	1,253.8	1,343.2	1,449.3	1,482.0	1,531.0	1,621.8	1,647.0

¹ Preliminary.

² Data include the production of crude oil, natural gas plant liquids, refinery gain, and other liquid fuels (see Table D2).

³ The Organization for Economic Cooperation and Development (OECD) includes Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Japan, Luxembourg, the Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, the United Kingdom, the United States, and the U.S. Territories. Refer to Appendix G for a listing of OECD Europe.

⁴ The Organization of Petroleum Exporting Countries (OPEC) includes Algeria, Gabon, Indonesia, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, the United Arab Emirates, and Venezuela.

⁵ European Economic Community (EEC) includes Belgium, Denmark, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, and the United Kingdom.

⁶ International Energy Agency (IEA) includes Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Japan, Luxembourg, the Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, the United Kingdom, the United States, and the U.S. Territories.

Note: Sum of components may not equal total due to independent rounding. The country groups, OECD, EEC, and IEA include the unified Germany.

Sources: See sources at the end of Chapters 3, 4, 5, 6.

For consistency, data reflect 1992 membership (as of December 31, 1992). For statistical comparison, refer to Table C1 for primary energy production data based on each country group's actual yearly membership.

**World Primary Energy
Consumption**

2. World Primary Energy Consumption

Petroleum

World consumption of petroleum rose from 58.7 million barrels per day in 1983 to 66.7 million barrels per day in 1992 (Table 8 and Figure 13). The five largest consumers, each with at least 2.5 million barrels per day consumed, accounted for 48 percent of total petroleum consumption as follows:

- United States—25.5 percent
- Japan—8.2 percent
- Russia—6.4 percent
- Germany—4.3 percent
- China—3.9 percent.

Regionally, the Far East and Oceania had the largest relative gain between 1983 and 1992—47 percent or 4.8 million barrels per day (Figure 14). The Eastern Europe and Former U.S.S.R. region had an average annual rate of decline of 3.5 percent. The average annual growth rate for the remaining regions, in order of 1992 total petroleum consumption, was:

- North America—1.4 percent
- Far East and Oceania—4.3 percent
- Western Europe—1.2 percent
- Central and South America—1.6 percent
- Middle East—4.0 percent
- Africa—3.1 percent.

Natural Gas

World consumption of dry natural gas rose from 54.4 trillion cubic feet in 1983 to 74.7 trillion cubic feet in 1992 (Table 9 and Figure 15). The seven largest consumers, each with at least 2 trillion cubic feet consumed, accounted for 66 percent of total natural gas consumption as follows:

- United States—26.4 percent
- Russia—21.6 percent
- Ukraine—5.3 percent
- Germany—3.6 percent
- Canada—3.4 percent
- United Kingdom—2.9 percent
- Japan—2.7 percent

Regionally, the Middle East had the largest relative gain between 1983 and 1992—210 percent or 2.7 trillion cubic feet (Figure 16). The average annual

growth rate for the regions, in order of 1992 total natural gas consumption, was:

- Eastern Europe and Former U.S.S.R.—3.4 percent
- North America—1.9 percent
- Western Europe—3.1 percent
- Far East and Oceania—8.6 percent
- Middle East—13.4 percent
- Central and South America—4.9 percent
- Africa—4.9 percent.

Coal

World consumption of coal rose from 4.4 billion short tons in 1983 to 5.0 billion short tons in 1992 (Table 10 and Figure 17). The four largest consumers, each with at least 0.3 billion short tons consumed, accounted for 57 percent of total coal consumption as follows:

- China—24.1 percent
- United States—17.8 percent
- Russia—7.6 percent
- Germany—7.3 percent.

Western Europe and the Eastern Europe and Former U.S.S.R. regions had average annual rates of decline, 1.3 percent and 1.2 percent respectively (Figure 18). The average annual growth rate for the remaining five regions, in order of 1992 total coal consumption, was:

- Far East and Oceania—5.1 percent
- North America—2.0 percent
- Africa—0.9 percent
- Central and South America—4.3 percent
- Middle East—9.9 percent.

Hydroelectric Power

World consumption of hydroelectric power rose from 1.9 trillion kilowatthours in 1983 to 2.2 trillion kilowatthours in 1992 (Table 11 and Figure 19). The three largest consumers, each with at least 0.2 trillion kilowatthours consumed, accounted for 36.6 percent of total hydroelectric power consumption as follows:

- Canada—12.9 percent
- United States—12.3 percent
- Brazil—11.4 percent.

Regionally, Central and South America had the largest relative gain between 1983 and 1992—58 percent or 0.14 trillion kilowatthours (Figure 20). North America had an average annual rate of decline of 0.7 percent. The average annual growth rate for the remaining six regions, in order of 1992 total hydro-electric power consumption, was:

- Western Europe—0.8 percent
- Far East and Oceania—3.4 percent
- Central and South America—5.2 percent
- Eastern Europe and Former U.S.S.R.—2.1 percent
- Africa—0.1 percent
- Middle East—4.5 percent.

Nuclear Electric Power

World consumption of nuclear electric power rose from 1.0 trillion kilowatthours in 1983 to 2.0 trillion kilowatthours in 1992 (Table 12 and Figure 21). The four largest consumers, each with at least 0.15 trillion kilowatthours consumed, accounted for 62 percent of total nuclear electric power consumption as follows:

- United States—30.7 percent
- France—13.9 percent
- Japan—10.3 percent
- Germany—7.6 percent

Regionally, Central and South America had the largest relative gain between 1983 and 1992—147 percent or 5.0 billion kilowatthours (Figure 22). The Middle East had no nuclear electric power consumption. The average annual growth rate for the remaining six regions, in order of 1992 total nuclear electric power consumption, was:

- North America—8.3 percent
- Western Europe—8.0 percent
- Far East and Oceania—9.2 percent
- Eastern Europe and Former U.S.S.R.—7.9 percent
- Africa—11.3 percent (1984-1992)
- Central and South America—10.6 percent.

Key Organizations

Among the international organizations, the Organization for Economic Cooperation and Development (OECD) had an increase in petroleum consumption from 34.1 million barrels per day in 1983 to 38.8 million barrels per day in 1992 (Table 13). The growth rate of petroleum demand in these countries averages 1.4 percent during the period. In the non-OECD countries, petroleum consumption increased from 24.6 million barrels per day to 28.0 million barrels per day in 1992. The growth rate for oil consumption in these countries also averaged 1.4 percent per year.

Table 8. World Petroleum Consumption, 1983-1992
(Thousand Barrels per Day)

Region Country	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992 ¹
North America										
Canada	1,448	1,472	1,504	1,506	1,548	1,693	1,733	1,690	1,622	1,644
Mexico	1,350	1,452	1,466	1,486	1,520	1,550	1,660	1,725	1,795	1,845
United States	15,231	15,726	15,726	16,281	16,665	17,283	17,325	16,988	16,714	17,033
Other	5	5	4	4	6	7	8	6	6	6
Total	18,034	18,655	18,701	19,277	19,739	20,532	20,726	20,410	20,136	20,527
Central & South America										
Argentina	477	463	415	448	479	475	434	413	416	420
Bahama Islands	19	17	15	15	17	16	18	19	17	15
Bolivia	25	24	22	21	21	23	24	25	26	26
Brazil	980	1,033	1,079	1,238	1,263	1,300	1,317	1,339	1,346	1,410
Chile	96	96	96	97	103	111	126	134	144	147
Colombia	172	174	171	172	185	198	209	197	205	218
Cuba	206	213	217	223	219	221	225	220	204	160
Dominican Republic	47	41	42	47	53	58	58	64	62	62
Ecuador	85	83	86	92	90	93	90	97	104	105
Guatemala	26	23	26	23	23	25	26	27	26	26
Jamaica	41	35	31	31	33	38	43	46	47	50
Netherlands Antilles	89	85	71	69	70	65	69	71	64	64
Panama Republic	35	34	24	26	30	26	24	27	33	33
Peru	124	127	125	135	138	141	121	121	113	113
Puerto Rico	152	167	145	156	162	147	143	140	176	150
Trinidad and Tobago	26	25	24	23	21	18	21	20	21	21
Uruguay	27	26	24	23	27	33	32	31	30	30
Venezuela	400	379	383	402	404	397	388	396	405	430
U.S. Virgin Islands	54	63	71	47	55	39	60	55	56	51
Other	112	110	117	120	126	137	149	152	152	152
Total	3,192	3,217	3,185	3,407	3,518	3,565	3,576	3,595	3,645	3,682
Western Europe										
Austria	207	202	201	211	217	212	213	217	235	229
Belgium	407	393	402	455	452	469	461	461	499	511
Denmark	219	217	224	221	215	205	195	191	194	193
Finland	208	208	209	208	226	228	226	225	227	221
France	1,835	1,754	1,775	1,772	1,789	1,797	1,857	1,818	1,935	1,929
Germany	2,661	2,662	2,700	2,860	2,767	2,744	2,581	2,664	2,828	2,843
Greece	231	234	245	248	267	285	291	315	320	331
Ireland	83	78	81	96	81	78	82	92	99	104
Italy	1,750	1,646	1,717	1,738	1,855	1,836	1,930	1,872	1,863	1,936
Luxembourg	21	21	22	24	27	28	30	33	39	39
Netherlands	613	609	622	684	686	716	709	735	756	766
Norway	165	170	188	186	209	187	193	191	184	183
Portugal	185	178	181	197	209	206	249	250	253	277
Spain	1,011	912	850	875	898	980	1,030	1,011	1,072	1,108
Sweden	365	340	359	367	370	359	336	321	323	342
Switzerland	259	252	263	275	262	261	260	274	284	287
Turkey	342	341	359	398	450	447	440	476	468	492
United Kingdom	1,531	1,849	1,634	1,649	1,603	1,697	1,738	1,752	1,801	1,803
Former Yugoslavia	267	325	331	304	314	316	310	317	251	153
Other	19	22	22	27	29	31	29	32	31	30
Total	12,379	12,413	12,385	12,785	12,927	13,084	13,159	13,246	13,660	13,777
Eastern Europe & Former U.S.S.R.										
Albania	44	43	42	38	34	32	27	20	18	12
Armenia	--	--	--	--	--	--	--	--	--	37
Azerbaijan	--	--	--	--	--	--	--	--	--	158
Belarus	--	--	--	--	--	--	--	--	--	471
Bulgaria	295	294	290	286	275	277	235	193	118	72
Former Czechoslovakia	319	310	300	297	320	312	315	281	232	206
Estonia	--	--	--	--	--	--	--	--	--	34
Georgia	--	--	--	--	--	--	--	--	--	55
Hungary	223	223	227	212	203	193	181	179	161	140
Kazakhstan	--	--	--	--	--	--	--	--	--	356
Kyrgyzstan	--	--	--	--	--	--	--	--	--	35
Latvia	--	--	--	--	--	--	--	--	--	46
Lithuania	--	--	--	--	--	--	--	--	--	85
Moldova	--	--	--	--	--	--	--	--	--	69
Poland	325	330	333	333	341	350	346	278	275	227
Romania	320	307	320	322	340	330	345	382	277	277
Russia	--	--	--	--	--	--	--	--	--	4,301
Tajikistan	--	--	--	--	--	--	--	--	--	24
Turkmenistan	--	--	--	--	--	--	--	--	--	38
Ukraine	--	--	--	--	--	--	--	--	--	799
Former U.S.S.R.	8,950	8,910	8,950	8,975	8,995	8,890	8,740	8,392	8,350	--
Uzbekistan	--	--	--	--	--	--	--	--	--	189
Total	10,474	10,417	10,461	10,463	10,508	10,383	10,190	9,725	9,431	7,631

See footnotes at end of table.

Table 8. World Petroleum Consumption, 1983-1992 (Continued)
(Thousand Barrels per Day)

Region Country	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992 ¹
Middle East										
Bahrain	15	16	16	16	19	20	23	25	27	27
Cyprus	20	20	21	22	24	25	30	32	32	32
Iran	785	765	790	830	865	870	965	1,003	1,075	1,118
Iraq	250	240	258	279	285	320	350	400	263	360
Israel	151	143	130	133	141	157	163	165	173	180
Jordan	53	56	58	62	66	62	62	66	63	63
Kuwait	123	120	121	118	115	120	125	85	45	100
Lebanon	43	41	48	46	48	43	35	33	53	53
Saudi Arabia	790	850	939	974	975	990	1,022	1,057	999	1,102
Syria	139	154	164	163	180	192	198	205	178	178
United Arab Emirates	149	153	185	207	211	237	242	243	332	332
Yemen	50	62	69	67	66	64	74	76	78	78
Other	44	54	55	59	59	54	67	75	82	82
Total	2,612	2,673	2,854	2,977	3,055	3,154	3,355	3,465	3,400	3,705
Africa										
Algeria	136	150	165	166	167	172	182	194	208	208
Angola	22	19	25	24	24	25	25	24	25	25
Egypt	376	406	430	428	442	437	443	465	456	494
Ivory Coast	30	29	30	31	35	37	40	38	39	39
Kenya	37	36	37	39	35	38	42	42	37	34
Libya	125	120	128	125	134	142	147	155	166	171
Morocco	89	85	90	94	92	99	111	117	117	117
Nigeria	202	210	222	208	218	234	250	275	277	300
South Africa	338	360	350	350	345	342	348	375	403	406
Sudan	24	22	25	28	27	30	28	25	36	60
Tunisia	59	57	55	61	52	61	64	63	72	72
Zaire	21	20	19	21	19	23	22	20	22	22
Other	239	244	251	252	254	266	291	307	294	294
Total	1,698	1,758	1,826	1,827	1,844	1,905	1,991	2,100	2,153	2,243
Far East & Oceania										
Australia	594	613	627	625	643	652	687	711	706	712
China	1,730	1,740	1,885	2,000	2,120	2,275	2,380	2,296	2,499	2,632
Guam	26	9	5	8	5	6	5	13	14	12
Hong Kong	119	115	110	113	116	121	124	127	134	146
India	773	824	895	947	988	1,084	1,150	1,168	1,190	1,252
Indonesia	470	470	465	470	493	524	583	651	695	770
Japan	4,395	4,576	4,384	4,439	4,484	4,752	4,983	5,140	5,284	5,454
Korea, North	57	60	64	68	69	65	64	73	76	76
Korea, South	561	587	569	607	639	731	843	1,025	1,202	1,508
Malaysia	192	194	194	192	197	202	220	266	282	291
Myanmar (Burma)	28	29	29	26	28	30	32	35	29	29
New Zealand	82	84	77	84	94	95	103	109	105	110
Pakistan	137	140	160	166	180	194	206	220	221	246
Philippines	195	167	152	159	188	196	229	236	235	235
Singapore	220	235	227	257	285	304	329	363	389	400
Sri Lanka	36	39	33	31	36	34	31	35	34	34
Taiwan	337	384	378	405	420	483	521	542	545	579
Thailand	214	233	225	234	259	283	349	407	437	478
Vietnam	27	27	28	29	35	40	46	53	56	64
Other	162	178	179	166	139	140	147	146	150	150
Total	10,355	10,704	10,686	11,026	11,419	12,209	13,032	13,614	14,283	15,180
World Total	58,744	59,836	60,098	61,762	63,010	64,832	66,030	66,155	66,707	66,744

¹ Preliminary.

--=Not applicable.

Note: Sum of components may not equal total due to independent rounding.

Sources: See sources at the end of Chapter 3.

Figure 13. World Petroleum Consumption, 1983-1992

Source: Table 8.

Figure 14. World Petroleum Consumption by Region, 1983 and 1992

Source: Table 8.

Table 9. World Dry Natural Gas Consumption, 1983-1992
(Billion Cubic Feet)

Region Country	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992 ¹
North America										
Canada	1,807	1,855	2,054	2,060	2,042	2,331	2,498	2,420	2,454	2,569
Mexico	1,078	990	955	923	865	926	943	946	994	1,015
United States	16,835	17,951	17,281	16,221	17,211	18,030	18,801	18,716	19,129	19,747
Total	19,720	20,796	20,290	19,204	20,118	21,287	22,242	22,082	22,577	23,331
Central & South America										
Argentina	449	572	578	625	605	713	801	707	721	686
Colombia	100	143	144	144	140	149	146	151	155	152
Trinidad and Tobago	100	192	216	152	143	154	162	177	201	222
Venezuela	573	610	618	674	657	656	769	864	826	840
Other	161	186	198	184	194	200	250	217	216	229
Total	1,383	1,703	1,754	1,779	1,739	1,872	2,128	2,116	2,119	2,128
Western Europe										
Austria	130	186	188	182	191	183	195	215	226	222
Belgium and Luxembourg	358	344	345	319	357	352	392	358	363	374
France	1,049	1,029	1,093	1,127	1,057	961	991	1,022	1,149	1,148
Germany	2,274	2,372	2,369	2,408	2,592	2,519	2,635	2,624	2,790	2,673
Italy	1,009	1,171	1,222	1,238	1,371	1,460	1,578	1,672	1,775	1,725
Netherlands	1,371	1,395	1,267	1,620	1,672	1,513	1,550	1,644	1,744	1,697
Spain	84	76	96	87	100	129	172	192	216	228
United Kingdom	1,774	1,900	1,995	2,020	2,079	1,972	1,951	2,059	2,220	2,182
Former Yugoslavia	149	200	208	224	263	258	287	232	252	200
Other	204	221	261	316	342	380	514	562	624	644
Total	8,402	8,894	9,044	9,541	10,024	9,727	10,265	10,580	11,359	11,093
Eastern Europe & Former U.S.S.R.										
Bulgaria	184	181	219	225	223	221	223	241	204	198
Former Czechoslovakia	346	364	407	427	444	416	451	530	494	463
Hungary	374	377	404	418	395	407	428	396	393	342
Poland	404	428	433	445	461	447	465	434	403	391
Romania	1,446	1,395	1,336	1,410	1,405	1,306	1,384	1,290	1,040	886
Russia	--	--	--	--	--	--	--	--	--	16,131
Turkmenistan	--	--	--	--	--	--	--	--	--	286
Ukraine	--	--	--	--	--	--	--	--	--	3,933
Former U.S.S.R.	16,822	18,512	20,302	21,522	22,462	24,092	24,529	24,961	25,014	--
Uzbekistan	--	--	--	--	--	--	--	--	--	1,359
Other	11	11	10	14	16	25	25	10	13	2,415
Total	19,587	21,268	23,111	24,461	25,407	26,914	27,505	27,862	27,561	26,403
Middle East										
Bahrain	140	133	164	180	217	182	186	205	233	253
Iran	310	476	600	536	565	706	784	837	811	863
Kuwait	127	144	140	191	284	351	415	256	18	216
Oman	113	47	55	70	80	87	99	99	124	143
Qatar	174	209	191	193	198	228	215	276	207	212
Saudi Arabia	200	253	716	890	946	1,028	1,052	1,077	1,130	1,201
United Arab Emirates	182	241	377	431	580	621	702	663	790	852
Other	29	31	30	37	59	108	125	180	163	217
Total	1,275	1,534	2,273	2,528	2,929	3,311	3,578	3,593	3,476	3,957
Africa										
Algeria	656	680	584	602	656	712	660	681	775	764
Egypt	113	143	175	200	222	244	273	286	321	346
Libya	112	122	143	168	161	157	165	175	192	199
Nigeria	81	97	108	116	131	133	166	131	168	187
Other	41	55	62	58	69	63	76	78	44	43
Total	1,003	1,097	1,072	1,144	1,238	1,309	1,340	1,351	1,500	1,539
Far East & Oceania										
Australia	388	403	448	516	532	555	570	625	563	587
China	431	438	457	484	494	503	505	508	526	501
India	106	113	135	180	227	297	315	399	449	463
Indonesia	302	365	513	441	542	492	546	547	557	653
Japan	1,008	1,367	1,419	1,494	1,543	1,618	1,731	1,851	1,962	2,009
Malaysia	77	152	225	279	265	289	297	315	383	451
New Zealand	92	95	115	158	152	166	171	170	186	198
Pakistan	347	354	365	392	419	445	475	415	534	580
Other	249	264	359	341	443	616	654	717	747	846
Total	3,000	3,551	4,036	4,285	4,617	4,981	5,265	5,547	5,907	6,290
World Total	54,370	58,843	61,580	62,942	66,071	69,400	72,322	73,131	74,500	74,742

¹ Preliminary.

--=Not applicable.

Note: Sum of components may not equal total due to independent rounding.

Sources: See sources at the end of Chapter 4.

Figure 15. World Dry Natural Gas Consumption, 1983-1992

Source: Table 9.

Figure 16. World Dry Natural Gas Consumption by Region, 1983 and 1992

Source: Table 9.

Table 10. World Coal Consumption,¹ 1983-1992
(Million Short Tons)

Region Country	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992 ²
North America										
Canada	53.37	64.57	59.69	55.69	54.33	61.31	62.55	57.88	53.30	55.92
Mexico	5.38	5.92	6.04	4.33	3.22	4.39	4.71	5.30	5.52	6.35
United States ³	736.67	791.30	818.05	804.23	836.94	883.64	889.70	895.48	887.62	892.27
Total	795.42	861.79	883.78	864.25	894.49	949.35	956.97	958.66	946.43	954.55
Central & South America										
Brazil	15.83	18.04	20.49	20.30	21.15	18.49	19.12	16.53	17.91	20.25
Chile	1.23	1.92	1.51	2.46	2.44	3.05	3.96	4.30	5.71	3.81
Colombia	6.64	7.09	8.39	6.37	5.88	5.10	9.16	9.67	9.70	9.48
Other	1.68	1.72	0.68	2.75	2.96	2.72	4.53	3.07	3.16	3.49
Total	25.37	28.76	31.07	31.89	32.43	29.37	36.76	33.58	36.48	37.03
Western Europe										
Austria	8.43	8.43	8.00	8.13	9.58	7.55	7.39	7.59	6.58	6.92
Belgium and Luxembourg	19.35	22.68	21.41	19.64	15.31	14.52	17.99	18.26	19.63	17.82
Denmark	11.04	9.92	14.97	13.85	12.10	9.41	11.83	10.45	13.22	13.60
France	43.04	46.21	40.90	37.56	31.72	28.41	34.66	38.73	38.61	36.87
Germany	544.00	544.32	580.25	573.33	543.28	556.02	547.99	508.55	399.07	362.96
Greece	29.12	36.58	44.40	44.80	48.40	51.77	58.73	59.03	61.17	62.09
Italy	23.21	25.71	27.98	26.66	26.12	23.04	23.67	22.70	24.95	20.70
Netherlands	8.90	12.85	12.72	11.40	12.36	13.17	12.61	15.90	17.35	13.42
Norway	1.74	1.79	1.65	1.67	1.32	1.47	1.59	1.57	1.30	1.49
Spain	49.20	50.95	54.72	53.81	47.06	51.43	59.15	56.42	44.84	69.84
Turkey	30.73	41.03	45.66	53.37	55.71	45.98	46.05	58.87	59.95	59.78
United Kingdom	123.95	62.90	112.55	125.47	119.77	127.15	126.76	110.28	130.90	119.44
Former Yugoslavia	74.91	78.10	81.48	82.76	83.61	82.81	87.10	87.38	76.18	74.99
Other	18.61	16.62	22.91	17.75	17.85	18.25	22.08	21.63	17.83	19.00
Total	986.23	958.07	1,069.59	1,070.19	1,024.18	1,030.97	1,057.59	1,017.35	911.60	878.93
Eastern Europe & Former U.S.S.R.										
Bulgaria	47.35	45.55	46.63	44.84	47.21	45.11	44.73	41.51	36.74	42.05
Former Czechoslovakia	142.14	141.02	138.57	140.29	136.52	135.92	129.99	118.42	110.97	101.14
Hungary	31.05	31.62	32.76	31.49	26.78	26.22	24.85	22.84	23.36	20.05
Kazakhstan	--	--	--	--	--	--	--	--	--	93.92
Poland	210.26	202.02	217.98	236.99	256.37	259.40	240.60	203.42	226.75	202.49
Romania	41.82	61.10	58.95	61.25	60.33	67.42	78.83	50.98	42.98	45.46
Russia	--	--	--	--	--	--	--	--	--	379.04
Ukraine	--	--	--	--	--	--	--	--	--	150.74
Former U.S.S.R.	703.11	696.18	701.27	717.36	721.17	730.85	729.27	744.24	595.25	--
Other	2.24	2.39	2.02	2.91	2.80	2.92	2.92	2.37	1.33	19.99
Total	1,177.97	1,179.87	1,198.17	1,235.13	1,251.18	1,267.84	1,251.18	1,183.78	1,037.38	1,054.89
Middle East										
Iran	1.14	1.55	0.96	1.53	1.81	1.59	1.72	1.94	2.14	2.05
Other	2.23	3.38	3.83	3.82	3.67	3.67	4.22	4.72	4.45	5.84
Total	3.37	4.94	4.79	5.35	5.48	5.26	5.94	6.66	6.59	7.89
Africa										
Morocco	1.26	1.17	1.30	1.56	1.84	1.75	2.06	1.95	1.99	2.01
South Africa	128.64	136.12	140.14	142.43	146.93	151.47	145.29	142.37	142.56	136.61
Zimbabwe (Rhodesia)	3.36	2.41	3.32	4.48	5.10	5.81	5.70	6.05	6.13	6.36
Other	5.28	5.50	5.80	5.15	5.34	4.89	5.01	5.02	5.40	5.57
Total	138.54	145.20	150.56	153.62	159.20	163.92	158.06	155.38	156.08	150.55
Far East & Oceania										
Australia	85.74	67.57	70.98	82.98	93.79	95.45	105.03	107.73	103.60	118.87
China	756.50	824.26	897.35	949.22	1,011.35	1,044.75	1,147.23	1,144.75	1,203.75	1,204.16
India	159.00	167.70	200.92	221.06	210.65	210.58	234.23	253.45	257.24	270.43
Japan	106.94	117.84	127.65	119.71	127.43	128.65	120.59	124.93	127.47	125.45
Korea, North	54.69	54.51	56.24	56.00	59.69	60.84	61.99	61.70	61.07	58.42
Korea, South	32.88	37.77	44.27	49.22	55.98	58.75	51.13	44.19	48.78	49.19
Mongolia	5.77	6.29	6.82	5.76	7.89	8.52	8.10	7.99	7.91	8.64
New Zealand	2.16	2.30	2.64	1.91	2.27	3.14	2.35	3.08	2.35	3.22
Pakistan	2.28	2.69	2.12	3.55	3.79	3.85	4.02	4.01	4.83	4.60
Philippines	1.37	2.08	1.17	2.94	2.01	2.93	2.74	3.43	3.18	3.45
Thailand	2.35	3.14	5.60	6.82	9.71	7.71	19.96	14.01	16.83	17.73
Vietnam	6.22	4.91	4.83	5.40	5.64	6.14	5.42	4.56	4.37	5.09
Other	10.38	17.96	20.64	22.41	32.38	33.81	39.82	42.50	44.92	48.18
Total	1,226.27	1,309.03	1,441.22	1,526.97	1,622.58	1,665.10	1,802.60	1,816.34	1,886.30	1,917.42
World Total	4,353.17	4,487.66	4,779.17	4,887.39	4,989.54	5,111.80	5,269.10	5,171.74	4,980.86	5,001.26

¹ See Glossary for definition of apparent coal consumption.

² Preliminary.

³ Consumption data do not reflect net exports of coke.

--=Not applicable.

Note: Sum of components may not equal total due to independent rounding.

Sources: See sources at the end of Chapter 5.

Figure 17. World Coal Consumption, 1983-1992

Source: Table 10.

Figure 18. World Coal Consumption by Region, 1983 and 1992

Source: Table 10.

Table 11. World Net Hydroelectric Power Consumption,¹ 1983-1992
(Billion Kilowatthours)

Region Country	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992 ²
North America										
Canada	228.1	243.8	259.9	273.1	268.8	273.5	278.1	291.9	282.4	284.1
Mexico	20.4	23.3	25.9	18.5	16.3	19.1	23.0	22.2	24.0	24.2
United States	370.6	364.0	325.3	329.9	299.2	257.9	279.2	285.1	300.9	271.1
Total	619.2	631.0	611.1	621.5	584.3	550.5	580.3	599.2	607.3	579.4
Central & South America										
Argentina	18.4	19.9	20.4	20.8	22.0	15.9	13.7	18.8	17.3	17.0
Brazil	153.1	167.9	178.8	193.2	201.0	214.6	224.2	228.9	242.2	251.8
Chile	8.9	9.3	10.4	11.3	12.0	11.4	9.5	9.0	10.1	10.2
Colombia	18.0	20.1	21.6	25.0	21.3	24.3	26.6	27.5	27.4	28.0
Peru	8.1	8.6	9.4	10.1	10.8	10.3	10.3	10.4	11.2	12.0
Uruguay	3.6	3.9	3.8	4.1	4.3	3.7	3.1	5.7	4.6	4.5
Venezuela	18.3	19.4	21.8	26.7	31.4	34.3	36.5	33.0	34.0	33.0
Other	12.1	14.5	19.5	19.3	20.5	21.3	21.7	22.7	22.8	23.8
Total	240.6	263.5	285.6	310.5	323.4	335.8	345.5	356.0	369.6	380.0
Western Europe										
Austria	26.0	25.9	27.0	27.2	30.1	31.2	31.0	29.0	29.2	32.6
Finland	15.2	14.7	13.5	13.7	15.1	15.2	15.2	13.7	14.6	16.5
France	68.2	62.5	59.6	60.4	66.4	70.3	45.8	51.0	53.7	64.8
Germany	29.9	26.7	24.8	26.1	29.0	29.1	26.6	26.4	23.2	26.0
Iceland	3.6	3.7	3.7	3.8	3.9	4.2	4.2	4.2	4.2	4.3
Italy	48.0	51.4	50.7	49.6	48.1	51.6	45.9	43.7	52.8	52.9
Norway	92.4	97.5	99.4	95.6	100.3	101.7	102.6	103.9	104.3	110.8
Portugal	8.4	9.6	10.9	8.8	9.7	12.4	6.3	9.0	8.9	4.9
Spain	29.3	34.2	32.6	27.0	27.6	35.4	19.8	26.0	27.9	20.7
Sweden	63.0	65.6	67.7	57.4	68.3	67.2	67.9	68.1	61.0	71.7
Switzerland	25.3	22.2	22.2	23.6	25.3	25.9	23.5	23.1	24.2	24.9
Turkey	12.0	14.1	12.5	11.9	18.5	28.7	17.7	22.4	22.2	26.3
United Kingdom	4.0	3.4	3.3	5.0	6.4	10.4	10.0	10.1	9.6	10.8
Former Yugoslavia	22.0	25.1	24.4	27.3	25.9	25.1	23.3	19.8	18.8	17.4
Other	12.9	12.0	10.6	10.0	10.4	11.4	11.7	12.5	10.9	9.9
Total	460.2	468.7	462.9	447.7	484.8	519.8	451.8	463.1	465.5	494.2
Eastern Europe & Former U.S.S.R.										
Former Czechoslovakia	5.2	4.5	5.8	4.8	6.2	5.8	6.0	5.8	4.1	3.5
Poland	4.5	4.5	5.1	5.5	6.4	7.3	6.6	5.7	4.7	4.9
Romania	10.5	12.0	12.7	11.8	12.4	15.4	14.6	13.4	15.7	15.6
Russia	--	--	--	--	--	--	--	--	--	167.6
Former U.S.S.R.	177.3	200.0	201.5	209.6	212.9	223.3	216.2	226.1	230.0	--
Other	11.4	10.9	10.5	9.6	10.0	10.7	10.6	9.6	7.1	60.1
Total	208.9	231.9	235.6	241.3	247.9	262.6	253.9	260.5	261.7	251.7
Middle East										
Iran	6.1	6.3	6.3	6.1	6.3	6.4	6.6	6.5	6.5	6.6
Other	3.3	3.1	3.2	2.8	3.3	6.1	5.8	6.8	7.1	7.4
Total	9.4	9.4	9.5	8.9	9.6	12.5	12.4	13.3	13.6	14.0
Africa										
Egypt	10.1	9.9	8.0	7.9	8.2	7.8	7.9	9.9	9.8	9.7
Zaire	4.3	4.5	4.8	5.0	5.0	5.1	5.8	5.8	5.9	6.0
Zambia	6.8	6.7	6.8	6.6	6.9	6.8	5.2	6.3	7.7	5.6
Other	28.9	23.9	26.1	27.2	26.1	26.8	28.4	29.4	29.0	29.3
Total	50.1	45.0	45.7	46.8	46.2	46.5	47.4	51.3	52.5	50.6
Far East & Oceania										
Australia	12.5	12.1	13.9	14.6	13.5	14.1	15.0	14.6	16.0	15.6
China	86.6	87.0	92.8	95.0	100.9	108.8	117.8	126.3	124.9	130.8
India	49.8	53.4	50.5	53.4	47.4	57.8	61.9	65.9	67.2	67.8
Japan	87.1	76.0	87.1	85.2	80.0	95.5	96.9	94.9	104.5	96.3
Korea, North	25.7	26.7	27.7	26.7	28.8	31.2	31.4	31.4	31.4	32.0
Korea, South	2.7	2.4	3.6	4.0	5.3	3.5	4.5	6.3	5.0	4.8
New Zealand	19.6	20.2	19.5	21.9	22.1	23.1	21.9	23.1	22.9	22.7
Pakistan	11.3	12.7	12.1	13.7	15.1	16.5	16.8	16.8	18.1	19.0
Philippines	2.9	5.1	5.5	6.0	5.2	6.2	6.4	6.0	5.1	4.5
Thailand	4.0	4.3	3.9	5.8	4.2	4.0	5.8	5.2	4.7	5.0
Other	19.0	21.8	25.2	26.8	27.6	29.0	32.2	35.0	32.4	35.0
Total	321.2	321.6	341.9	355.0	350.2	389.7	410.7	425.6	432.2	433.5
World Total	1,909.7	1,971.2	1,992.4	2,031.6	2,046.4	2,117.4	2,102.0	2,169.0	2,202.5	2,203.5

¹ Does not account for thermal equivalent conversion losses.

² Preliminary.

--=Not applicable.

Note: Sum of components may not equal total due to independent rounding.

Sources: See sources at the end of Chapter 6.

Figure 19. World Net Hydroelectric Power Consumption, 1983-1992

Source: Table 11.

Figure 20. World Net Hydroelectric Power Consumption by Region, 1983 and 1992

Source: Table 11.

Table 12. World Net Nuclear Electric Power Consumption,¹ 1983-1992
(Billion Kilowatthours)

Region Country	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992 ²
North America										
Canada	46.2	49.3	57.1	67.2	72.9	78.2	75.4	68.8	80.1	76.0
Mexico	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	4.0	3.7
United States	293.7	327.6	383.7	414.0	455.3	527.0	529.4	576.9	612.6	618.8
Total	339.9	376.9	440.8	481.3	528.2	605.1	604.7	647.7	696.6	698.4
Central & South America										
Argentina	3.2	4.3	5.4	5.4	6.1	4.8	4.8	7.0	7.7	6.7
Brazil	0.2	2.7	2.9	0.1	0.9	0.2	1.5	1.9	1.4	1.7
Total	3.4	7.0	8.4	5.5	7.1	5.1	6.3	9.0	9.1	8.4
Western Europe										
Belgium	21.6	25.4	30.9	35.3	36.5	37.7	36.2	37.1	38.5	39.1
Finland	17.4	19.0	19.3	19.8	20.3	20.9	21.1	21.9	21.2	20.8
France	127.5	164.3	194.3	219.1	225.6	232.0	254.3	261.2	274.4	280.9
Germany	79.8	106.2	139.8	133.8	144.7	157.9	153.2	146.8	141.3	152.7
Italy	7.9	12.0	13.8	15.9	8.2	10.9	12.0	12.3	13.5	13.5
Netherlands	4.2	4.4	5.2	4.7	4.5	5.5	5.8	6.3	6.8	7.3
Spain	11.0	23.8	28.1	37.2	40.8	47.7	53.0	51.7	53.1	52.8
Sweden	38.9	47.8	54.5	64.2	62.2	63.8	61.3	62.9	72.0	59.1
Switzerland	10.4	13.3	15.5	16.3	18.7	17.6	19.5	20.1	20.4	21.1
United Kingdom	43.9	47.3	53.8	53.2	52.0	60.0	68.1	62.8	69.0	80.0
Former Yugoslavia	4.1	4.6	4.7	4.8	5.0	4.2	5.1	5.2	4.8	4.4
Other	4.2	6.1	6.9	6.9	6.7	7.6	9.2	9.3	9.0	9.0
Total	370.9	474.3	566.9	611.0	623.0	665.8	698.5	697.5	723.9	740.7
Eastern Europe & Former U.S.S.R.										
Bulgaria	11.8	12.5	13.6	12.7	13.2	16.6	16.2	14.9	13.3	11.8
Former Czechoslovakia	6.8	8.3	13.3	18.6	22.2	23.2	24.5	25.2	23.5	24.3
Hungary	4.1	6.3	9.3	10.4	13.7	16.3	16.7	16.8	15.8	16.0
Lithuania	--	--	--	--	--	--	--	--	--	15.8
Russia	--	--	--	--	--	--	--	--	--	116.9
Ukraine	--	--	--	--	--	--	--	--	--	70.1
Former U.S.S.R.	108.0	139.7	167.1	149.0	172.6	199.1	207.9	197.4	199.4	--
Other	1.1	1.9	2.5	3.9	5.1	6.8	6.9	6.9	5.5	5.5
Total	131.8	168.7	205.9	194.7	226.9	261.9	272.2	261.2	257.4	260.4
Middle East	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Africa										
South Africa	0.0	4.0	5.5	8.9	6.3	10.5	11.1	8.5	9.2	9.4
Total	0.0	4.0	5.5	8.9	6.3	10.5	11.1	8.5	9.2	9.4
Far East & Oceania										
India	3.5	3.8	4.7	4.7	4.7	5.2	3.8	5.6	5.2	6.0
Japan	105.2	127.0	149.7	158.8	188.6	173.9	174.5	182.3	201.4	207.2
Korea, South	8.4	11.1	15.8	26.7	37.1	37.8	45.0	50.2	53.5	53.7
Pakistan	0.2	0.3	0.3	0.4	0.5	0.2	0.1	0.4	0.4	0.5
Taiwan	18.1	23.6	27.8	25.8	31.8	29.4	27.1	31.6	33.5	32.1
Total	135.5	165.9	198.2	216.4	262.7	246.5	250.5	270.1	294.0	299.6
World Total	981.6	1,196.8	1,425.6	1,517.7	1,654.1	1,794.9	1,843.4	1,893.9	1,990.2	2,016.9

¹ Does not account for thermal equivalent conversion losses.

² Preliminary.

--=Not applicable.

Note: Sum of components may not equal total due to independent rounding.

Sources: See sources at the end of Chapter 6.

Figure 21. World Net Nuclear Electric Power Consumption, 1983-1992

Source: Table 12.

Figure 22. World Net Nuclear Electric Power Consumption by Region, 1983 and 1992

Source: Table 12.

Table 13. Consumption of Primary Energy Sources by Selected Country Groups, 1983-1992

Type of Energy Country Groups	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992 ¹
Petroleum (thousand barrels per day)										
World Total	58,744	59,836	60,098	61,762	63,010	64,832	66,030	66,155	66,707	66,744
OECD ²	34,129	34,840	34,633	35,641	36,253	37,415	37,871	37,758	38,067	38,772
Non OECD	24,615	24,996	25,466	26,122	26,757	27,417	28,160	28,397	28,640	27,973
Other Groups:										
OECD Europe	12,102	12,076	12,043	12,465	12,598	12,748	12,832	12,911	13,391	13,606
OPEC ³	3,467	3,498	3,692	3,818	3,911	4,045	4,304	4,608	4,523	4,950
EEC ⁴	10,546	10,553	10,453	10,819	10,850	11,042	11,153	11,194	11,658	11,839
IEA ⁵	34,119	34,830	34,622	35,630	36,241	37,402	37,860	37,744	38,054	38,760
Natural Gas (trillion cubic feet)										
World total	54.37	58.84	61.58	62.94	66.07	69.40	72.32	73.13	74.50	74.74
OECD ²	28.38	30.37	30.15	29.77	31.24	32.17	33.75	34.13	35.40	36.00
Non OECD	25.99	28.48	31.43	33.18	34.83	37.23	38.57	39.00	39.10	38.74
Other Groups:										
OECD Europe	8.25	8.69	8.84	9.32	9.76	9.47	9.98	10.35	11.11	10.89
OPEC ³	2.74	3.22	4.02	4.27	4.76	5.18	5.57	5.59	5.52	6.04
EEC ⁴	8.00	8.38	8.50	8.92	9.34	9.04	9.42	9.73	10.42	10.19
IEA ⁵	28.38	30.37	30.15	29.77	31.24	32.17	33.75	34.13	35.40	36.00
Coal (million short tons)										
World Total	4,353	4,488	4,779	4,887	4,990	5,112	5,269	5,172	4,981	5,001
OECD ²	1,896	1,923	2,067	2,052	2,055	2,120	2,151	2,119	2,010	2,000
Non OECD	2,457	2,564	2,712	2,836	2,934	2,991	3,118	3,053	2,971	3,002
Other Groups:										
OECD Europe	911	880	988	987	940	948	970	930	835	804
OPEC ³	4	4	4	6	7	7	11	11	12	12
EEC ⁴	857	818	915	911	863	882	902	850	758	725
IEA ⁵	1,896	1,923	2,067	2,052	2,055	2,120	2,151	2,119	2,010	2,000
Hydroelectric Power (billion kilowatthours)										
World Total	1,909.7	1,971.2	1,992.4	2,031.6	2,046.4	2,117.4	2,102.0	2,169.0	2,202.5	2,203.5
OECD ²	1,156.1	1,159.8	1,144.4	1,145.2	1,142.7	1,159.0	1,119.7	1,153.1	1,173.7	1,166.8
Non OECD	753.6	811.4	848.1	886.4	903.7	958.4	982.3	1,015.9	1,028.8	1,036.7
Other Groups:										
OECD Europe	438.1	443.6	438.5	420.3	458.9	494.7	428.4	443.2	446.7	476.8
OPEC ³	33.2	35.8	38.3	43.6	49.4	52.8	55.5	52.2	52.4	51.4
EEC ⁴	200.7	199.8	192.5	186.9	197.5	220.5	166.1	178.7	187.0	189.8
IEA ⁵	1,152.5	1,156.0	1,140.7	1,141.4	1,138.8	1,154.8	1,115.5	1,148.9	1,169.5	1,162.5
Nuclear Electric Power (billion kilowatthours)										
World Total	981.6	1,196.8	1,425.6	1,517.7	1,654.1	1,794.9	1,843.4	1,893.9	1,990.2	2,016.9
OECD ²	812.0	973.6	1,152.6	1,246.3	1,334.9	1,440.7	1,472.7	1,520.3	1,613.1	1,638.2
Non OECD	169.6	223.2	273.0	271.4	319.3	354.3	370.7	373.6	377.1	378.6
Other Groups:										
OECD Europe	366.9	469.7	562.2	606.2	618.1	661.6	693.5	692.4	719.1	736.3
OPEC ³	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EEC ⁴	298.8	387.3	469.3	502.4	516.5	556.7	589.2	585.0	600.7	630.5
IEA ⁵	812.0	973.6	1,152.6	1,246.3	1,334.9	1,440.7	1,472.7	1,520.3	1,613.1	1,638.2

¹ Preliminary.

² The Organization for Economic Cooperation and Development (OECD) includes Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Japan, Luxembourg, the Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, the United Kingdom, the United States, and the U.S. Territories. Refer to Appendix G for a listing of OECD Europe.

³ The Organization of Petroleum Exporting Countries (OPEC) includes Algeria, Gabon, Indonesia, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, the United Arab Emirates, and Venezuela.

⁴ European Economic Community (EEC) includes Belgium, Denmark, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, and the United Kingdom.

⁵ International Energy Agency (IEA) includes Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Japan, Luxembourg, the Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, the United Kingdom, the United States, and the U.S. Territories.

Note: Sum of components may not equal total due to independent rounding. The country groups, OECD, EEC, and IEA include the unified Germany.

Sources: See sources at the end of Chapters 3, 4, 5, 6.

For consistency, data reflect 1992 membership (as of December 31, 1992) for all years. For statistical comparison, refer to Table C2 for primary energy consumption data based on each country group's actual yearly membership.

**World Petroleum Supply,
Disposition, and Refining Capacity**

3. World Petroleum Supply, Disposition, and Refining Capacity

Oil Production

World production of crude oil, natural gas plant liquids, other liquids (fuel alcohol and liquid hydrocarbons from coal), including refinery processing gains, was 66.6 million barrels per day in 1991 (Table 14). The leading regional producer was the Middle East, which accounted for 26 percent of world oil production. It was followed by North America with a 23-percent share, the Eastern Europe and Former U.S.S.R. region with a 16-percent share, Africa with an 11-percent share, the Far East and Oceania with a 10-percent share, Central and South America with a 7-percent share, and Western Europe with a 7-percent share. The three largest producing countries were the former U.S.S.R., the United States, and Saudi Arabia. Their combined production was 29.1 million barrels per day and accounted for 44 percent of the world total in 1991.

Crude Oil Imports

Crude oil imports were 28.4 million barrels per day in 1991 (Tables 14 and 20). The leading regional importer of crude oil was Western Europe, which accounted for 36 percent of world crude oil imports. The Far East and Oceania followed with a 29-percent share, North America with a 22-percent share, Central and South America with a 6-percent share, the Eastern Europe and Former U.S.S.R. region with a 3-percent share, Africa with a 2-percent share, and the Middle East with a 2-percent share. The three largest importers were the United States, Japan, and Germany. Their combined imports were 11.8 million barrels per day and accounted for 41 percent of the world total in 1991.

Crude Oil Exports

Crude oil exports were 28.2 million barrels per day in 1991 (Tables 14 and 20 and Figure 29). The leading regional exporter of crude oil was the Middle East, which accounted for 45 percent of world ex-

ports. It was followed by Africa with an 18-percent share, Western Europe with a 10-percent share, the Far East and Oceania with an 8-percent share, North America with an 8-percent share, Central and South America with a 7-percent share, and the Eastern Europe and Former U.S.S.R. region with a 4-percent share (Figure 30). The three largest exporters of crude oil were Saudi Arabia, Iran, and the United Arab Emirates. Their combined exports were 11.1 million barrels per day and accounted for 39 percent of the world total in 1991.

Refinery Production

World refinery production was 64.7 million barrels per day in 1991 (Table 15). The leading region in refinery production was North America, which accounted for 28 percent of world production. It was followed by Western Europe with a 21-percent share, the Far East and Oceania with a 19-percent share, the Eastern Europe and Former U.S.S.R. region with a 15-percent share, Central and South America with a 7-percent share, the Middle East with a 6-percent share, and Africa with a 4-percent share. The three largest producers of refined products were the United States, the former U.S.S.R., and Japan. Their combined production of refined products was 27.9 million barrels per day and accounted for 43 percent of the world total in 1991.

World refinery production in 1991 was distributed as follows:

- Motor Gasoline—26.7 percent
- Distillate Fuel Oil—26.2 percent
- Residual Fuel Oil—20.8 percent
- Miscellaneous¹—13.0 percent
- Jet Fuel—6.1 percent
- Liquefied Petroleum Gases—3.6 percent
- Kerosene—2.5 percent
- Lubricants—1.1 percent.

Refined Product Imports

World imports of refined petroleum products were 12.7 million barrels per day in 1991 (Table 16 and

¹Miscellaneous includes other finished products and unfinished oils that require further processing.

Figure 23). The world's leading regional importer of refined petroleum products was Western Europe which accounted for 42 percent of the world total. It was followed by the Far East and Oceania with a 28-percent share, North America with a 17-percent share, Central and South America with a 5-percent share, the Middle East with a 4-percent share, Africa with a 3-percent share, and the Eastern Europe and Former U.S.S.R. region with a 1-percent share. The three largest importers of refined petroleum products were the United States, Japan, and Germany. Their combined imports were 4.3 million barrels per day and accounted for 34 percent of the world total in 1991.

World imports of refined products in 1991 (Figure 24) were distributed as follows:

- Miscellaneous—24.5 percent
- Distillate Fuel Oil—21.9 percent
- Residual Fuel Oil—21.0 percent
- Motor Gasoline—12.8 percent
- Liquefied Petroleum Gases—12.6 percent
- Jet Fuel—4.2 percent
- Kerosene—2.0 percent
- Lubricants—1.0 percent.

Refined Product Exports

World exports of refined petroleum products were 13.1 million barrels per day in 1991 (Table 17 and Figure 25). The world's leading regional exporter of refined products was Western Europe, which accounted for 30 percent of the world total. The Middle East followed with a 16-percent share, the Far East and Oceania with a 16-percent share, Central and South America with a 13-percent share, North America with a 12-percent share, the Eastern Europe and Former U.S.S.R. region with an 8-percent share, and Africa with a 6-percent share. The three largest exporters of refinery products were Saudi Arabia, the Netherlands, and Singapore. Their combined exports were 3.4 million barrels per day and accounted for 26 percent of the world total in 1991.

World exports of refined products in 1991 (Figure 26) were distributed as follows:

- Residual Fuel Oil—24.2 percent
- Distillate Fuel Oil—22.5 percent
- Miscellaneous—18.7 percent
- Liquefied Petroleum Gases—13.2 percent
- Motor Gasoline—12.3 percent
- Jet Fuel—5.9 percent
- Kerosene—2.0 percent
- Lubricants—1.2 percent.

Refined Product Consumption

World consumption of refined petroleum products was 66.7 million barrels per day in 1991 (Table 18). The world's leading regional consumer of refined products was North America which accounted for 30 percent of the world total. It was followed by the Far East and Oceania with a 21-percent share, Western Europe with a 20-percent share, the Eastern Europe and Former U.S.S.R. region with a 14-percent share, Central and South America with a 5-percent share, the Middle East with a 5-percent share, and Africa with a 3-percent share. The three largest consumers of refinery products were the United States, the former U.S.S.R., and Japan. Their combined consumption was 30.3 million barrels per day and accounted for 45 percent of the world total in 1991.

World consumption of refined products in 1991 was distributed as follows:

- Motor Gasoline—26.1 percent
- Distillate Fuel Oil—25.0 percent
- Residual Fuel Oil—19.1 percent
- Miscellaneous—12.3 percent
- Liquefied Petroleum Gases—8.8 percent
- Jet Fuel—5.4 percent
- Kerosene—2.4 percent
- Lubricants—1.0 percent.

OECD Stocks

At the close of 1992, petroleum stocks (including strategic stocks) for the Organization for Economic Cooperation and Development (OECD) were 3,589 million barrels, essentially unchanged from 1991 yearend levels (Table 19). OECD crude oil stocks were 1,748 million barrels (Figure 27), up by 36.8 million barrels from 1991 year end levels. OECD petroleum product stocks were 1,841 million barrels (Figure 28), down by 37.0 million barrels from 1991 yearend levels. Since 1989, total OECD stock changes have been:

- Petroleum Stocks—up 3.2 percent
- Crude Oil Stocks—up 4.4 percent
- Petroleum Product Stocks—up 2.2 percent.

Since 1989, the United States has increased its closing 1992 petroleum stock levels by 0.7 percent. Its 1991 to 1992 change in petroleum stocks was -1.1 percent. Since 1989, the United Kingdom has decreased its closing 1992 petroleum stock levels by 4.2 percent. Its 1991 to 1992 change in petroleum stocks was -4.9 percent.

Italy has increased its closing 1992 crude oil stock levels by 44 percent since 1989. The corresponding 1991 to 1992 change was 31.4 percent.

Japan has increased its closing 1992 petroleum product stocks by 2.1 percent since 1989. The corresponding 1991 to 1992 change was 2.1 percent.

OECD members with the largest increases in petroleum stocks in the past year were Italy at 8.7 percent and Germany at 7.8 percent (Table 19). OECD members with the largest increases in crude oil stocks in the past year were Italy at 31.4 percent, Germany at 8.4 percent, and the United Kingdom at 6.6 percent. OECD members with the largest increases in petroleum product stocks in the past year were Germany at 7.3 percent, Japan at 2.1 percent, and Italy at 2.0 percent.

Refining Capacity

World crude oil refining distillation capacity was estimated at 73 million barrels per day, from a total of 715 refineries as of January 1, 1993 (Table 21 and Figure 31). The regional distribution of distillation capacity was estimated to be on January 1, 1993 (Figure 32):

- North America—25.3 percent
- Western Europe—20.6 percent
- Eastern Europe and Former U.S.S.R.—16.7 percent
- Far East and Oceania—18.3 percent
- Central and South America—8.3 percent
- Middle East—6.8 percent
- Africa—4.0 percent.

Table 14. World Petroleum Supply and Disposition, 1991
(Thousand Barrels per Day)

Region Country	Primary Supply			Disposition			Bunkers	
	Oil Production ¹	Crude Oil Imports	Total Imports of Refined Petroleum Products	Crude Oil Exports	Total Exports of Refined Petroleum Products	Apparent Consumption ² (Including Bunkers)	Residual Fuel Oil	Distillate Fuel Oil and Other Products
North America								
Canada	2,032	551	150	752	432	1,622	9	3
Mexico	3,165	0	137	1,369	105	1,795	1	2
United States	9,883	5,782	1,844	116	885	16,714	443	141
Other	0	0	6	0	0	6	0	1
Total	15,080	6,334	2,137	2,237	1,422	20,136	453	147
Central & South America								
Argentina	520	4	19	25	104	416	3	5
Bahama Islands	0	0	17	0	0	17	3	1
Bolivia	26	0	0	0	(s)	26	0	0
Brazil	821	526	98	0	82	1,346	13	12
Chile	25	109	14	0	3	144	0	0
Colombia	427	0	26	170	78	205	1	2
Cuba	16	121	95	0	29	204	2	2
Ecuador	302	0	7	179	26	104	1	2
Netherlands Antilles	6	200	25	0	167	64	27	5
Panama Republic	1	23	15	0	5	33	8	4
Peru	118	34	11	2	47	113	1	1
Puerto Rico	0	128	83	0	39	176	2	2
Trinidad and Tobago	157	33	3	72	95	21	(s)	1
U.S. Virgin Islands	(s)	296	2	0	244	56	1	2
Venezuela	2,509	0	16	1,381	736	405	12	10
Other	10	167	161	8	16	317	3	14
Total	4,938	1,642	591	1,836	1,672	3,645	76	62
Western Europe								
Austria	29	143	74	0	7	235	0	0
Belgium	12	583	325	0	411	499	66	15
Denmark	147	107	91	90	62	194	11	6
Finland	0	210	65	0	64	227	8	2
France	109	1,466	695	0	318	1,935	46	8
Germany	133	1,793	1,023	0	180	2,828	29	10
Greece	20	249	148	12	91	320	33	11
Ireland	1	37	72	0	15	99	(s)	(s)
Italy	120	1,485	673	10	396	1,863	36	12
Luxembourg	0	0	39	0	(s)	39	0	0
Netherlands	118	1,009	884	22	1,180	756	169	45
Norway	1,987	30	57	1,729	188	184	4	5
Portugal	2	194	103	0	41	253	5	2
Spain	47	1,037	168	0	253	1,072	50	24
Sweden	4	341	146	3	170	323	12	3
Switzerland	1	93	190	0	11	284	0	(s)
Turkey	92	354	58	0	50	468	1	2
United Kingdom	1,993	936	448	1,073	484	1,801	24	26
Former Yugoslavia	68	176	35	0	21	251	0	0
Other	(s)	0	30	0	(s)	31	7	3
Total	4,883	10,245	5,324	2,939	3,944	13,660	502	175
Eastern Europe & Former U.S.S.R.								
Albania	19	0	0	0	1	18	0	0
Bulgaria	4	89	29	0	4	118	4	3
Former Czechoslovakia	3	225	10	0	13	232	0	0
Hungary	47	116	23	0	25	161	0	0
Poland	4	232	78	0	38	275	2	1
Romania	148	173	18	0	61	277	0	0
Former U.S.S.R.	10,412	0	31	1,205	879	8,350	80	0
Total	10,636	834	188	1,205	1,020	9,431	86	4

See footnotes at end of table.

Table 14. World Petroleum Supply and Disposition, 1991 (Continued)
(Thousand Barrels per Day)

Region Country	Primary Supply			Disposition			Bunkers	
	Oil Production ¹	Crude Oil Imports	Total Imports of Refined Petroleum Products	Crude Oil Exports	Total Exports of Refined Petroleum Products	Apparent Consumption ² (Including Bunkers)	Residual Fuel Oil	Distillate Fuel Oil and Other Products
Middle East								
Bahrain	44	215	1	0	234	27	2	11
Iran	3,374	0	162	2,420	41	1,075	48	2
Iraq	305	0	0	42	0	283	1	0
Israel	(s)	159	41	0	27	173	0	3
Kuwait	190	0	30	98	75	45	(s)	2
Oman	708	0	1	643	28	39	5	6
Qatar	446	0	(s)	337	67	43	0	0
Saudi Arabia	8,810	7	11	6,452	1,377	999	95	125
Syria	494	5	19	295	45	178	0	7
United Arab Emirates	2,554	0	164	2,195	192	332	178	15
Other	197	136	91	140	50	226	6	11
Total	17,122	522	520	12,621	2,137	3,400	333	180
Africa								
Algeria	1,371	0	9	704	467	208	2	6
Angola	500	0	(s)	472	3	25	8	8
Egypt	920	0	21	412	71	456	22	9
Gabon	295	0	2	279	3	16	1	2
Kenya	1	42	2	0	8	37	2	(s)
Libya	1,523	0	4	1,220	141	166	1	5
Morocco	1	108	16	0	10	117	(s)	2
Nigeria	1,897	0	34	1,610	42	277	5	10
South Africa	72	330	15	0	17	403	42	19
Tunisia	109	2	48	71	15	72	0	1
Other	344	138	229	302	35	376	9	29
Total	7,034	621	380	5,070	812	2,153	93	90
Far East & Oceania								
Australia	619	150	140	144	89	706	9	2
Brunei	171	0	2	162	(s)	10	0	0
China	2,835	121	90	453	104	2,499	40	0
Hong Kong	0	0	187	0	53	134	13	38
India	629	480	185	0	103	1,190	3	15
Indonesia	1,659	122	73	900	259	695	2	5
Japan	48	4,180	1,396	0	188	5,284	100	8
Korea, South	3	1,094	303	0	192	1,202	38	18
Malaysia	659	22	133	473	55	282	1	1
New Zealand	57	62	14	20	9	105	3	3
Pakistan	65	82	86	7	4	221	(s)	3
Philippines	4	210	47	0	26	235	(s)	2
Singapore	4	919	356	(s)	891	389	165	43
Taiwan	5	428	169	0	57	545	25	2
Thailand	73	220	168	19	8	437	8	32
Other	97	119	220	78	8	349	6	19
Total	6,929	8,210	3,569	2,256	2,047	14,283	413	192
World Total	66,623	28,406	12,710	28,165	13,052	66,707	1,956	851

¹ Oil production includes crude oil, natural gas plant liquids, other liquids, and refinery processing gains.

² Apparent consumption includes internal consumption, refinery fuel and loss, and bunkering. Also included, where available, are liquefied petroleum gases sold directly from natural gas processing plants for fuel or chemical uses.

(s)=Value less than 500 barrels per day.

Note: Sum of components may not equal total due to rounding.

Sources: See sources at the end of this Chapter.

Table 15. World Output of Refined Petroleum Products, 1991
(Thousand Barrels per Day)

Region Country	Motor Gasoline	Jet Fuel ¹	Kerosene	Distillate Fuel Oil	Residual Fuel Oil	Liquefied Petroleum Gases	Lubricants (including Greases)	Other ²	Total Output of Refined Petroleum Products	Refinery Fuel and Loss ³
North America										
Canada	599	83	45	449	138	71	16	315	1,717	99
Mexico	416	62	10	279	435	55	8	68	1,332	63
United States	6,975	1,438	38	2,962	934	536	156	2,216	15,256	0
Total	7,991	1,583	93	3,689	1,508	663	181	2,599	18,306	162
Central & South America										
Argentina	102	14	9	171	80	22	5	63	466	36
Brazil	218	51	4	401	202	115	12	152	1,155	44
Chile	34	6	5	42	25	12	0	8	132	5
Colombia	85	11	5	46	78	14	2	15	257	10
Cuba	20	1	11	18	70	4	2	11	137	5
Ecuador	31	4	5	29	46	6	(s)	3	124	5
Netherlands Antilles	26	16	(s)	47	76	3	3	34	205	8
Panama Republic	4	1	(s)	6	11	(s)	0	1	23	2
Peru	26	6	15	26	69	4	(s)	6	152	6
Puerto Rico	55	16	1	23	30	4	7	34	169	15
Trinidad and Tobago	18	6	5	14	56	2	0	9	110	4
U.S. Virgin Islands	50	36	1	62	65	6	0	77	297	23
Venezuela	227	73	6	296	295	8	8	101	1,014	39
Other	42	13	8	46	61	7	1	10	190	7
Total	936	256	75	1,227	1,165	209	40	524	4,432	209
Western Europe										
Austria	56	8	(s)	66	33	1	1	27	192	7
Belgium	138	34	2	224	133	15	0	127	672	27
Denmark	36	4	1	76	38	5	0	9	169	7
Finland	74	12	0	83	27	7	0	26	228	8
France	400	104	2	619	227	86	33	247	1,717	92
Germany	576	51	1	852	224	78	30	396	2,207	109
Greece	73	32	(s)	67	99	14	3	23	311	12
Ireland	8	0	0	14	12	1	0	2	37	1
Italy	418	50	42	607	444	73	24	200	1,858	107
Netherlands	318	103	7	359	264	81	11	409	1,552	65
Norway	62	11	6	120	25	7	0	32	263	12
Portugal	39	17	(s)	49	70	10	3	24	211	10
Spain	210	81	3	322	294	59	6	157	1,131	64
Sweden	86	7	(s)	123	97	8	4	14	339	8
Switzerland	27	6	(s)	37	17	6	0	6	99	4
Turkey	70	12	3	131	162	21	5	52	457	21
United Kingdom	650	153	52	533	281	62	19	195	1,944	127
Former Yugoslavia	38	2	2	61	83	10	10	28	234	16
Total	3,278	685	122	4,341	2,529	544	147	1,975	13,621	696
Eastern Europe & Former U.S.S.R.										
Albania	2	0	(s)	2	6	(s)	1	8	19	1
Bulgaria	16	1	2	27	33	1	1	11	93	4
Former Czechoslovakia	36	7	6	66	67	4	5	37	227	9
Hungary	24	5	1	54	35	3	4	29	154	6
Poland	53	3	(s)	75	51	5	5	43	234	7
Romania	73	8	1	81	101	8	6	39	316	12
Former U.S.S.R.	1,679	406	94	2,218	3,122	290	132	804	8,745	290
Total	1,883	429	103	2,522	3,413	311	153	972	9,788	328

See footnotes at end of table.

Table 15. World Output of Refined Petroleum Products, 1991 (Continued)
(Thousand Barrels per Day)

Region Country	Motor Gasoline	Jet Fuel ¹	Kerosene	Distillate Fuel Oil	Residual Fuel Oil	Liquefied Petroleum Gases	Lubricants (Including Greases)	Other ²	Total Output of Refined Petroleum Products	Refinery Fuel and Loss ³
Middle East										
Bahrain	22	24	26	84	65	1	2	32	254	7
Iran	136	20	80	248	261	37	17	92	892	34
Iraq	37	5	12	92	95	6	3	23	273	11
Israel	30	10	7	45	55	7	(s)	4	159	6
Kuwait	17	11	10	16	32	(s)	(s)	6	92	4
Saudi Arabia	255	182	87	460	482	31	11	66	1,574	51
Syria	32	7	4	74	82	5	1	5	209	8
Other	80	53	17	143	175	20	3	19	509	23
Total	609	311	243	1,163	1,246	106	38	246	3,963	143
Africa										
Algeria	52	7	2	160	116	30	2	123	491	19
Angola	2	3	1	7	12	1	0	1	28	1
Egypt	48	5	56	84	219	12	4	67	495	19
Gabon	2	2	2	5	5	(s)	0	1	16	1
Kenya	8	5	4	11	12	1	0	2	43	2
Libya	42	33	5	84	92	6	1	40	303	12
Morocco	8	4	1	37	38	7	2	15	113	4
Nigeria	87	8	34	60	69	5	2	10	275	11
South Africa	102	9	9	108	63	3	7	36	337	13
Tunisia	4	3	3	11	10	5	0	1	36	1
Zambia	3	1	1	4	2	(s)	0	1	12	(s)
Other	36	10	16	43	55	3	2	9	174	7
Total	394	90	134	613	694	73	20	305	2,323	90
Far East & Oceania										
Australia	289	64	4	183	51	15	12	66	684	38
China	546	63	24	555	604	91	37	436	2,356	150
India	82	36	115	380	183	68	10	223	1,098	42
Indonesia	105	15	123	160	206	18	5	141	772	30
Japan	761	88	423	1,114	753	144	42	535	3,861	185
Korea, North	23	0	5	22	12	(s)	0	2	64	2
Korea, South	78	48	37	349	420	37	11	138	1,118	43
Malaysia	29	7	10	65	58	5	1	15	191	7
New Zealand	37	16	0	29	7	0	0	8	96	5
Pakistan	22	11	11	35	40	3	4	11	138	6
Philippines	33	9	9	66	69	8	2	18	215	8
Singapore	86	168	55	239	232	17	14	133	945	41
Taiwan	54	20	6	89	195	16	3	40	423	16
Thailand	53	32	2	83	66	7	0	7	250	10
Other	12	4	9	23	21	1	1	9	81	4
Total	2,211	581	834	3,393	2,919	428	143	1,783	12,292	587
World Total	17,301	3,937	1,604	16,948	13,474	2,334	721	8,404	64,723	2,214

¹ Jet fuel includes naphtha-type jet fuel and kerosene-type jet fuel.

² Includes asphalt, coke, aviation gasoline, naphthas, paraffin wax, petrochemical feedstocks, unfinished oils, white spirits, and blending components.

³ Refinery fuel and loss reported in this column as a memo item has been included in the output of the individual petroleum products and should not be added to "Total Output of Refined Petroleum Products".

(s)=Value less than 500 barrels per day.

Note: Sum of components may not equal total due to rounding.

Sources: See sources at the end of this Chapter.

Table 16. World Imports of Refined Petroleum Products, 1991
(Thousand Barrels per Day)

Region Country	Motor Gasoline	Jet Fuel ¹	Kerosene	Distillate Fuel Oil	Residual Fuel Oil	Liquefied Petroleum Gases	Lubricants (Including Greases)	Other ²	Total Imports of Refined Petroleum Products
North America									
Canada	11	7	6	7	50	3	2	65	150
United States	297	67	12	205	453	170	8	632	1,844
Other	69	(s)	(s)	3	47	22	(s)	(s)	142
Total	377	74	18	215	550	194	10	698	2,137
Central & South America									
Brazil	(s)	3	0	31	4	47	(s)	12	98
Cuba	3	2	1	26	59	(s)	(s)	4	95
Netherlands Antilles	6	1	(s)	5	7	1	(s)	5	25
Puerto Rico	5	1	(s)	2	14	(s)	(s)	60	83
Other	64	16	4	88	67	32	9	9	290
Total	79	22	5	153	152	81	10	90	591
Western Europe									
Austria	10	(s)	(s)	15	9	5	3	33	74
Belgium	37	9	1	96	51	13	11	108	325
Denmark	16	13	(s)	37	8	(s)	1	15	91
Finland	2	(s)	1	15	16	1	14	16	65
France	96	32	(s)	252	26	65	3	220	695
Germany	242	61	3	427	93	29	9	159	1,023
Greece	4	14	0	51	33	(s)	1	47	148
Ireland	13	5	2	23	22	4	1	1	72
Italy	32	0	(s)	80	218	50	2	290	673
Netherlands	111	12	5	198	154	177	7	220	884
Norway	11	3	(s)	16	8	5	1	12	57
Portugal	3	1	0	14	37	18	1	29	103
Spain	5	(s)	0	16	11	24	1	110	168
Sweden	40	12	1	33	16	22	4	18	146
Switzerland	65	18	(s)	95	1	1	1	8	190
Turkey	2	(s)	0	15	0	33	1	7	58
United Kingdom	29	7	2	17	91	30	3	269	448
Other	23	7	(s)	31	30	1	(s)	12	105
Total	742	195	17	1,431	824	478	65	1,573	5,324
Eastern Europe & Former U.S.S.R.									
Bulgaria	1	4	0	7	15	0	(s)	2	29
Poland	37	(s)	0	22	17	0	(s)	1	78
Other	25	0	3	14	20	1	3	17	82
Total	64	4	3	43	52	1	3	19	188
Middle East									
Saudi Arabia	0	2	0	3	0	(s)	6	(s)	11
United Arab Emirates	(s)	2	0	1	160	0	(s)	1	164
Other	43	13	24	134	99	13	2	17	346
Total	43	17	24	137	259	13	8	19	520
Africa									
Egypt	0	6	(s)	11	(s)	1	1	(s)	21
Other	85	35	17	110	61	23	9	19	360
Total	85	42	17	122	62	24	10	19	380
Far East & Oceania									
Australia	4	2	(s)	6	0	1	(s)	127	140
Hong Kong	7	37	2	74	47	6	3	10	187
India	(s)	3	60	100	0	12	5	4	185
Indonesia	0	10	0	43	13	0	1	6	73
Japan	23	72	46	69	142	632	3	408	1,396
Malaysia	41	7	(s)	37	34	8	3	2	133
Pakistan	3	0	9	54	21	0	(s)	(s)	86
Singapore	50	6	3	14	271	(s)	5	8	356
Thailand	14	10	0	91	45	3	4	2	168
Other	97	34	46	198	204	135	4	127	844
Total	239	179	166	687	777	798	29	694	3,569
World Total	1,630	533	250	2,787	2,675	1,589	133	3,112	12,710

¹ Jet fuel includes naphtha-type jet fuel and kerosene-type jet fuel.

² Includes asphalt, coke, aviation gasoline, naphthas, paraffin wax, petrochemical feedstocks, unfinished oils, white spirits, and blending components.
(s)=Value less than 500 barrels per day.

Note: Sum of components may not equal total due to rounding.

Sources: See sources at the end of this Chapter.

Figure 23. Refined Petroleum Products Imports by Region, 1991

Source: Table 16.

Figure 24. World Imports of Selected Refined Petroleum Products, 1991

Source: Table 16.

Table 17. World Exports of Refined Petroleum Products, 1991
(Thousand Barrels per Day)

Region Country	Motor Gasoline	Jet Fuel ¹	Kerosene	Distillate Fuel Oil	Residual Fuel Oil	Liquefied Petroleum Gases	Lubricants (Including Greases)	Other ²	Total Exports of Refined Products ³
North America									
Canada	80	10	1	105	42	161	1	33	432
Mexico	3	17	0	20	8	52	0	6	105
United States	82	43	3	215	226	42	18	256	885
Other	0	0	0	0	0	0	0	0	0
Total	165	69	5	339	276	255	19	294	1,422
Central & South America									
Argentina	37	(s)	0	30	8	6	(s)	22	104
Bahama Islands	0	0	0	0	0	0	0	0	0
Brazil	26	11	0	3	42	0	1	(s)	82
Netherlands Antilles	30	16	(s)	46	42	2	1	30	167
Puerto Rico	4	9	0	4	(s)	1	7	13	39
Trinidad and Tobago	9	5	5	11	55	4	(s)	7	95
U.S. Virgin Islands	49	17	8	56	54	(s)	0	60	244
Venezuela	56	59	0	237	237	30	2	116	736
Other	3	4	(s)	14	163	1	(s)	19	204
Total	215	120	13	401	600	43	12	267	1,672
Western Europe									
Belgium	107	23	(s)	121	65	9	7	80	411
Finland	30	2	0	24	2	(s)	3	3	64
France	91	30	(s)	75	34	31	20	37	318
Germany	52	1	0	47	33	14	6	27	180
Greece	21	23	0	10	22	4	2	9	91
Italy	75	8	25	139	80	7	13	49	396
Netherlands	255	76	4	355	186	36	14	253	1,180
Spain	29	29	1	21	121	4	2	47	253
Sweden	31	1	(s)	58	56	2	5	17	170
United Kingdom	117	16	4	132	85	73	10	47	484
Other	54	16	(s)	94	123	57	3	50	395
Total	861	225	35	1,076	807	236	85	619	3,944
Eastern Europe & Former U.S.S.R.									
Romania	34	0	1	20	(s)	5	0	1	61
Former U.S.S.R.	32	0	22	367	329	23	11	95	879
Other	5	2	(s)	18	27	4	1	23	80
Total	70	2	23	405	356	32	12	119	1,020
Middle East									
Bahrain	17	15	25	80	62	5	1	29	234
Kuwait	14	10	10	12	26	0	0	3	75
Saudi Arabia	62	32	82	38	97	615	1	451	1,377
Syria	2	0	0	1	41	0	0	1	45
Other	6	12	12	51	82	209	2	31	405
Total	101	69	128	183	307	829	4	515	2,137
Africa									
Algeria	5	4	(s)	100	87	124	0	147	467
Other	18	14	3	62	143	8	1	95	345
Total	23	18	4	163	230	132	1	242	812
Far East & Oceania									
Australia	10	4	3	17	16	24	6	10	89
China	48	7	3	21	10	1	1	14	104
Indonesia	0	1	0	0	114	77	(s)	67	259
Japan	1	96	10	29	40	0	3	10	188
Singapore	109	140	29	229	245	10	14	115	891
Other	13	25	12	107	191	24	4	141	516
Total	181	271	56	403	616	136	27	356	2,047
World Total	1,614	775	264	2,970	3,192	1,663	161	2,412	13,052

¹ Jet fuel includes naphtha-type jet fuel and kerosene-type jet fuel.

² Includes asphalt, coke, aviation gasoline, naphthas, paraffin wax, petrochemical feedstocks, unfinished oils, white spirits, and blending components.

³ Exports of refined products do not include bunker fuels where identifiable.

(s)=Value less than 500 barrels per day.

Note: Sum of components may not equal total due to rounding.

Sources: See sources at the end of this Chapter.

Figure 25. Refined Petroleum Products Exports by Region, 1991

Source: Table 17.

Figure 26. World Exports of Selected Refined Petroleum Products, 1991

Source: Table 17.

Table 18. World Apparent Consumption of Refined Petroleum Products, 1991
(Thousand Barrels per Day)

Region Country	Motor Gasoline	Jet Fuel ¹	Kerosene	Distillate Fuel Oil	Residual Fuel Oil	Liquefied Petroleum Gases	Lubricants (Including Greases)	Other ²	Total Apparent Consumption ³
North America									
Canada	536	82	47	356	154	190	15	243	1,622
Mexico	480	37	10	226	474	271	7	290	1,795
United States	7,188	1,471	46	2,921	1,158	1,863	146	1,921	16,714
Other	1	(s)	(s)	3	(s)	(s)	(s)	(s)	6
Total	8,204	1,590	103	3,506	1,786	2,324	168	2,454	20,136
Central & South America									
Argentina	100	13	9	141	59	46	4	44	416
Bahama Islands	4	1	(s)	5	6	1	1	(s)	17
Bolivia	9	2	1	(s)	8	6	(s)	(s)	26
Brazil	330	43	4	441	194	160	11	163	1,346
Chile	35	6	5	46	25	19	3	6	144
Colombia	111	11	5	39	14	14	2	9	205
Cuba	23	3	12	44	106	4	2	9	204
Dominican Republic	11	3	1	14	16	6	(s)	11	62
Ecuador	32	4	2	22	26	12	(s)	5	104
Guatemala	7	1	1	10	3	3	(s)	1	26
Jamaica	6	3	1	6	30	1	(s)	1	47
Netherlands Antilles	2	1	1	8	39	2	2	9	64
Panama Republic	4	1	(s)	11	13	2	(s)	1	33
Peru	26	6	15	32	24	6	(s)	4	113
Puerto Rico	56	9	1	21	44	4	(s)	41	176
Trinidad and Tobago	9	1	(s)	4	1	2	(s)	4	21
Uruguay	5	1	1	8	9	2	(s)	2	30
U.S. Virgin Islands	2	12	(s)	5	15	6	(s)	16	56
Venezuela	173	14	7	65	60	48	6	32	405
Other	32	13	4	54	36	7	2	4	152
Total	975	149	68	977	727	352	36	361	3,645
Western Europe									
Austria	65	8	(s)	79	42	6	3	32	235
Belgium	64	20	3	197	119	17	3	75	499
Denmark	40	14	(s)	95	29	3	1	12	194
Finland	46	9	(s)	84	42	4	2	39	227
France	387	80	1	787	201	132	17	331	1,935
Germany	733	108	1	1,247	221	94	24	400	2,828
Greece	58	26	(s)	111	94	10	2	19	320
Ireland	21	7	3	36	21	4	1	6	99
Italy	349	51	16	555	550	109	11	222	1,863
Luxembourg	11	3	0	19	5	1	(s)	(s)	39
Netherlands	81	36	2	165	194	88	3	188	756
Norway	41	7	7	64	11	27	2	25	184
Portugal	35	12	1	57	82	26	2	37	253
Spain	192	54	2	331	185	93	6	210	1,072
Sweden	99	17	0	102	53	25	2	25	323
Switzerland	90	23	(s)	145	8	6	1	11	284
Turkey	72	10	4	146	119	54	6	57	468
United Kingdom	561	134	51	419	282	130	15	209	1,801
Former Yugoslavia	44	3	2	62	91	13	10	26	251
Other	5	3	(s)	8	13	(s)	(s)	1	31
Total	2,995	626	91	4,711	2,361	841	111	1,925	13,660
Eastern Europe & Former U.S.S.R.									
Albania	2	0	(s)	2	6	(s)	1	7	18
Bulgaria	17	5	2	31	48	1	1	13	118
Former Czechoslovakia	40	7	5	62	66	4	6	42	232
Hungary	33	3	2	53	36	10	4	22	161
Poland	86	3	(s)	95	47	6	5	33	275
Romania	40	8	2	64	114	7	6	37	277
Former U.S.S.R.	1,665	460	72	1,855	2,795	730	122	650	8,350
Total	1,883	485	83	2,162	3,112	758	145	803	9,431

See footnotes at end of table.

Table 18. World Apparent Consumption of Refined Petroleum Products, 1991 (Continued)
(Thousand Barrels per Day)

Region Country	Motor Gasoline	Jet Fuel ¹	Kerosene	Distillate Fuel Oil	Residual Fuel Oil	Liquefied Petroleum Gases	Lubricants (Including Greases)	Other ²	Total Apparent Consumption ³
Middle East									
Bahrain	5	9	1	4	2	1	1	4	27
Cyprus	4	6	(s)	6	13	2	(s)	1	32
Iran	159	24	125	354	276	52	18	67	1,075
Iraq	47	5	12	88	74	10	5	23	263
Israel	36	13	5	28	66	5	(s)	21	173
Jordan	10	3	3	17	22	4	(s)	2	63
Kuwait	9	2	1	10	17	3	(s)	3	45
Lebanon	17	2	1	11	20	2	0	(s)	53
Saudi Arabia	161	37	5	297	218	124	11	146	999
Syria	29	7	6	74	41	9	1	11	178
United Arab Emirates	30	26	1	53	211	4	1	6	332
Yemen	12	4	5	24	25	4	(s)	5	78
Other	20	8	(s)	13	13	25	(s)	3	82
Total	539	147	164	980	996	244	38	291	3,400
Africa									
Algeria	48	7	4	59	23	45	4	20	208
Angola	2	3	1	7	11	1	(s)	1	25
Egypt	50	11	50	92	188	28	5	32	456
Ivory Coast	8	1	7	9	10	1	(s)	2	39
Kenya	8	5	3	9	8	1	1	2	37
Libya	38	24	4	47	44	5	2	2	166
Morocco	9	4	1	41	38	20	1	4	117
Nigeria	112	11	37	54	42	4	2	14	277
South Africa	157	11	10	115	62	3	6	38	403
Sudan	4	3	1	19	8	(s)	(s)	1	36
Tunisia	4	4	6	22	26	8	1	1	72
Zaire	5	4	1	6	4	(s)	(s)	1	22
Other	68	26	18	98	58	7	5	14	294
Total	513	115	143	579	520	124	28	132	2,153
Far East & Oceania									
Australia	290	58	3	170	39	40	8	98	706
China	503	60	23	593	765	93	36	426	2,499
Guam	2	8	0	4	(s)	(s)	0	(s)	14
Hong Kong	7	34	2	49	25	7	1	9	134
India	82	38	175	478	173	82	16	148	1,190
Indonesia	118	23	140	251	92	13	6	53	695
Japan	787	64	467	1,162	862	723	41	1,176	5,234
Korea, North	25	0	6	27	16	(s)	(s)	3	76
Korea, South	79	46	70	321	401	119	11	154	1,202
Malaysia	70	15	4	98	65	18	4	9	282
Myanmar (Burma)	5	1	(s)	13	5	1	1	3	29
New Zealand	45	13	(s)	23	6	7	1	11	105
Pakistan	25	11	20	88	62	5	3	7	221
Philippines	33	13	10	73	82	13	2	9	235
Singapore	13	45	1	40	247	17	1	26	389
Sri Lanka	3	2	4	13	9	1	1	1	34
Taiwan	102	6	1	81	234	42	3	77	545
Thailand	67	44	2	172	109	33	4	6	437
Vietnam	14	2	4	23	11	(s)	1	1	56
Other	25	20	14	54	26	2	2	6	150
Total	2,295	503	945	3,732	3,229	1,216	141	2,222	14,283
World Total	17,405	3,614	1,596	16,646	12,732	5,860	666	8,188	66,707

¹ Jet fuel includes naphtha-type jet fuel and kerosene-type jet fuel.

² Includes asphalt, coke, aviation gasoline, naphthas, paraffin wax, petrochemical feedstocks, unfinished oils, white spirits, and blending components.

³ Apparent consumption includes internal consumption, refinery fuel and loss, and bunkering. Also included, where available, are liquefied petroleum gases sold directly from natural gas processing plants for fuel or chemical uses.

(s)=Value less than 500 barrels per day.

Note: Sum of components may not equal total due to rounding.

Sources: See sources at the end of this Chapter

Table 19. OECD¹ Petroleum Stocks, 1989-1992
(Million Barrels)

Year Quarter	Canada	France	Germany	Italy	Japan	United Kingdom ²	United States ³	Other OECD ⁴	Total OECD
Crude Oil Stocks									
1989									
Q1	27	29	129	33	365	29	893	148	1,654
Q2	31	30	126	31	361	27	903	152	1,662
Q3	30	31	128	36	355	31	912	150	1,673
Q4	31	31	127	33	361	32	921	137	1,675
1990									
Q1	33	28	128	39	389	37	953	159	1,766
Q2	34	42	128	36	365	35	971	183	1,795
Q3	31	37	127	39	366	35	932	162	1,730
Q4	35	34	128	40	358	27	908	172	1,701
1991									
Q1	37	35	133	44	398	37	905	158	1,746
Q2	30	36	131	40	381	35	915	161	1,729
Q3	33	34	134	41	390	32	909	153	1,726
Q4	35	36	135	36	390	33	893	152	1,711
1992									
Q1	31	34	144	49	395	31	907	150	1,741
Q2	37	37	146	45	385	30	895	161	1,737
Q3	33	33	142	46	381	33	893	165	1,726
Q4	33	34	147	48	382	35	893	176	1,748
Product Stocks⁵									
1989									
Q1	84	94	141	115	187	86	675	349	1,731
Q2	88	97	143	122	196	86	705	352	1,788
Q3	92	105	146	129	217	88	755	359	1,890
Q4	82	107	144	130	216	87	660	375	1,801
1990									
Q1	89	103	140	123	192	84	689	356	1,775
Q2	84	105	141	123	214	85	714	376	1,842
Q3	81	113	142	134	219	88	766	373	1,915
Q4	86	106	137	132	233	84	713	377	1,867
1991									
Q1	80	108	147	134	195	87	653	371	1,775
Q2	77	108	142	133	210	83	719	364	1,835
Q3	84	117	153	129	232	88	754	390	1,945
Q4	84	118	153	124	216	87	724	374	1,878
1992									
Q1	80	108	158	120	191	84	664	349	1,754
Q2	75	110	161	121	199	83	708	363	1,820
Q3	77	115	157	119	227	79	743	374	1,890
Q4	74	112	164	126	221	79	699	365	1,841
Total Petroleum Stocks⁶									
1989									
Q1	111	123	270	148	552	115	1,568	497	3,385
Q2	119	128	269	154	557	112	1,608	504	3,450
Q3	121	135	274	165	572	120	1,667	509	3,563
Q4	114	138	271	164	577	118	1,581	512	3,476
1990									
Q1	121	131	268	163	581	121	1,642	515	3,542
Q2	119	147	270	160	579	120	1,685	559	3,637
Q3	112	150	269	173	585	123	1,698	534	3,645
Q4	121	140	265	172	590	112	1,621	548	3,568
1991									
Q1	117	142	280	178	593	124	1,558	530	3,521
Q2	107	144	274	173	590	118	1,634	524	3,564
Q3	117	150	287	170	622	120	1,663	543	3,671
Q4	119	153	288	160	607	119	1,617	526	3,589
1992									
Q1	111	142	303	169	586	115	1,571	499	3,495
Q2	112	148	307	166	583	114	1,603	524	3,557
Q3	110	148	299	165	608	112	1,636	539	3,616
Q4	107	146	310	174	603	113	1,592	541	3,589

¹ Organization for Economic Cooperation and Development. The members of the OECD are Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Japan, Luxembourg, the Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, the United Kingdom, and the United States. Total OECD includes the United States Territories.

² Crude oil stocks for the United Kingdom include unfinished oils.

³ Stocks for the United States include data for the 50 States and the District of Columbia. Data include lease condensate, pipeline and tank farm stocks, stocks held at refineries, stocks at natural gas processing plants, bulk terminals, and the Strategic Petroleum Reserve.

⁴ Includes the United States Territories.

⁵ Includes natural gas plant liquids and unfinished oils in addition to refined product stocks.

⁶ Total petroleum stock data through 1990 are former West Germany. Beginning with 1991, the data for Germany are for unified Germany.

Sources: See sources at the end of this Chapter.

Figure 27. OECD Crude Oil Stocks, 1989 and 1992

Source: Table 19.

Figure 28. OECD Product Stocks, 1989 and 1992

Source: Table 19.

Table 20. World Crude Oil Flow, 1991
(Thousand Barrels per Day)

Exporting Region or Country	Importing Country or Region										Total ¹
	North America		Central and South America		Western Europe	Eastern Europe and Former U.S.S.R.	Middle East	Africa	Far East and Oceania		
	United States	Canada	Caribbean Islands	Other					Japan	Other	
North America											
Canada	743	--	0	0	0	0	0	0	1	8	752
Mexico	759	15	44	14	346	0	32	0	156	3	1,369
United States	--	5	111	0	(s)	0	0	0	0	0	116
Central & South America											
Ecuador	53	0	24	54	0	0	0	0	0	48	179
Peru	2	0	0	0	0	0	0	0	0	0	2
Trinidad and Tobago	72	0	0	0	0	0	0	0	0	0	72
Venezuela	668	35	374	96	199	0	0	0	9	0	1,381
Other	132	0	42	25	9	0	0	0	0	0	208
Western Europe											
Norway	74	157	0	0	1,475	0	23	0	0	0	1,729
United Kingdom	106	191	11	0	765	0	0	0	0	0	1,073
Other	3	1	0	0	134	0	0	0	0	0	137
Eastern Europe & Former U.S.S.R.	1	0	5	0	637	493	10	6	2	51	1,205
Middle East											
Iran	32	2	7	141	1,192	114	10	31	380	511	2,420
Iraq	0	0	0	0	0	0	42	0	0	0	42
Saudi Arabia	1,703	72	12	190	1,931	0	216	34	984	1,310	6,452
United Arab Emirates	2	3	63	1	193	0	5	238	1,062	628	2,195
Other	33	12	88	180	251	132	51	104	608	379	1,838
Africa											
North ²	61	5	1	7	1,969	90	105	116	0	54	2,408
West ³	788	54	31	64	977	0	(s)	85	11	8	2,018
Other	311	0	44	0	155	5	15	2	0	11	543
Far East & Oceania	239	0	0	12	12	0	13	5	967	1,019	2,267
World Total	5,782	551	857	784	10,245	834	522	621	4,180	4,030	28,406

¹ The data in this column do not equal reported exports because of changes in stocks at sea, exchanges, transshipments, and other statistical discrepancies.

² Includes Algeria, Egypt, Libya, Morocco, and Tunisia.

³ Includes Benin, Cameroon, Equatorial Guinea, Gabon, Ivory Coast, Nigeria, and Togo.

--=Not applicable.

(s)=Value less than 500 barrels per day.

Note: Sum of components may not equal total due to rounding.

Sources: See sources at the end of this Chapter.

Figure 29. Crude Oil Imports and Exports by the 10 Largest Exporters, 1991

Source: Table 20.

Figure 30. Crude Oil Imports and Exports by Region, 1991

Source: Table 20.

Table 21. World Crude Oil Refining Distillation Capacity, January 1, 1993

Region Country	Number of Refineries	Thousand Barrels per Day ¹			
		Crude Oil Distillation	Catalytic Cracking	Thermal Cracking	Reforming
North America					
Canada	26	1,872	387	108	360
Mexico	7	1,524	243	63	171
United States ²	187	15,121	5,494	1,978	3,542
Total	220	18,516	6,124	2,149	4,073
Central & South America					
Argentina	12	709	180	169	41
Brazil	13	1,403	317	40	24
Netherlands Antilles	2	470	49	110	20
Trinidad and Tobago	2	246	26	8	28
U.S. Virgin Islands	1	545	--	80	125
Venezuela	6	1,167	234	134	9
Other	39	1,507	192	130	99
Total	75	6,047	997	670	346
Western Europe					
Belgium	4	607	109	63	94
France	14	1,851	340	169	260
Germany	21	2,233	234	370	382
Greece	4	396	63	44	51
Italy	19	2,420	321	436	304
Netherlands	6	1,231	132	155	189
Portugal	3	294	10	--	51
Sweden	5	428	28	65	74
Turkey	5	714	42	5	65
United Kingdom	15	1,843	465	149	374
Other	30	3,022	319	430	473
Total	126	15,037	2,062	1,885	2,316
Eastern Europe & Former U.S.S.R.					
Kazakhstan	3	390	--	27	--
Russia	29	6,463	233	446	--
Ukraine	6	1,244	--	42	--
Other	43	4,122	270	267	204
Total	81	12,219	503	782	204
Middle East					
Iran	8	1,089	--	93	105
Iraq	8	319	--	--	44
Kuwait	2	368	28	27	33
Saudi Arabia	8	1,863	88	72	184
Other	15	1,304	96	103	165
Total	41	4,943	211	295	531
Africa					
Algeria	6	530	--	--	74
Egypt	8	532	--	16	34
Libya	3	348	--	--	14
South Africa	4	431	84	72	63
Other	25	1,098	88	14	161
Total	46	2,939	173	103	346
Far East & Oceania					
Australia	10	698	199	--	171
China	23	2,200	--	--	--
India	12	1,047	136	113	29
Indonesia	6	860	13	70	64
Japan	41	4,741	675	75	669
Korea, South	6	1,147	--	19	123
Singapore	5	1,029	26	185	63
Other	23	1,673	97	49	182
Total	126	13,395	1,145	511	1,301
World Total	715	73,097	11 216	6,395	9,116

¹ Calendar day basis.

² Refinery cracking and reforming data for the United States are available only on a stream day basis. These figures have been converted to calendar days by reducing the stream day data by 5 percent. Thus, the United States cracking and reforming data are estimated.

--=Not applicable.

Note: Sum of components may not equal total due to rounding.

Sources: See sources at the end of this Chapter.

Figure 31. Crude Oil Refining Distillation Capacity, January 1, 1993

Source: Table 21.

Figure 32. Crude Oil Refining Distillation Capacity by Region, January 1, 1993

Source: Table 21.

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4

**World Natural Gas
Supply and Disposition**

4. World Natural Gas Supply and Disposition

Gross Production

World gross production of natural gas was 92.1 trillion cubic feet in 1991 (Table 22). The gas was processed in the following manner:

- 4.4 trillion cubic feet were vented and flared as waste
- 8.8 trillion cubic feet were reinjected into reservoirs
- 3.9 trillion cubic feet were extracted in the processing of natural gas plant liquids
- 74.8 trillion cubic feet were available as dry natural gas.

There were 65 natural gas producing countries in 1991. The nine largest producers, each with more than 2 trillion cubic feet, were the former U.S.S.R., the United States, Canada, Algeria, the Netherlands, Indonesia, the United Kingdom, Saudi Arabia, and Iran. These countries accounted for 79.1 percent of the world's gross production in 1991. The former U.S.S.R. and the United States, the two largest producers, accounted for 31.9 and 23.7 percent, respectively. Regional production as a percentage of the world's gross production was as follows for 1991:

- Eastern Europe and Former U.S.S.R.—33.3 percent
- North America—30.8 percent
- Western Europe—9.6 percent
- Middle East—7.7 percent
- Far East and Oceania—7.5 percent
- Africa—7.3 percent
- Central and South America—3.8 percent.

Vented and Flared

Total venting and flaring of natural gas was 4.8 percent of gross production in 1991 (Table 22). About 41.2 percent of the world's total venting and flaring occurred in three countries that accounted for only 4.2 percent of the world's gross production. Venting and flaring as a percentage of gross production within each of these three countries in 1991 was as follows:

- Kuwait—96.8 percent
- Nigeria—76.0 percent
- Saudi Arabia—20.2 percent.

On a regional basis, venting and flaring of natural gas as a percentage of gross production within each region was as follows for 1991:

- Middle East—20.9 percent
- Africa—19.0 percent
- Central and South America—11.0 percent
- Far East and Oceania—6.0 percent
- Eastern Europe and Former U.S.S.R.—1.4 percent
- Western Europe—1.2 percent
- North America—1.1 percent.

Expansion of the Das Island natural gas liquefaction capability in Abu Dhabi.

Reinjected

In 1991, 74.6 percent of the world's total reinjected natural gas occurred in five countries that reinjected at least 500 billion cubic feet of their gross production (Table 22). The five countries with the largest volumes of reinjected natural gas in 1991 and the percentage of reinjected gas over gross production within each country were as follows:

- Algeria—47.9 percent
- Venezuela—32.8 percent
- Iran—32.0 percent
- United States—12.7 percent
- Canada—8.9 percent.

On a regional basis, reinjected natural gas as a percentage of gross production within each region was as follows for 1991:

- Africa—36.9 percent
- Central and South America—22.4 percent
- Middle East—15.4 percent
- North America—11.4 percent
- Western Europe—7.8 percent
- Far East and Oceania—6.7 percent
- Eastern Europe and Former U.S.S.R.—0.0 percent.

Dry Gas Production

In 1991, 67.5 percent of the world's total dry gas production was by only three countries (Table 22 and Figure 33). The three countries with the largest volume of dry gas production were as follows:

- Former U.S.S.R.—38.3 percent
- United States—23.7 percent
- Canada—5.5 percent.

On a regional basis, dry gas production (Figure 34) as a percentage of the world total was as follows for 1991:

- Eastern Europe and Former U.S.S.R.—39.9 percent
- North America—30.5 percent
- Western Europe—10.5 percent
- Far East and Oceania—7.8 percent
- Middle East—5.0 percent
- Africa—3.6 percent
- Central and South America—2.8 percent.

Imports and Consumption

In 1991, 70.3 percent of the world's imports of natural gas (including liquefied natural gas) were by only five countries (Tables 23 and 24). Natural gas imports as a percentage of consumption within each of these countries were as follows:

- Japan—96.0 percent
- France—92.3 percent
- Germany—78.5 percent
- Italy—65.9 percent
- United States—9.3 percent.

On a regional basis, imports as a percentage of consumption within each region were as follows for 1991:

- Western Europe—52.6 percent
- Far East and Oceania—35.5 percent
- North America—8.2 percent
- Eastern Europe and Former U.S.S.R.—5.3 percent
- Central and South America—3.7 percent
- Africa—2.4 percent
- Middle East—0.0 percent.

Exports and Production

The world's exports of natural gas (including liquefied natural gas), as a percentage of the world's gross production, were 12.5 percent in 1991 (Tables 22, 23, and 24). The five largest exporters of natural gas (more than 1 trillion cubic feet) accounted for 79.2 percent of the world's exports (Figure 37). Exports of natural gas by these five countries were 20.5 percent of their gross production. For these countries, exports as a percentage of gross production within each country were as follows for 1991:

- Indonesia—47.5 percent
- Netherlands—45.5 percent
- Canada—32.8 percent
- Algeria—26.0 percent
- Former U.S.S.R.—12.7 percent.

On a regional basis (Figure 38), natural gas exports as a percentage of gross production within each region were as follows for 1991:

- Far East and Oceania—28.2 percent
- Western Europe—27.5 percent
- Africa—18.0 percent
- Eastern Europe and Former U.S.S.R.—12.2 percent
- North America—6.5 percent
- Middle East—3.3 percent
- Central and South America—2.2 percent.

Consumption

The world's consumption of dry natural gas in 1991 was 74.5 trillion cubic feet, or 80.9 percent of gross production (Tables 22 and 23). The two largest consumers of natural gas (more than 19 trillion cubic feet) accounted for 59.3 percent of the total world's consumption (Figure 35). Natural gas consumption

by these two countries as a percentage of the total world's consumption was as follows for 1991:

- Former U.S.S.R.—33.6 percent
- United States—25.7 percent.

On a regional basis (Figure 36), natural gas consumption as a percentage of the world total was as follows for 1991:

- Eastern Europe and Former U.S.S.R.—37.0 percent
- North America—30.3 percent
- Western Europe—15.2 percent
- Far East and Oceania—7.9 percent
- Middle East—4.7 percent
- Central and South America—2.8 percent
- Africa—2.0 percent.

Table 22. World Natural Gas Production, 1991
(Billion Cubic Feet)

Region Country	Gross Production	Vented, Flared	Reinjected	Marketed Production	Dry Gas Production
North America					
Canada	5,208	95	466	4,647	4,122
Mexico	1,326	38	0	1,288	936
United States	21,803	170	2,772	18,586	17,751
Total	28,337	303	3,238	24,521	22,809
Central & South America					
Argentina	819	88	32	699	643
Bolivia	192	4	79	109	104
Brazil	233	40	49	144	118
Chile	146	7	81	58	52
Colombia	186	7	18	161	155
Trinidad and Tobago	298	97	0	201	201
Venezuela	1,560	116	512	932	826
Other	63	24	12	27	21
Total	3,497	383	783	2,331	2,120
Western Europe					
France	156	0	0	156	104
Germany	693	0	0	693	668
Italy	614	0	0	614	614
Netherlands	3,044	0	0	3,044	3,044
Norway	1,482	13	445	1,024	962
United Kingdom	2,356	85	177	2,094	2,005
Other	497	6	67	424	421
Total	8,842	104	689	8,049	7,818
Eastern Europe & Former U.S.S.R.					
Hungary	186	0	0	186	176
Poland	146	0	0	146	146
Romania	886	0	0	886	876
Former U.S.S.R.	29,404	424	0	28,980	28,623
Other	37	0	6	30	28
Total	30,659	424	6	30,228	29,849
Middle East					
Bahrain	328	0	88	240	233
Iran	2,030	388	650	992	918
Kuwait	565	547	0	18	18
Oman	237	31	71	136	124
Qatar	290	0	0	290	207
Saudi Arabia	2,284	462	155	1,666	1,130
United Arab Emirates	1,163	18	120	1,024	916
Other	225	43	11	170	163
Total	7,122	1,489	1,095	4,536	3,709
Africa					
Algeria	4,458	159	2,135	2,164	1,933
Egypt	478	83	36	359	321
Libya	551	118	173	260	238
Nigeria	1,052	800	85	168	168
Other	180	117	49	14	11
Total	6,719	1,277	2,478	2,965	2,671
Far East & Oceania					
Afghanistan	89	5	0	83	83
Australia	830	0	0	830	759
Brunei	337	0	55	282	277
China	526	0	0	526	526
India	669	201	4	465	449
Indonesia	2,315	179	368	1,768	1,724
Japan	75	0	0	75	75
Malaysia	759	0	0	759	747
New Zealand	244	0	39	205	186
Pakistan	534	0	0	534	534
Other	558	31	0	527	477
Total	6,935	416	466	6,054	5,837
World Total	92,111	4,396	8,755	78,684	74,813

Note: Sum of components may not equal total due to independent rounding.
Sources: See sources at the end of this Chapter.

Figure 33. Natural Gas Production by the 10 Largest Producers, 1991

Source: Table 22.

Figure 34. Natural Gas Production by Region, 1991

Source: Table 22.

Table 23. World Dry Natural Gas Supply and Disposition, 1991
(Billion Cubic Feet)

Region Country	Dry Gas Production	Imports ¹	Exports ¹	Apparent Consumption ²
North America				
Canada	4,122	11	1,710	2,454
Mexico	936	60	0	994
United States	17,751	1,773	121	19,129
Total	22,809	1,844	1,831	22,577
Central & South America				
Argentina	643	78	0	721
Colombia	155	0	0	155
Trinidad and Tobago	201	0	0	201
Venezuela	826	0	0	826
Other	295	0	0	216
Total	2,120	78	0	2,119
Western Europe				
Austria	47	181	0	226
Belgium and Luxembourg	0	376	16	363
Ireland	84	0	0	84
France	104	1,061	3	1,149
Germany	668	2,190	106	2,790
Italy	614	1,169	1	1,775
Netherlands	3,044	86	1,386	1,744
Norway	962	0	868	94
Spain	46	170	0	216
United Kingdom	2,005	225	0	2,220
Former Yugoslavia	94	158	0	252
Other	150	357	54	446
Total	7,818	5,973	2,434	11,359
Eastern Europe & Former U.S.S.R.				
Bulgaria	0	200	0	204
Former Czechoslovakia	15	484	5	494
Hungary	176	216	0	393
Poland	146	258	0	403
Romania	876	164	0	1,040
Former U.S.S.R.	28,623	139	3,748	25,014
Other	13	0	0	13
Total	29,849	1,461	3,753	27,561
Middle East				
Bahrain	233	0	0	233
Iran	918	0	107	811
Kuwait	18	0	0	18
Oman	124	0	0	124
Qatar	207	0	0	207
Saudi Arabia	1,130	0	0	1,130
United Arab Emirates	916	0	126	790
Other	163	0	0	163
Total	3,709	0	233	3,476
Africa				
Algeria	1,933	0	1,158	775
Egypt	321	0	0	321
Libya	238	0	46	192
Nigeria	168	0	0	168
Tunisia	0	36	3	33
Other	11	0	0	11
Total	2,671	36	1,207	1,500
Far East & Oceania				
Australia	759	0	196	563
China	526	0	0	526
India	449	0	0	449
Indonesia	1,724	0	1,099	557
Japan	75	1,883	0	1,962
Malaysia	747	0	364	383
New Zealand	186	0	0	186
Pakistan	534	0	0	534
Other	837	214	294	747
Total	5,837	2,097	1,953	5,907
World Total	74,813	11,489	11,489	74,500

¹ Includes liquefied natural gas.

² Includes stock changes.

Note: Sum of components may not equal total due to independent rounding.

Sources: See sources at the end of this Chapter.

Figure 35. Natural Gas Consumption and Production by the 10 Largest Producers, 1991

Source: Table 23.

Figure 36. Natural Gas Consumption and Production by Region, 1991

Source: Table 23.

Table 24. World Natural Gas Flow, 1991
(Billion Cubic Feet)

Importers	Exporters														Total
	North & South America			Western Europe			Eastern Europe		Middle East		Africa		Far East and Oceania		
	Canada	United States	Other	Netherlands	Norway	Other	Former U.S.S.R.	Other	Iran	United Arab Emirates	Algeria	Other	Indonesia	Other	
North America															
Canada	--	11	0	0	0	0	0	0	0	0	0	0	0	0	11
Mexico	0	60	0	0	0	0	0	0	0	0	0	0	0	0	60
United States	1,710	--	0	0	0	0	0	0	0	0	'63	0	0	0	'1,773
Central & South America															
Argentina	0	0	78	0	0	0	0	0	0	0	0	0	0	0	78
Western Europe															
Austria	0	0	0	0	0	8	173	0	0	0	0	0	0	0	181
Belgium and Luxembourg	0	0	0	141	67	18	0	0	0	0	'150	0	0	0	'376
Finland	0	0	0	0	0	0	100	0	0	0	0	0	0	0	100
France	0	0	0	177	204	0	376	0	0	0	'304	0	0	0	'1,061
Germany	0	0	0	838	362	31	954	5	0	0	0	0	0	0	2,190
Italy	0	0	0	188	0	0	501	0	0	0	477	3	0	0	1,169
Netherlands	0	0	0	--	0	86	0	0	0	0	0	0	0	0	86
Spain	0	0	0	0	0	0	0	0	0	0	'124	'46	0	0	'170
Sweden	0	0	0	0	0	23	0	0	0	0	0	0	0	0	23
Switzerland	0	0	0	42	10	14	22	0	0	0	4	0	0	0	92
Turkey	0	0	0	0	0	0	142	0	0	0	0	0	0	0	142
United Kingdom	0	0	0	0	225	0	0	0	0	0	0	0	0	0	225
Former Yugoslavia	0	0	0	0	0	0	158	0	0	0	0	0	0	0	158
Eastern Europe & Former U.S.S.R.															
Bulgaria	0	0	0	0	0	0	200	0	0	0	0	0	0	0	200
Former Czechoslovakia	0	0	0	0	0	0	484	0	0	0	0	0	0	0	484
Hungary	0	0	0	0	0	0	216	0	0	0	0	0	0	0	216
Poland	0	0	0	0	0	0	258	0	0	0	0	0	0	0	258
Romania	0	0	0	0	0	0	164	0	0	0	0	0	0	0	164
Former U.S.S.R.	0	0	0	0	0	0	--	0	107	0	0	0	0	32	139
Middle East															
Kuwait	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
United Arab Emirates	0	0	0	0	0	0	0	0	0	--	0	0	0	0	0
Africa															
Tunisia	0	0	0	0	0	0	0	0	0	0	36	0	0	0	36
Far East & Oceania															
Japan	0	'50	0	0	0	0	0	0	0	'126	0	0	'885	'822	'1,883
Korea, South	0	0	0	0	0	0	0	0	0	0	0	0	'136	0	'136
Taiwan	0	0	0	0	0	0	0	0	0	0	0	0	'78	0	'78
World Total	1,710	'121	78	1,386	868	180	3,748	5	107	'126	'1,158	'49	'1,099	'854	'11,489

¹ Includes liquefied natural gas

--=Not applicable.

Sources: See sources at the end of this Chapter

Figure 37. Natural Gas Imports and Exports by the 10 Largest Exporters, 1991

Source: Table 24.

Figure 38. Natural Gas Imports and Exports by Region, 1991

Source: Table 24.

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World Coal Supply and Disposition

5. World Coal Supply and Disposition

Production

World production of primary (Figure 39) and secondary coal was 5,389 million short tons in 1991. The 10 largest producers, with at least 100 million short tons of total primary and secondary production each, accounted for 86 percent of the world total (Table 25). These 10 countries were:

- China—24.0 percent
- United States—18.9 percent
- Former U.S.S.R.—13.0 percent
- Germany—8.1 percent
- India—4.8 percent
- Poland—4.5 percent
- Australia—4.5 percent
- South Africa—3.8 percent
- Former Czechoslovakia—2.2 percent
- United Kingdom—2.1 percent.

On a regional basis (Figure 40), shares of worldwide production of primary and secondary coal in 1991 were:

- Far East and Oceania—37.5 percent
- Eastern Europe and Former U.S.S.R.—21.5 percent
- North America—20.6 percent
- Western Europe—15.5 percent
- Africa—3.9 percent
- Central and South America—0.9 percent
- Middle East—0.04 percent.

World production of anthracite and bituminous coal was 3,768 million short tons in 1991. The 8 largest producers, with at least 100 million short tons of combined anthracite and bituminous production each, accounted for 90.3 percent of the world total (Table 25). The 8 largest producers in 1991 were:

- China—30.9 percent
- United States—24.1 percent
- Former U.S.S.R.—12.1 percent
- India—6.2 percent
- South Africa—5.2 percent
- Australia—4.8 percent
- Poland—4.1 percent
- United Kingdom—2.8 percent.

Advanced coal conversion process demonstration at the Rosebud synfuel site in Montana.

On a regional basis, shares of worldwide production of anthracite and bituminous coal in 1991 were:

- Far East and Oceania—44.5 percent
- North America—26.1 percent
- Eastern Europe and Former U.S.S.R.—17.0 percent
- Western Europe—5.9 percent
- Africa—5.5 percent
- Central and South America—1.0 percent
- Middle East—0.04 percent.

World secondary production of coal, metallurgical coke and briquets was 436 million short tons in 1991. The 6 largest producers, with at least 20 million short tons of metallurgical coke and briquets each, accounted for 71 percent of the world total (Table 25). These countries were:

- China—18.6 percent
- Former U.S.S.R.—17.6 percent
- Japan—11.5 percent
- Germany—11.3 percent
- South Korea—6.4 percent
- United States—5.5 percent

Worldwide shares of secondary production in 1991 were distributed regionally:

- Far East and Oceania—42.1 percent
- Eastern Europe and Former U.S.S.R.—24.8 percent
- Western Europe—21.9 percent
- North America—7.0 percent
- Central and South America—2.5 percent
- Africa—1.6 percent
- Middle East—0.1 percent.

World production of briquets was 62 million short tons in 1991. The 2 largest producers, with at least 10 million short tons of briquets each, accounted for 76.8 percent of the world total (Table 25). These 2 countries were:

- Germany—50.2 percent
- Korea, South—26.6 percent.

On a regional basis, shares of world briquet production in 1991 were:

- Western Europe—54 percent
- Far East and Oceania—28.5 percent
- Eastern Europe and Former U.S.S.R.—17.5 percent
- Africa—none
- Middle East—none
- North America—none
- Central and South America—none.

World production of metallurgical coke was 374 million short tons in 1991. The 4 largest producers,

each with at least 20 million short tons of metallurgical coke accounted for 60.5 percent of the world total. The 4 largest producers in 1991 were:

- China—21.7 percent
- Former U.S.S.R.—19.0 percent
- Japan—13.4 percent
- United States—6.4 percent.

On a regional basis, shares of world metallurgical coke production in 1991 were:

- Far East and Oceania—44.4 percent
- Eastern Europe and Former U.S.S.R.—26.0 percent
- Western Europe—16.6 percent
- North America—8.1 percent
- Central and South America—2.9 percent
- Africa—1.8 percent
- Middle East—0.1 percent.

Consumption

World consumption of coal was 87 quadrillion Btu in 1991. The 3 largest consumers (Figure 41), with at least 5 quadrillion Btu of consumption each, accounted for 56.3 percent of the world total (Table 26). The 3 largest consumers in 1991 were:

- China—24.9 percent
- United States—21.5 percent
- Former U.S.S.R.—9.9 percent.

On a regional basis (Figure 42), shares of world consumption in 1991 were:

- Far East and Oceania—39.2 percent
- North America—23.0 percent
- Eastern Europe and Former U.S.S.R.—16.6 percent
- Western Europe—15.5 percent
- Africa—4.6 percent
- Central and South America—1.0 percent
- Middle East—0.2 percent.

Imports

World imports of coal were 11 quadrillion Btu in 1991 (Table 27). The 5 largest importers, with at least 0.5 quadrillion Btu of imports each, accounted for 46.4 percent of the world total (Table 26). The 5 largest importers in 1991 (Figure 43) were:

- Japan—24.3 percent
- Korea, South—6.7 percent
- France—5.5 percent
- Italy—5.2 percent.
- United Kingdom—4.7 percent.

On a regional basis (Figure 44), shares of world imports in 1991 were:

- Western Europe—42.9 percent
- Far East and Oceania—41.8 percent
- North America—4.5 percent
- Eastern Europe and Former U.S.S.R.—4.3 percent
- Central and South America—4.0 percent
- Africa—1.3 percent
- Middle East—1.2 percent

Exports

World exports of coal were 11 quadrillion Btu in 1991. The 6 largest exporters, with at least 0.5 quadrillion Btu of exports each, accounted for 83.3 percent of the world total (Table 26). The 6 largest exporters in 1991 were:

- United States—26.7 percent
- Australia—25.1 percent
- South Africa—13.0 percent
- Canada—8.4 percent
- Former U.S.S.R.—4.7 percent
- Poland—5.4 percent.

On a regional basis (Figure 44), shares of world exports in 1991 were:

- North America—35.1 percent
- Far East and Oceania—32.7 percent
- Africa—13.1 percent
- Eastern Europe and Former U.S.S.R.—11.2 percent
- Central and South America—4.3 percent
- Western Europe—3.6 percent
- Middle East—none.

Table 25. World Coal Production, 1991
(Thousand Short Tons)

Region Country	Primary ¹			Secondary ¹		
	Anthracite	Bituminous Coal	Lignite	Metallurgical Coke	Anthracite & Bituminous Briquets	Lignite Briquets
North America						
Canada	--	68,506	9,900	3,993	--	--
Mexico	--	5,280	--	2,373	--	--
United States	3,445	906,025	86,514	24,046	--	--
Total	3,445	979,812	96,414	30,412	--	--
Central & South America						
Brazil	--	5,648	--	8,913	--	--
Chile	--	2,977	44	519	--	--
Colombia	--	² 25,904	--	486	--	--
Other	99	3,349	--	893	--	--
Total	99	37,879	44	10,811	--	--
Western Europe						
Austria	--	--	2,293	1,698	--	--
Belgium	--	² 2,326	--	5,388	6	--
France	--	² 12,026	2,167	7,622	701	--
Germany	--	² 80,192	308,182	18,211	877	30,282
Greece	--	--	58,086	--	--	134
Italy	--	23	1,036	6,361	--	--
Norway	--	430	--	--	--	--
Spain	--	15,344	16,291	3,505	6	--
Turkey	--	5,742	52,953	3,716	--	34
United Kingdom	--	² 105,998	--	8,746	642	--
Former Yugoslavia	--	295	74,075	1,653	--	441
Other	--	330	--	5,241	--	392
Total	--	222,707	515,084	62,143	2,231	31,284
Eastern Europe & Former U.S.S.R.						
Albania	--	--	1,433	24	--	--
Bulgaria	23	118	31,221	720	--	1,659
Former Czechoslovakia	--	21,450	89,080	9,449	--	983
Hungary	--	1,936	16,859	740	90	2,121
Poland	--	154,620	76,507	12,578	1	137
Romania	20	4,228	31,502	2,845	200	--
Former U.S.S.R.	78	² 456,334	167,585	71,016	661	5,049
Total	121	638,686	414,187	97,373	952	9,948
Middle East						
Iran	--	1,543	--	496	--	--
Total	--	1,543	--	496	--	--
Africa						
Morocco	612	--	--	--	--	--
South Africa	3,469	193,181	--	6,243	--	--
Zimbabwe (Rhodesia)	--	6,201	--	617	--	--
Other	--	1,972	--	42	--	--
Total	4,081	201,354	--	6,903	--	--
Far East & Oceania						
Australia	--	181,489	54,439	4,668	--	788
China	236,997	926,272	50,155	81,038	--	--
India	--	233,392	15,554	10,472	--	220
Indonesia	--	15,118	--	--	--	--
Japan	238	9,574	17	50,109	121	--
Korea, North	44,092	--	14,330	3,968	--	--
Korea, South	16,599	--	--	11,570	16,530	--
Mongolia	--	744	7,826	--	--	--
New Zealand	--	² 2,756	187	1	--	--
Pakistan	--	3,366	--	798	--	--
Thailand	22	--	16,192	--	--	--
Vietnam	5,512	--	--	--	--	--
Other	--	2,280	58	3,351	39	--
Total	303,460	1,374,992	158,758	165,975	16,690	1,009
World Total	311,205	3,456,972	1,184,487	374,113	19,874	42,241

¹ Primary coal includes all coal mined and when necessary washed and sorted. Secondary coal (e.g. coke, briquets), is derived from primary coal.

² Includes anthracite.

--=Not applicable.

Note: Sum of components may not equal total due to independent rounding.

Sources: See sources at the end of this Chapter.

Figure 39. World Primary Coal Production by the 10 Largest Producers, 1991

Source: Table 25.

Figure 40. Primary Coal Production by Region, 1991

Source: Table 25.

Table 26. World Coal Supply and Disposition, 1991
(Trillion (10¹²) Btu)

Region Country	Production	Imports ¹	Exports ¹	Apparent Consumption
North America				
Canada	1,777	367	907	1,204
Mexico	102	7	0	109
United States	21,594	116	2,877	² 18,770
Total	23,474	490	3,784	20,082
Central & South America				
Brazil	99	330	0	408
Chile	75	45	0	139
Colombia	606	0	399	227
Other	83	54	65	71
Total	862	430	463	845
Western Europe				
Austria	24	122	2	126
Belgium and Luxembourg	40	464	37	470
Denmark	0	327	2	325
France	328	596	29	894
Germany	3,949	461	135	4,178
Greece	316	36	(s)	361
Italy	10	563	5	601
Netherlands	0	494	95	407
Norway	10	29	7	32
Spain	393	359	2	731
Turkey	1,224	164	0	1,271
United Kingdom	2,402	509	56	3,019
Former Yugoslavia	630	65	3	687
Other	5	441	12	428
Total	9,331	4,630	385	13,528
Eastern Europe & Former U.S.S.R.				
Albania	13	7	8	13
Bulgaria	211	97	(s)	315
Former Czechoslovakia	1,393	130	114	1,413
Hungary	166	56	0	232
Poland	3,585	1	581	3,492
Romania	282	140	0	418
Former U.S.S.R.	9,084	31	505	8,610
Total	14,735	464	1,209	14,493
Middle East				
Iran	40	13	0	53
Other	0	116	0	116
Total	40	129	0	169
Africa				
Morocco	18	35	(s)	54
South Africa	5,081	10	1,407	3,685
Zimbabwe (Rhodesia)	151	4	6	149
Other	45	88	2	131
Total	5,296	138	1,414	4,020
Far East & Oceania				
Australia	4,128	(s)	2,708	1,405
China	21,967	33	460	21,775
India	4,185	148	13	4,354
Indonesia	369	22	205	191
Japan	207	2,622	75	2,756
Korea, North	1,315	78	13	1,379
Korea, South	269	719	(s)	983
Mongolia	88	(s)	7	81
New Zealand	66	0	17	51
Pakistan	65	35	0	97
Philippines	29	37	(s)	67
Thailand	161	11	0	173
Vietnam	134	(s)	27	107
Other	21	798	3	816
Total	33,005	4,502	3,528	34,235
World Total	86,743	10,783	10,783	87,371

¹ Includes coke.

² Data do not reflect net imports and exports of coke.

(s)=Value less than 5 billion Btu.

Note: The sum of production and imports less exports may not equal apparent consumption due to changes in stocks, losses, and special arrangements.

Sources: See sources at the end of this Chapter.

Figure 41. Coal Consumption and Production by the 10 Largest Consumers, 1991

Source: Table 26.

Figure 42. Coal Consumption and Production by Region, 1991

Source: Table 26.

Table 27. World Coal Flow,¹ 1991
(Trillion (10¹² Btu))

Importers	Exporters															World Other	World Total
	North, Central and South America			Western Europe				Eastern Europe			Africa	Far East					
	Canada	United States	Colom- bia	Belgium	Germany	Ne- ther- lands	United King- dom	Former Czecho- slovakia	Poland	Former USSR	South Africa	Aust- ralia	China	Japan			
North America																	
Canada	--	299	0	0	0	0	0	0	0	0	0	0	0	0	67	367	
United States	22	--	44	0	0	0	1	0	0	0	0	5	(s)	21	23	116	
Other	2	5	0	0	0	0	0	0	0	0	0	0	0	0	(s)	7	
Central & South America																	
Brazil	36	188	1	0	(s)	0	(s)	0	21	0	20	45	4	0	13	330	
Chile	8	4	0	(s)	0	0	0	0	0	0	18	14	0	0	0	45	
Other	2	18	16	0	10	0	0	0	9	0	0	0	0	0	(s)	54	
Western Europe																	
Austria	(s)	0	(s)	(s)	5	0	(s)	37	67	10	1	0	0	0	0	122	
Belgium and Luxembourg	3	197	4	--	24	18	4	0	15	10	105	38	5	0	39	464	
Denmark	24	122	68	(s)	(s)	0	5	(s)	24	29	0	45	2	0	4	327	
Finland	0	14	16	(s)	1	5	2	2	63	19	0	(s)	7	0	0	130	
France	14	249	49	4	33	6	10	0	10	18	25	96	39	0	38	596	
Germany	12	46	18	11	--	5	6	32	120	5	158	31	5	0	10	461	
Ireland	(s)	35	21	(s)	(s)	3	7	(s)	14	(s)	3	0	(s)	0	(s)	85	
Italy	9	296	11	1	17	0	(s)	(s)	20	20	141	33	8	0	3	563	
Netherlands	11	252	26	6	11	--	(s)	(s)	24	(s)	33	127	1	0	(s)	494	
Portugal	10	43	9	0	(s)	0	3	0	1	1	49	0	(s)	0	(s)	118	
Spain	5	124	16	3	8	3	8	(s)	6	8	141	26	0	0	8	359	
Sweden	(s)	33	(s)	1	(s)	1	2	2	17	11	0	14	(s)	2	(s)	86	
Turkey	5	58	0	0	(s)	0	(s)	(s)	0	21	35	39	0	0	3	164	
United Kingdom	25	162	62	5	7	45	--	0	19	19	19	107	6	0	31	509	
Former Yugoslavia	0	26	0	(s)	(s)	0	0	(s)	4	0	0	0	0	0	34	65	
Other	1	8	3	5	14	9	2	3	3	9	26	4	(s)	0	1	87	
Eastern Europe & Former U.S.S.R.																	
Bulgaria	0	25	0	0	0	0	0	(s)	0	71	0	0	0	0	1	97	
Former Czechoslovakia	0	0	0	0	0	0	0	--	78	46	0	0	0	0	5	130	
Hungary	0	0	0	0	0	0	0	(s)	31	0	0	0	0	0	25	56	
Romania	0	30	0	0	0	0	0	(s)	5	82	0	17	4	0	1	140	
Former U.S.S.R.	0	1	0	0	0	0	0	(s)	0	--	0	0	0	0	29	31	
Other	0	3	0	0	0	0	0	5	0	(s)	0	0	0	0	(s)	9	
Middle East																	
Israel	0	17	15	(s)	(s)	0	(s)	0	0	0	71	12	0	0	0	115	
Other	3	(s)	0	(s)	(s)	0	0	0	(s)	0	0	9	0	0	(s)	13	
Africa																	
Algeria	0	14	0	0	0	0	(s)	0	0	0	0	10	0	0	12	36	
Egypt	0	20	0	0	0	0	(s)	0	0	0	0	10	0	0	3	33	
Other	0	33	0	(s)	0	0	3	2	(s)	3	21	1	0	3	1	69	
Far East & Oceania																	
Hong Kong	0	16	0	0	0	0	0	0	0	0	62	80	55	0	34	248	
India	0	(s)	0	0	0	0	0	0	8	8	0	130	0	0	(s)	148	
Japan	510	323	8	0	0	0	0	0	(s)	98	236	1,319	99	--	27	2,622	
Korea, South	170	97	0	0	0	0	0	0	0	11	77	251	100	0	10	719	
Taiwan	20	119	0	0	0	0	0	0	0	0	152	159	32	(s)	(s)	483	
Other	9	(s)	10	0	1	0	(s)	25	14	0	7	77	89	48	4	284	
World Total	907	2,877	399	37	135	95	56	114	581	505	1,407	2,708	460	75	427	10,783	

¹ Includes coke.

--=Not applicable.

(s)=Value less than 500 billion Btu.

Note: Sum of components may not equal total due to statistical discrepancies, losses, unaccounted for coal and coal trade not in national accounts, such as the United States shipment of coal to United States Armed Forces in Europe.

Sources: See sources at the end of this Chapter.

Figure 43. Coal Imports and Exports by the 10 Largest Importing Countries, 1991

Source: Table 27.

Figure 44. Coal Imports and Exports by Importing Region, 1991

Source: Table 27.

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**World Electricity Supply, Consumption,
and Capacity by Type**

6. World Electricity Supply, Consumption and Capacity by Type

Electricity Supply

World net conventional thermal generation rose from 5.7 trillion kilowatthours in 1983 to 7.4 trillion kilowatthours in 1992 (Figure 45). The four largest producers, with at least 500 billion kilowatthours of generation, accounted for 54 percent of total thermal generation (Table 28). These countries were:

- United States—28.3 percent
- Russia—9.8 percent
- China—8.1 percent
- Japan—7.4 percent.

Regionally, the Eastern Europe and Former U.S.S.R. region had an annual rate of decline of 0.2 percent (Figure 46). The average annual growth rate for the remaining six regions, in order of 1992 total thermal electricity generation was:

- North America—2.5 percent
- Far East and Oceania—7.2 percent
- Western Europe—1.5 percent
- Africa—4.8 percent
- Middle East—4.9 percent
- Central and South America—3.0 percent.

World total net electricity generation was 11.4 trillion kilowatthours in 1991. Hydroelectric generation accounted for 19.3 percent, nuclear generation 17.4 percent, geothermal 0.3 percent, and thermal 63.0 percent. The two largest producers, with more than 1 trillion kilowatthours, were the United States and the former U.S.S.R. The United States total generation was 3.0 trillion kilowatthours and comprised of 9.4 percent hydro, 20.6 percent nuclear, 0.3 percent geothermal, and 69.6 percent thermal. The former U.S.S.R.'s total generation was 1.6 trillion kilowatthours and comprised of

View of John Day Dam in Oregon.

14.5 percent hydro, 12.5 percent nuclear, and 73.0 percent thermal (Table 30).

The regional shares of total generation in 1991 were:

- North America—31.4 percent
- Far East and Oceania—21.7 percent
- Western Europe—21.0 percent
- Eastern Europe and Former U.S.S.R.—16.9 percent
- Central and South America—4.5 percent
- Africa—2.7 percent
- Middle East—1.7 percent.

Consumption

World total net electricity consumption increased in 1992 to 10.8 trillion kilowatthours from 8.0 trillion kilowatthours in 1983 at an average growth of 3.4 percent (Figure 47). Among the world's five largest consumers of electricity, three had average annual growth rates in excess of 3.0 percent: Japan, China, and Canada (Table 29).

The regional shares of total consumption (Figure 48) in 1992 were:

- North America—30.6 percent
- Far East and Oceania—22.7 percent
- Western Europe—21.4 percent
- Eastern Europe and Former U.S.S.R.—16.2 percent
- Central and South America—4.6 percent
- Africa—2.7 percent
- Middle East—1.7 percent.

Capacity

As of January 1, 1992, the total installed capacity was 2.7 billion kilowatts (Table 31). The regional shares of total capacity at the beginning of 1992 were:

- North America—30.2 percent
- Western Europe—22.0 percent
- Far East and Oceania—21.4 percent
- Eastern Europe and Former U.S.S.R.—15.9 percent
- Central and South America—5.0 percent
- Africa—2.8 percent
- Middle East—2.6 percent.

Worldwide installed thermal electric capacity accounted for 63.7 percent of total capacity; hydroelectric, 23.8 percent; nuclear, 12.1 percent; and

geothermal, 0.4 percent of the world total installed capacity.

1992 Worldwide Commercial Nuclear Power

Commercial nuclear power accounted for between 17 and 18 percent of total world electricity generation in both 1991 and 1992 (Tables 5, 6, and 28). At the end of 1992, there were 424 commercial nuclear reactors operating in 28 countries throughout the world.¹ Four of those units, located in Russia, were used primarily for district heating, rather than electricity generation.² The remaining 420 units had a total net capacity of 329 million kilowatts. Nuclear capacity increased slightly from 1991, when there were 417 operating nuclear units with a total capacity of 326 million kilowatts. The nations with the largest nuclear capacity in 1992 were the United States (99 million kilowatts), France (58 million kilowatts), Japan (34 million kilowatts), the former U.S.S.R. (31 million kilowatts), the united Germany (23 million kilowatts), Canada (15 million kilowatts), and the United Kingdom (12 million kilowatts). Combined, these countries accounted for 82 percent of the world's nuclear electricity generation capacity in 1992.

Net nuclear electricity generation in 1992 increased by a little more than 1 percent, from 1,990 billion kilowatthours in 1991 to 2,017 billion kilowatthours in 1992 (Table 6). This increase was due in part to a slight increase in the world average capacity utilization factor, from 70 percent in 1991 to 71 percent in 1992. Six countries produced at least 30 percent of their electricity from nuclear power: France (73 percent), Belgium (59 percent), South Korea (43 percent), Sweden (43 percent), Bulgaria (33 percent), and Germany (30 percent).³ There is an aggressive program to develop nuclear power in Japan, and the percentage of electricity generated by nuclear plants in this country is expected to reach to 30 percent in the near future. Although the United States has the most nuclear reactors and the largest nuclear generating capacity in the world, nuclear power's share of total generation in the United States was only 22 percent in 1992.

At the end of 1992, 97 nuclear units totaling 84 million kilowatts of capacity were under construction or in the planning stages. Of these units, 55 were one-fourth or less complete. Japan had 23

¹Except as otherwise noted, all of the statistics in this discussion of nuclear power are from "World Nuclear Capacity and Fuel Cycle Requirements 1993," Energy Information Administration (Washington, D.C.: 1993).

²The four units, Bibilino 1 through 4, are not included in the electricity generating statistics and projections discussed here.

³The ranking of countries according to the percentage of electricity generated by nuclear power includes only countries that had at least 5 billion kilowatts of nuclear capacity at the end of 1992.

units under construction or in planning, with a capacity of 24 million kilowatts; 6 of the 23 units were more than three-fourths complete. The size of Japan's nuclear construction program far surpasses that in any other country. France, India, and South Korea also have aggressive nuclear construction programs. These three countries have a total of 24 units in the construction pipeline, with a combined capacity of 21 million kilowatts. The United States is not developing nuclear power rapidly at this time. There has not been an order placed for a new reactor in the United States since 1978. At the end of 1992, there were eight reactors under construction, five of which were indefinitely deferred and may not be completed.

Worldwide, six nuclear units became operational in 1992. Two of these were in India, (Narora 2 and Kakrapar 1), both 220-megawatt, pressurized heavy water reactors, located in Narora, Uttar Pradesh, and Kakrapar, Gujarat, respectively. The addition of these two units brings India's total nuclear capacity to 2 million kilowatts. Japan also completed two units, Ohi 4, a 1,127-megawatt, pressurized water reactor, and Kashiwazaki Kariha-3, a 1,067-megawatt, boiling-water reactor. In France, Penly 2, a 1,330-megawatt, pressurized water reactor, began

operation. In Canada, Darlington 3, a 881-megawatt, pressurized water reactor, was completed, bringing that country's total nuclear capacity to 15 million kilowatts.

Three nuclear units were shut down in 1992. In the United States, San Onofre and Trojan were closed due to economic factors.⁴ France's Saint Laurent A2, a 450-megawatt, gas-cooled reactor located in Loir-et-Cher, was retired. The retirement of Saint Laurent leaves only Bugey 1, a 540-megawatt, gas-cooled reactor, still operating, of the original eight gas-cooled reactors in France.

In the United States, passage of the Energy Policy Act of 1992 established a more favorable environment for the U.S. nuclear power industry. This act created a new licensing procedure that enables utilities seeking to build a nuclear power unit to obtain a combined construction and operating license. The new procedure involves less uncertainty for the applicant, and hence less financial risk. Also, technical and financial assistance for the development of standardized commercial nuclear power plants will be funded. Standardization is important in helping to control construction and operating costs of nuclear plants.

⁴The Trojan nuclear plant was shut down in November 1992 because of problems with the plant's steam generators. Portland General Electricity Company decided in January 1993 to shut it down permanently.

Table 28. World Net Conventional Thermal¹ Electricity Generation,² 1983-1992
(Billion Kilowatthours)

Region Country	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992 ³
North America										
Canada	85.9	92.2	88.6	80.9	96.0	107.3	119.2	104.4	105.4	113.4
Mexico	60.2	61.9	65.5	73.7	82.0	84.2	88.7	90.8	93.8	95.0
United States ⁴	1,691.0	1,776.9	1,820.3	1,810.9	1,904.9	2,010.4	2,068.6	2,056.7	2,065.8	2,088.7
Other	0.5	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.7	0.7
Total	1,837.6	1,931.6	1,975.0	1,966.2	2,083.6	2,202.6	2,277.1	2,252.7	2,265.7	2,297.8
Central & South America										
Argentina	19.9	19.2	17.7	20.9	22.4	29.6	30.5	24.0	28.1	30.0
Cuba	10.8	11.5	11.4	12.3	12.7	13.6	14.2	15.2	15.2	15.5
Puerto Rico	11.2	11.6	11.4	11.9	12.7	13.3	13.2	14.1	14.5	15.0
Venezuela	23.5	23.2	24.4	22.7	21.6	21.7	21.1	21.1	21.5	22.0
Other	38.4	39.0	36.4	40.5	42.8	44.5	46.6	46.9	50.8	52.9
Total	103.8	104.5	101.3	108.3	112.2	122.6	125.8	121.3	130.0	135.4
Western Europe										
Denmark	20.7	19.7	25.6	28.6	27.4	25.5	20.8	23.4	33.3	27.3
France	75.8	61.0	52.3	40.5	37.4	35.7	48.5	45.1	57.8	50.3
Germany	371.9	377.8	361.7	370.2	366.2	368.1	356.4	358.9	342.7	391.1
Greece	19.9	20.2	22.9	22.8	24.9	27.4	29.5	30.2	29.7	32.9
Italy	121.9	119.4	123.0	127.3	145.9	130.8	159.8	167.6	162.4	165.9
Netherlands	53.5	56.8	56.9	60.6	62.8	53.0	66.8	65.9	68.4	68.8
Spain	77.7	63.5	66.0	63.8	59.5	46.6	66.9	66.5	67.2	76.9
Turkey	16.2	17.5	22.5	24.7	21.6	17.8	28.2	31.4	34.2	38.3
United Kingdom	209.1	211.0	217.4	223.3	229.7	227.2	225.5	233.8	233.4	222.0
Former Yugoslavia	38.4	40.1	43.7	43.6	47.0	50.4	51.2	54.7	52.1	50.0
Other	72.5	73.4	76.1	76.4	81.3	71.7	96.6	104.4	111.2	109.0
Total	1,077.6	1,060.4	1,068.1	1,081.9	1,103.7	1,054.2	1,150.2	1,182.0	1,192.4	1,232.5
Eastern Europe & Former U.S.S.R.										
Bulgaria	25.3	26.9	24.6	25.7	26.7	24.7	25.4	24.1	21.9	20.1
Former Czechoslovakia	62.3	63.8	60.6	59.1	55.2	56.1	56.7	54.6	52.9	51.4
Poland	115.2	123.6	125.8	128.3	133.3	131.8	133.2	125.0	123.4	121.1
Romania	56.6	56.7	56.3	60.8	59.1	58.0	59.4	50.1	40.1	40.4
Russia	--	--	--	--	--	--	--	--	--	722.7
Ukraine	--	--	--	--	--	--	--	--	--	171.7
Former U.S.S.R.	1,126.7	1,147.0	1,170.0	1,144.6	1,178.1	1,178.0	1,209.2	1,204.1	1,173.0	--
Other	22.3	21.5	19.4	19.7	17.9	15.1	15.1	14.0	15.3	259.0
Total	1,408.3	1,439.4	1,456.8	1,438.2	1,470.3	1,463.7	1,499.0	1,471.9	1,426.7	1,386.5
Middle East										
Iraq	14.7	16.7	19.2	20.4	22.2	25.1	26.6	26.8	19.3	20.0
Kuwait	12.1	13.3	14.7	16.2	17.3	18.8	19.9	19.4	8.6	10.0
Saudi Arabia	28.8	29.9	31.6	34.8	38.2	39.7	44.6	43.9	44.8	45.0
Other	65.9	71.9	76.7	80.6	83.6	86.3	92.6	107.7	109.8	111.5
Total	121.5	131.8	142.2	152.0	161.3	169.8	183.7	197.8	182.5	186.5
Africa										
Egypt	12.4	19.4	24.3	25.6	28.6	27.6	23.9	27.7	28.7	29.4
Libya	6.7	8.6	11.1	12.5	14.7	15.0	16.9	17.9	18.3	18.5
South Africa	114.9	110.1	110.0	133.5	137.3	143.1	148.3	151.1	153.7	155.0
Other	32.8	34.6	37.1	39.7	43.8	46.4	46.6	49.4	50.3	51.0
Total	166.9	172.7	182.5	211.2	224.3	232.1	235.7	246.0	251.1	253.9
Far East & Oceania										
Australia	86.0	91.7	97.1	101.9	108.5	117.1	124.2	131.4	132.0	135.0
China	265.1	290.2	318.3	355.1	397.1	409.9	444.2	477.1	519.3	600.0
Hong Kong	15.5	16.8	18.1	20.1	22.3	24.0	25.7	27.2	29.9	31.0
India	91.6	104.5	119.7	133.9	156.5	166.9	187.5	201.0	222.2	250.0
Indonesia	15.1	16.7	22.2	24.5	27.0	29.3	31.0	33.0	33.7	34.0
Japan	387.5	407.8	395.3	393.1	419.7	449.1	483.8	521.0	530.1	546.4
Korea, North	14.1	16.9	18.8	19.7	19.8	20.2	20.4	20.4	20.4	21.0
Korea, South	34.8	37.1	35.2	30.3	27.5	39.3	40.0	45.5	53.8	65.4
Taiwan	24.4	23.5	17.7	25.8	26.6	36.1	43.2	42.6	50.3	53.1
Thailand	15.1	16.9	19.3	19.2	24.4	28.4	31.5	38.7	45.0	50.0
Other	60.8	61.2	68.4	69.3	74.5	82.3	89.9	97.2	107.6	109.3
Total	1,010.0	1,083.3	1,130.0	1,192.9	1,303.9	1,402.6	1,521.4	1,635.2	1,744.6	1,895.2
World Total	5,725.6	5,923.8	6,055.9	6,150.8	6,459.3	6,647.6	6,992.9	7,106.8	7,192.9	7,387.8

¹ Thermal generation consists of electricity generated from coal, oil, and gas.

² Generation data consist of both utility and nonutility sources.

³ Preliminary.

⁴ U.S. data include purchases from nonutilities.

--=Not applicable.

Note: Sum of components may not equal total due to independent rounding.

Sources: See sources at the end of this Chapter.

Figure 45. World Net Conventional Thermal Electricity Generation, 1983-1992

Source: Table 28.

Figure 46. World Net Conventional Thermal Electricity Generation by Region, 1983 and 1992

Source: Table 28.

Table 29. World Total Net Electricity Consumption,¹ 1983-1992
(Billion Kilowatthours)

Region Country	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992 ²
North America										
Canada	329.7	354.9	371.1	387.9	403.4	423.5	433.1	431.0	421.4	432.3
Mexico	76.1	80.5	86.5	88.6	95.1	100.1	107.9	111.4	116.7	117.8
United States	2,151.0	2,285.8	2,324.0	2,368.8	2,457.3	2,578.1	2,646.8	2,712.6	2,762.0	2,757.1
Other	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.7	0.7	0.7
Total	2,557.3	2,721.7	2,782.1	2,845.8	2,956.4	3,102.3	3,188.4	3,255.7	3,300.8	3,307.8
Central & South America										
Argentina	39.8	40.3	40.5	43.8	47.0	46.9	45.7	46.4	49.4	50.0
Brazil	155.3	169.4	178.9	197.2	203.8	214.9	225.1	228.6	241.8	251.1
Colombia	24.7	26.8	27.3	30.3	28.2	30.2	31.7	32.4	33.3	34.4
Venezuela	38.8	39.6	43.0	45.9	49.3	52.1	53.6	50.3	51.6	51.2
Other	74.8	78.3	83.3	85.6	91.1	93.9	94.9	100.7	103.7	107.2
Total	333.4	354.5	373.0	402.8	419.3	438.0	450.9	458.4	479.8	493.9
Western Europe										
Austria	35.1	36.9	38.4	38.7	40.0	41.5	42.9	44.9	47.1	47.2
Belgium	46.1	48.5	50.3	51.4	53.7	55.5	56.9	58.8	61.5	61.8
Finland	42.3	45.4	48.7	49.4	52.9	48.3	56.5	58.8	58.7	57.0
France	250.1	263.2	281.6	295.9	304.4	311.1	318.8	326.6	350.4	359.8
Germany	448.7	471.5	486.0	490.8	500.2	511.7	492.5	486.9	461.9	520.1
Italy	172.6	182.3	187.7	191.5	200.7	195.6	219.5	225.2	230.2	233.6
Netherlands	57.6	59.5	61.4	62.2	65.1	58.4	70.6	72.7	75.8	76.6
Norway	85.5	90.9	95.4	92.4	95.8	95.8	95.0	96.1	99.4	105.5
Spain	108.9	114.0	116.9	118.2	118.0	120.2	128.7	133.7	137.3	139.4
Sweden	103.3	111.6	121.5	119.7	127.7	128.8	129.0	130.5	131.8	130.3
Switzerland	37.7	39.7	40.8	41.9	43.1	44.6	45.9	48.1	49.4	50.5
Turkey	27.8	31.3	34.2	34.7	37.8	43.6	43.2	49.7	52.9	60.3
United Kingdom	226.1	231.0	241.9	249.3	257.2	263.0	267.9	272.6	297.3	298.1
Former Yugoslavia	60.1	63.9	67.7	70.3	72.2	72.9	73.2	73.1	69.6	66.0
Other	81.5	83.6	87.5	92.1	96.3	99.3	105.6	108.5	111.6	108.5
Total	1,783.4	1,873.3	1,959.9	1,998.6	2,065.1	2,090.2	2,147.3	2,186.1	2,235.0	2,314.7
Eastern Europe & Former U.S.S.R.										
Bulgaria	39.7	41.5	40.9	40.6	42.4	43.8	44.4	40.5	36.2	33.1
Former Czechoslovakia	73.3	71.8	75.0	76.8	78.7	79.7	81.1	80.7	74.9	73.6
Hungary	31.6	33.3	34.3	35.1	36.7	36.9	37.0	36.3	33.8	33.9
Poland	106.6	113.4	118.5	122.9	129.4	130.9	129.1	118.3	113.7	111.7
Romania	62.4	65.1	66.6	70.9	70.4	73.4	74.7	66.2	57.5	57.7
Russia	--	--	--	--	--	--	--	--	--	921.4
Ukraine	--	--	--	--	--	--	--	--	--	231.5
Former U.S.S.R.	1,294.5	1,363.8	1,408.1	1,375.1	1,427.9	1,459.9	1,491.0	1,488.4	1,476.1	--
Other	2.9	2.9	2.9	2.9	3.0	3.1	3.2	3.1	2.0	286.1
Total	1,611.0	1,691.8	1,746.2	1,724.3	1,788.5	1,827.7	1,860.4	1,833.5	1,794.1	1,748.9
Middle East										
Iraq	14.1	16.1	18.4	19.5	21.2	24.0	25.3	25.5	18.2	18.9
Saudi Arabia	26.7	27.8	29.4	32.4	35.5	36.9	41.5	40.8	41.7	41.9
Other	80.9	87.4	93.3	97.7	102.2	108.6	115.6	130.0	122.4	125.7
Total	121.7	131.3	141.1	149.6	158.9	169.5	182.4	196.3	182.4	186.4
Africa										
Egypt	20.9	27.3	30.0	31.1	34.2	32.9	29.6	34.9	35.8	36.4
South Africa	107.5	106.6	107.9	132.9	134.1	143.4	148.9	149.0	152.1	153.5
Other	73.7	72.6	79.7	84.5	89.5	92.9	95.5	101.0	103.4	102.4
Total	202.0	206.5	217.7	248.6	257.8	269.2	274.0	284.9	291.3	292.3
Far East & Oceania										
Australia	91.6	96.5	103.2	108.4	113.5	122.0	129.4	135.9	137.6	140.1
China	327.3	351.4	383.0	419.3	463.7	483.1	523.5	562.1	601.0	681.6
India	139.6	150.3	162.6	178.6	194.5	214.4	235.9	253.9	274.6	301.8
Indonesia	19.3	21.0	26.5	29.5	32.4	35.2	36.9	39.1	39.4	39.5
Japan	553.1	580.8	599.3	601.8	638.1	669.3	703.5	743.8	779.1	791.9
Korea, North	37.0	40.6	43.3	45.0	45.2	47.8	48.2	48.2	48.2	49.3
Korea, South	42.7	47.0	50.8	56.7	64.9	75.0	83.2	94.9	104.5	115.2
Pakistan	20.4	22.8	24.6	27.0	30.0	34.5	36.0	39.2	42.3	43.7
Thailand	17.3	20.1	22.0	23.7	26.8	30.3	35.1	41.2	46.7	51.6
Other	138.8	148.8	155.4	165.6	177.0	191.7	205.3	217.7	233.1	238.3
Total	1,387.0	1,479.5	1,570.7	1,655.6	1,786.2	1,903.1	2,037.2	2,176.2	2,306.5	2,453.0
World Total	7,995.8	8,458.6	8,790.7	9,025.3	9,432.2	9,800.1	10,140.6	10,391.1	10,589.9	10,797.2

¹ Consumption equals generation plus imports minus exports minus distribution losses.

² Preliminary.

--=Not applicable.

Note: Sum of components may not equal total due to independent rounding.

Sources: See sources at the end of this Chapter.

Figure 47. World Net Electricity Consumption, 1983-1992

Source: Table 29.

Figure 48. World Net Electricity Consumption by Region, 1983 and 1992

Source: Table 29.

Table 30. World Net Electricity Generation¹ by Type, 1991
(Billion Kilowatthours)

Region Country	Thermal ²	Hydro	Nuclear	Geothermal and Other ³	Total
North America					
Canada	105.4	304.3	80.1	(s)	489.9
Mexico	93.8	24.3	4.0	5.0	127.1
United States	2,065.8	278.7	612.6	10.1	2,967.2
Other	0.0	0.0	0.0	0.0	0.0
Total	2,265.7	607.3	696.7	15.2	3,584.9
Central & South America					
Argentina	28.1	16.3	7.7	0.0	52.0
Brazil	7.7	215.6	1.4	6.5	231.2
Colombia	8.4	27.4	0.0	0.0	35.8
Venezuela	21.5	34.0	0.0	0.0	55.4
Other	64.4	78.5	(s)	0.7	141.5
Total	130.0	369.7	9.1	7.2	516.0
Western Europe					
Austria	17.6	32.2	0.0	0.0	49.8
Belgium	26.5	1.0	40.6	(s)	68.1
Finland	23.9	13.0	18.4	0.0	55.2
France	57.8	60.7	315.0	0.6	434.1
Germany	342.7	18.2	139.4	(s)	500.3
Greece	29.7	3.2	0.0	0.0	32.9
Italy	162.4	45.1	0.0	3.0	210.5
Netherlands	68.4	0.1	3.1	0.1	71.6
Norway	0.4	109.5	0.0	0.0	110.0
Spain	67.2	27.9	53.2	0.0	148.4
Sweden	6.7	62.9	73.5	(s)	143.1
Switzerland	1.3	33.1	21.7	0.0	56.1
Turkey	34.2	22.3	0.0	0.1	56.6
United Kingdom	233.4	5.9	62.8	(s)	302.1
Former Yugoslavia	52.1	18.9	4.2	0.0	75.2
Other	68.0	15.0	(s)	1.0	84.1
Total	1,192.4	468.9	731.9	4.8	2,398.0
Eastern Europe & Former U.S.S.R.					
Bulgaria	21.9	2.4	12.4	0.0	36.7
Former Czechoslovakia	52.9	3.1	22.5	0.0	78.6
Poland	123.4	3.4	0.0	0.0	126.8
Romania	40.1	14.1	0.0	0.0	54.2
Former U.S.S.R.	1,173.0	232.7	201.5	(s)	1,607.2
Other	15.3	2.7	13.1	0.0	31.1
Total	1,426.7	258.4	249.5	(s)	1,934.6
Middle East					
Iraq	19.3	0.3	0.0	0.0	19.6
Saudi Arabia	44.8	0.0	0.0	0.0	44.8
Other	118.4	13.3	0.0	(s)	131.7
Total	182.5	13.6	0.0	(s)	196.1
Africa					
Egypt	28.7	9.8	0.0	0.0	38.5
South Africa	153.7	0.6	9.2	0.0	163.5
Other	68.7	42.1	0.0	0.3	111.2
Total	251.1	52.5	9.2	0.3	313.2
Far East & Oceania					
Australia	132.0	16.0	0.0	0.0	148.0
China	519.3	123.8	0.0	0.0	643.2
India	222.2	66.8	5.2	(s)	294.3
Indonesia	33.7	8.5	0.0	0.2	42.4
Japan	530.1	104.5	201.4	1.7	837.7
Korea, North	20.4	31.4	0.0	0.0	51.9
Korea, South	53.8	5.0	53.5	0.0	112.3
Pakistan	26.9	18.1	0.4	0.0	45.4
Taiwan	50.3	5.5	33.5	0.0	89.3
Other	155.6	52.8	0.0	7.6	215.7
Total	1,744.6	432.2	294.0	9.4	2,480.2
World Total	7,192.9	2,202.7	1,990.4	37.0	11,423.0

¹ Generation data consist of both utility and nonutility sources.

² Thermal generation consists of electricity generated from coal, oil, and gas.

³ Geothermal and other consists of electricity generated from solar, biomass, wind, and other renewable sources.

(s)=Value less than 500 million kilowatthours.

Note: Sum of components may not equal total due to independent rounding.

Sources: See sources at the end of this Chapter.

Table 31. World Electricity Installed Capacity by Type,¹ January 1, 1992
(Million Kilowatts)

Region Country	Thermal ²	Hydro	Nuclear	Geothermal and Other ³	Total
North America					
Canada	31.3	60.2	13.1	(s)	104.6
Mexico	20.1	7.8	0.7	0.7	29.3
United States	499.8	92.0	99.6	1.6	693.0
Other	0.3	0.0	0.0	0.0	0.3
Total	551.4	160.1	113.3	2.3	827.2
Central & South America					
Argentina	9.8	6.6	1.0	0.0	17.5
Brazil	2.1	46.7	0.7	4.7	54.1
Colombia	2.1	7.6	0.0	0.0	9.7
Venezuela	5.8	12.0	0.0	0.0	17.7
Other	20.2	18.1	0.0	0.1	38.4
Total	40.1	90.9	1.7	4.8	137.5
Western Europe					
Austria	5.8	11.0	0.0	0.0	16.8
Belgium	7.2	1.4	5.5	(s)	14.1
Denmark	9.1	(s)	0.0	0.4	9.6
Finland	8.3	2.6	2.4	0.0	13.3
France	22.6	24.7	56.8	0.2	104.3
Germany	87.0	8.6	22.5	0.0	118.1
Greece	6.4	2.5	0.0	(s)	8.9
Italy	38.2	19.1	0.0	0.6	57.9
Netherlands	16.9	(s)	0.5	0.1	17.5
Norway	0.3	26.9	0.0	0.0	27.1
Spain	20.3	16.3	7.0	0.0	43.6
Sweden	8.2	16.3	10.0	(s)	34.5
Switzerland	0.8	11.7	3.0	0.0	15.4
Turkey	10.1	7.1	0.0	(s)	17.2
United Kingdom	54.5	4.2	11.4	(s)	70.0
Former Yugoslavia	12.5	8.0	0.7	0.0	21.2
Other	8.0	5.8	0.0	(s)	13.8
Total	316.1	166.3	119.6	1.4	603.4
Eastern Europe & Former U.S.S.R.					
Former Czechoslovakia	14.8	3.0	3.5	0.0	21.3
Poland	29.1	1.9	0.0	0.0	31.0
Romania	15.8	6.4	0.0	0.0	22.3
Former U.S.S.R.	240.8	65.0	37.9	(s)	343.7
Other	11.2	2.7	4.4	0.0	18.3
Total	311.6	79.1	45.8	(s)	436.6
Middle East					
Saudi Arabia	18.4	0.0	0.0	0.0	18.4
Other	50.6	3.1	0.0	0.0	53.7
Total	68.9	3.1	0.0	0.0	72.1
Africa					
South Africa	24.0	0.6	1.9	0.0	26.5
Other	30.6	18.9	0.0	0.1	49.6
Total	54.6	19.5	1.9	0.1	76.0
Far East & Oceania					
Australia	26.6	7.3	0.0	0.0	33.9
China	108.0	38.0	0.0	0.0	146.0
India	58.2	19.8	1.6	(s)	79.5
Indonesia	9.7	2.1	0.0	(s)	11.8
Japan	127.2	39.1	33.4	0.3	200.0
Korea, North	4.5	5.0	0.0	0.0	9.5
Korea, South	14.5	2.4	7.6	0.0	24.6
Pakistan	7.1	2.9	0.1	0.0	10.1
Thailand	8.3	2.5	0.0	0.0	10.8
Other	39.1	14.4	5.1	1.2	59.9
Total	403.2	133.6	47.9	1.5	586.0
World Total	1,745.9	652.5	330.3	10.1	2,738.8

¹ Capacity data consist of both utility and nonutility sources.

² Thermal capacity consists of coal, oil, and gas.

³ Geothermal and other capacity consists of solar, biomass, wind, and other renewable sources.

(s)=Value less than 500 thousand kilowatts.

Note: Sum of components may not equal total due to independent rounding.

Sources: See sources at the end of this Chapter.

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World Energy Reserves

7. World Energy Reserves

Crude Oil

World crude oil reserves were estimated to be between 996.1 billion barrels and 1,092.4 billion barrels as of January 1, 1993 (Table 36). The eight countries, with at least 50 billion barrels of reserves each, accounted for 80.9 percent (*World Oil*) to 82.2 percent (*Oil & Gas Journal*) of the world's crude oil reserves. These eight countries were:

- Saudi Arabia—23.9 to 26.1 percent
- Iraq—9.1 to 10.0 percent
- Kuwait—8.7 to 9.7 percent
- United Arab Emirates—6.0 to 9.8 percent
- Iran—5.6 to 9.3 percent
- Venezuela—5.8 to 6.3 percent
- Former U.S.S.R.—5.7 to 17.1 percent
- Mexico—4.7 to 5.1 percent.

Regionally, the Middle East had the largest share of world reserves—54.6 percent (*World Oil*) to 66.4 percent (*Oil & Gas Journal*). The statistics for the remaining six regions were:

- North America—7.4 to 8.1 percent
- Central and South America—6.8 to 7.3 percent
- Africa—6.2 to 6.8 percent
- Eastern Europe and Former U.S.S.R.—5.9 to 17.3 percent
- Far East and Oceania—4.5 to 4.9 percent
- Western Europe—1.6 to 2.2 percent.

Natural Gas

World natural gas reserves were estimated to be between 4.8 quadrillion cubic feet and 4.9 quadrillion cubic feet as of January 1, 1993 (Table 36). The six countries, with at least 160 trillion cubic feet of reserves each, accounted for 69.7 percent (*World Oil*) to 70.1 percent (*Oil & Gas Journal*) of the world's natural gas reserves. These six countries were:

- Former U.S.S.R.—39.8 to 42.2 percent
- Iran—12.7 to 14.3 percent
- United Arab Emirates—4.1 to 4.2 percent
- Saudi Arabia—3.7 to 3.8 percent
- United States—3.4 percent
- Qatar—3.4 to 4.6 percent.

Regionally, the Eastern Europe and Former U.S.S.R. region had the most reserves—40.1 to 42.5 percent

of the world total. The statistics for the remaining six regions were:

- Middle East—28.3 to 31.1 percent
- North America—6.8 percent
- Africa—6.8 to 7.1 percent
- Far East and Oceania—7.0 to 7.1 percent
- Western Europe—4.0 to 4.5 percent
- Central and South America—3.9 percent.

Coal

World coal reserves were estimated to be 1,145 billion short tons (Table 37). The eight countries, with at least 40 billion short tons reserves each, accounted for 89.1 percent of the world's coal reserves. These eight countries were:

- Former U.S.S.R.—23.2 percent
- United States—23.1 percent
- China—11.0 percent
- Australia—8.8 percent
- Germany—7.7 percent
- India—6.0 percent
- South Africa—5.3 percent
- Poland—4.0 percent.

Regionally, the Far East and Oceania had the most reserves—29.3 percent of the world total. The statistics for the remaining six regions were:

- Eastern Europe and Former U.S.S.R.—28.8 to 30.4 percent
- North America—24.1 percent
- Western Europe—9.3 to 10.9 percent
- Africa—6.0 percent
- Central and South America—0.9 percent
- Middle East—0.02 percent.

Oil, Natural Gas, and Coal Reserve Trends

Qualifying Reserve Estimates

There is no international standard for estimating or defining reserves. Each country, organization, agency, company, and individual has its own definitions for reserves. Most countries have several categories of reserve estimates reflecting the likelihood of the reserves actually being produced, the quality

of the estimate, the particular circumstances of the field, or some combination of these attributes. The most important reserve category is the one that reflects a high certainty of actual production. Such reserves are economically and technically feasible to produce, can be produced with the current infrastructure, and directly reflect current production capacity.

In the United States, this category is generally called "proved" reserves. Several other countries also use this term, but each has its own definitions and standards. Most countries have a category similar in concept, but definitions vary around the world. Some countries use a definition of their proved reserves that would allow more to be included than might be included in the U.S. definition. Others may have a definition that is more restrictive. Some countries may not report proved reserves. Instead, they may combine additional reserves from a second-level (less certain) reserves category with their first-level category and attach such labels as "reserves," "recoverable reserves," or "explored reserves."

In addition to problems of inconsistent definitions and standards, analysts work with data that is incomplete, imprecise, and often of questionable quality. They must decide what information will be used and how and what data will be discounted based on their own experience and judgment. They may also call on their own expertise when estimating some parameters and in choosing an estimation procedure. Therefore, equally competent engineers may arrive at significantly different reserve estimates for a given field. In addition, there is always the potential of a country or individual company reporting misleading or conflicting data for a particular field to gain financial or political advantages. In many instances, gas reserves data are held in strict confidence by countries and independent verification is not possible.

Crude Oil Reserves

As of year-end 1992, both *World Oil* and the *Oil and Gas Journal* reported increases in world crude oil reserves from 1991 levels. *World Oil*¹ reported an increase of 13 percent over 1991, to 1,092 billion barrels, and the *Oil and Gas Journal*² reported an increase of less than 1 percent, to 996 billion barrels. The *Oil and Gas Journal* reported oil reserves for OPEC countries (excluding Ecuador) of 771 billion barrels, while *World Oil* listed OPEC reserves at 726 billion barrels, both nearly equal to their 1991 estimates. OPEC has 66 percent of world oil reserves according to *World Oil*, and 77 percent according to

Table 32. Percentage of World Oil Reserves for Countries with Largest Reserves

Country	World Oil ¹		Oil & Gas Journal ²	
	1991	1992	1991	1992
Saudi Arabia ³	27.1	23.9	26.3	26.1
Former U.S.S.R.	6.2	17.1	5.8	5.7
Iraq ³	10.3	9.1	10.1	10.0
Kuwait ³	9.8	8.7	9.8	9.7
Venezuela ³	6.5	5.8	6.0	6.3
United Arab Emirates ³	6.8	6.0	9.9	9.8
Iran ³	6.5	5.6	9.4	9.3
Mexico	5.3	4.7	5.2	5.2
Libya ³	4.0	3.5	2.3	2.3
China	3.1	2.7	2.4	2.4
United States	2.6	2.2	2.5	2.4
Total	88.2	89.3	89.7	89.2

¹World Oil (Houston: Gulf Publishing Co.).

²Oil and Gas Journal (Tulsa: PennWell Publishing Co.).

³OPEC Countries.

the *Oil and Gas Journal*. The 11 countries shown represent holdings of about 89 percent of the world's oil reserves (Table 32).

Differences in oil reserve estimates between *World Oil* and the *Oil and Gas Journal* can be attributed to factors described in the previous section. The following countries are examples of where these differences occur: Norway, United Arab Emirates, Iran, Syria, Yemen, Egypt, Libya, China, and Indonesia. *World Oil* reported oil reserves for the former U.S.S.R. that are about 3 times larger than both its 1991 reported value and the 1992 estimate in the *Oil and Gas Journal*. *World Oil* has included more than the first-level (proved) reserves in its 1992 estimate for the former U.S.S.R. This estimate is similar to "proved-plus-probable-plus-some-possible" reserves in the United States.

When comparing current oil holdings in 1991 with those of 1982, similar accounting problems arise (Table 33). The values for Eastern Europe in the *World Oil* column are affected by the inclusion of more than proved reserves for the former U.S.S.R. Assuming that proved reserves in the former U.S.S.R. for 1992 are equal to the 1991 reported value and eliminating the other-than-proved reserves in the former U.S.S.R. from the 1992 value for Eastern Europe, the change in reserves for Eastern Europe is -0.3 percent between 1991 and 1992 and 30 percent between 1982 and 1992. This also changes the *World Oil* figures for the non-OPEC countries and the world total. The adjusted non-OPEC *World Oil* values are 0.5 percent for 1991 and -1.4 percent for 1982. The adjusted world total

¹World Oil (Houston: Gulf Publishing Co.).

²Oil and Gas Journal (Tulsa: PennWell Publishing Co.).

World Oil values are -0.3 percent for 1991 and 42 percent for 1982.

World oil reserves grew by 40 to 50 percent over the 1982 to 1991 period (using the adjusted values from above). This increase is due mostly to a 65 to 75 percent growth in OPEC reserves. Non-OPEC oil reserves are about the same as in 1982. South America had a large increase, due almost entirely to Venezuela. The Middle East showed growth of 65 to 80 percent in oil reserves compared to 1982, yielding the largest volume of between 240 and 300 billion barrels.

Table 33. 1992 Percentage Change in Oil Reserves from 1991 and 1982

Country	World Oil ¹		Oil & Gas Journal ²	
	1982	1991	1982	1991
North America	-4.9	-3.6	-4.2	-2.0
South America	129.0	2.0	139.6	5.7
Western Europe	42.8	9.4	-33.0	10.0
Eastern Europe	114.8	204.6	-9.8	0.7
Middle East	66.9	0.0	79.3	0.0
Africa	16.9	-0.9	7.0	2.3
Asia-Pacific	41.7	04.2	13.6	1.1
OPEC	65.7	-0.6	73.7	0.4
Non-OPEC	50.9	53.8	0.0	1.5
Total	60.4	12.8	48.8	0.6

¹World Oil (Houston: Gulf Publishing Co.).

²Oil and Gas Journal (Tulsa: PennWell Publishing Co.).

³Includes former U.S.S.R.

Natural Gas Reserves

Both *World Oil* and the *Oil and Gas Journal* reported increases in world natural gas reserves between 1991 and 1992 (Table 34). *World Oil*³ reported an increase of 3.0 percent to 4,817 trillion cubic feet, and the *Oil and Gas Journal*⁴ reported an increase of almost 12 percent to 4,883 trillion cubic feet. The *Oil and Gas Journal* reported natural gas reserves for OPEC countries of 1,962 trillion cubic feet, while *World Oil* listed OPEC reserves at 1,792 trillion cubic feet. This translates into a 13-percent increase reported by the *Oil and Gas Journal* and a 1.9-percent drop reported by *World Oil*. OPEC has 37 percent of world natural gas reserves according to *World Oil* and 40 percent according to the *Oil and Gas Journal*. The eight OPEC countries shown hold about 35 percent of the world's remaining natural gas. About 40 percent of the world's gas reserves lie within the former U.S.S.R. (Table 36).

³World Oil (Houston: Gulf Publishing Co.).

⁴Oil and Gas Journal (Tulsa: PennWell Publishing Co.).

Table 34. Percentage of World Natural Gas Reserves for Countries with Largest Reserves

Country	World Oil ¹		Oil & Gas Journal ²	
	1991	1992	1991	1992
Former U.S.S.R.	39.7	42.3	40.0	39.8
Iran ³	12.8	12.7	13.7	14.3
United Arab Emirates ³	4.0	3.9	4.2	3.9
Saudi Arabia ³	3.9	3.8	4.2	3.7
Qatar ³	3.5	3.4	3.7	4.6
United States	3.6	3.4	3.9	3.4
Venezuela ³	2.7	2.7	2.5	2.6
Algeria	2.7	2.7	2.7	2.6
Nigeria ³	2.6	2.5	2.4	2.5
Iraq ³	2.3	2.3	2.2	2.2
Norway	2.1	2.0	1.4	1.4
Total	79.9	81.7	80.9	81.0

¹World Oil (Houston: Gulf Publishing Co.).

²Oil and Gas Journal (Tulsa: PennWell Publishing Co.).

³OPEC countries.

There are some large differences between these two sources for natural gas reserve estimates. Most of these differences are due to varying definitions of reserves data. Some examples of this variance are the following countries: Colombia, Germany, Norway, Iran, Qatar, Egypt, Australia, Indonesia, Pakistan, and Papua New Guinea.

Table 35. 1992 Percentage Change in Natural Gas Reserves from 1991 and 1982

Country	World Oil ¹		Oil & Gas Journal ²	
	1982	1991	1982	1991
North America	-13.4	-1.5	-11.4	-1.1
South America	63.3	2.2	70.2	13.0
Western Europe	46.5	0.9	22.0	7.5
Eastern Europe	34.9	9.4	56.6	11.1
Middle East	85.3	1.5	97.6	15.2
Africa	41.4	-1.7	83.1	11.8
Asia-Pacific	74.7	-14.3	93.7	13.9
OPEC	78.6	-1.9	94.9	13.4
Non-OPEC	30.2	6.0	45.0	10.4
Total	44.8	2.9	61.6	11.6

¹World Oil (Houston: Gulf Publishing Co.).

²Oil and Gas Journal (Tulsa: PennWell Publishing Co.).

³Includes former U.S.S.R.

Natural gas reserves for the world increased 45 to 62 percent over the 1982 to 1991 period (Table 35). This increase is due mostly to large growth in reserves in the Middle East and the former U.S.S.R. All regions, except North America, experienced growth in natural gas reserves compared to 1982. Venezuela had the largest increase in South America. The Netherlands

and Norway gained the most in Western Europe. In the Middle East, The United Arab Emirates, Iran, Iraq, Qatar, and Saudi Arabia have all had large increases since 1982. Australia, China, Indonesia, Malaysia, and Pakistan have all shown large growth in reserves in the Asia-Pacific region. The former U.S.S.R. had the largest volume increase in gas reserves of 540 to 700 trillion cubic feet since 1982.

Coal Reserves

The Energy Information Administration does not make estimates of world coal reserves. Both *British Petroleum* and *World Energy Council* estimate global coal reserves of about 1,145 billion short tons at the beginning of 1991 (Table 37). This makes coal the most plentiful of the fossil fuel reserves—totaling over 200 years of the world's coal consumption at 1992 levels. In comparison, crude oil reserves represented about 41 to 45 years of oil consumption at 1992 levels, and natural gas reserves totaled about 64 to 65 years of gas consumption at 1992 levels (Tables 8, 9, and 36).

The distribution by weight between the harder, higher-heat content coals (anthracite and bituminous) and the softer coals (lignite and subbituminous) is about equal globally, though the regional distributions are diverse.

Though coal reserves are greater than the other primary fossil fuels (oil and natural gas), coal represented only about 30 percent of the consumption of fossil fuels (Table A8). Coal is a less versatile fuel than oil. Coal is primarily used for electricity generation and industrial consumption. Use of coal as a transport fuel and as a chemical feedstock is relatively limited. Coal consumption is further constrained because it produces relatively high levels of carbon emissions when burned and releases sulfur into the environment unless controlled.

Coal has higher concentrations of carbon than the other primary fossil fuels. The burning of carbon results in the formation of greenhouse gases (carbon monoxide and carbon dioxide). In general, coal contributes between 25 and 28 million metric tons of carbon per quadrillion Btu of heat obtained from its burning (depending on the type of coal). On the other hand, natural gas emits a little over 14 million metric tons of carbon per quadrillion Btu and oil emits about 17 to 21 million metric tons of carbon for most products.

As technological improvements occur that make the production of synfuels from coal more economical and as cleaner coal burning methods become more widespread, there should be continuing incentives for further exploration and development of coal reserves and resources.

Table 36. World Crude Oil and Natural Gas Reserves, January 1, 1993

Region Country	Crude Oil (Billion Barrels)		Natural Gas (Trillion Cubic Feet)	
	Oil & Gas Journal	World Oil	Oil & Gas Journal	World Oil
North America				
Canada	5.3	5.7	95.7	94.1
Mexico	51.3	51.2	70.9	70.0
United States	23.7	23.7	165.0	165.0
Total	80.3	80.6	331.6	329.2
Central & South America				
Argentina	1.6	1.6	22.7	23.8
Brazil	3.0	3.7	4.4	4.8
Colombia	1.9	1.6	7.2	3.9
Ecuador	1.6	2.0	3.9	4.0
Trinidad and Tobago	0.6	0.5	8.7	8.5
Venezuela	62.7	63.3	126.5	128.9
Other	1.2	1.4	15.2	15.1
Total	72.5	74.3	188.6	189.0
Western Europe				
Denmark	0.7	0.7	4.0	3.6
Germany	0.4	0.2	12.1	7.8
Italy	0.7	0.8	13.0	12.7
Netherlands	0.1	0.3	68.9	68.1
Norway	8.8	16.8	70.6	97.3
United Kingdom	4.1	4.6	19.1	21.5
Other	1.0	0.6	7.0	4.5
Total	16.1	24.0	194.7	215.6
Eastern Europe & Former U.S.S.R.				
Former U.S.S.R.	57.0	186.9	1,942.3	2,033.4
Other	2.0	1.6	18.1	15.9
Total	59.0	188.5	1,960.4	2,049.3
Middle East				
Bahrain	0.1	0.1	5.8	5.6
Iran	92.9	61.3	699.2	610.0
Iraq	100.0	99.8	109.5	109.3
Kuwait ¹	96.5	94.8	52.9	51.6
Oman	4.5	4.7	16.9	17.0
Qatar	3.7	4.3	227.0	165.0
Saudi Arabia ¹	260.3	261.0	183.1	185.3
United Arab Emirates	98.1	65.1	204.6	198.4
Other	5.7	5.0	21.1	23.4
Total	661.8	596.3	1,520.1	1,365.6
Africa				
Algeria	9.2	10.4	128.0	128.9
Cameroon	0.4	0.3	3.9	3.9
Egypt	6.2	3.6	15.4	12.3
Libya	22.8	38.2	46.2	43.5
Nigeria	17.9	18.2	120.0	121.9
Tunisia	1.7	0.5	3.0	0.9
Other	3.7	3.6	30.4	14.6
Total	61.9	74.7	346.9	326.0
Far East & Oceania				
Australia	1.8	3.2	18.3	73.9
Brunei	1.4	1.1	14.0	13.1
China	24.0	29.6	49.4	45.0
India	6.0	5.9	26.0	23.9
Indonesia	5.8	8.4	64.4	48.5
Malaysia	3.7	4.3	67.8	66.9
New Zealand	0.2	0.2	3.4	3.1
Pakistan	0.4	0.1	31.0	23.7
Thailand	0.2	0.2	8.5	8.2
Other	1.1	1.0	58.4	36.3
Total	44.6	54.0	341.0	342.7
World Total	996.1	1,092.4	4,883.3	4,817.3

¹ Includes one-half of the reserves in the Neutral Zone. Saudi Arabia revised its oil reserves estimate in January 1989.

Note: Sum of components may not equal total due to independent rounding. All reserve data except those for the former U.S.S.R. and natural gas reserves in Canada are proved reserves. Former U.S.S.R. data are "explored reserves," which include proved, probable, and partially possible reserves.

Sources: PennWell Publishing Co., *Oil and Gas Journal*, Vol. 90, No. 52, (December 1992). Gulf Publishing Co., *World Oil*, Vol. 214, No. 8, (August 1993). Energy Information Administration, *U.S. Crude Oil, Natural Gas, and Natural Gas Liquids Reserves, 1992 Annual Report*, DOE/EIA-0216(92) (September 1993).

Table 37. World Estimated Recoverable Reserves of Coal¹
(Million Short Tons)

Region Country	Recoverable Anthracite and Bituminous		Recoverable Lignite and Subbituminous		Total Recoverable Coal	
	World Energy Council ²	British Petroleum ³	World Energy Council ²	British Petroleum ³	World Energy Council ²	British Petroleum ³
North America						
Canada	4,970	4,970	4,535	4,535	9,505	9,505
Mexico	1,380	1,380	516	516	1,896	1,896
United States ⁴	117,391	117,391	147,291	147,291	264,682	264,682
Greenland	--	--	202	--	202	--
Total	123,741	123,741	152,544	152,342	276,285	276,083
Central & South America						
Argentina	--	--	143	--	143	--
Brazil	--	--	2,600	2,600	2,600	2,600
Chile	34	--	1,268	--	1,302	--
Colombia	4,674	4,674	330	330	5,003	5,003
Peru	1,058	--	110	--	1,168	--
Venezuela	460	460	--	--	460	460
Other	--	1,092	26	1,546	26	2,638
Total	6,226	6,226	4,478	4,476	10,703	10,702
Western Europe						
Belgium	452	--	--	--	452	--
France	196	196	35	35	231	231
Germany	26,366	26,366	61,895	61,895	88,261	88,261
Greece	--	--	3,307	3,307	3,307	3,307
Netherlands	548	--	--	--	548	--
Spain	937	--	661	--	1,598	--
Turkey	179	179	7,701	7,701	7,879	7,879
United Kingdom	3,638	3,638	551	551	4,189	4,189
Former Yugoslavia	77	--	18,188	--	18,265	--
Other	19	1,956	154	1,017	173	2,973
Total	32,411	32,334	92,493	74,506	124,904	106,840
Eastern Europe & Former U.S.S.R.						
Bulgaria	33	--	4,079	--	4,112	--
Former Czechoslovakia	2,061	--	3,858	--	5,919	--
Hungary	657	--	4,260	--	4,917	--
Poland	32,628	32,628	12,787	12,787	45,415	45,415
Romania	1	--	3,436	--	3,437	--
Former U.S.S.R.	114,640	114,640	151,017	151,017	265,657	265,657
Other	--	2,830	--	33,821	--	36,651
Total	150,021	150,098	179,436	197,625	329,457	347,723
Middle East						
Iran	213	--	--	--	213	--
Total	213	213	--	--	213	213
Africa						
Afghanistan	73	--	--	--	73	--
Botswana	3,858	--	--	--	3,858	--
Egypt	14	--	44	--	58	--
Mozambique	265	--	--	--	265	--
Niger	77	--	--	--	77	--
Nigeria	23	--	186	--	209	--
South Africa	60,994	60,994	--	--	60,994	60,994
Swaziland	--	--	1,101	--	1,101	--
Tanzania	220	--	--	--	220	--
Zaire	661	--	--	--	661	--
Zambia	--	--	61	--	61	--
Zimbabwe (Rhodesia)	809	809	--	--	809	809
Other	101	5,229	4	1,397	106	6,626
Total	67,024	67,033	1,397	1,397	68,420	68,429

See footnotes at end of table.

Table 37. World Estimated Recoverable Reserves of Coal¹ (Continued)
(Million Short Tons)

Region Country	Recoverable Anthracite and Bituminous		Recoverable Lignite and Subbituminous		Total Recoverable Coal	
	World Energy Council ²	British Petroleum ³	World Energy Council ²	British Petroleum ³	World Energy Council ²	British Petroleum ³
Far East & Oceania						
Australia	49,979	49,979	50,265	50,251	100,244	100,230
China	68,564	68,564	57,651	57,635	126,215	126,198
India	66,853	66,853	2,094	2,094	68,947	68,947
Indonesia	1,060	1,060	34,283	34,273	35,343	35,334
Japan	912	912	19	19	930	930
Korea, North	331	--	331	--	661	--
Korea, South	224	224	--	--	224	224
New Zealand	30	30	99	99	129	129
Pakistan	--	--	578	--	578	--
Philippines	0	--	289	--	289	--
Taiwan	110	110	--	--	110	110
Thailand	--	--	1,101	--	1,101	--
Vietnam	165	--	--	--	165	--
Other	9	579	--	2,298	9	2,876
Total	188,237	188,310	146,710	146,668	334,947	334,979
World Total	567,946	567,743	577,057	577,015	1,145,002	1,144,758

¹ The data in this table do not represent the same time period. Data for the U.S. represent recoverable reserves as of December 31, 1991. Data for the other countries are as of December 31, 1990, the most recent period for which they are available.

² World Energy Council definition of "Proved Recoverable Reserves": Proved Recoverable Reserves are the tonnage of Proved Amount in Place that can be recovered (extracted from the earth in raw form) under present and expected local economic conditions with existing available technology. Data at end of 1990.

³ British Petroleum definitions of "Proved Reserves": Proved reserves of coal are generally taken to be those quantities which geological and engineering information indicate with reasonable certainty can be recovered in the future from known deposits under existing economic and operating conditions. Data at end of 1992.

⁴ Data represent both measured and indicated tonnage, as of January 1, 1992. The U.S. term "measured" approximates the term "proved" used by the World Energy Council and by British Petroleum. The U.S. "measured and indicated" data have been combined prior to depletion adjustments and cannot be recaptured as "measured alone."

--=Not applicable.

Notes: The Energy Information Administration does not certify the international reserves data but reproduces the information as a matter of convenience for the reader. Sum of components may not equal total due to independent rounding.

Sources: British Petroleum, *BP Statistical Review of World Energy* (June 1993). World Energy Council, *1992 Survey of Energy Resources*. World Energy Conference (1992). United States: Energy Information Administration, *U.S. Coal Reserves: An Update by Heat and Sulfur Content*, DOE/EIA-0529(92) (February 1993).

Appendix A
World Primary Energy Production
and Consumption In British Thermal Units

Table A1. World Primary¹ Energy Production, 1983-1992
(Quadrillion (10¹⁵) Btu)

Region Country	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992 ²
North America										
Canada	10.14	11.01	11.80	11.71	12.32	13.17	13.10	13.07	13.96	14.36
Mexico	7.61	7.80	7.67	6.97	7.14	7.21	7.25	7.42	7.78	7.76
United States	61.08	65.71	64.58	64.05	64.62	65.79	65.84	67.65	67.36	66.68
Total	78.84	84.52	84.05	82.73	84.09	86.17	86.19	88.15	89.10	88.80
Central & South America										
Argentina	1.74	1.80	1.79	1.79	1.79	1.89	1.92	1.96	1.97	2.08
Brazil	2.52	3.03	3.38	3.41	3.46	3.54	3.72	3.74	3.87	4.00
Venezuela	5.00	5.02	4.78	5.20	5.15	5.60	5.74	6.34	6.86	6.80
Other	2.94	3.29	3.53	3.92	3.86	4.20	4.33	4.53	4.65	4.72
Total	12.20	13.14	13.47	14.31	14.26	15.23	15.71	16.57	17.35	17.60
Western Europe										
France	2.96	3.37	3.54	3.81	3.97	4.09	4.09	4.20	4.49	4.66
Germany	6.69	7.00	7.52	7.35	7.21	7.39	7.21	6.75	6.31	6.14
Italy	1.11	1.17	1.18	1.26	1.19	1.27	1.20	1.19	1.28	1.32
Netherlands	2.62	2.71	2.82	2.71	2.78	2.55	2.62	2.63	2.94	2.91
Norway	3.42	3.66	3.83	3.98	4.48	4.74	5.77	5.96	6.22	6.80
Spain	1.25	1.41	1.48	1.50	1.51	1.73	1.67	1.70	1.34	1.35
Sweden	1.05	1.19	1.28	1.29	1.38	1.38	1.37	1.40	1.40	1.38
United Kingdom	9.85	8.78	10.11	10.55	10.24	9.96	8.95	8.78	9.29	9.23
Former Yugoslavia	1.19	1.31	1.33	1.38	1.37	1.39	1.39	1.34	1.11	1.00
Other	2.89	3.04	3.33	3.52	3.81	3.87	3.63	3.80	4.57	4.53
Total	33.03	33.64	36.44	37.35	37.94	38.38	37.90	37.76	38.96	39.31
Eastern Europe & Former U.S.S.R.										
Former Czechoslovakia	2.02	2.06	2.10	2.16	2.17	2.18	2.10	1.94	1.72	1.61
Kazakhstan	--	--	--	--	--	--	--	--	--	3.91
Poland	5.25	5.37	5.54	5.72	5.79	5.87	5.49	4.71	3.78	3.74
Romania	2.67	2.72	2.64	2.72	2.65	2.46	2.59	2.12	1.72	1.59
Russia	--	--	--	--	--	--	--	--	--	45.66
Ukraine	--	--	--	--	--	--	--	--	--	4.18
Former U.S.S.R.	58.83	60.86	62.66	65.19	67.17	69.59	69.63	68.87	62.51	--
Other	1.58	1.57	1.59	1.59	1.63	1.66	1.63	1.42	1.07	6.31
Total	70.36	72.59	74.53	77.38	79.41	81.76	81.45	79.06	70.80	67.01
Middle East										
Iran	5.67	5.29	5.57	5.06	5.66	5.70	7.01	7.67	8.28	8.53
Iraq	2.17	2.61	3.09	3.66	4.58	5.97	6.47	4.54	0.69	1.01
Kuwait	2.51	2.76	2.44	3.36	3.77	3.64	4.32	2.83	0.43	2.48
Oman	0.83	0.94	1.13	1.28	1.34	1.43	1.49	1.59	1.64	1.74
Qatar	0.84	1.09	0.88	0.88	0.86	1.01	1.08	1.20	1.12	1.13
Saudi Arabia	11.69	11.29	8.55	11.91	10.73	12.73	12.68	15.92	19.75	20.63
United Arab Emirates	2.91	3.00	3.29	3.68	4.21	4.25	4.99	5.51	6.27	6.23
Other	0.67	0.66	0.71	0.79	0.95	1.32	1.57	1.76	2.05	2.19
Total	27.29	27.65	25.66	30.62	32.09	36.04	39.61	41.03	40.23	43.94
Africa										
Algeria	3.46	3.71	3.77	3.55	4.01	4.02	4.28	4.52	4.81	4.83
Egypt	1.84	2.08	2.23	2.09	2.30	2.24	2.32	2.36	2.41	2.45
Libya	2.52	2.53	2.46	2.43	2.29	2.73	2.69	3.18	3.44	3.46
Nigeria	2.77	3.12	3.35	3.30	3.04	3.29	3.88	4.05	4.26	4.49
South Africa	3.45	3.87	4.17	4.26	4.23	4.39	4.28	4.19	5.18	5.06
Other	2.08	2.22	2.44	2.50	2.65	2.87	3.02	3.19	3.29	3.40
Total	16.12	17.52	18.43	18.14	18.53	19.54	20.47	21.49	23.39	23.70
Far East & Oceania										
Australia	4.24	4.41	5.33	5.49	6.02	5.81	6.15	6.71	6.30	6.66
China	20.47	22.39	24.60	25.34	26.25	27.50	29.15	29.29	29.89	30.18
India	4.88	5.22	5.53	5.97	5.71	5.97	6.53	6.96	6.71	6.94
Indonesia	3.84	4.27	4.24	4.33	4.36	4.49	4.86	5.14	5.70	6.09
Japan	2.54	2.66	3.01	3.07	3.26	3.22	3.20	3.22	3.47	3.43
Korea, North	1.41	1.44	1.51	1.54	1.62	1.65	1.68	1.69	1.64	1.65
Malaysia	0.93	1.30	1.42	1.65	1.67	1.80	1.92	2.03	2.19	2.38
Other	3.27	3.49	3.87	4.18	4.34	4.49	4.76	4.87	5.05	5.42
Total	41.57	45.18	49.50	51.56	53.24	54.94	58.25	59.89	60.94	62.75
World Total	279.40	294.24	302.08	312.09	319.55	332.07	339.58	343.95	340.76	343.10

¹ Includes petroleum, natural gas, coal, net hydroelectric power, and net nuclear electric power.

² Preliminary.

--=Not applicable.

Note: Sum of components may not equal total due to independent rounding.

Sources: See sources at the end of Chapters 3, 4, 5, 6.

Table A2. World Crude Oil¹ Production, 1983-1992
(Quadrillion (10¹⁵) Btu)

Region Country	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992 ²
North America										
Canada ³	2.88	3.06	3.12	3.13	3.26	3.44	3.31	3.29	3.28	3.40
Mexico	5.90	6.12	6.02	5.34	5.59	5.53	5.53	5.60	5.88	5.87
United States	18.39	18.85	18.99	18.38	17.68	17.28	16.12	15.57	15.70	15.22
Total	27.17	28.02	28.13	26.84	26.52	26.24	24.95	24.47	24.86	24.49
Central & South America										
Argentina	1.07	1.05	1.01	0.95	0.94	0.98	1.01	1.06	1.06	1.21
Brazil	0.73	1.03	1.22	1.23	1.22	1.20	1.29	1.36	1.36	1.35
Colombia	0.33	0.37	0.39	0.67	0.85	0.83	0.89	0.97	0.92	0.97
Ecuador	0.52	0.57	0.61	0.64	0.38	0.66	0.61	0.62	0.65	0.70
Peru	0.36	0.39	0.40	0.38	0.35	0.30	0.28	0.27	0.24	0.25
Trinidad and Tobago	0.35	0.37	0.38	0.37	0.35	0.35	0.34	0.33	0.33	0.30
Venezuela	4.07	4.04	3.76	4.00	3.92	4.27	4.27	4.79	5.32	5.24
Other	0.17	0.17	0.17	0.16	0.16	0.14	0.14	0.14	0.13	0.14
Total	7.61	7.99	7.94	8.41	8.16	8.74	8.82	9.53	10.02	10.16
Western Europe										
Norway	1.26	1.43	1.62	1.78	2.10	2.38	3.19	3.50	3.88	4.37
United Kingdom	4.85	5.27	5.36	5.38	5.10	4.74	3.82	3.85	3.81	3.88
Other	1.07	1.05	1.14	1.24	1.30	1.33	1.28	1.30	1.38	1.26
Total	7.18	7.75	8.12	8.40	8.49	8.45	8.28	8.65	9.06	9.50
Eastern Europe & Former U.S.S.R.										
Romania	0.51	0.50	0.46	0.47	0.45	0.41	0.38	0.34	0.30	0.29
Russia	--	--	--	--	--	--	--	--	--	15.89
Former U.S.S.R.	25.69	25.53	24.86	25.53	25.72	25.78	24.95	23.35	21.22	--
Other	0.28	0.24	0.24	0.24	0.23	0.21	0.21	0.18	0.14	2.30
Total	26.48	26.27	25.56	26.23	26.41	26.40	25.54	23.87	21.66	18.49
Middle East										
Iran	5.24	4.68	4.84	4.37	4.94	4.83	6.04	6.64	7.12	7.39
Iraq	2.13	2.58	3.04	3.59	4.42	5.72	6.15	4.33	0.65	0.96
Kuwait	2.30	2.51	2.21	3.07	3.43	3.23	3.85	2.54	0.41	2.23
Oman	0.80	0.89	1.07	1.20	1.25	1.33	1.37	1.47	1.50	1.58
Qatar	0.62	0.83	0.63	0.65	0.62	0.73	0.80	0.86	0.83	0.84
Saudi Arabia	10.97	10.09	7.31	10.51	9.20	11.00	10.92	13.83	17.51	18.25
Syria	0.38	0.38	0.40	0.44	0.52	0.60	0.76	0.87	1.11	1.20
United Arab Emirates	2.43	2.43	2.52	2.81	3.26	3.32	3.93	4.47	5.04	4.93
Other	0.09	0.09	0.09	0.12	0.13	0.46	0.50	0.49	0.49	0.46
Total	24.97	24.48	22.11	26.75	27.75	31.21	34.34	35.50	34.65	37.84
Africa										
Algeria	1.96	2.06	2.10	1.92	2.12	2.11	2.22	2.38	2.49	2.47
Angola	0.38	0.44	0.49	0.60	0.77	0.96	0.97	1.01	1.06	1.13
Cameroon	0.25	0.29	0.40	0.38	0.38	0.35	0.37	0.35	0.33	0.31
Egypt	1.57	1.78	1.92	1.76	1.94	1.84	1.87	1.89	1.89	1.91
Gabon	0.34	0.34	0.37	0.36	0.33	0.34	0.45	0.58	0.63	0.64
Libya	2.33	2.30	2.23	2.18	2.05	2.48	2.42	2.90	3.13	3.13
Nigeria	2.66	2.99	3.21	3.15	2.88	3.12	3.68	3.88	4.06	4.26
Tunisia	0.25	0.25	0.24	0.23	0.22	0.21	0.22	0.19	0.22	0.23
Other	0.30	0.41	0.41	0.38	0.38	0.41	0.42	0.42	0.40	0.46
Total	10.04	10.86	11.37	10.95	11.07	11.84	12.62	13.61	14.22	14.56
Far East & Oceania										
Australia	0.85	1.00	1.17	1.06	1.11	1.10	1.00	1.17	1.11	1.10
Brunei	0.35	0.34	0.33	0.36	0.30	0.29	0.28	0.32	0.35	0.35
China	4.55	4.94	5.38	5.62	5.77	5.87	5.91	5.95	6.08	6.11
India	1.00	1.09	1.30	1.32	1.27	1.33	1.46	1.38	1.29	1.17
Indonesia	2.81	2.97	2.78	2.91	2.81	2.82	2.95	3.06	3.34	3.29
Malaysia	0.76	0.92	0.91	1.05	1.03	1.13	1.22	1.29	1.34	1.36
Other	0.20	0.23	0.30	0.33	0.32	0.35	0.41	0.49	0.57	0.81
Total	10.52	11.49	12.17	12.65	12.62	12.89	13.24	13.67	14.08	14.19
World Total	113.97	116.86	115.40	120.24	121.02	125.77	127.79	129.30	128.55	129.22

¹ Crude oil includes lease condensate.

² Preliminary.

³ Includes petroleum processed from Athabasca Tar Sands.

--=Not applicable.

Note: Sum of components may not equal total due to independent rounding.

Sources: See sources at the end of Chapter 3.

Table A3. World Natural Gas Plant Liquids Production, 1983-1992
(Quadrillion (10¹⁵) Btu)

Region Country	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992 ¹
North America										
Canada ²	0.45	0.49	0.49	0.48	0.53	0.55	0.60	0.62	0.63	0.67
Mexico	0.35	0.34	0.36	0.47	0.45	0.49	0.50	0.57	0.60	0.59
United States	2.18	2.27	2.24	2.15	2.22	2.26	2.16	2.17	2.31	2.36
Total	2.98	3.10	3.09	3.09	3.19	3.31	3.25	3.36	3.54	3.62
Central & South America										
Argentina	0.01	0.02	0.03	0.04	0.05	0.05	0.04	0.04	0.04	0.05
Brazil	0.02	0.02	0.03	0.03	0.04	0.04	0.04	0.03	0.03	0.04
Colombia	(s)	(s)	(s)	(s)	(s)	(s)	(s)	(s)	(s)	(s)
Ecuador	(s)	(s)	(s)	(s)	(s)	(s)	(s)	(s)	(s)	(s)
Peru	(s)	(s)	(s)	(s)	(s)	(s)	(s)	(s)	(s)	(s)
Trinidad and Tobago	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	(s)	(s)
Venezuela	0.09	0.09	0.10	0.15	0.14	0.15	0.17	0.17	0.18	0.17
Other	0.03	0.03	0.03	0.03	0.02	0.03	0.03	0.02	0.02	0.03
Total	0.15	0.17	0.19	0.26	0.27	0.27	0.28	0.28	0.29	0.31
Western Europe										
Norway	0.06	0.06	0.07	0.08	0.09	0.12	0.12	0.12	0.15	0.15
United Kingdom	0.18	0.22	0.24	0.25	0.27	0.26	0.23	0.18	0.23	0.26
Other	0.06	0.06	0.06	0.06	0.07	0.07	0.07	0.08	0.07	0.06
Total	0.30	0.34	0.36	0.40	0.42	0.45	0.42	0.38	0.45	0.48
Eastern Europe & Former U.S.S.R.										
Romania	0.03	0.03	0.03	0.03	0.03	0.02	0.02	0.01	0.01	0.01
Russia	--	--	--	--	--	--	--	--	--	0.48
Former U.S.S.R.	0.50	0.52	0.53	0.67	0.75	0.80	0.78	0.79	0.80	--
Other	0.04	0.04	0.04	0.04	0.04	0.04	0.03	0.03	0.02	0.34
Total	0.56	0.58	0.60	0.73	0.81	0.86	0.83	0.83	0.83	0.83
Middle East										
Iran	0.01	0.02	0.02	0.02	0.03	0.03	0.04	0.06	0.08	0.10
Iraq	0.01	0.01	0.02	0.02	0.02	0.03	0.08	0.05	0.00	0.00
Kuwait	0.08	0.10	0.08	0.11	0.15	0.15	0.17	0.10	0.00	0.02
Oman	(s)	(s)	(s)	0.01	0.01	0.01	0.02	0.02	0.01	0.01
Qatar	0.03	0.04	0.04	0.03	0.03	0.04	0.06	0.06	0.07	0.07
Saudi Arabia	0.51	0.55	0.49	0.47	0.54	0.65	0.66	0.97	1.06	1.12
Syria	0.00	0.00	0.00	(s)	(s)	(s)	(s)	(s)	(s)	(s)
United Arab Emirates	0.20	0.22	0.26	0.31	0.24	0.22	0.21	0.22	0.27	0.27
Other	0.01	0.01	(s)	0.01	0.01	0.01	0.01	(s)	(s)	0.01
Total	0.87	0.95	0.93	0.98	1.03	1.15	1.24	1.47	1.50	1.60
Africa										
Algeria	0.10	0.20	0.22	0.22	0.26	0.22	0.24	0.24	0.26	0.27
Angola	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cameroon	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Egypt	0.05	0.05	0.05	0.04	0.05	0.06	0.08	0.07	0.08	0.08
Gabon	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Libya	0.05	0.06	0.04	0.05	0.05	0.05	0.04	0.06	0.06	0.06
Nigeria	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tunisia	0.00	0.00	0.00	0.00	(s)	(s)	(s)	0.01	0.01	0.01
Other	0.00	0.00	0.00	0.00	0.00	0.00	0.00	(s)	0.00	0.00
Total	0.20	0.30	0.31	0.31	0.36	0.34	0.37	0.38	0.41	0.42
Far East & Oceania										
Australia	0.08	0.08	0.10	0.09	0.10	0.11	0.10	0.10	0.10	0.10
Brunei	0.04	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
China	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
India	(s)	(s)	(s)	(s)	0.01	0.02	0.02	0.02	0.02	0.02
Indonesia	0.14	0.11	0.07	0.04	0.04	0.04	0.10	0.11	0.10	0.11
Malaysia	0.00	0.02	0.02	0.01	0.02	0.02	0.02	0.02	0.02	0.02
Other	0.02	0.03	0.04	0.03	0.03	0.04	0.04	0.05	0.06	0.06
Total	0.28	0.27	0.25	0.22	0.22	0.24	0.30	0.31	0.31	0.33
World Total	5.34	5.71	5.72	6.00	6.31	6.62	6.70	7.01	7.34	7.60

¹ Preliminary.

² Includes petroleum processed from Athabasca Tar Sands.

--=Not applicable.

(s)=Value less than 5 trillion Btu.

Note: Sum of components may not equal total due to independent rounding.

Sources: See sources at the end of Chapter 3.

Table A4. World Dry Natural Gas Production, 1983-1992
(Quadrillion (10¹⁵) Btu)

Region Country	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992 ¹
North America										
Canada	2.52	2.61	2.98	2.77	3.00	3.47	3.67	3.72	4.18	4.56
Mexico	1.06	1.00	0.92	0.89	0.83	0.89	0.89	0.91	0.90	0.89
United States	16.53	17.93	16.91	16.47	17.05	17.52	17.78	18.36	18.28	18.31
Total	20.11	21.54	20.80	20.13	20.88	21.87	22.34	22.99	23.37	23.76
Central & South America										
Argentina	0.41	0.46	0.47	0.51	0.49	0.62	0.67	0.59	0.60	0.57
Colombia	0.12	0.16	0.16	0.16	0.16	0.17	0.17	0.17	0.18	0.17
Trinidad and Tobago	0.13	0.20	0.23	0.16	0.15	0.16	0.17	0.19	0.21	0.20
Venezuela	0.66	0.69	0.70	0.77	0.75	0.79	0.88	0.98	0.94	0.96
Other	0.23	0.26	0.28	0.26	0.27	0.29	0.33	0.29	0.29	0.31
Total	1.55	1.78	1.84	1.86	1.82	2.04	2.21	2.22	2.22	2.21
Western Europe										
France	0.21	0.20	0.17	0.13	0.13	0.10	0.10	0.09	0.12	0.13
Germany	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.60	0.60
Italy	0.47	0.50	0.52	0.58	0.59	0.60	0.62	0.62	0.62	0.65
Netherlands	2.45	2.52	2.59	2.44	2.53	2.33	2.41	2.41	2.72	2.73
Norway	0.98	1.06	1.07	1.09	1.22	1.10	1.23	1.09	1.05	1.07
United Kingdom	1.49	1.51	1.61	1.70	1.79	1.72	1.68	1.86	2.01	1.98
Former Yugoslavia	0.06	0.08	0.09	0.10	0.09	0.12	0.11	0.10	0.10	0.10
Other	0.14	0.16	0.20	0.21	0.25	0.31	0.31	0.30	0.35	0.35
Total	5.82	6.03	6.25	6.26	6.59	6.28	6.47	6.47	7.56	7.60
Eastern Europe & Former U.S.S.R.										
Hungary	0.26	0.27	0.29	0.28	0.25	0.25	0.24	0.18	0.20	0.19
Poland	0.20	0.22	0.23	0.21	0.20	0.21	0.19	0.14	0.15	0.15
Romania	1.57	1.50	1.43	1.50	1.48	1.22	1.27	1.16	0.98	0.88
Russia	--	--	--	--	--	--	--	--	--	21.08
Turkmenistan	--	--	--	--	--	--	--	--	--	1.98
Ukraine	--	--	--	--	--	--	--	--	--	0.69
Former U.S.S.R.	17.58	19.27	21.12	22.50	23.63	25.34	26.20	26.82	26.68	--
Uzbekistan	--	--	--	--	--	--	--	--	--	1.32
Other	0.04	0.04	0.04	0.05	0.05	0.06	0.06	0.03	0.03	0.58
Total	19.65	21.31	23.11	24.54	25.61	27.08	27.96	28.34	28.04	26.85
Middle East										
Bahrain	0.15	0.14	0.17	0.19	0.23	0.17	0.19	0.21	0.24	0.26
Iran	0.33	0.50	0.63	0.57	0.60	0.75	0.83	0.88	0.97	0.93
Kuwait	0.13	0.15	0.15	0.18	0.20	0.25	0.30	0.19	0.02	0.23
Qatar	0.18	0.22	0.20	0.20	0.21	0.24	0.23	0.29	0.22	0.22
Saudi Arabia	0.20	0.65	0.75	0.93	0.99	1.08	1.10	1.13	1.18	1.26
United Arab Emirates	0.28	0.36	0.51	0.56	0.71	0.72	0.85	0.82	0.96	1.03
Other	0.06	0.08	0.09	0.13	0.25	0.32	0.37	0.37	0.30	0.38
Total	1.33	2.10	2.50	2.76	3.18	3.53	3.87	3.89	3.89	4.31
Africa										
Algeria	1.39	1.44	1.44	1.41	1.62	1.68	1.81	1.90	2.05	2.09
Egypt	0.12	0.15	0.18	0.21	0.23	0.26	0.29	0.30	0.34	0.36
Libya	0.15	0.17	0.19	0.21	0.20	0.20	0.22	0.23	0.25	0.26
Nigeria	0.09	0.10	0.11	0.12	0.14	0.14	0.17	0.14	0.18	0.20
Other	0.04	0.05	0.04	0.04	0.04	0.04	0.04	0.04	0.01	0.01
Total	1.79	1.91	1.97	1.99	2.23	2.32	2.53	2.60	2.82	2.92
Far East & Oceania										
Australia	0.40	0.42	0.47	0.50	0.51	0.52	0.59	0.68	0.80	0.88
Bangladesh	0.07	0.09	0.10	0.11	0.13	0.16	0.16	0.16	0.17	0.19
Brunei	0.37	0.34	0.33	0.33	0.34	0.34	0.34	0.35	0.31	0.31
China	0.45	0.46	0.48	0.51	0.52	0.53	0.53	0.53	0.55	0.52
India	0.11	0.12	0.14	0.19	0.23	0.31	0.33	0.41	0.46	0.48
Indonesia	0.81	1.11	1.29	1.24	1.35	1.42	1.49	1.60	1.81	2.00
Japan	0.08	0.09	0.10	0.08	0.08	0.08	0.08	0.08	0.08	0.08
Malaysia	0.15	0.34	0.45	0.55	0.57	0.60	0.63	0.68	0.77	0.95
New Zealand	0.11	0.11	0.13	0.16	0.15	0.19	0.18	0.14	0.19	0.20
Pakistan	0.33	0.34	0.36	0.38	0.41	0.43	0.46	0.40	0.52	0.56
Thailand	0.06	0.07	0.13	0.12	0.14	0.20	0.19	0.22	0.25	0.27
Other	0.16	0.17	0.19	0.19	0.19	0.17	0.20	0.23	0.16	0.17
Total	3.10	3.66	4.16	4.35	4.63	4.96	5.18	5.48	6.06	6.62
World Total	53.33	58.33	60.62	61.89	64.93	68.07	70.56	72.00	73.96	74.27

¹ Preliminary.

--=Not applicable.

Note: Sum of components may not equal total due to independent rounding.

Sources: See sources at the end of Chapter 4.

Table A5. World Coal¹ Production, 1983-1992
(Quadrillion (10¹⁵) Btu)

Region Country	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992 ²
North America										
Canada	1.02	1.34	1.42	1.36	1.44	1.66	1.66	1.60	1.78	1.61
Mexico	0.09	0.10	0.10	0.07	0.08	0.08	0.08	0.08	0.10	0.12
United States	17.25	19.72	19.33	19.51	20.14	20.74	21.35	22.46	21.59	21.62
Total	18.36	21.16	20.85	20.94	21.66	22.48	23.09	24.14	23.47	23.35
Central & South America										
Brazil	0.15	0.16	0.18	0.17	0.17	0.15	0.15	0.10	0.10	0.11
Chile	0.03	0.03	0.04	0.04	0.04	0.06	0.05	0.06	0.07	0.05
Colombia	0.14	0.17	0.22	0.26	0.33	0.38	0.47	0.50	0.61	0.61
Other	0.02	0.02	0.01	0.01	0.02	0.04	0.07	0.07	0.08	0.09
Total	0.34	0.38	0.44	0.49	0.56	0.63	0.74	0.73	0.86	0.87
Western Europe										
Austria	0.04	0.04	0.04	0.04	0.04	0.03	0.03	0.03	0.02	0.02
Belgium	0.15	0.16	0.18	0.14	0.14	0.09	0.06	0.03	0.04	0.02
France	0.50	0.48	0.43	0.42	0.40	0.38	0.38	0.34	0.33	0.30
Germany	5.47	5.51	5.69	5.59	5.34	5.35	5.24	4.87	3.95	3.63
Greece	0.16	0.17	0.19	0.20	0.24	0.24	0.27	0.27	0.32	0.32
Italy	0.02	0.02	0.02	0.02	0.01	0.02	0.02	0.01	0.01	0.01
Spain	0.71	0.71	0.74	0.71	0.67	0.72	0.77	0.78	0.39	0.48
Turkey	0.42	0.49	0.55	0.66	0.66	0.55	0.56	0.68	1.22	1.12
United Kingdom	2.72	1.17	2.23	2.56	2.47	2.51	2.40	2.12	2.40	2.12
Former Yugoslavia	0.68	0.74	0.75	0.77	0.78	0.78	0.82	0.84	0.63	0.62
Other	0.02	0.02	0.02	0.02	0.02	0.01	0.02	0.02	0.02	0.02
Total	10.89	9.51	10.84	11.13	10.77	10.69	10.58	9.98	9.33	8.68
Eastern Europe & Former U.S.S.R.										
Albania	0.02	0.02	0.03	0.03	0.03	0.03	0.03	0.03	0.01	(s)
Bulgaria	0.45	0.45	0.43	0.45	0.50	0.48	0.48	0.44	0.21	0.26
Former Czechoslovakia	1.88	1.91	1.88	1.87	1.83	1.83	1.74	1.59	1.39	1.28
Hungary	0.31	0.31	0.29	0.28	0.27	0.26	0.25	0.22	0.17	0.15
Kazakhstan	--	--	--	--	--	--	--	--	--	2.31
Poland	5.01	5.10	5.26	5.46	5.54	5.61	5.25	4.53	3.58	3.56
Romania	0.46	0.58	0.61	0.61	0.58	0.67	0.79	0.49	0.28	0.26
Russia	--	--	--	--	--	--	--	--	--	5.13
Ukraine	--	--	--	--	--	--	--	--	--	2.42
Former U.S.S.R.	11.93	11.81	12.07	12.53	12.77	12.96	12.97	13.20	9.08	--
Other	0.00	0.00	0.00	0.00	(s)	0.00	(s)	(s)	(s)	0.08
Total	20.07	20.18	20.56	21.23	21.51	21.85	21.51	20.50	14.73	15.47
Middle East										
Iran	0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.03	0.04	0.04
Total	0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.03	0.04	0.04
Africa										
Morocco	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.01	0.02	0.02
South Africa	3.44	3.82	4.11	4.16	4.16	4.27	4.16	4.09	5.08	4.96
Zimbabwe (Rhodesia)	0.08	0.06	0.07	0.10	0.11	0.12	0.12	0.13	0.15	0.16
Other	0.04	0.04	0.04	0.02	0.04	0.04	0.04	0.04	0.05	0.05
Total	3.58	3.94	4.25	4.31	4.33	4.45	4.34	4.28	5.30	5.18
Far East & Oceania										
Australia	2.77	2.78	3.44	3.68	4.16	3.94	4.30	4.60	4.13	4.42
China	14.57	16.09	17.78	18.23	18.92	19.98	21.49	21.50	21.97	22.20
India	3.21	3.41	3.51	3.85	3.65	3.65	4.04	4.40	4.19	4.50
Indonesia	0.02	0.03	0.05	0.06	0.07	0.11	0.22	0.27	0.37	0.60
Japan	0.41	0.40	0.39	0.39	0.32	0.27	0.23	0.19	0.21	0.19
Korea, North	1.14	1.16	1.22	1.24	1.32	1.33	1.36	1.36	1.31	1.31
Korea, South	0.38	0.41	0.47	0.50	0.44	0.44	0.41	0.34	0.27	0.21
Mongolia	0.06	0.06	0.07	0.06	0.08	0.08	0.08	0.08	0.09	0.09
New Zealand	0.04	0.06	0.05	0.05	0.05	0.05	0.06	0.06	0.07	0.07
Pakistan	0.04	0.04	0.04	0.04	0.05	0.05	0.05	0.05	0.07	0.07
Thailand	0.02	0.02	0.05	0.05	0.08	0.06	0.16	0.11	0.16	0.17
Vietnam	0.15	0.13	0.13	0.14	0.14	0.14	0.14	0.13	0.13	0.15
Other	0.08	0.08	0.08	0.08	0.07	0.07	0.05	0.04	0.05	0.05
Total	22.88	24.65	27.27	28.36	29.35	30.19	32.60	33.15	33.00	34.04
World Total	76.14	79.84	84.24	86.50	88.22	90.32	92.88	92.81	86.74	87.63

¹ Coal includes anthracite, subanthracite, bituminous, subbituminous, lignite, and brown coal.

² Preliminary.

--=Not applicable.

(s)=Value less than 5 trillion Btu.

Note: Sum of components may not equal total due to independent rounding.

Sources: See sources at the end of Chapter 5.

Table A6. World Net Hydroelectric Power Generation,¹ 1983-1992
(Quadrillion (10¹⁵) Btu)

Region Country	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992 ²
North America										
Canada	2.74	2.95	3.13	3.20	3.26	3.16	2.99	3.04	3.16	3.25
Mexico	0.21	0.24	0.27	0.21	0.19	0.22	0.25	0.24	0.25	0.25
United States	3.53	3.39	2.97	3.07	2.63	2.33	2.77	2.93	2.88	2.51
Total	6.48	6.58	6.37	6.48	6.08	5.71	6.01	6.21	6.30	6.01
Central & South America										
Argentina	0.19	0.21	0.21	0.22	0.23	0.16	0.14	0.19	0.17	0.17
Brazil	1.56	1.71	1.84	1.88	1.91	2.05	2.11	2.13	2.24	2.34
Chile	0.09	0.10	0.11	0.12	0.13	0.12	0.10	0.09	0.11	0.11
Colombia	0.19	0.21	0.22	0.26	0.22	0.25	0.27	0.28	0.29	0.29
Paru	0.08	0.09	0.10	0.10	0.11	0.11	0.11	0.11	0.12	0.12
Uruguay	0.07	0.07	0.07	0.08	0.07	0.06	0.04	0.07	0.06	0.06
Venezuela	0.19	0.20	0.23	0.28	0.33	0.36	0.38	0.34	0.35	0.34
Other	0.13	0.15	0.20	0.30	0.36	0.39	0.45	0.49	0.51	0.52
Total	2.50	2.74	2.97	3.23	3.36	3.49	3.59	3.70	3.85	3.95
Western Europe										
Austria	0.31	0.30	0.32	0.32	0.38	0.37	0.37	0.33	0.34	0.37
Finland	0.14	0.14	0.13	0.13	0.14	0.14	0.13	0.11	0.13	0.15
France	0.74	0.70	0.66	0.67	0.75	0.81	0.52	0.59	0.63	0.75
Germany	0.21	0.21	0.20	0.21	0.23	0.23	0.21	0.20	0.19	0.22
Ireland	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Italy	0.45	0.47	0.46	0.46	0.44	0.45	0.38	0.36	0.47	0.47
Norway	1.10	1.11	1.07	1.01	1.07	1.13	1.22	1.25	1.14	1.21
Portugal	0.08	0.10	0.11	0.09	0.09	0.13	0.06	0.10	0.09	0.05
Spain	0.30	0.35	0.34	0.28	0.29	0.37	0.21	0.27	0.29	0.22
Sweden	0.65	0.70	0.73	0.62	0.74	0.72	0.74	0.75	0.65	0.77
Switzerland	0.37	0.32	0.34	0.35	0.36	0.38	0.32	0.32	0.34	0.35
Turkey	0.12	0.14	0.12	0.12	0.19	0.30	0.18	0.24	0.23	0.27
United Kingdom	0.04	0.03	0.03	0.04	0.04	0.07	0.07	0.07	0.06	0.07
Former Yugoslavia	0.22	0.27	0.25	0.29	0.27	0.27	0.24	0.21	0.20	0.18
Other	0.08	0.09	0.09	0.10	0.09	0.09	0.09	0.08	0.10	0.09
Total	4.84	4.92	4.87	4.69	5.09	5.47	4.76	4.89	4.88	5.18
Eastern Europe & Former U.S.S.R.										
Former Czechoslovakia	0.04	0.03	0.04	0.04	0.05	0.05	0.04	0.04	0.03	0.03
Poland	0.03	0.03	0.04	0.04	0.04	0.04	0.04	0.03	0.03	0.04
Romania	0.10	0.12	0.12	0.11	0.12	0.14	0.13	0.11	0.15	0.15
Russia	--	--	--	--	--	--	--	--	--	1.77
Former U.S.S.R.	1.87	2.11	2.13	2.22	2.26	2.38	2.30	2.40	2.42	--
Other	0.07	0.07	0.06	0.06	0.06	0.06	0.07	0.05	0.05	0.60
Total	2.12	2.37	2.40	2.47	2.53	2.67	2.58	2.64	2.69	2.58
Middle East										
Iran	0.06	0.07	0.07	0.06	0.07	0.07	0.07	0.07	0.07	0.07
Syria	0.02	0.02	0.02	0.02	0.02	0.05	0.05	0.06	0.06	0.07
Other	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Total	0.10	0.10	0.10	0.09	0.10	0.13	0.13	0.14	0.14	0.15
Africa										
Egypt	0.10	0.10	0.08	0.08	0.08	0.08	0.08	0.10	0.10	0.10
Zaire	0.05	0.05	0.05	0.05	0.05	0.05	0.06	0.06	0.06	0.06
Zambia	0.10	0.10	0.10	0.10	0.09	0.09	0.07	0.08	0.08	0.06
Other	0.27	0.22	0.24	0.25	0.25	0.26	0.28	0.29	0.30	0.30
Total	0.52	0.47	0.48	0.49	0.48	0.48	0.49	0.53	0.55	0.53
Far East & Oceania										
Australia	0.13	0.13	0.15	0.15	0.14	0.15	0.16	0.15	0.17	0.16
China	0.90	0.90	0.96	0.98	1.04	1.12	1.22	1.30	1.29	1.35
India	0.52	0.56	0.53	0.55	0.49	0.60	0.64	0.68	0.70	0.70
Japan	0.91	0.79	0.91	0.89	0.83	0.99	1.01	0.99	1.09	1.00
Korea, North	0.27	0.28	0.29	0.30	0.30	0.32	0.33	0.33	0.33	0.33
Korea, South	0.03	0.02	0.04	0.04	0.05	0.04	0.05	0.07	0.05	0.05
New Zealand	0.20	0.21	0.20	0.23	0.23	0.24	0.23	0.24	0.24	0.24
Pakistan	0.12	0.13	0.13	0.14	0.16	0.17	0.17	0.17	0.19	0.20
Philippines	0.03	0.05	0.06	0.06	0.05	0.06	0.07	0.06	0.05	0.05
Other	0.24	0.27	0.31	0.34	0.34	0.36	0.41	0.43	0.40	0.43
Total	3.34	3.34	3.55	3.69	3.64	4.05	4.27	4.43	4.49	4.51
World Total	19.90	20.51	20.73	21.14	21.29	22.00	21.84	22.54	22.89	22.90

¹ Generation data consist of both utility and nonutility sources. Data are reported as net generation as opposed to gross. Net generation excludes the energy consumed by the generating unit.

² Preliminary.

--=Not applicable.

Note: Sum of components may not equal total due to independent rounding.

Sources: See sources at the end of Chapter 6.

Table A7. World Net Nuclear Electric Power Generation,¹ 1983-1992
(Quadrillion (10¹⁵) Btu)

Region Country	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992 ²
North America										
Canada	0.54	0.57	0.66	0.78	0.84	0.90	0.87	0.80	0.93	0.88
Mexico	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.04	0.04
United States	3.20	3.55	4.15	4.47	4.91	5.66	5.68	6.16	6.58	6.65
Total	3.74	4.12	4.81	5.25	5.75	6.56	6.55	6.98	7.54	7.56
Central & South America										
Argentina	0.04	0.05	0.06	0.06	0.07	0.06	0.06	0.08	0.09	0.08
Brazil	(s)	0.03	0.03	(s)	(s)	(s)	0.02	0.02	0.01	0.02
Total	0.04	0.08	0.09	0.06	0.08	0.06	0.07	0.10	0.10	0.10
Western Europe										
Belgium	0.24	0.28	0.34	0.39	0.41	0.42	0.41	0.42	0.42	0.43
Finland	0.17	0.18	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19
France	1.40	1.87	2.15	2.43	2.53	2.64	2.93	3.02	3.28	3.34
Germany	0.82	1.10	1.45	1.37	1.48	1.63	1.59	1.51	1.42	1.54
Italy	0.07	0.08	0.08	0.10	(s)	0.00	0.00	0.00	0.00	0.00
Netherlands	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.03	0.03	0.04
Spain	0.12	0.25	0.30	0.40	0.44	0.52	0.58	0.56	0.54	0.54
Sweden	0.39	0.49	0.56	0.67	0.64	0.66	0.63	0.65	0.74	0.61
Switzerland	0.15	0.17	0.21	0.21	0.22	0.23	0.23	0.24	0.23	0.23
United Kingdom	0.57	0.58	0.64	0.62	0.57	0.66	0.76	0.70	0.78	0.92
Former Yugoslavia	0.04	0.05	0.05	0.05	0.05	0.04	0.05	0.05	0.04	0.04
Total	4.01	5.09	6.00	6.47	6.58	7.04	7.40	7.38	7.68	7.88
Eastern Europe & Former U.S.S.R.										
Bulgaria	0.13	0.13	0.14	0.13	0.13	0.17	0.16	0.15	0.14	0.12
Former Czechoslovakia	0.08	0.09	0.15	0.22	0.26	0.27	0.28	0.29	0.28	0.29
Hungary	0.03	0.04	0.07	0.08	0.12	0.14	0.15	0.15	0.13	0.13
Lithuania	--	--	--	--	--	--	--	--	--	0.17
Russia	--	--	--	--	--	--	--	--	--	1.31
Ukraine	--	--	--	--	--	--	--	--	--	0.76
Former U.S.S.R.	1.25	1.62	1.95	1.74	2.03	2.33	2.43	2.31	2.31	--
Total	1.48	1.89	2.30	2.17	2.53	2.91	3.03	2.89	2.86	2.79
Middle East³	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Africa										
South Africa	0.00	0.04	0.06	0.09	0.06	0.11	0.11	0.09	0.09	0.09
Total	0.00	0.04	0.06	0.09	0.06	0.11	0.11	0.09	0.09	0.09
Far East & Oceania										
India	0.04	0.04	0.05	0.06	0.06	0.06	0.04	0.07	0.06	0.07
Japan	1.13	1.36	1.59	1.69	2.01	1.85	1.86	1.94	2.06	2.12
Korea, South	0.09	0.12	0.16	0.28	0.39	0.39	0.47	0.52	0.54	0.54
Pakistan	(s)	(s)	(s)	(s)	(s)	(s)	(s)	(s)	(s)	(s)
Taiwan	0.19	0.24	0.28	0.26	0.33	0.30	0.28	0.32	0.33	0.32
Total	1.45	1.77	2.10	2.29	2.78	2.61	2.65	2.86	3.00	3.06
World Total	10.71	12.99	15.36	16.33	17.79	19.29	19.81	20.30	21.27	21.47

¹ Generation data consist of both utility and nonutility sources. Data are reported as net generation as opposed to gross. Net generation excludes the energy consumed by the generating unit.

² Preliminary.

³ No production is reported for the Middle East.

--=Not applicable.

(s)=Value less than 5 trillion Btu.

Note: Sum of components may not equal total due to independent rounding.

Sources: See sources at the end of Chapter 6.

Table A8. Production of Primary Energy Sources by Selected Country Groups, 1983-1992
(Quadrillion (10¹⁵) Btu)

Type of Energy Country Groups	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992 ¹
Petroleum²										
World Total	119.32	122.57	121.12	126.24	127.33	132.39	134.49	136.31	135.89	136.82
OECD ³	32.18	33.73	34.47	33.99	33.71	33.56	31.92	31.91	32.62	32.90
Non OECD	87.13	88.84	86.65	92.25	93.62	98.83	102.57	104.39	103.27	103.92
Other Groups:										
OECD Europe	7.30	7.91	8.29	8.62	8.73	8.72	8.54	8.88	9.37	9.93
OPEC ⁴	39.10	39.19	36.34	40.94	41.47	45.57	49.46	52.29	52.61	55.84
EEC ⁵	5.83	6.28	6.47	6.60	6.38	6.06	5.06	5.05	5.09	5.17
IEA ⁶	32.18	33.73	34.47	33.99	33.71	33.56	31.92	31.91	32.62	32.90
Natural Gas										
World Total	53.33	58.33	60.62	61.89	64.93	68.07	70.56	72.00	73.96	74.27
OECD ³	25.39	27.11	26.74	26.15	27.30	27.94	28.65	29.36	31.00	31.52
Non OECD	27.95	31.22	33.88	35.74	37.63	40.13	41.91	42.64	42.97	42.75
Other Groups:										
OECD Europe	5.75	5.95	6.16	6.16	6.50	6.17	6.35	6.38	7.47	7.50
OPEC ⁴	4.24	5.43	6.00	6.23	6.90	7.49	8.11	8.31	8.61	9.22
EEC ⁵	4.72	4.85	5.05	5.01	5.22	4.96	5.06	5.24	6.36	6.37
IEA ⁶	25.39	27.11	26.74	26.15	27.30	27.94	28.65	29.36	31.00	31.52
Coal										
World Total	76.14	79.84	84.24	86.50	88.22	90.32	92.88	92.81	86.74	87.63
OECD ³	31.71	33.05	34.72	35.35	36.09	36.57	37.35	38.06	36.47	35.97
Non OECD	44.43	46.79	49.51	51.15	52.13	53.74	55.53	54.75	50.27	51.66
Other Groups:										
OECD Europe	10.21	8.77	10.09	10.36	9.99	9.91	9.75	9.15	8.70	8.06
OPEC ⁴	0.04	0.05	0.07	0.10	0.11	0.17	0.31	0.36	0.48	0.73
EEC ⁵	9.74	8.22	9.48	9.65	9.27	9.32	9.15	8.43	7.44	6.90
IEA ⁶	31.71	33.05	34.72	35.35	36.09	36.57	37.35	38.06	36.47	35.97
Hydroelectric Power										
World Total	19.90	20.51	20.73	21.14	21.29	22.00	21.84	22.54	22.89	22.90
OECD ³	12.12	12.11	11.97	11.95	11.91	12.07	11.67	12.03	12.22	12.15
Non OECD	7.78	8.40	8.77	9.20	9.37	9.93	10.17	10.51	10.67	10.75
Other Groups:										
OECD Europe	4.62	4.65	4.61	4.41	4.82	5.20	4.52	4.68	4.68	4.99
OPEC ⁴	0.34	0.37	0.40	0.45	0.51	0.55	0.58	0.54	0.55	0.53
EEC ⁵	1.88	1.92	1.87	1.82	1.90	2.11	1.50	1.64	1.80	1.83
IEA ⁶	12.08	12.08	11.93	11.91	11.87	12.03	11.62	11.99	12.18	12.11
Nuclear Electric Power										
World Total	10.71	12.99	15.36	16.33	17.79	19.29	19.81	20.30	21.27	21.47
OECD ³	8.83	10.52	12.36	13.36	14.29	15.41	15.75	16.23	17.20	17.49
Non OECD	1.88	2.46	3.00	2.97	3.50	3.88	4.06	4.07	4.07	3.99
Other Groups:										
OECD Europe	3.96	5.04	5.96	6.42	6.53	7.00	7.34	7.33	7.63	7.84
OPEC ⁴	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EEC ⁵	3.25	4.20	5.00	5.35	5.48	5.92	6.30	6.25	6.48	6.81
IEA ⁶	8.83	10.52	12.36	13.36	14.29	15.41	15.75	16.23	17.20	17.49
Total Energy										
World Total	279.40	294.24	302.08	312.09	319.55	332.07	339.58	343.95	340.76	343.10
OECD ³	110.22	116.53	120.26	120.79	123.30	125.55	125.34	127.59	129.52	130.03
Non OECD	169.18	177.71	181.82	191.31	196.25	206.52	214.24	216.36	211.24	213.07
Other Groups:										
OECD Europe	31.84	32.33	35.11	35.97	36.57	37.00	36.50	36.41	37.85	38.31
OPEC ⁴	44.27	45.65	43.46	48.41	49.43	54.50	59.12	62.19	62.96	67.09
EEC ⁵	25.41	25.46	27.87	28.43	28.25	28.38	27.08	26.61	27.17	27.08
IEA ⁶	110.19	116.49	120.22	120.75	123.25	125.51	125.30	127.55	129.47	129.99

¹ Preliminary.

² Data include the production of crude oil, and natural gas plant liquids.

³ The Organization for Economic Cooperation and Development (OECD) includes Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Japan, Luxembourg, the Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, the United Kingdom, the United States, and the U.S. Territories. Refer to Appendix G for a listing of OECD Europe.

⁴ The Organization of Petroleum Exporting Countries (OPEC) includes Algeria, Gabon, Indonesia, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, the United Arab Emirates, and Venezuela.

⁵ European Economic Community (EEC) includes Belgium, Denmark, France, Germany, Greece (since 1982), Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, and the United Kingdom.

⁶ International Energy Agency (IEA) includes Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Japan, Luxembourg, the Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, the United Kingdom, the United States, and the U.S. Territories.

Note: Sum of components may not equal total due to independent rounding. The country groups, OECD, EEC, and IEA include the unified Germany.

Sources: See sources at the end of Chapters 3, 4, 5, 6.

For consistency, data reflect 1992 membership (as of December 31, 1992) for all years. For statistical comparison, refer to Table C3 for primary energy production data based on each country group's actual yearly membership.

Table A9. World Primary Energy¹ Consumption, 1983-1992
(Quadrillion (10¹⁵) Btu)

Region Country	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992 ²
North America										
Canada	8.68	9.17	9.57	9.72	9.77	10.52	10.90	10.71	10.79	10.97
Mexico	4.05	4.38	4.28	4.28	4.26	4.45	4.64	4.79	4.98	5.12
United States	70.41	73.98	73.78	74.08	76.64	79.94	81.08	81.06	81.01	82.19
Total	83.14	87.54	87.64	88.09	90.68	94.93	96.63	96.57	96.79	98.29
Central & South America										
Argentina	1.65	1.78	1.67	1.84	1.90	1.94	1.88	1.81	1.80	1.77
Brazil	4.00	4.36	4.64	5.06	5.13	5.38	5.56	5.58	5.78	6.07
Venezuela	1.65	1.68	1.70	1.87	1.89	1.95	2.04	2.13	2.12	2.18
Other	3.82	4.08	4.13	4.11	4.18	4.28	4.53	4.61	4.75	4.61
Total	11.11	11.91	12.14	12.89	13.11	13.55	14.02	14.13	14.45	14.63
Western Europe										
France	7.85	8.06	8.27	8.40	8.49	8.45	8.75	8.85	9.58	9.71
Germany	14.27	14.62	15.52	15.66	15.39	16.02	14.47	14.26	14.18	14.11
Italy	5.83	5.92	6.16	6.24	6.51	6.51	6.80	6.77	7.00	7.00
Netherlands	2.84	2.94	2.85	3.06	3.20	3.22	3.22	3.30	3.63	3.52
Norway	1.37	1.45	1.51	1.46	1.54	1.53	1.56	1.60	1.60	1.67
Spain	3.51	3.51	3.47	3.55	3.53	3.98	4.17	4.13	4.01	4.62
Sweden	1.92	1.98	2.12	2.13	2.20	2.19	2.17	2.11	2.12	2.15
United Kingdom	8.34	7.90	8.64	8.98	8.81	9.21	9.33	8.98	9.87	9.68
Former Yugoslavia	1.78	2.03	2.08	2.08	2.13	2.13	2.16	2.09	1.73	1.41
Other	8.60	8.87	9.38	9.65	9.97	10.05	10.28	10.83	11.67	11.86
Total	56.31	57.25	60.00	61.21	61.77	63.29	62.91	62.91	65.38	65.71
Eastern Europe & Former U.S.S.R.										
Former Czechoslovakia	3.06	3.06	3.12	3.21	3.28	3.25	3.21	3.13	2.76	2.53
Kazakhstan	--	--	--	--	--	--	--	--	--	2.98
Poland	5.13	5.02	5.34	5.73	6.15	6.28	5.87	4.99	4.56	3.98
Romania	2.97	3.17	3.11	3.23	3.25	3.15	3.46	3.15	2.37	2.17
Russia	--	--	--	--	--	--	--	--	--	32.72
Ukraine	--	--	--	--	--	--	--	--	--	8.75
Former U.S.S.R.	49.37	51.40	53.50	54.94	56.22	58.05	58.15	58.04	53.98	--
Other	3.14	3.16	3.29	3.21	3.16	3.21	3.05	2.87	2.23	8.68
Total	63.68	65.80	68.37	70.31	72.06	73.95	73.74	72.17	65.90	61.81
Middle East										
Iran	2.09	2.22	2.38	2.42	2.53	2.69	2.96	3.11	3.24	3.38
Iraq	0.55	0.54	0.57	0.62	0.64	0.77	0.82	0.92	0.60	0.81
Kuwait	0.39	0.41	0.40	0.45	0.54	0.62	0.70	0.45	0.11	0.44
Oman	0.16	0.10	0.12	0.13	0.14	0.14	0.17	0.18	0.21	0.23
Qatar	0.22	0.27	0.24	0.26	0.27	0.29	0.29	0.36	0.29	0.30
Saudi Arabia	1.89	2.08	2.71	2.94	3.00	3.11	3.22	3.31	3.23	3.52
United Arab Emirates	0.51	0.58	0.80	0.90	1.07	1.12	1.26	1.23	1.56	1.62
Other	1.24	1.29	1.36	1.38	1.51	1.53	1.62	1.76	1.83	1.95
Total	7.06	7.49	8.58	9.11	9.69	10.28	11.04	11.31	11.07	12.25
Africa										
Algeria	1.00	1.08	0.99	0.99	1.06	1.07	1.09	1.14	1.27	1.26
Egypt	1.04	1.15	1.21	1.24	1.29	1.29	1.33	1.42	1.44	1.55
Libya	0.38	0.38	0.42	0.44	0.45	0.46	0.48	0.51	0.55	0.57
Nigeria	0.52	0.56	0.59	0.57	0.61	0.65	0.71	0.72	0.77	0.83
South Africa	3.46	3.71	3.79	3.87	3.93	4.07	3.96	3.92	4.61	4.47
Other	1.69	1.60	1.68	1.76	1.75	1.86	1.98	2.04	2.07	2.10
Total	8.09	8.47	8.69	8.87	9.09	9.41	9.55	9.75	10.71	10.77
Far East & Oceania										
Australia	2.99	2.78	2.91	3.13	3.31	3.43	3.69	3.77	3.58	3.93
China	19.05	20.37	22.10	23.34	24.79	25.83	28.02	27.88	28.90	29.22
India	5.11	5.43	6.14	6.70	6.58	6.99	7.57	8.10	8.06	8.51
Indonesia	1.38	1.44	1.60	1.58	1.76	1.78	2.04	2.20	2.31	2.57
Japan	14.55	15.66	15.85	15.90	16.44	17.16	17.51	18.23	18.68	19.01
Korea, North	1.65	1.66	1.72	1.73	1.82	1.87	1.89	1.91	1.87	1.81
Malaysia	0.51	0.61	0.70	0.75	0.75	0.79	0.85	0.97	1.08	1.17
Other	7.35	7.96	8.26	8.86	9.84	10.74	11.47	12.16	12.95	14.22
Total	52.59	55.92	59.29	61.99	65.30	68.59	73.04	75.21	77.43	80.43
World Total	281.98	294.39	304.70	312.47	321.70	333.99	340.94	342.07	341.74	343.90

¹ Includes petroleum, dry natural gas, coal, net hydroelectric power, and net nuclear power.

² Preliminary.

--=Not applicable.

Note: Sum of components may not equal total due to independent rounding.

Sources: See sources at the end of Chapters 3, 4, 5, 6.

Table A10. World Petroleum Consumption, 1983-1992
(Quadrillion (10¹⁵) Btu)

Region Country	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992 ¹
North America										
Canada	2.97	3.00	3.04	3.03	3.11	3.40	3.48	3.39	3.24	3.28
Mexico	2.70	3.07	2.98	3.12	3.20	3.27	3.40	3.53	3.62	3.72
United States	30.05	31.05	30.92	32.20	32.87	34.22	34.21	33.55	32.85	33.51
Other	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0.01
Total	35.73	37.14	36.95	38.35	39.18	40.91	41.11	40.48	39.72	40.53
Central & South America										
Argentina	0.97	0.96	0.85	0.94	0.99	0.97	0.89	0.84	0.84	0.85
Bahama Islands	0.04	0.04	0.03	0.03	0.04	0.03	0.04	0.04	0.04	0.03
Bolivia	0.05	0.05	0.04	0.04	0.04	0.04	0.05	0.05	0.05	0.05
Brazil	2.00	2.12	2.21	2.52	2.57	2.65	2.68	2.71	2.72	2.85
Chile	0.19	0.19	0.19	0.19	0.21	0.22	0.25	0.27	0.29	0.30
Colombia	0.34	0.35	0.34	0.34	0.37	0.40	0.41	0.39	0.41	0.43
Cuba	0.44	0.46	0.47	0.48	0.47	0.48	0.49	0.48	0.44	0.35
Dominican Republic	0.10	0.09	0.09	0.10	0.11	0.12	0.12	0.13	0.13	0.13
Ecuador	0.18	0.17	0.18	0.19	0.18	0.19	0.18	0.20	0.21	0.21
Guatemala	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Jamaica	0.09	0.07	0.07	0.07	0.07	0.08	0.09	0.10	0.10	0.11
Netherlands Antilles	0.20	0.19	0.16	0.15	0.15	0.14	0.15	0.16	0.14	0.14
Panama Republic	0.07	0.07	0.05	0.05	0.06	0.06	0.05	0.06	0.07	0.07
Peru	0.26	0.27	0.26	0.28	0.29	0.30	0.25	0.25	0.23	0.23
Puerto Rico	0.32	0.36	0.31	0.33	0.34	0.31	0.30	0.29	0.37	0.31
Trinidad and Tobago	0.05	0.05	0.05	0.05	0.04	0.04	0.04	0.04	0.04	0.04
Uruguay	0.06	0.05	0.05	0.05	0.06	0.07	0.07	0.07	0.06	0.06
Venezuela	0.80	0.78	0.77	0.81	0.81	0.80	0.78	0.79	0.80	0.85
U.S. Virgin Islands	0.11	0.13	0.15	0.10	0.12	0.08	0.12	0.11	0.12	0.11
Other	0.23	0.23	0.24	0.25	0.26	0.29	0.31	0.32	0.32	0.32
Total	6.57	6.68	6.56	7.02	7.23	7.31	7.33	7.35	7.44	7.50
Western Europe										
Austria	0.43	0.42	0.42	0.44	0.46	0.44	0.45	0.45	0.49	0.48
Belgium	0.86	0.83	0.85	0.96	0.95	0.99	0.97	0.97	1.05	1.08
Denmark	0.46	0.46	0.47	0.46	0.45	0.43	0.41	0.40	0.41	0.40
Finland	0.44	0.44	0.44	0.44	0.48	0.48	0.48	0.47	0.48	0.46
France	3.79	3.61	3.64	3.63	3.67	3.69	3.81	3.73	3.98	3.97
Germany	5.54	5.55	5.61	5.94	5.72	5.68	5.32	5.49	5.83	5.86
Greece	0.49	0.50	0.52	0.53	0.57	0.60	0.62	0.67	0.68	0.70
Ireland	0.17	0.16	0.17	0.20	0.17	0.16	0.17	0.19	0.21	0.22
Italy	3.72	3.50	3.62	3.67	3.93	3.89	4.07	3.94	3.91	4.06
Luxembourg	0.04	0.04	0.04	0.05	0.06	0.06	0.06	0.07	0.08	0.08
Netherlands	1.26	1.24	1.27	1.40	1.40	1.49	1.47	1.52	1.56	1.59
Norway	0.33	0.34	0.38	0.37	0.42	0.37	0.38	0.38	0.37	0.36
Portugal	0.39	0.38	0.38	0.41	0.44	0.43	0.52	0.52	0.53	0.58
Spain	2.12	1.91	1.76	1.80	1.85	2.03	2.13	2.09	2.21	2.28
Sweden	0.77	0.72	0.76	0.77	0.77	0.74	0.69	0.65	0.66	0.70
Switzerland	0.53	0.52	0.54	0.56	0.54	0.54	0.53	0.56	0.58	0.59
Turkey	0.72	0.72	0.75	0.81	0.94	0.93	0.91	0.98	0.97	1.02
United Kingdom	3.14	3.87	3.38	3.37	3.26	3.46	3.55	3.59	3.67	3.67
Former Yugoslavia	0.57	0.69	0.70	0.64	0.66	0.67	0.66	0.67	0.53	0.32
Other	0.04	0.05	0.05	0.06	0.06	0.07	0.06	0.07	0.07	0.07
Total	25.84	25.94	25.74	26.54	26.78	27.16	27.26	27.42	28.25	28.48
Eastern Europe & Former U.S.S.R.										
Albania	0.09	0.09	0.09	0.08	0.07	0.07	0.06	0.04	0.04	0.03
Armenia	--	--	--	--	--	--	--	--	--	0.08
Azerbaijan	--	--	--	--	--	--	--	--	--	0.33
Belarus	--	--	--	--	--	--	--	--	--	0.98
Bulgaria	0.64	0.64	0.63	0.62	0.60	0.60	0.50	0.41	0.25	0.16
Former Czechoslovakia	0.69	0.67	0.65	0.64	0.69	0.67	0.67	0.60	0.49	0.44
Estonia	--	--	--	--	--	--	--	--	--	0.07
Georgia	--	--	--	--	--	--	--	--	--	0.11
Hungary	0.47	0.47	0.48	0.44	0.42	0.40	0.38	0.37	0.34	0.29
Kazakhstan	--	--	--	--	--	--	--	--	--	0.74
Kyrgyzstan	--	--	--	--	--	--	--	--	--	0.07
Latvia	--	--	--	--	--	--	--	--	--	0.10
Lithuania	--	--	--	--	--	--	--	--	--	0.18
Moldova	--	--	--	--	--	--	--	--	--	0.14
Poland	0.68	0.69	0.70	0.70	0.71	0.73	0.72	0.58	0.57	0.47
Romania	0.68	0.65	0.69	0.69	0.73	0.71	0.74	0.82	0.59	0.59
Russia	--	--	--	--	--	--	--	--	--	8.96
Tajikistan	--	--	--	--	--	--	--	--	--	0.05
Turkmenistan	--	--	--	--	--	--	--	--	--	0.08
Ukraine	--	--	--	--	--	--	--	--	--	1.66
Former U.S.S.R.	18.70	18.66	18.67	18.81	18.82	18.54	18.25	17.48	17.40	--
Uzbekistan	--	--	--	--	--	--	--	--	--	0.39
Total	21.94	21.88	21.91	21.99	22.05	21.72	21.32	20.32	19.69	15.93

See footnotes at the end of table

Table A10. World Petroleum Consumption, 1983-1992 (Continued)
(Quadrillion (10¹⁵) Btu)

Region Country	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992 ¹
Middle East										
Bahrain	0.03	0.03	0.03	0.03	0.04	0.04	0.05	0.05	0.05	0.05
Cyprus	0.04	0.04	0.05	0.05	0.05	0.05	0.06	0.07	0.07	0.07
Iran	1.67	1.62	1.66	1.76	1.83	1.85	2.03	2.11	2.26	2.35
Iraq	0.53	0.51	0.54	0.59	0.59	0.67	0.72	0.83	0.55	0.76
Israel	0.32	0.31	0.27	0.28	0.30	0.34	0.35	0.35	0.37	0.38
Jordan	0.11	0.12	0.12	0.13	0.14	0.13	0.13	0.14	0.13	0.13
Kuwait	0.26	0.26	0.26	0.25	0.24	0.25	0.26	0.18	0.09	0.21
Lebanon	0.09	0.09	0.10	0.10	0.10	0.09	0.07	0.07	0.11	0.11
Saudi Arabia	1.69	1.82	1.96	2.01	2.01	2.04	2.12	2.19	2.05	2.26
Syria	0.30	0.33	0.35	0.34	0.38	0.41	0.42	0.43	0.37	0.37
United Arab Emirates	0.32	0.33	0.40	0.45	0.46	0.52	0.53	0.53	0.73	0.73
Yemen	0.10	0.13	0.15	0.14	0.14	0.14	0.15	0.16	0.17	0.17
Other	0.08	0.10	0.10	0.12	0.12	0.10	0.13	0.15	0.16	0.16
Total	5.54	5.68	5.99	6.25	6.40	6.62	7.02	7.26	7.11	7.75
Africa										
Algeria	0.26	0.31	0.32	0.32	0.32	0.33	0.36	0.38	0.41	0.41
Angola	0.05	0.04	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Egypt	0.80	0.87	0.92	0.92	0.94	0.93	0.94	0.99	0.97	1.05
Ivory Coast	0.06	0.06	0.06	0.07	0.07	0.08	0.08	0.08	0.08	0.08
Kenya	0.08	0.08	0.08	0.08	0.07	0.08	0.09	0.09	0.08	0.07
Libya	0.26	0.26	0.27	0.27	0.28	0.30	0.31	0.33	0.35	0.36
Morocco	0.19	0.18	0.19	0.19	0.19	0.20	0.23	0.24	0.24	0.24
Nigeria	0.41	0.43	0.45	0.42	0.44	0.48	0.51	0.56	0.57	0.61
South Africa	0.70	0.75	0.73	0.72	0.72	0.72	0.73	0.78	0.83	0.84
Sudan	0.05	0.05	0.05	0.06	0.06	0.06	0.06	0.05	0.08	0.13
Tunisia	0.13	0.12	0.11	0.13	0.11	0.13	0.13	0.13	0.15	0.15
Zaire	0.04	0.04	0.04	0.04	0.04	0.05	0.05	0.04	0.04	0.04
Other	0.50	0.51	0.52	0.52	0.53	0.55	0.61	0.64	0.61	0.61
Total	3.54	3.69	3.80	3.80	3.83	3.97	4.14	4.37	4.47	4.66
Far East & Oceania										
Australia	1.21	1.25	1.26	1.26	1.29	1.31	1.37	1.42	1.42	1.43
China	3.69	3.75	4.04	4.27	4.51	4.83	5.03	4.85	5.27	5.55
Guam	0.06	0.02	0.01	0.02	0.01	0.01	0.01	0.03	0.03	0.03
Hong Kong	0.26	0.25	0.23	0.24	0.25	0.26	0.26	0.27	0.28	0.31
India	1.63	1.74	1.87	1.99	2.07	2.29	2.40	2.44	2.48	2.61
Indonesia	0.99	0.99	0.97	0.98	1.03	1.10	1.22	1.36	1.45	1.61
Japan	8.97	9.34	8.90	9.00	9.08	9.69	10.14	10.44	10.73	11.07
Korea, North	0.12	0.13	0.13	0.14	0.14	0.14	0.13	0.15	0.16	0.16
Korea, South	1.21	1.26	1.21	1.28	1.34	1.54	1.77	2.15	2.53	3.17
Malaysia	0.41	0.41	0.41	0.41	0.41	0.43	0.46	0.55	0.58	0.60
Myanmar (Burma)	0.06	0.06	0.06	0.05	0.06	0.06	0.07	0.07	0.06	0.06
New Zealand	0.16	0.17	0.15	0.17	0.18	0.19	0.21	0.22	0.21	0.22
Pakistan	0.29	0.30	0.34	0.35	0.38	0.41	0.44	0.47	0.47	0.52
Philippines	0.42	0.36	0.32	0.34	0.40	0.42	0.49	0.50	0.50	0.50
Singapore	0.49	0.51	0.50	0.57	0.63	0.68	0.73	0.80	0.85	0.88
Sri Lanka	0.08	0.08	0.07	0.07	0.08	0.07	0.07	0.07	0.07	0.07
Taiwan	0.72	0.81	0.79	0.85	0.88	1.02	1.11	1.14	1.15	1.22
Thailand	0.44	0.49	0.47	0.48	0.53	0.58	0.72	0.84	0.91	1.00
Vietnam	0.06	0.06	0.06	0.06	0.07	0.09	0.10	0.11	0.12	0.13
Other	0.34	0.38	0.38	0.35	0.29	0.30	0.31	0.30	0.31	0.31
Total	21.60	22.34	22.20	22.88	23.64	25.40	27.02	28.20	29.59	31.46
World Total	120.75	123.35	123.14	126.83	129.11	133.11	135.20	135.39	136.25	136.31

¹ Preliminary.

--=Not applicable.

Note: Sum of components may not equal total due to independent rounding.

Sources: See sources at the end of Chapter 3.

Table A11. World Dry Natural Gas Consumption, 1983-1992
(Quadrillion (10¹⁵) Btu)

Region Country	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992 ¹
North America										
Canada	1.81	1.85	2.05	2.03	2.01	2.19	2.37	2.38	2.49	2.61
Mexico	1.04	0.95	0.92	0.89	0.83	0.89	0.91	0.91	0.96	0.98
United States	17.36	18.51	17.83	16.71	17.75	18.55	19.38	19.29	19.70	20.34
Total	20.20	21.31	20.81	19.63	20.59	21.63	22.66	22.59	23.15	23.92
Central & South America										
Argentina	0.42	0.53	0.54	0.58	0.56	0.70	0.75	0.66	0.67	0.64
Colombia	0.11	0.16	0.16	0.16	0.16	0.17	0.17	0.17	0.18	0.17
Trinidad and Tobago	0.10	0.20	0.23	0.16	0.15	0.16	0.17	0.19	0.21	0.23
Venezuela	0.65	0.69	0.70	0.77	0.75	0.79	0.88	0.98	0.94	0.96
Other	0.15	0.19	0.20	0.19	0.09	0.21	0.25	0.22	0.22	0.23
Total	1.44	1.78	1.84	1.86	1.71	2.03	2.21	2.22	2.22	2.23
Western Europe										
Austria	0.13	0.18	0.18	0.18	0.17	0.18	0.19	0.24	0.24	0.24
Belgium and Luxembourg	0.36	0.35	0.35	0.32	0.34	0.33	0.38	0.36	0.39	0.40
France	1.03	1.01	1.07	1.04	1.10	1.01	1.08	1.03	1.29	1.29
Germany	2.08	2.28	2.41	2.30	2.44	2.93	2.57	2.02	2.49	2.39
Italy	1.00	1.17	1.23	1.27	1.40	1.48	1.61	1.74	1.80	1.75
Netherlands	1.32	1.35	1.22	1.34	1.45	1.35	1.38	1.31	1.56	1.52
Spain	0.09	0.08	0.10	0.11	0.12	0.16	0.20	0.21	0.25	0.26
United Kingdom	1.92	2.06	2.16	2.21	2.29	2.18	2.11	2.15	2.22	2.19
Former Yugoslavia	0.15	0.20	0.21	0.22	0.26	0.28	0.29	0.24	0.26	0.21
Other	0.21	0.23	0.27	0.27	0.28	0.37	0.49	0.59	0.66	0.68
Total	8.29	8.90	9.20	9.27	9.85	10.26	10.30	9.89	11.16	10.91
Eastern Europe & Former U.S.S.R.										
Albania	0.01	0.01	0.01	0.01	0.02	0.03	0.03	0.01	0.01	0.01
Bulgaria	0.17	0.17	0.20	0.21	0.21	0.23	0.21	0.25	0.21	0.21
Former Czechoslovakia	0.32	0.34	0.38	0.40	0.42	0.40	0.42	0.55	0.52	0.48
Hungary	0.39	0.40	0.42	0.43	0.41	0.42	0.44	0.44	0.44	0.38
Poland	0.39	0.42	0.42	0.43	0.45	0.47	0.45	0.44	0.41	0.40
Romania	1.61	1.55	1.49	1.57	1.56	1.37	1.51	1.45	1.17	1.00
Russia	--	--	--	--	--	--	--	--	--	15.03
Turkmenistan	--	--	--	--	--	--	--	--	--	0.27
Ukraine	--	--	--	--	--	--	--	--	--	3.67
Former U.S.S.R.	15.64	17.21	18.89	20.03	20.94	22.50	22.86	23.26	23.31	--
Uzbekistan	--	--	--	--	--	--	--	--	--	1.27
Other	0.00	0.00	(s)	0.00	0.00	0.00	(s)	0.00	0.00	2.24
Total	18.54	20.10	21.82	23.09	24.00	25.41	25.92	26.41	26.07	24.95
Middle East										
Bahrain	0.15	0.14	0.17	0.19	0.23	0.17	0.19	0.21	0.24	0.26
Iran	0.33	0.50	0.63	0.57	0.60	0.75	0.83	0.88	0.86	0.91
Kuwait	0.13	0.15	0.15	0.20	0.30	0.37	0.43	0.27	0.02	0.23
Oman	0.12	0.05	0.06	0.07	0.08	0.09	0.10	0.10	0.13	0.15
Qatar	0.18	0.22	0.20	0.20	0.21	0.24	0.23	0.29	0.22	0.22
Saudi Arabia	0.21	0.26	0.75	0.93	0.99	1.08	1.10	1.13	1.18	1.26
United Arab Emirates	0.19	0.25	0.39	0.45	0.61	0.60	0.73	0.69	0.83	0.89
Other	0.03	0.03	0.03	0.04	0.06	0.12	0.13	0.19	0.17	0.23
Total	1.34	1.61	2.39	2.65	3.07	3.41	3.75	3.77	3.65	4.15
Africa										
Algeria	0.70	0.72	0.62	0.64	0.70	0.71	0.70	0.72	0.82	0.81
Egypt	0.12	0.15	0.18	0.21	0.23	0.26	0.29	0.30	0.34	0.36
Libya	0.12	0.13	0.15	0.18	0.17	0.16	0.17	0.18	0.20	0.21
Nigeria	0.08	0.10	0.11	0.12	0.14	0.14	0.17	0.14	0.18	0.20
Other	0.05	0.06	0.07	0.06	0.08	0.07	0.08	0.09	0.05	0.05
Total	1.06	1.16	1.13	1.21	1.31	1.33	1.42	1.43	1.59	1.63
Far East & Oceania										
Australia	0.40	0.42	0.47	0.50	0.51	0.52	0.56	0.58	0.59	0.62
China	0.45	0.46	0.48	0.51	0.52	0.53	0.53	0.53	0.55	0.52
India	0.11	0.12	0.14	0.19	0.23	0.31	0.33	0.41	0.46	0.48
Indonesia	0.32	0.38	0.54	0.46	0.57	0.52	0.57	0.57	0.58	0.68
Japan	1.07	1.45	1.50	1.56	1.58	1.65	1.71	1.97	2.05	2.10
Malaysia	0.08	0.16	0.23	0.29	0.27	0.30	0.31	0.33	0.40	0.47
New Zealand	0.10	0.11	0.13	0.16	0.15	0.19	0.18	0.14	0.19	0.20
Pakistan	0.34	0.34	0.36	0.38	0.41	0.43	0.46	0.40	0.52	0.56
Other	0.26	0.27	0.37	0.35	0.46	0.65	0.68	0.74	0.77	0.87
Total	3.14	3.71	4.22	4.40	4.70	5.10	5.32	5.67	6.11	6.50
World Total	54.01	58.57	61.40	62.11	65.23	69.17	71.59	71.99	73.95	74.31

¹ Preliminary.

--=Not applicable.

(s)=Value less than 5 trillion Btu.

Note: Sum of components may not equal total due to independent rounding.

Sources: See sources at the end of Chapter 4.

Table A12. World Coal¹ Consumption, 1983-1992
(Quadrillion (10¹⁵) Btu)

Region Country	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992 ²
North America										
Canada	1.00	1.21	1.11	1.04	1.01	1.19	1.28	1.11	1.20	1.25
Mexico	0.10	0.11	0.11	0.08	0.06	0.08	0.09	0.00	0.11	0.12
United States ³	15.89	17.07	17.48	17.26	18.01	18.85	18.93	19.10	18.77	18.88
Total	16.99	18.38	18.70	18.38	19.08	20.11	20.29	20.21	20.08	20.26
Central & South America										
Brazil	0.34	0.39	0.44	0.44	0.46	0.40	0.41	0.36	0.41	0.45
Chile	0.03	0.05	0.04	0.06	0.06	0.08	0.10	0.11	0.14	0.09
Colombia	0.15	0.16	0.19	0.14	0.13	0.11	0.20	0.22	0.23	0.22
Other	0.04	0.04	0.02	0.06	0.07	0.06	0.10	0.07	0.07	0.08
Total	0.56	0.64	0.68	0.71	0.72	0.65	0.82	0.75	0.84	0.85
Western Europe										
Austria	0.16	0.16	0.15	0.15	0.18	0.14	0.14	0.14	0.13	0.13
Belgium and Luxembourg	0.45	0.52	0.49	0.45	0.35	0.34	0.41	0.42	0.47	0.43
Denmark	0.25	0.22	0.34	0.31	0.27	0.21	0.27	0.24	0.32	0.31
France	1.01	1.08	0.96	0.88	0.74	0.66	0.80	0.91	0.89	0.86
Germany	5.49	5.39	5.78	5.75	5.41	5.46	4.69	4.95	4.18	4.04
Greece	0.16	0.20	0.24	0.25	0.27	0.28	0.31	0.31	0.36	0.38
Italy	0.51	0.57	0.62	0.59	0.58	0.49	0.52	0.51	0.60	0.50
Netherlands	0.21	0.30	0.30	0.27	0.29	0.31	0.29	0.37	0.41	0.31
Spain	0.88	0.91	0.97	0.96	0.84	0.92	1.07	1.01	0.73	1.33
Turkey	0.42	0.56	0.62	0.73	0.76	0.64	0.63	0.82	1.27	1.26
United Kingdom	2.67	1.36	2.43	2.71	2.58	2.75	2.75	2.39	3.02	2.72
Former Yugoslavia	0.80	0.83	0.87	0.88	0.89	0.88	0.92	0.91	0.69	0.65
Other	0.44	0.40	0.53	0.42	0.42	0.44	0.53	0.51	0.46	0.47
Total	13.43	12.50	14.29	14.34	13.58	13.50	13.34	13.50	13.53	13.38
Eastern Europe & Former U.S.S.R.										
Albania	0.03	0.03	0.03	0.04	0.04	0.04	0.04	0.03	0.01	0.01
Bulgaria	0.66	0.63	0.65	0.62	0.66	0.62	0.61	0.57	0.32	0.32
Former Czechoslovakia	1.91	1.90	1.87	1.89	1.84	1.83	1.76	1.60	1.41	1.28
Hungary	0.38	0.39	0.40	0.39	0.33	0.33	0.30	0.28	0.23	0.20
Kazakhstan	--	--	--	--	--	--	--	--	--	1.58
Poland	4.01	3.85	4.15	4.51	4.88	4.96	4.58	3.86	3.49	3.02
Romania	0.56	0.82	0.80	0.83	0.81	0.89	1.03	0.70	0.42	0.39
Russia	--	--	--	--	--	--	--	--	--	5.69
Ukraine	--	--	--	--	--	--	--	--	--	2.58
Former U.S.S.R.	11.97	11.86	11.94	12.22	12.28	12.43	12.43	12.70	8.61	--
Other	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.37
Total	19.52	19.49	19.83	20.50	20.84	21.09	20.75	19.75	14.49	15.44
Middle East										
Iran	0.03	0.03	0.02	0.03	0.04	0.03	0.04	0.04	0.05	0.05
Other	0.05	0.08	0.09	0.09	0.08	0.08	0.10	0.11	0.12	0.15
Total	0.08	0.11	0.11	0.12	0.12	0.12	0.13	0.15	0.17	0.20
Africa										
Morocco	0.03	0.03	0.03	0.04	0.04	0.04	0.05	0.04	0.05	0.05
South Africa	2.75	2.91	3.00	3.05	3.14	3.24	3.11	3.05	3.68	3.53
Zimbabwe (Rhodesia)	0.07	0.05	0.07	0.10	0.11	0.13	0.13	0.13	0.15	0.16
Other	0.12	0.12	0.13	0.11	0.11	0.11	0.11	0.11	0.13	0.13
Total	2.97	3.11	3.23	3.29	3.41	3.52	3.39	3.33	4.02	3.87
Far East & Oceania										
Australia	1.26	0.99	1.04	1.21	1.37	1.46	1.61	1.61	1.41	1.72
China	14.00	15.26	16.61	17.57	18.72	19.34	21.23	21.18	21.77	21.78
India	2.82	2.97	3.56	3.91	3.73	3.73	4.15	4.50	4.35	4.65
Japan	2.47	2.73	2.95	2.77	2.95	2.98	2.79	2.90	2.76	2.71
Korea, North	1.26	1.26	1.30	1.29	1.38	1.41	1.43	1.43	1.38	1.31
Korea, South	0.70	0.80	0.94	1.05	1.19	1.26	1.08	0.95	0.98	0.99
Mongolia	0.06	0.06	0.07	0.05	0.08	0.08	0.08	0.07	0.08	0.09
New Zealand	0.04	0.05	0.05	0.04	0.05	0.07	0.05	0.07	0.05	0.05
Pakistan	0.04	0.05	0.04	0.07	0.07	0.07	0.08	0.08	0.10	0.09
Philippines	0.03	0.04	0.02	0.06	0.04	0.06	0.06	0.07	0.07	0.07
Thailand	0.02	0.03	0.05	0.06	0.09	0.07	0.17	0.12	0.17	0.18
Vietnam	0.14	0.11	0.11	0.12	0.13	0.14	0.12	0.10	0.11	0.12
Other	0.24	0.41	0.48	0.52	0.74	0.77	0.91	0.98	1.01	1.11
Total	23.08	24.76	27.22	28.73	30.53	31.43	33.78	34.06	34.23	34.90
World Total	76.63	78.99	84.07	86.06	88.28	90.43	92.51	91.75	87.37	88.90

¹ Coal includes anthracite, subanthracite, bituminous, subbituminous, lignite, and brown coal

² Preliminary.

³ Consumption data do not reflect net exports of coke

--=Not applicable.

Note: Sum of components may not equal total due to independent rounding.

Sources: See sources at the end of Chapter 5

Table A13. World Net Hydroelectric Power Consumption,¹ 1983-1992
(Quadrillion (10¹⁵) Btu)

Region Country	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992 ²
North America										
Canada	2.37	2.54	2.70	2.84	2.80	2.84	2.89	3.04	2.94	2.95
Mexico	0.21	0.24	0.27	0.19	0.17	0.20	0.24	0.23	0.25	0.25
United States	3.90	3.80	3.40	3.45	3.12	2.66	2.88	2.95	3.11	2.81
Total	6.48	6.58	6.37	6.48	6.08	5.71	6.01	6.21	6.30	6.01
Central & South America										
Argentina	0.19	0.21	0.21	0.22	0.23	0.17	0.14	0.20	0.18	0.18
Brazil	1.59	1.75	1.86	2.01	2.09	2.23	2.33	2.38	2.52	2.62
Chile	0.09	0.10	0.11	0.12	0.13	0.12	0.10	0.09	0.11	0.11
Colombia	0.19	0.21	0.22	0.26	0.22	0.25	0.28	0.29	0.29	0.29
Peru	0.08	0.09	0.10	0.10	0.11	0.11	0.11	0.11	0.12	0.12
Uruguay	0.04	0.04	0.04	0.04	0.05	0.04	0.03	0.06	0.05	0.05
Venezuela	0.19	0.20	0.23	0.28	0.33	0.36	0.38	0.34	0.35	0.34
Other	0.13	0.15	0.20	0.20	0.21	0.22	0.23	0.24	0.24	0.25
Total	2.50	2.74	2.97	3.23	3.36	3.49	3.59	3.70	3.84	3.95
Western Europe										
Austria	0.27	0.27	0.28	0.28	0.31	0.32	0.32	0.30	0.30	0.34
Finland	0.16	0.15	0.14	0.14	0.16	0.16	0.16	0.14	0.15	0.17
France	0.71	0.65	0.62	0.63	0.69	0.73	0.48	0.53	0.56	0.67
Germany	0.31	0.28	0.26	0.27	0.30	0.30	0.28	0.28	0.24	0.27
Italy	0.50	0.53	0.53	0.52	0.50	0.54	0.48	0.45	0.55	0.55
Norway	0.96	1.01	1.03	0.99	1.04	1.06	1.07	1.08	1.08	1.15
Portugal	0.09	0.10	0.11	0.09	0.10	0.13	0.07	0.09	0.09	0.05
Spain	0.30	0.36	0.34	0.28	0.29	0.37	0.21	0.27	0.29	0.22
Sweden	0.66	0.68	0.70	0.60	0.71	0.70	0.71	0.71	0.63	0.75
Switzerland	0.26	0.23	0.23	0.25	0.26	0.27	0.24	0.24	0.25	0.26
Turkey	0.13	0.15	0.13	0.12	0.19	0.30	0.18	0.23	0.23	0.27
United Kingdom	0.04	0.03	0.03	0.05	0.07	0.11	0.10	0.10	0.10	0.11
Former Yugoslavia	0.23	0.26	0.25	0.28	0.27	0.26	0.24	0.21	0.20	0.18
Other	0.15	0.15	0.15	0.14	0.15	0.16	0.17	0.17	0.16	0.15
Total	4.77	4.86	4.81	4.66	5.04	5.41	4.70	4.82	4.84	5.14
Eastern Europe & Former U.S.S.R.										
Former Czechoslovakia	0.05	0.05	0.06	0.05	0.06	0.06	0.06	0.06	0.04	0.04
Poland	0.05	0.05	0.05	0.06	0.07	0.08	0.07	0.06	0.05	0.05
Romania	0.11	0.12	0.13	0.12	0.13	0.16	0.15	0.14	0.16	0.16
Russia	--	--	--	--	--	--	--	--	--	1.74
Former U.S.S.R.	1.84	2.08	2.10	2.18	2.21	2.32	2.25	2.35	2.39	--
Other	0.12	0.11	0.11	0.10	0.10	0.11	0.11	0.10	0.07	0.62
Total	2.17	2.41	2.45	2.51	2.58	2.73	2.64	2.71	2.72	2.62
Middle East										
Iran	0.06	0.07	0.07	0.06	0.07	0.07	0.07	0.07	0.07	0.07
Other	0.03	0.03	0.03	0.03	0.03	0.06	0.06	0.07	0.07	0.08
Total	0.10	0.10	0.10	0.09	0.10	0.13	0.13	0.14	0.14	0.15
Africa										
Egypt	0.10	0.10	0.08	0.08	0.08	0.08	0.08	0.10	0.10	0.10
Zaire	0.05	0.05	0.05	0.05	0.05	0.05	0.06	0.06	0.06	0.06
Zambia	0.07	0.07	0.07	0.07	0.07	0.07	0.05	0.07	0.08	0.06
Zimbabwe (Rhodesia)	0.07	0.06	0.06	0.06	0.03	0.03	0.04	0.04	0.03	0.03
Other	0.23	0.18	0.21	0.22	0.23	0.24	0.26	0.27	0.27	0.27
Total	0.52	0.46	0.47	0.48	0.48	0.48	0.49	0.53	0.55	0.53
Far East & Oceania										
Australia	0.13	0.13	0.15	0.15	0.14	0.15	0.16	0.15	0.17	0.16
China	0.90	0.91	0.96	0.99	1.05	1.13	1.23	1.31	1.30	1.36
India	0.52	0.56	0.53	0.55	0.49	0.60	0.64	0.69	0.70	0.71
Japan	0.91	0.79	0.91	0.89	0.83	0.99	1.01	0.99	1.09	1.00
Korea, North	0.27	0.28	0.29	0.30	0.30	0.32	0.33	0.33	0.33	0.33
Korea, South	0.03	0.02	0.04	0.04	0.05	0.04	0.05	0.07	0.05	0.05
New Zealand	0.20	0.21	0.20	0.23	0.23	0.24	0.23	0.24	0.24	0.24
Pakistan	0.12	0.13	0.13	0.14	0.16	0.17	0.17	0.17	0.19	0.20
Philippines	0.03	0.05	0.06	0.06	0.05	0.06	0.07	0.06	0.05	0.05
Thailand	0.04	0.04	0.04	0.06	0.04	0.04	0.06	0.05	0.05	0.05
Other	0.19	0.22	0.26	0.28	0.29	0.30	0.33	0.36	0.34	0.36
Total	3.34	3.34	3.55	3.69	3.64	4.05	4.27	4.42	4.49	4.51
World Total	19.88	20.50	20.73	21.14	21.28	22.00	21.83	22.53	22.89	22.90

¹ Accounts for thermal equivalent conversion losses. Data are reported as net generation as opposed to gross. Net generation excludes the energy consumed by the generating plants.

² Preliminary.

--=Not applicable.

Note: Sum of components may not equal total due to independent rounding.

Sources: See sources at the end of Chapter 6.

Table A14. World Net Nuclear Electric Power Consumption,¹ 1983-1992
(Quadrillion (10¹⁵) Btu)

Region Country	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992 ²
North America										
Canada	0.54	0.57	0.66	0.78	0.84	0.90	0.87	0.80	0.92	0.88
Mexico	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.04	0.04
United States	3.20	3.55	4.15	4.47	4.91	5.66	5.68	6.16	6.58	6.65
Total	3.74	4.12	4.81	5.25	5.75	6.56	6.55	6.98	7.54	7.56
Central & South America										
Argentina	0.04	0.05	0.06	0.06	0.07	0.06	0.06	0.08	0.09	0.08
Brazil	(s)	0.03	0.03	(s)	0.01	(s)	0.02	0.02	0.01	0.02
Total	0.04	0.08	0.09	0.06	0.08	0.06	0.07	0.10	0.10	0.10
Western Europe										
Belgium	0.23	0.27	0.32	0.37	0.38	0.39	0.38	0.39	0.40	0.41
Finland	0.18	0.20	0.20	0.21	0.21	0.22	0.22	0.23	0.22	0.21
France	1.31	1.71	1.97	2.23	2.29	2.36	2.58	2.65	2.85	2.92
Germany	0.85	1.12	1.47	1.40	1.52	1.65	1.61	1.53	1.44	1.56
Italy	0.10	0.15	0.17	0.19	0.10	0.11	0.12	0.12	0.14	0.14
Netherlands	0.04	0.05	0.05	0.05	0.05	0.06	0.06	0.07	0.07	0.08
Spain	0.12	0.26	0.30	0.40	0.44	0.51	0.57	0.56	0.54	0.54
Sweden	0.39	0.48	0.55	0.64	0.62	0.64	0.61	0.63	0.73	0.60
Switzerland	0.11	0.14	0.17	0.17	0.18	0.19	0.21	0.21	0.22	0.22
United Kingdom	0.57	0.58	0.64	0.63	0.62	0.71	0.81	0.75	0.86	0.98
Former Yugoslavia	0.04	0.05	0.05	0.05	0.05	0.04	0.05	0.05	0.05	0.04
Other	0.04	0.06	0.07	0.07	0.07	0.08	0.09	0.10	0.09	0.09
Total	3.98	5.05	5.96	6.41	6.52	6.96	7.31	7.29	7.60	7.79
Eastern Europe & Former U.S.S.R.										
Bulgaria	0.13	0.14	0.15	0.14	0.15	0.18	0.18	0.16	0.15	0.13
Former Czechoslovakia	0.08	0.10	0.16	0.23	0.27	0.28	0.30	0.31	0.29	0.30
Hungary	0.05	0.07	0.11	0.12	0.16	0.18	0.19	0.19	0.16	0.16
Lithuania	--	--	--	--	--	--	--	--	--	0.17
Russia	--	--	--	--	--	--	--	--	--	1.29
Ukraine	--	--	--	--	--	--	--	--	--	0.76
Former U.S.S.R.	1.23	1.59	1.90	1.69	1.96	2.26	2.36	2.25	2.27	--
Other	0.01	0.02	0.03	0.04	0.06	0.08	0.08	0.08	0.06	0.06
Total	1.50	1.92	2.35	2.23	2.59	2.99	3.11	2.99	2.92	2.87
Middle East	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Africa										
South Africa	0.00	0.04	0.06	0.09	0.06	0.11	0.11	0.09	0.09	0.09
Total	0.00	0.04	0.06	0.09	0.06	0.11	0.11	0.09	0.09	0.09
Far East & Oceania										
India	0.04	0.04	0.05	0.06	0.06	0.06	0.04	0.07	0.06	0.07
Japan	1.13	1.36	1.59	1.69	2.01	1.85	1.86	1.94	2.06	2.12
Korea, South	0.09	0.12	0.16	0.28	0.39	0.39	0.47	0.52	0.54	0.54
Pakistan	(s)	(s)	(s)	(s)	0.01	(s)	(s)	(s)	(s)	0.01
Taiwan	0.19	0.24	0.28	0.26	0.33	0.30	0.28	0.32	0.33	0.32
Total	1.45	1.77	2.10	2.29	2.78	2.61	2.65	2.86	3.00	3.06
World Total	10.71	12.99	15.36	16.33	17.79	19.29	19.81	20.30	21.27	21.47

¹ Accounts for thermal equivalent conversion losses. Data are reported as net generation as opposed to gross. Net generation excludes the energy consumed by the generating plants.

² Preliminary.

--=Not applicable.

(s)=Value less than 5 trillion Btu.

Note: Sum of components may not equal total due to independent rounding.

Sources: See sources at the end of Chapter 6

Table A15. Consumption of Primary Energy Sources by Selected Country Groups, 1983-1992
(Quadrillion (10¹⁵) Btu)

Type of Energy Country Groups	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992 ¹
Petroleum										
World Total	120.75	123.35	123.14	126.83	129.11	133.11	135.20	135.39	136.25	136.31
OECD ²	69.20	70.66	69.87	72.02	73.07	75.66	76.40	76.16	76.62	78.08
Non OECD	51.56	52.69	53.27	54.81	56.04	57.44	58.80	59.23	59.63	58.23
Other Groups:										
OECD Europe	25.25	25.23	25.01	25.86	26.08	26.45	26.56	26.70	27.67	28.12
OPEC ³	7.26	7.37	7.67	7.94	8.11	8.41	8.93	9.56	9.37	10.26
EEC ⁴	22.00	22.05	21.70	22.44	22.45	22.92	23.10	23.17	24.11	24.49
IEA ⁵	69.17	70.64	69.85	72.00	73.04	75.64	76.38	76.13	76.59	78.06
Natural Gas										
World Total	54.01	58.57	61.40	62.11	65.23	69.17	71.59	71.99	73.95	74.31
OECD ²	28.88	31.03	30.98	30.01	31.59	33.08	34.22	34.01	35.92	36.56
Non OECD	25.13	27.54	30.42	32.10	33.65	36.09	37.37	37.98	38.03	37.74
Other Groups:										
OECD Europe	8.14	8.70	8.99	9.04	9.59	9.98	10.02	9.65	10.90	10.70
OPEC ³	2.93	3.44	4.27	4.55	5.06	5.45	5.91	5.95	5.87	6.42
EEC ⁴	7.88	8.39	8.66	8.71	9.24	9.57	9.45	8.99	10.17	9.96
IEA ⁵	28.88	31.03	30.98	30.01	31.59	33.08	34.22	34.01	35.92	36.56
Coal										
World Total	76.63	78.99	84.07	86.06	88.28	90.43	92.51	91.85	87.37	88.90
OECD ²	33.29	33.71	36.06	35.78	36.08	37.16	37.08	37.37	37.03	37.35
Non OECD	43.33	45.28	48.01	50.29	52.20	53.26	55.43	54.48	50.34	51.55
Other Groups:										
OECD Europe	12.63	11.67	13.42	13.45	12.69	12.62	12.41	12.58	12.83	12.72
OPEC ³	0.09	0.09	0.10	0.15	0.16	0.15	0.24	0.26	0.30	0.30
EEC ⁴	11.73	10.67	12.25	12.27	11.49	11.57	11.31	11.33	11.19	11.09
IEA ⁵	33.29	33.70	36.06	35.77	36.08	37.16	37.08	37.37	37.02	37.35
Hydroelectric Power										
World Total	19.88	20.50	20.73	21.14	21.28	22.00	21.83	22.53	22.89	22.90
OECD ²	12.05	12.06	11.92	11.93	11.89	12.03	11.62	11.97	12.19	12.12
Non OECD	7.83	8.43	8.81	9.21	9.39	9.96	10.21	10.56	10.70	10.78
Other Groups:										
OECD Europe	4.54	4.60	4.56	4.37	4.77	5.14	4.45	4.61	4.65	4.96
OPEC ³	0.34	0.37	0.40	0.45	0.51	0.55	0.58	0.54	0.55	0.53
EEC ⁴	2.07	2.07	2.00	1.94	2.05	2.29	1.73	1.86	1.95	1.97
IEA ⁵	12.01	12.03	11.88	11.89	11.85	11.99	11.58	11.93	12.15	12.08
Nuclear Electric Power										
World Total	10.71	12.99	15.36	16.33	17.79	19.29	19.81	20.30	21.27	21.47
OECD ²	8.81	10.49	12.31	13.30	14.23	15.33	15.67	16.13	17.12	17.39
Non OECD	1.90	2.50	3.05	3.03	3.56	3.96	4.14	4.17	4.15	4.08
Other Groups:										
OECD Europe	3.94	5.01	5.91	6.36	6.47	6.92	7.26	7.23	7.56	7.75
OPEC ³	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EEC ⁴	3.25	4.16	4.96	5.30	5.43	5.85	6.20	6.14	6.35	6.67
IEA ⁵	8.81	10.49	12.31	13.30	14.23	15.33	15.67	16.13	17.12	17.39
Total Energy										
World Total	281.98	294.39	304.70	312.47	321.70	333.99	340.94	342.07	341.74	343.90
OECD ²	152.23	157.95	161.13	163.03	166.85	173.27	174.99	175.65	178.88	181.51
Non OECD	129.75	136.44	143.57	149.45	154.85	160.72	165.95	166.42	162.86	162.38
Other Groups:										
OECD Europe	54.50	55.20	57.89	59.09	59.60	61.11	60.70	60.77	63.61	64.25
OPEC ³	10.82	11.48	12.66	13.32	14.08	14.80	15.89	16.36	16.36	17.79
EEC ⁴	46.93	47.33	49.57	50.66	50.67	52.19	51.78	51.49	53.77	54.17
IEA ⁵	152.17	157.89	161.07	162.96	166.78	173.20	174.92	175.57	178.81	181.44

¹ Preliminary.

² The Organization for Economic Cooperation and Development (OECD) includes Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Japan, Luxembourg, the Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, the United Kingdom, the United States, and the U.S. Territories. Refer to Appendix G for a listing of OECD Europe.

³ The Organization of Petroleum Exporting Countries (OPEC) includes Algeria, Gabon, Indonesia, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, the United Arab Emirates, and Venezuela.

⁴ European Economic Community (EEC) includes Belgium, Denmark, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, and the United Kingdom.

⁵ International Energy Agency (IEA) includes Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Japan, Luxembourg, the Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, the United Kingdom, the United States, and the U.S. Territories.

Note: Sum of components may not equal total due to independent rounding. The country groups, OECD, EEC, and IEA, include the unified Germany.
Sources: See sources at the end of Chapters 3, 4, 5, 6.

For consistency, data reflect 1992 membership (as of December 31, 1992) for all years. For statistical comparison, refer to Table C4 for primary energy production data based on each country group's actual yearly membership.

Appendix B
World Primary Energy Production
and Consumption In Joules

Table B1. World Primary Energy¹ Production, 1983-1992
(Exa (10¹⁸) Joules)

Region Country	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992 ²
North America										
Canada	10.70	11.61	12.45	12.35	13.00	13.90	13.82	13.79	14.73	15.15
Mexico	8.03	8.23	8.09	7.36	7.53	7.60	7.65	7.83	8.21	8.19
United States	64.45	69.33	68.14	67.57	68.18	69.41	69.47	71.37	71.06	70.35
Total	83.18	89.17	88.68	87.28	88.72	90.92	90.94	93.00	94.00	93.69
Central & South America										
Argentina	1.84	1.90	1.88	1.89	1.88	1.99	2.03	2.06	2.08	2.20
Brazil	2.66	3.20	3.57	3.60	3.65	3.74	3.93	3.95	4.08	4.22
Venezuela	5.28	5.30	5.05	5.48	5.43	5.91	6.06	6.69	7.24	7.17
Other	3.10	3.47	3.72	4.13	4.08	4.43	4.57	4.78	4.90	4.98
Total	12.87	13.87	14.21	15.10	15.04	16.07	16.58	17.48	18.30	18.57
Western Europe										
France	3.12	3.55	3.74	4.02	4.19	4.32	4.32	4.43	4.74	4.91
Germany	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.66	6.48
Italy	1.17	1.23	1.24	1.33	1.25	1.34	1.27	1.25	1.35	1.39
Netherlands	2.77	2.86	2.98	2.86	2.93	2.69	2.76	2.77	3.10	3.07
Norway	3.61	3.87	4.05	4.20	4.73	5.00	6.09	6.29	6.57	7.18
Spain	1.32	1.49	1.57	1.58	1.59	1.82	1.76	1.80	1.41	1.42
Sweden	1.10	1.25	1.36	1.36	1.46	1.46	1.44	1.48	1.47	1.45
United Kingdom	10.40	9.27	10.67	11.13	10.80	10.51	9.44	9.26	9.80	9.74
Former Yugoslavia	1.25	1.38	1.40	1.46	1.45	1.46	1.47	1.42	1.17	1.05
Other	10.11	10.59	11.45	11.46	11.63	11.89	11.43	11.13	4.83	4.78
Total	34.85	35.49	38.45	39.41	40.03	40.50	39.98	39.84	41.10	41.47
Eastern Europe & Former U.S.S.R.										
Former Czechoslovakia	2.13	2.17	2.21	2.28	2.29	2.30	2.22	2.05	1.82	1.70
Kazakhstan	--	--	--	--	--	--	--	--	--	4.12
Poland	5.54	5.66	5.85	6.04	6.11	6.19	5.80	4.97	3.99	3.95
Romania	2.82	2.87	2.79	2.87	2.80	2.60	2.73	2.24	1.82	1.68
Russia	--	--	--	--	--	--	--	--	--	48.18
Ukraine	--	--	--	--	--	--	--	--	--	4.41
Former U.S.S.R.	62.07	64.21	66.11	68.78	70.87	73.42	73.46	72.66	65.95	--
Other	1.67	1.66	1.67	1.67	1.72	1.75	1.72	1.50	1.13	6.65
Total	74.23	76.58	78.63	81.64	83.78	86.26	85.93	83.41	74.70	70.70
Middle East										
Iran	5.98	5.58	5.88	5.33	5.97	6.01	7.39	8.10	8.73	9.00
Iraq	2.29	2.75	3.26	3.86	4.83	6.30	6.82	4.79	0.73	1.07
Kuwait	2.65	2.91	2.57	3.55	3.97	3.84	4.56	2.99	0.45	2.62
Oman	0.88	1.00	1.19	1.35	1.41	1.50	1.58	1.68	1.73	1.84
Qatar	0.89	1.15	0.92	0.93	0.91	1.07	1.14	1.27	1.18	1.19
Saudi Arabia	12.33	11.91	9.02	12.57	11.32	13.43	13.38	16.80	20.83	21.77
United Arab Emirates	3.07	3.17	3.47	3.88	4.44	4.48	5.26	5.82	6.62	6.57
Other	0.70	0.70	0.75	0.84	1.00	1.39	1.65	1.86	2.17	2.31
Total	28.79	29.18	27.07	32.31	33.85	38.03	41.79	43.29	42.45	46.36
Africa										
Algeria	3.65	3.91	3.98	3.75	4.23	4.24	4.51	4.77	5.07	5.10
Egypt	1.94	2.19	2.36	2.21	2.43	2.36	2.45	2.49	2.54	2.59
Libya	2.66	2.67	2.60	2.57	2.42	2.89	2.84	3.36	3.63	3.65
Nigeria	2.92	3.29	3.53	3.48	3.21	3.47	4.10	4.27	4.50	4.73
South Africa	3.64	4.08	4.40	4.50	4.47	4.63	4.52	4.42	5.46	5.34
Other	2.20	2.34	2.57	2.64	2.80	3.03	3.19	3.37	3.47	3.59
Total	17.01	18.48	19.44	19.14	19.55	20.62	21.60	22.67	24.67	25.00
Far East & Oceania										
Australia	4.47	4.65	5.62	5.79	6.35	6.13	6.48	7.08	6.64	7.02
China	21.59	23.62	25.95	26.73	27.70	29.02	30.76	30.90	31.53	31.85
India	5.15	5.50	5.83	6.30	6.03	6.29	6.89	7.34	7.08	7.32
Indonesia	4.05	4.51	4.47	4.56	4.60	4.74	5.12	5.42	6.02	6.43
Japan	2.68	2.80	3.18	3.24	3.44	3.40	3.37	3.40	3.66	3.62
Korea, North	1.48	1.52	1.59	1.62	1.71	1.75	1.78	1.78	1.73	1.74
Malaysia	0.98	1.38	1.50	1.74	1.76	1.90	2.02	2.14	2.31	2.51
Other	3.45	3.68	4.09	4.41	4.57	4.74	5.02	5.13	5.33	5.71
Total	43.86	47.67	52.23	54.40	56.17	57.96	61.45	63.19	64.30	66.20
World Total	294.78	310.44	318.71	329.28	337.14	350.36	358.27	362.89	359.52	361.99

¹ Includes petroleum, natural gas, coal, net hydroelectric power, and net nuclear electric power.

² Preliminary.

--=Not applicable.

Note: Sum of components may not equal total due to independent rounding.

Sources: See sources at the end of Chapters 3, 4, 5, 6.

Table B2. World Crude Oil¹ Production, 1983-1992
(Exa (10¹⁸) Joules)

Region Country	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992 ²
North America										
Canada ³	3.03	3.23	3.29	3.30	3.43	3.63	3.49	3.47	3.46	3.59
Mexico	6.22	6.45	6.35	5.64	5.90	5.83	5.83	5.91	6.20	6.19
United States	19.41	19.89	20.04	19.39	18.65	18.23	17.00	16.43	16.57	16.06
Total	28.66	29.56	29.68	28.32	27.98	27.69	26.33	25.81	26.23	25.84
Central & South America										
Argentina	1.13	1.11	1.06	1.00	0.99	1.04	1.06	1.11	1.12	1.28
Brazil	0.77	1.08	1.28	1.30	1.29	1.26	1.36	1.43	1.43	1.43
Colombia	0.35	0.39	0.41	0.71	0.89	0.88	0.93	1.02	0.97	1.02
Ecuador	0.55	0.60	0.65	0.68	0.40	0.70	0.64	0.66	0.69	0.74
Peru	0.38	0.41	0.43	0.40	0.37	0.32	0.29	0.29	0.26	0.26
Trinidad and Tobago	0.37	0.40	0.41	0.39	0.36	0.37	0.36	0.35	0.35	0.32
Venezuela	4.29	4.26	3.96	4.22	4.14	4.51	4.51	5.05	5.61	5.53
Other	0.18	0.18	0.18	0.17	0.17	0.15	0.15	0.15	0.14	0.14
Total	8.03	8.43	8.37	8.87	8.61	9.22	9.30	10.06	10.57	10.72
Western Europe										
Norway	1.33	1.51	1.71	1.88	2.21	2.51	3.36	3.69	4.09	4.61
United Kingdom	5.12	5.56	5.65	5.67	5.38	5.00	4.03	4.07	4.02	4.09
Other	1.13	1.11	1.21	1.31	1.37	1.40	1.35	1.37	1.46	1.33
Total	7.57	8.18	8.57	8.87	8.96	8.91	8.74	9.13	9.56	10.02
Eastern Europe & Former U.S.S.R.										
Romania	0.53	0.53	0.49	0.49	0.48	0.43	0.40	0.36	0.31	0.31
Russia	--	--	--	--	--	--	--	--	--	16.77
Former U.S.S.R.	27.11	26.93	26.23	26.93	27.14	27.20	26.32	24.64	22.39	--
Other	0.30	0.25	0.25	0.25	0.24	0.23	0.23	0.19	0.15	2.43
Total	27.94	27.71	26.97	27.68	27.86	27.85	26.95	25.19	22.85	19.51
Middle East										
Iran	5.53	4.94	5.10	4.61	5.21	5.09	6.37	7.00	7.51	7.80
Iraq	2.25	2.72	3.21	3.79	4.66	6.03	6.49	4.57	0.68	1.01
Kuwait	2.43	2.65	2.33	3.24	3.61	3.41	4.07	2.68	0.43	2.35
Oman	0.85	0.94	1.13	1.27	1.32	1.40	1.45	1.55	1.58	1.67
Qatar	0.66	0.88	0.67	0.69	0.65	0.77	0.85	0.90	0.88	0.88
Saudi Arabia	11.58	10.64	7.71	11.08	9.71	11.61	11.53	14.59	18.47	19.26
Syria	0.40	0.40	0.42	0.46	0.55	0.63	0.81	0.92	1.17	1.26
United Arab Emirates	2.56	2.56	2.66	2.96	3.43	3.50	4.15	4.72	5.32	5.20
Other	0.10	0.10	0.10	0.13	0.14	0.48	0.53	0.52	0.52	0.49
Total	26.34	25.83	23.33	28.22	29.28	32.93	36.23	37.45	36.56	39.92
Africa										
Algeria	2.07	2.18	2.22	2.02	2.24	2.23	2.34	2.51	2.63	2.61
Angola	0.40	0.47	0.52	0.63	0.81	1.02	1.02	1.07	1.12	1.20
Cameroon	0.26	0.31	0.42	0.41	0.40	0.37	0.39	0.37	0.35	0.32
Egypt	1.66	1.88	2.02	1.85	2.04	1.94	1.97	1.99	1.99	2.02
Gabon	0.36	0.36	0.39	0.38	0.35	0.36	0.47	0.61	0.67	0.68
Libya	2.46	2.42	2.36	2.30	2.16	2.62	2.56	3.06	3.30	3.31
Nigeria	2.81	3.15	3.39	3.32	3.04	3.29	3.89	4.10	4.28	4.50
Tunisia	0.26	0.26	0.25	0.24	0.23	0.23	0.23	0.20	0.23	0.24
Other	0.32	0.43	0.43	0.40	0.40	0.43	0.44	0.45	0.43	0.49
Total	10.59	11.46	11.99	11.56	11.68	12.49	13.31	14.36	15.00	15.36
Far East & Oceania										
Australia	0.89	1.06	1.24	1.12	1.17	1.16	1.05	1.24	1.17	1.16
Brunei	0.37	0.36	0.35	0.37	0.31	0.31	0.30	0.34	0.36	0.37
China	4.80	5.21	5.67	5.93	6.09	6.20	6.24	6.28	6.42	6.44
India	1.06	1.15	1.37	1.39	1.34	1.40	1.54	1.46	1.36	1.23
Indonesia	2.97	3.13	2.93	3.07	2.97	2.97	3.11	3.23	3.52	3.47
Malaysia	0.80	0.97	0.97	1.11	1.09	1.19	1.28	1.36	1.42	1.44
Other	0.21	0.25	0.32	0.35	0.33	0.37	0.44	0.52	0.60	0.85
Total	11.10	12.13	12.84	13.34	13.31	13.60	13.97	14.42	14.85	14.97
World Total	120.25	123.29	121.75	126.86	127.68	132.69	134.82	136.41	135.63	136.33

¹ Crude oil includes lease condensate.

² Preliminary.

³ Includes petroleum processed from Athabasca Tar Sands.

--=Not applicable.

Note: Sum of components may not equal total due to independent rounding.

Sources: See sources at the end of Chapter 3.

Table B3. World Natural Gas Plant Liquids Production, 1983-1992
(Exa (10¹⁸) Joules)

Region Country	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992 ¹
North America										
Canada ²	0.47	0.52	0.52	0.50	0.56	0.59	0.63	0.65	0.66	0.70
Mexico	0.37	0.36	0.38	0.49	0.47	0.52	0.52	0.60	0.64	0.62
United States	2.30	2.40	2.36	2.27	2.34	2.38	2.28	2.29	2.44	2.50
Total	3.15	3.27	3.26	3.26	3.37	3.49	3.43	3.54	3.74	3.82
Central & South America										
Argentina	0.01	0.02	0.03	0.05	0.05	0.05	0.04	0.04	0.04	0.05
Brazil	0.02	0.02	0.03	0.03	0.04	0.04	0.04	0.03	0.04	0.04
Colombia	(s)	(s)	(s)	(s)	(s)	(s)	0.01	0.01	(s)	0.01
Ecuador	(s)	(s)	(s)	(s)	(s)	(s)	(s)	(s)	(s)	(s)
Peru	(s)	(s)	(s)	(s)	(s)	(s)	(s)	(s)	(s)	(s)
Trinidad and Tobago	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	(s)	(s)
Venezuela	0.09	0.09	0.10	0.16	0.15	0.16	0.17	0.18	0.19	0.18
Other	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.02	0.02	0.03
Total	0.16	0.18	0.20	0.27	0.28	0.29	0.30	0.30	0.31	0.33
Western Europe										
Norway	0.06	0.06	0.07	0.09	0.09	0.13	0.12	0.13	0.16	0.16
United Kingdom	0.19	0.24	0.25	0.26	0.28	0.28	0.24	0.19	0.24	0.28
Other	0.06	0.06	0.06	0.07	0.07	0.08	0.07	0.08	0.07	0.07
Total	0.32	0.36	0.38	0.42	0.44	0.48	0.44	0.40	0.47	0.50
Eastern Europe & Former U.S.S.R.										
Romania	0.03	0.03	0.03	0.03	0.03	0.02	0.02	0.01	0.01	0.01
Russia	--	--	--	--	--	--	--	--	--	0.51
Former U.S.S.R.	0.53	0.54	0.56	0.70	0.79	0.84	0.82	0.83	0.84	--
Other	0.04	0.04	0.04	0.04	0.04	0.04	0.03	0.03	0.02	0.36
Total	0.59	0.61	0.63	0.77	0.86	0.91	0.87	0.87	0.88	0.88
Middle East										
Iran	0.01	0.02	0.02	0.03	0.03	0.03	0.05	0.06	0.08	0.10
Iraq	0.01	0.01	0.02	0.02	0.02	0.03	0.08	0.05	0.00	0.00
Kuwait	0.09	0.11	0.09	0.12	0.15	0.16	0.18	0.10	0.00	0.02
Oman	(s)	(s)	(s)	0.01	0.01	0.01	0.02	0.02	0.01	0.01
Qatar	0.04	0.04	0.04	0.03	0.04	0.04	0.06	0.06	0.07	0.07
Saudi Arabia	0.54	0.58	0.52	0.50	0.57	0.69	0.69	1.02	1.12	1.19
Syria	0.00	0.00	0.00	(s)	(s)	(s)	(s)	(s)	(s)	(s)
United Arab Emirates	0.21	0.23	0.28	0.32	0.25	0.23	0.22	0.24	0.29	0.28
Other	0.01	0.01	(s)	0.01	0.01	0.01	0.01	(s)	(s)	0.01
Total	0.92	1.01	0.98	1.04	1.09	1.21	1.31	1.56	1.59	1.69
Africa										
Algeria	0.11	0.21	0.23	0.23	0.27	0.24	0.25	0.25	0.27	0.28
Angola	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cameroon	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Egypt	0.05	0.05	0.05	0.05	0.05	0.07	0.09	0.08	0.09	0.09
Gabon	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Libya	0.05	0.06	0.04	0.05	0.05	0.05	0.05	0.06	0.07	0.07
Nigeria	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tunisia	0.00	0.00	0.00	0.00	(s)	(s)	(s)	0.01	0.01	0.01
Other	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.21	0.32	0.33	0.33	0.38	0.36	0.40	0.40	0.43	0.45
Far East & Oceania										
Australia	0.09	0.09	0.11	0.10	0.11	0.11	0.11	0.10	0.10	0.11
Brunei	0.04	0.03	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.02
China	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
India	(s)	(s)	(s)	(s)	0.01	0.02	0.02	0.02	0.02	0.02
Indonesia	(s)	(s)	(s)	(s)	(s)	0.01	0.01	0.02	0.02	0.02
Malaysia	0.00	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Other	0.02	0.03	0.04	0.04	0.03	0.04	0.05	0.05	0.06	0.06
Total	0.30	0.28	0.26	0.23	0.24	0.25	0.32	0.33	0.32	0.35
World Total	5.64	6.03	6.04	6.33	6.66	6.98	7.07	7.40	7.74	8.02

¹ Preliminary.

² Includes petroleum processed from Althasca Tar Sands.

--=Not applicable.

(s)=Value less than 5 Peta (10¹⁵) Joules.

Note: Sum of components may not equal total due to independent rounding.

Sources: See sources at the end of Chapter 3.

Table B4. World Dry Natural Gas Production, 1983-1992
(Exa (10¹⁸) Joules)

Region Country	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992 ¹
North America										
Canada	2.66	2.75	3.14	2.92	3.16	3.66	3.87	3.92	4.41	4.81
Mexico	1.12	1.06	0.97	0.94	0.88	0.94	0.94	0.96	0.95	0.94
United States	17.44	18.92	17.84	17.38	17.99	18.48	18.76	19.37	19.29	19.32
Total	21.21	22.73	21.95	21.24	22.03	23.08	23.57	24.26	24.66	25.07
Central & South America										
Argentina	0.44	0.49	0.49	0.54	0.52	0.66	0.71	0.62	0.63	0.60
Colombia	0.12	0.17	0.17	0.17	0.17	0.18	0.18	0.18	0.19	0.18
Trinidad and Tobago	0.14	0.21	0.24	0.17	0.16	0.17	0.18	0.20	0.22	0.21
Venezuela	0.69	0.73	0.74	0.81	0.79	0.84	0.92	1.04	0.99	1.01
Other	0.25	0.28	0.29	0.27	0.28	0.31	0.35	0.31	0.31	0.33
Total	1.64	1.88	1.94	1.96	1.92	2.15	2.33	2.34	2.34	2.33
Western Europe										
France	0.22	0.21	0.18	0.14	0.14	0.11	0.10	0.10	0.12	0.13
Germany	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.63	0.63
Italy	0.50	0.53	0.54	0.61	0.62	0.64	0.65	0.66	0.66	0.68
Netherlands	2.59	2.66	2.74	2.58	2.67	2.45	2.55	2.54	2.87	2.88
Norway	1.04	1.11	1.13	1.15	1.29	1.16	1.30	1.15	1.11	1.12
United Kingdom	1.57	1.60	1.70	1.80	1.89	1.82	1.78	1.97	2.12	2.09
Former Yugoslavia	0.07	0.08	0.10	0.10	0.09	0.13	0.12	0.10	0.10	0.11
Other	0.15	0.17	0.21	0.23	0.26	0.33	0.33	0.32	0.37	0.37
Total	6.14	6.36	6.60	6.60	6.95	6.63	6.82	6.83	7.98	8.02
Eastern Europe & Former U.S.S.R.										
Hungary	0.27	0.28	0.31	0.29	0.26	0.26	0.26	0.19	0.21	0.20
Poland	0.21	0.23	0.24	0.22	0.22	0.22	0.21	0.15	0.16	0.15
Romania	1.66	1.59	1.51	1.59	1.56	1.29	1.34	1.22	1.04	0.93
Russia	--	--	--	--	--	--	--	--	--	22.24
Turkmenistan	--	--	--	--	--	--	--	--	--	2.09
Ukraine	--	--	--	--	--	--	--	--	--	0.73
Former U.S.S.R.	18.55	20.33	22.28	23.74	24.93	26.74	27.64	28.30	28.15	--
Uzbekistan	--	--	--	--	--	--	--	--	--	1.39
Other	0.04	0.04	0.04	0.05	0.05	0.06	0.06	0.03	0.03	0.61
Total	20.73	22.48	24.38	25.89	27.02	28.57	29.50	29.90	29.58	28.33
Middle East										
Bahrain	0.15	0.15	0.18	0.20	0.24	0.18	0.21	0.23	0.26	0.28
Iran	0.35	0.53	0.67	0.60	0.63	0.79	0.87	0.93	1.02	0.98
Kuwait	0.14	0.16	0.15	0.19	0.21	0.27	0.32	0.20	0.02	0.24
Qatar	0.19	0.23	0.21	0.21	0.22	0.25	0.24	0.30	0.23	0.23
Saudi Arabia	0.21	0.68	0.79	0.98	1.05	1.14	1.16	1.19	1.25	1.33
United Arab Emirates	0.30	0.38	0.53	0.59	0.75	0.76	0.90	0.86	1.01	1.09
Other	0.06	0.09	0.09	0.14	0.26	0.34	0.39	0.39	0.32	0.40
Total	1.40	2.22	2.63	2.92	3.35	3.72	4.08	4.11	4.11	4.55
Africa										
Algeria	1.47	1.52	1.52	1.49	1.71	1.77	1.91	2.00	2.16	2.20
Egypt	0.13	0.16	0.19	0.22	0.25	0.27	0.30	0.32	0.35	0.38
Libya	0.15	0.18	0.20	0.22	0.21	0.21	0.23	0.24	0.26	0.27
Nigeria	0.09	0.11	0.12	0.13	0.14	0.15	0.18	0.14	0.19	0.21
Other	0.04	0.05	0.04	0.04	0.04	0.04	0.04	0.04	0.01	0.01
Total	1.88	2.01	2.07	2.10	2.35	2.45	2.67	2.75	2.98	3.08
Far East & Oceania										
Australia	0.43	0.44	0.49	0.53	0.54	0.55	0.62	0.72	0.84	0.92
Bangladesh	0.07	0.10	0.10	0.12	0.13	0.17	0.17	0.17	0.18	0.20
Brunei	0.39	0.36	0.35	0.34	0.36	0.36	0.36	0.37	0.33	0.33
China	0.48	0.48	0.50	0.53	0.55	0.56	0.56	0.56	0.58	0.55
India	0.12	0.12	0.15	0.20	0.25	0.33	0.34	0.44	0.49	0.51
Indonesia	0.86	1.17	1.36	1.30	1.43	1.50	1.57	1.68	1.90	2.11
Japan	0.08	0.10	0.10	0.09	0.09	0.08	0.08	0.08	0.08	0.08
Malaysia	0.16	0.35	0.48	0.58	0.60	0.63	0.66	0.71	0.81	1.00
New Zealand	0.11	0.11	0.14	0.17	0.16	0.20	0.19	0.14	0.20	0.21
Pakistan	0.35	0.36	0.38	0.40	0.43	0.46	0.49	0.43	0.55	0.60
Thailand	0.06	0.08	0.14	0.12	0.15	0.21	0.20	0.23	0.26	0.28
Other	0.17	0.18	0.20	0.20	0.20	0.18	0.21	0.24	0.17	0.18
Total	3.27	3.86	4.39	4.59	4.88	5.23	5.47	5.79	6.39	6.98
World Total	56.27	61.54	63.96	65.29	68.50	71.82	74.45	75.96	78.03	78.36

¹ Preliminary.

--=Not applicable.

Note: Sum of components may not equal total due to independent rounding.

Sources: See sources at the end of Chapter 4.

Table B5. World Coal¹ Production, 1983-1992
(Exa (10¹⁸) Joules)

Region Country	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992 ²
North America										
Canada	1.08	1.41	1.50	1.43	1.52	1.75	1.75	1.69	1.88	1.70
Mexico	0.10	0.11	0.11	0.08	0.09	0.09	0.09	0.09	0.11	0.12
United States	18.20	20.80	20.39	20.58	21.25	21.88	22.52	23.69	22.78	22.81
Total	19.37	22.32	22.00	22.09	22.86	23.72	24.36	25.47	24.77	24.64
Central & South America										
Brazil	0.16	0.17	0.19	0.18	0.18	0.16	0.16	0.11	0.10	0.12
Chile	0.03	0.03	0.04	0.05	0.05	0.06	0.06	0.06	0.08	0.06
Colombia	0.15	0.18	0.23	0.28	0.35	0.40	0.49	0.53	0.64	0.64
Other	0.02	0.02	0.01	0.01	0.02	0.05	0.07	0.07	0.09	0.10
Total	0.36	0.40	0.47	0.52	0.59	0.66	0.78	0.77	0.91	0.92
Western Europe										
Austria	0.04	0.04	0.05	0.04	0.04	0.04	0.04	0.04	0.03	0.02
Belgium	0.16	0.17	0.19	0.15	0.14	0.10	0.07	0.03	0.04	0.02
France	0.53	0.51	0.45	0.44	0.42	0.40	0.40	0.36	0.35	0.32
Germany	5.77	5.82	6.00	5.90	5.64	5.65	5.53	5.14	4.17	3.83
Greece	0.17	0.18	0.20	0.21	0.25	0.26	0.29	0.29	0.33	0.34
Italy	0.02	0.02	0.02	0.02	0.01	0.02	0.02	0.01	0.01	0.01
Norway	0.01	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Spain	0.75	0.75	0.78	0.75	0.71	0.76	0.81	0.82	0.41	0.51
Turkey	0.44	0.52	0.58	0.69	0.70	0.58	0.59	0.71	1.29	1.18
United Kingdom	2.87	1.23	2.35	2.70	2.61	2.64	2.53	2.23	2.53	2.24
Former Yugoslavia	0.71	0.78	0.79	0.81	0.83	0.82	0.87	0.88	0.66	0.66
Other	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	(s)
Total	11.49	10.03	11.43	11.75	11.36	11.28	11.16	10.53	9.84	9.16
Eastern Europe & Former U.S.S.R.										
Albania	0.03	0.03	0.03	0.03	0.03	0.04	0.04	0.03	0.01	(s)
Bulgaria	0.48	0.48	0.46	0.47	0.52	0.51	0.51	0.47	0.22	0.28
Former Czechoslovakia	1.98	2.01	1.98	1.97	1.93	1.93	1.83	1.67	1.47	1.36
Hungary	0.33	0.32	0.31	0.30	0.28	0.27	0.26	0.23	0.18	0.16
Kazakhstan	--	--	--	--	--	--	--	--	--	2.44
Poland	5.29	5.38	5.55	5.76	5.84	5.92	5.54	4.78	3.78	3.75
Romania	0.49	0.61	0.64	0.65	0.61	0.71	0.83	0.52	0.30	0.28
Russia	--	--	--	--	--	--	--	--	--	5.41
Ukraine	--	--	--	--	--	--	--	--	--	2.56
Former U.S.S.R.	12.58	12.46	12.73	13.22	13.47	13.68	13.68	13.92	9.58	--
Other	0.00	0.00	(s)	0.00	(s)	0.00	0.00	(s)	(s)	0.09
Total	21.17	21.29	21.69	22.40	22.70	23.05	22.69	21.62	15.55	16.32
Middle East										
Iran	0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.03	0.04	0.04
Total	0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.03	0.04	0.04
Africa										
Morocco	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.01	0.02	0.02
South Africa	3.63	4.03	4.34	4.39	4.39	4.51	4.39	4.32	5.36	5.23
Zimbabwe (Rhodesia)	0.08	0.06	0.08	0.10	0.12	0.13	0.13	0.14	0.16	0.17
Other	0.05	0.04	0.05	0.03	0.04	0.04	0.04	0.04	0.05	0.05
Total	3.78	4.16	4.48	4.54	4.57	4.70	4.58	4.52	5.59	5.47
Far East & Oceania										
Australia	2.93	2.93	3.63	3.88	4.39	4.16	4.54	4.85	4.36	4.66
China	15.37	16.98	18.76	19.23	19.96	21.08	22.67	22.68	23.18	23.43
India	3.39	3.60	3.70	4.06	3.85	3.85	4.27	4.64	4.42	4.74
Indonesia	0.02	0.03	0.05	0.07	0.07	0.12	0.23	0.29	0.39	0.63
Japan	0.43	0.42	0.41	0.41	0.33	0.29	0.25	0.20	0.22	0.20
Korea, North	1.20	1.23	1.29	1.31	1.39	1.40	1.43	1.44	1.39	1.39
Korea, South	0.40	0.43	0.49	0.53	0.47	0.46	0.43	0.36	0.28	0.23
Mongolia	0.06	0.06	0.07	0.07	0.08	0.08	0.09	0.09	0.09	0.09
New Zealand	0.05	0.06	0.06	0.05	0.06	0.06	0.06	0.06	0.07	0.08
Pakistan	0.04	0.04	0.04	0.04	0.05	0.06	0.06	0.06	0.07	0.07
Thailand	0.02	0.02	0.05	0.05	0.08	0.06	0.17	0.12	0.17	0.18
Vietnam	0.16	0.13	0.13	0.15	0.15	0.15	0.14	0.13	0.14	0.16
Other	0.09	0.09	0.09	0.08	0.07	0.08	0.06	0.05	0.05	0.05
Total	24.14	26.01	28.78	29.92	30.96	31.85	34.40	34.97	34.82	35.92
World Total	80.33	84.24	88.88	91.26	93.08	95.29	97.99	97.92	91.52	92.46

¹ Coal includes anthracite, subanthracite, bituminous, subbituminous, lignite, and brown coal.

² Preliminary.

--=Not applicable.

(s)=Value less than 5 Peta (10¹⁵) Joules.

Note: Sum of components may not equal total due to independent rounding.

Sources: See sources at the end of Chapter 5.

Table B6. World Net Hydroelectric Power Generation,¹ 1983-1992
(Exa (10¹⁸) Joules)

Region Country	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992 ²
North America										
Canada	2.89	3.11	3.30	3.38	3.44	3.33	3.16	3.21	3.34	3.42
Mexico	0.23	0.26	0.28	0.22	0.20	0.23	0.27	0.26	0.27	0.27
United States	3.72	3.57	3.13	3.24	2.78	2.46	2.92	3.09	3.04	2.65
Total	6.84	6.94	6.72	6.83	6.42	6.02	6.34	6.56	6.65	6.34
Central & South America										
Argentina	0.20	0.22	0.22	0.23	0.24	0.17	0.14	0.20	0.18	0.18
Brazil	1.64	1.81	1.94	1.98	2.02	2.16	2.22	2.25	2.37	2.47
Chile	0.10	0.10	0.11	0.12	0.13	0.12	0.10	0.10	0.11	0.11
Colombia	0.20	0.22	0.24	0.27	0.23	0.27	0.29	0.30	0.30	0.31
Peru	0.09	0.09	0.10	0.11	0.12	0.11	0.11	0.11	0.12	0.13
Uruguay	0.08	0.08	0.07	0.08	0.08	0.06	0.04	0.08	0.07	0.06
Venezuela	0.20	0.21	0.24	0.29	0.34	0.38	0.40	0.36	0.37	0.36
Other	0.13	0.16	0.21	0.31	0.38	0.41	0.47	0.51	0.54	0.55
Total	2.64	2.89	3.13	3.41	3.55	3.69	3.79	3.91	4.06	4.17
Western Europe										
Austria	0.33	0.32	0.34	0.34	0.40	0.39	0.39	0.35	0.35	0.39
Finland	0.15	0.14	0.13	0.13	0.15	0.15	0.14	0.12	0.14	0.16
France	0.78	0.74	0.70	0.71	0.79	0.85	0.55	0.62	0.67	0.79
Germany	0.23	0.22	0.21	0.22	0.24	0.25	0.22	0.21	0.20	0.23
Ireland	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Italy	0.48	0.49	0.48	0.48	0.46	0.47	0.41	0.38	0.49	0.50
Norway	1.16	1.17	1.13	1.06	1.13	1.19	1.29	1.32	1.20	1.27
Portugal	0.09	0.11	0.12	0.09	0.10	0.13	0.07	0.10	0.10	0.06
Spain	0.32	0.37	0.36	0.30	0.30	0.39	0.22	0.28	0.31	0.23
Sweden	0.69	0.73	0.77	0.66	0.78	0.76	0.78	0.79	0.69	0.81
Switzerland	0.39	0.34	0.35	0.36	0.38	0.40	0.33	0.34	0.36	0.37
Turkey	0.12	0.15	0.13	0.13	0.20	0.31	0.19	0.25	0.24	0.29
United Kingdom	0.04	0.04	0.04	0.04	0.04	0.08	0.07	0.08	0.07	0.08
Former Yugoslavia	0.24	0.28	0.27	0.30	0.29	0.28	0.26	0.22	0.21	0.19
Other	0.08	0.09	0.09	0.10	0.10	0.10	0.09	0.09	0.10	0.09
Total	5.11	5.19	5.13	4.95	5.37	5.77	5.02	5.16	5.15	5.46
Eastern Europe & Former U.S.S.R.										
Former Czechoslovakia	0.04	0.04	0.05	0.04	0.05	0.05	0.05	0.04	0.03	0.03
Poland	0.04	0.04	0.04	0.04	0.04	0.05	0.04	0.04	0.04	0.04
Romania	0.11	0.12	0.13	0.12	0.12	0.15	0.14	0.12	0.15	0.15
Russia	--	--	--	--	--	--	--	--	--	1.87
Former U.S.S.R.	1.98	2.23	2.25	2.34	2.39	2.51	2.42	2.53	2.55	--
Other	0.07	0.07	0.06	0.06	0.07	0.07	0.07	0.05	0.06	0.64
Total	2.24	2.50	2.53	2.61	2.67	2.82	2.72	2.78	2.83	2.72
Middle East										
Iran	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
Syria	0.02	0.02	0.02	0.02	0.02	0.05	0.05	0.06	0.07	0.07
Other	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Total	0.10	0.10	0.10	0.10	0.11	0.14	0.14	0.15	0.15	0.15
Africa										
Egypt	0.11	0.11	0.09	0.09	0.09	0.09	0.09	0.11	0.11	0.11
Zaire	0.05	0.05	0.05	0.06	0.06	0.06	0.07	0.07	0.07	0.07
Zambia	0.11	0.11	0.11	0.11	0.09	0.09	0.07	0.08	0.08	0.06
Other	0.28	0.23	0.25	0.26	0.27	0.28	0.29	0.31	0.32	0.32
Total	0.55	0.49	0.50	0.51	0.51	0.51	0.52	0.56	0.58	0.56
Far East & Oceania										
Australia	0.14	0.13	0.15	0.16	0.15	0.15	0.16	0.16	0.18	0.17
China	0.95	0.95	1.01	1.04	1.10	1.19	1.28	1.38	1.36	1.42
India	0.55	0.59	0.55	0.58	0.52	0.63	0.67	0.72	0.73	0.74
Japan	0.96	0.83	0.96	0.94	0.88	1.05	1.06	1.04	1.15	1.06
Korea, North	0.28	0.29	0.30	0.31	0.32	0.34	0.34	0.34	0.34	0.35
Korea, South	0.03	0.03	0.04	0.04	0.06	0.04	0.05	0.07	0.05	0.05
New Zealand	0.21	0.22	0.21	0.24	0.24	0.25	0.24	0.25	0.25	0.25
Pakistan	0.12	0.14	0.13	0.15	0.17	0.18	0.18	0.18	0.20	0.21
Philippines	0.03	0.06	0.06	0.07	0.06	0.07	0.07	0.07	0.06	0.05
Other	0.25	0.29	0.32	0.36	0.36	0.38	0.43	0.46	0.42	0.45
Total	3.52	3.53	3.75	3.90	3.84	4.28	4.51	4.67	4.74	4.76
World Total	21.00	21.64	21.88	22.31	22.46	23.21	23.04	23.78	24.15	24.16

¹ Generation data consist of both utility and nonutility sources. Data are reported as net generation as opposed to gross. Net generation excludes the energy consumed by the generating unit.

² Preliminary.

--=Not applicable.

Note: Sum of components may not equal total due to independent rounding.

Sources: See sources at the end of Chapter 6.

Table B7. World Net Nuclear Electric Power Generation,¹ 1983-1992
(Exa (10¹⁸) Joules)

Region Country	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992 ²
North America										
Canada	0.57	0.60	0.70	0.82	0.89	0.95	0.92	0.84	0.98	0.93
Mexico	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.04	0.04
United States	3.38	3.75	4.38	4.72	5.18	5.97	5.99	6.50	6.94	7.01
Total	3.94	4.35	5.07	5.54	6.06	6.93	6.91	7.36	7.96	7.98
Central & South America										
Argentina	0.04	0.05	0.07	0.07	0.08	0.06	0.06	0.09	0.10	0.08
Brazil	(s)	0.03	0.03	(s)	(s)	(s)	0.02	0.02	0.01	0.02
Total	0.04	0.08	0.10	0.07	0.09	0.06	0.08	0.11	0.11	0.10
Western Europe										
Belgium	0.25	0.29	0.36	0.41	0.44	0.45	0.43	0.44	0.44	0.45
Finland	0.18	0.19	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
France	1.48	1.98	2.26	2.57	2.67	2.79	3.10	3.19	3.46	3.53
Germany	0.87	1.16	1.53	1.44	1.56	1.72	1.67	1.60	1.50	1.62
Italy	0.07	0.08	0.08	0.11	(s)	0.00	0.00	0.00	0.00	0.00
Netherlands	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.03	0.04
Spain	0.12	0.26	0.32	0.43	0.47	0.55	0.61	0.59	0.57	0.57
Sweden	0.42	0.52	0.59	0.71	0.68	0.69	0.66	0.69	0.78	0.65
Switzerland	0.16	0.18	0.22	0.23	0.23	0.24	0.24	0.25	0.24	0.25
United Kingdom	0.60	0.61	0.67	0.65	0.60	0.70	0.80	0.74	0.83	0.97
Former Yugoslavia	0.04	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.04	0.04
Total	4.23	5.37	6.33	6.82	6.94	7.43	7.80	7.79	8.10	8.31
Eastern Europe & Former U.S.S.R.										
Bulgaria	0.13	0.14	0.14	0.13	0.14	0.18	0.17	0.16	0.14	0.13
Former Czechoslovakia	0.08	0.09	0.15	0.23	0.27	0.28	0.30	0.30	0.29	0.30
Hungary	0.03	0.04	0.07	0.08	0.12	0.15	0.16	0.16	0.14	0.14
Lithuania	--	--	--	--	--	--	--	--	--	0.18
Russia	--	--	--	--	--	--	--	--	--	1.39
Ukraine	--	--	--	--	--	--	--	--	--	0.81
Former U.S.S.R.	1.32	1.71	2.06	1.84	2.14	2.46	2.57	2.43	2.44	--
Total	1.56	1.99	2.43	2.29	2.67	3.07	3.19	3.05	3.01	2.94
Middle East³	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Africa										
South Africa	0.00	0.04	0.06	0.10	0.07	0.11	0.12	0.09	0.10	0.10
Total	0.00	0.04	0.06	0.10	0.07	0.11	0.12	0.09	0.10	0.10
Far East & Oceania										
India	0.04	0.05	0.06	0.06	0.06	0.06	0.05	0.07	0.06	0.08
Japan	1.19	1.43	1.68	1.78	2.12	1.95	1.96	2.05	2.18	2.24
Korea, South	0.09	0.12	0.17	0.29	0.41	0.42	0.49	0.55	0.57	0.57
Pakistan	(s)	(s)	(s)	(s)	(s)	(s)	(s)	(s)	(s)	(s)
Taiwan	0.20	0.26	0.30	0.28	0.34	0.32	0.29	0.34	0.35	0.33
Total	1.52	1.86	2.22	2.42	2.93	2.75	2.79	3.01	3.17	3.23
World Total	11.30	13.70	16.21	17.23	18.77	20.35	20.90	21.42	22.45	22.66

¹ Generation data consist of both utility and nonutility sources. Data are reported as net generation as opposed to gross. Net generation excludes the energy consumed by the generating unit.

² Preliminary.

³ No production is reported for the Middle East.

--=Not applicable.

(s)=Value less than 5 Peta (10¹⁵) Joules.

Note: Sum of components may not equal total due to independent rounding.

Sources: See sources at the end of Chapter 6.

Table B8. Production of Primary Energy Sources by Selected Country Groups, 1983-1992
(Exa (10¹⁸) Joules)

Type of Energy Country Groups	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992 ¹
Petroleum²										
World Total	125.88	129.32	127.79	133.19	134.34	139.68	141.89	143.81	143.37	144.35
OECD ³	33.95	35.58	36.37	35.86	35.56	35.40	33.68	33.67	34.42	34.71
Non OECD	91.93	93.73	91.42	97.33	98.77	104.27	108.21	110.14	108.95	109.64
Other Groups:										
OECD Europe	7.70	8.35	8.75	9.09	9.21	9.20	9.01	9.37	9.89	10.47
OPEC ⁴	41.25	41.35	38.34	43.19	43.76	48.08	52.19	55.17	55.50	58.91
EEC ⁵	6.15	6.62	6.83	6.96	6.74	6.39	5.34	5.33	5.37	5.46
IEA ⁶	33.95	35.58	36.37	35.86	35.56	35.40	33.68	33.67	34.42	34.71
Natural Gas										
World total	56.27	61.54	63.96	65.29	68.50	71.82	74.45	75.96	78.03	78.36
OECD ³	26.78	28.60	28.21	27.59	28.80	29.48	30.23	30.97	32.70	33.26
Non OECD	29.49	32.94	35.75	37.70	39.70	42.34	44.22	44.99	45.33	45.10
Other Groups:										
OECD Europe	6.07	6.28	6.50	6.50	6.86	6.51	6.70	6.73	7.88	7.91
OPEC ⁴	4.48	5.72	6.33	6.58	7.28	7.90	8.56	8.77	9.09	9.73
EEC ⁵	4.98	5.11	5.32	5.29	5.51	5.24	5.34	5.53	6.71	6.72
IEA ⁶	26.78	28.60	28.21	27.59	28.80	29.48	30.23	29.36	31.00	31.52
Coal										
World Total	80.33	84.24	88.88	91.26	93.08	95.29	97.99	97.92	91.52	92.46
OECD ³	33.45	34.87	36.64	37.29	38.08	38.59	39.40	40.16	38.48	37.95
Non OECD	46.88	49.36	52.24	53.96	55.00	56.70	58.59	57.77	53.04	54.51
Other Groups:										
OECD Europe	10.77	9.25	10.64	10.93	10.54	10.46	10.29	9.65	9.18	8.50
OPEC ⁴	0.04	0.05	0.08	0.10	0.12	0.18	0.32	0.38	0.51	0.77
EEC ⁵	10.27	8.68	10.00	10.18	9.78	9.83	9.66	8.89	7.85	7.28
IEA ⁶	33.45	34.87	36.64	37.29	38.08	38.59	39.40	40.16	38.48	37.95
Hydroelectric Power										
World Total	21.00	21.64	21.88	22.31	22.46	23.21	23.04	23.78	24.15	24.16
OECD ³	12.79	12.78	12.63	12.60	12.57	12.74	12.31	12.69	12.90	12.82
Non OECD	8.21	8.86	9.25	9.70	9.89	10.48	10.73	11.09	11.26	11.34
Other Groups:										
OECD Europe	4.87	4.91	4.87	4.65	5.08	5.49	4.76	4.94	4.94	5.27
OPEC ⁴	0.36	0.39	0.42	0.48	0.54	0.58	0.61	0.57	0.58	0.56
EEC ⁵	1.99	2.03	1.97	1.92	2.00	2.23	1.59	1.73	1.90	1.93
IEA ⁶	12.75	12.74	12.59	12.56	12.53	12.69	12.26	12.65	12.85	12.78
Nuclear Electric Power										
World Total	11.30	13.70	16.21	17.23	18.77	20.35	20.90	21.42	22.45	22.66
OECD ³	9.31	11.10	13.04	14.09	15.07	16.26	16.62	17.12	18.15	18.45
Non OECD	1.99	2.60	3.17	3.14	3.69	4.09	4.28	4.29	4.30	4.21
Other Groups:										
OECD Europe	4.18	5.32	6.28	6.77	6.89	7.38	7.75	7.73	8.05	8.27
OPEC ⁴	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EEC ⁵	3.43	4.43	5.27	5.64	5.78	6.25	6.65	6.60	6.83	7.18
IEA ⁶	9.31	11.10	13.04	14.09	15.07	16.26	16.62	17.12	18.15	18.45
Total Energy										
World Total	294.78	310.44	318.71	329.28	337.14	350.36	358.27	362.89	359.52	361.99
OECD ³	116.29	122.95	126.88	127.44	130.08	132.47	132.24	134.61	136.65	137.19
Non OECD	178.49	187.50	191.83	201.84	207.06	217.89	226.03	228.28	222.88	224.80
Other Groups:										
OECD Europe	33.59	34.11	37.04	37.95	38.58	39.03	38.51	38.42	39.93	40.42
OPEC ⁴	46.71	48.16	45.86	51.08	52.15	57.50	62.38	65.61	66.43	70.78
EEC ⁵	26.81	26.87	29.40	29.99	29.81	29.94	28.57	28.07	28.66	28.57
IEA ⁶	116.25	122.90	126.84	127.40	130.04	132.42	132.19	134.57	136.60	137.15

¹ Preliminary.

² Data include the production of crude oil, and natural gas liquids.

³ The Organization for Economic Cooperation and Development (OECD) includes Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Japan, Luxembourg, the Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, the United Kingdom, the United States, and the U.S. Territories. Refer to Appendix G for a listing of OECD Europe.

⁴ The Organization of Petroleum Exporting Countries (OPEC) includes Algeria, Gabon, Indonesia, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, the United Arab Emirates, and Venezuela.

⁵ European Economic Community (EEC) includes Belgium, Denmark, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, and the United Kingdom.

⁶ International Energy Agency (IEA) includes Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Japan, Luxembourg, the Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, the United Kingdom, the United States, and the U.S. Territories.

Note: Sum of components may not equal total due to independent rounding. The country groups, OECD, EEC, and IEA, include the unified Germany.

Sources: See sources at the end of Chapters 3, 4, 5, 6.

For consistency, data reflect 1992 membership (as of December 31, 1992) for all years

Table B9. World Primary¹ Energy Consumption, 1983-1992
(Exa (10¹⁸) Joules)

Region Country	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992 ²
North America										
Canada	9.15	9.67	10.10	10.25	10.31	11.10	11.50	11.30	11.39	11.58
Mexico	4.27	4.62	4.51	4.51	4.49	4.69	4.89	5.05	5.25	5.40
United States	74.28	78.05	77.84	78.16	80.86	84.34	85.54	85.52	85.47	86.71
Total	87.72	92.36	92.46	92.94	95.68	100.15	101.95	101.89	102.12	103.70
Central & South America										
Argentina	1.74	1.88	1.76	1.94	2.00	2.04	1.98	1.91	1.90	1.87
Brazil	4.22	4.60	4.89	5.34	5.41	5.68	5.87	5.88	6.10	6.41
Venezuela	1.74	1.77	1.80	1.97	2.00	2.05	2.16	2.25	2.23	2.30
Other	4.03	4.31	4.36	4.34	4.41	4.51	4.78	4.86	5.01	4.87
Total	11.72	12.57	12.81	13.59	13.83	14.29	14.79	14.91	15.25	15.44
Western Europe										
France	8.28	8.51	8.72	8.87	8.95	8.92	9.24	9.34	10.10	10.24
Germany	15.05	15.42	16.37	16.53	16.24	16.91	15.26	15.05	14.96	14.89
Italy	6.15	6.24	6.50	6.59	6.87	6.86	7.17	7.14	7.38	7.38
Netherlands	2.99	3.10	3.01	3.23	3.38	3.40	3.40	3.48	3.83	3.71
Norway	1.45	1.52	1.60	1.54	1.62	1.61	1.65	1.68	1.69	1.76
Spain	3.71	3.70	3.66	3.74	3.72	4.20	4.40	4.36	4.24	4.87
Sweden	2.02	2.09	2.24	2.25	2.32	2.31	2.28	2.22	2.24	2.27
United Kingdom	8.80	8.33	9.11	9.47	9.30	9.72	9.84	9.48	10.42	10.21
Former Yugoslavia	1.88	2.14	2.19	2.20	2.25	2.25	2.28	2.20	1.82	1.49
Other	9.07	9.35	9.90	10.18	10.52	10.61	10.85	11.42	12.31	12.51
Total	59.41	60.41	63.31	64.58	65.17	66.77	66.37	66.38	68.98	69.33
Eastern Europe & Former U.S.S.R.										
Former Czechoslovakia	3.23	3.23	3.29	3.38	3.46	3.43	3.39	3.30	2.91	2.67
Kazakhstan	..	..	..	..	..	..	..	..	..	3.14
Poland	5.41	5.30	5.64	6.04	6.49	6.63	6.19	5.26	4.81	4.19
Romania	3.13	3.34	3.29	3.40	3.43	3.33	3.65	3.32	2.50	2.29
Russia	..	..	..	..	..	..	..	..	..	34.52
Ukraine	..	..	..	..	..	..	..	..	..	9.24
Former U.S.S.R.	52.09	54.23	56.45	57.96	59.32	61.25	61.35	61.24	56.95	..
Other	3.31	3.33	3.47	3.39	3.33	3.39	3.22	3.03	2.35	9.16
Total	67.18	69.42	72.13	74.18	76.03	78.02	77.80	76.15	69.53	65.22
Middle East										
Iran	2.20	2.34	2.51	2.55	2.67	2.84	3.13	3.28	3.41	3.57
Iraq	0.58	0.57	0.60	0.65	0.67	0.81	0.87	0.97	0.63	0.86
Kuwait	0.41	0.43	0.42	0.48	0.57	0.65	0.73	0.47	0.12	0.46
Oman	0.17	0.11	0.13	0.14	0.15	0.15	0.18	0.19	0.22	0.24
Qatar	0.24	0.28	0.26	0.28	0.29	0.31	0.30	0.38	0.31	0.31
Saudi Arabia	2.00	2.20	2.86	3.10	3.16	3.29	3.40	3.50	3.41	3.71
United Arab Emirates	0.54	0.61	0.84	0.95	1.13	1.18	1.33	1.30	1.64	1.71
Other	1.30	1.36	1.43	1.46	1.60	1.61	1.71	1.86	1.93	2.06
Total	7.44	7.91	9.05	9.62	10.23	10.85	11.65	11.93	11.68	12.92
Africa										
Algeria	1.05	1.14	1.05	1.05	1.12	1.13	1.15	1.20	1.34	1.33
Egypt	1.10	1.21	1.28	1.31	1.36	1.37	1.41	1.50	1.52	1.63
Libya	0.40	0.41	0.44	0.47	0.48	0.49	0.51	0.54	0.58	0.60
Nigeria	0.55	0.59	0.62	0.60	0.64	0.68	0.75	0.76	0.81	0.88
South Africa	3.65	3.92	4.00	4.08	4.15	4.30	4.17	4.14	4.87	4.71
Other	1.78	1.68	1.78	1.85	1.85	1.96	2.09	2.16	2.19	2.21
Total	8.54	8.93	9.17	9.36	9.59	9.93	10.08	10.29	11.30	11.37
Far East & Oceania										
Australia	3.16	2.93	3.07	3.30	3.49	3.62	3.89	3.98	3.78	4.14
China	20.09	21.50	23.31	24.62	26.16	27.25	29.56	29.41	30.49	30.83
India	5.39	5.72	6.48	7.06	6.94	7.37	7.98	8.54	8.50	8.98
Indonesia	1.45	1.52	1.68	1.67	1.85	1.88	2.15	2.32	2.44	2.71
Japan	15.36	16.52	16.73	16.78	17.35	18.11	18.47	19.24	19.71	20.05
Korea, North	1.74	1.75	1.82	1.83	1.92	1.97	2.00	2.01	1.97	1.91
Malaysia	0.54	0.65	0.74	0.79	0.79	0.84	0.90	1.03	1.14	1.24
Other	7.75	8.40	8.71	9.35	10.38	11.33	12.11	12.83	13.66	15.00
Total	55.49	59.00	62.55	65.41	68.89	72.37	77.06	79.36	81.69	84.86
World Total	297.50	310.60	321.48	329.68	339.41	352.38	359.71	360.90	360.55	362.83

¹ Includes petroleum, dry natural gas, coal, net hydroelectric power, and net nuclear power.

² Preliminary.

---=Not applicable.

Note: Sum of components may not equal total due to independent rounding.

Sources: See sources at the end of Chapters 3, 4, 5, 6.

Table B10. World Petroleum Consumption, 1983-1992
(Exa (10¹⁸) Joules)

Region Country	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992 ¹
North America										
Canada	3.13	3.17	3.21	3.20	3.28	3.59	3.68	3.57	3.41	3.46
Mexico	2.85	3.24	3.14	3.29	3.37	3.45	3.59	3.72	3.82	3.93
United States	31.71	32.76	32.62	33.97	34.67	36.11	36.09	35.40	34.65	35.36
Other	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0.01
Total	37.69	39.18	38.99	40.46	41.34	43.17	43.38	42.71	41.90	42.76
Central & South America										
Argentina	1.03	1.02	0.89	1.00	1.05	1.03	0.93	0.89	0.89	0.90
Bahama Islands	0.04	0.04	0.04	0.03	0.04	0.04	0.04	0.04	0.04	0.03
Bolivia	0.05	0.05	0.05	0.04	0.04	0.05	0.05	0.05	0.05	0.05
Brazil	2.11	2.24	2.33	2.66	2.72	2.79	2.82	2.86	2.87	3.01
Chile	0.20	0.20	0.20	0.20	0.22	0.23	0.27	0.29	0.31	0.31
Colombia	0.36	0.37	0.36	0.36	0.39	0.42	0.44	0.41	0.43	0.45
Cuba	0.47	0.49	0.49	0.51	0.50	0.51	0.51	0.50	0.47	0.37
Dominican Republic	0.10	0.09	0.09	0.10	0.12	0.13	0.13	0.14	0.14	0.14
Ecuador	0.18	0.18	0.19	0.20	0.19	0.20	0.19	0.21	0.22	0.22
Guatemala	0.06	0.05	0.06	0.05	0.05	0.05	0.06	0.06	0.06	0.06
Jamaica	0.10	0.08	0.07	0.07	0.08	0.09	0.10	0.11	0.11	0.12
Netherlands Antilles	0.21	0.20	0.16	0.16	0.16	0.15	0.16	0.16	0.15	0.15
Panama Republic	0.08	0.08	0.05	0.06	0.07	0.06	0.05	0.06	0.07	0.07
Peru	0.27	0.28	0.28	0.30	0.30	0.31	0.27	0.27	0.25	0.25
Puerto Rico	0.33	0.37	0.32	0.34	0.36	0.32	0.32	0.31	0.39	0.33
Trinidad and Tobago	0.05	0.05	0.05	0.05	0.04	0.04	0.04	0.04	0.05	0.05
Uruguay	0.06	0.06	0.05	0.05	0.06	0.07	0.07	0.07	0.07	0.07
Venezuela	0.84	0.82	0.81	0.86	0.86	0.84	0.82	0.84	0.85	0.90
U.S. Virgin Islands	0.12	0.14	0.16	0.11	0.12	0.09	0.13	0.12	0.12	0.11
Other	0.25	0.24	0.26	0.26	0.28	0.30	0.33	0.34	0.34	0.34
Total	6.93	7.04	6.92	7.41	7.63	7.72	7.73	7.76	7.85	7.92
Western Europe										
Austria	0.46	0.45	0.44	0.47	0.48	0.47	0.47	0.48	0.52	0.50
Belgium	0.91	0.88	0.89	1.01	1.01	1.05	1.03	1.03	1.11	1.14
Denmark	0.49	0.48	0.50	0.49	0.48	0.46	0.43	0.42	0.43	0.43
Finland	0.47	0.47	0.47	0.46	0.50	0.51	0.50	0.50	0.50	0.49
France	4.00	3.81	3.84	3.83	3.87	3.89	4.02	3.93	4.20	4.18
Germany	5.85	5.85	5.91	6.27	6.04	6.00	5.61	5.79	6.15	6.18
Greece	0.52	0.53	0.55	0.55	0.60	0.64	0.65	0.70	0.71	0.74
Ireland	0.18	0.17	0.18	0.21	0.18	0.17	0.18	0.20	0.22	0.23
Italy	3.93	3.69	3.82	3.88	4.14	4.10	4.29	4.15	4.12	4.29
Luxembourg	0.04	0.05	0.05	0.05	0.06	0.06	0.07	0.07	0.08	0.09
Netherlands	1.33	1.31	1.33	1.48	1.48	1.57	1.55	1.60	1.65	1.67
Norway	0.35	0.36	0.40	0.39	0.44	0.39	0.40	0.40	0.39	0.38
Portugal	0.41	0.40	0.40	0.44	0.46	0.45	0.55	0.55	0.56	0.61
Spain	2.24	2.01	1.85	1.90	1.95	2.14	2.24	2.20	2.33	2.41
Sweden	0.81	0.76	0.80	0.81	0.82	0.78	0.73	0.69	0.70	0.74
Switzerland	0.56	0.55	0.57	0.59	0.57	0.57	0.56	0.59	0.61	0.62
Turkey	0.76	0.76	0.79	0.85	0.99	0.98	0.96	1.04	1.02	1.07
United Kingdom	3.32	4.08	3.56	3.56	3.44	3.65	3.75	3.79	3.87	3.87
Former Yugoslavia	0.60	0.72	0.74	0.68	0.70	0.71	0.70	0.71	0.56	0.34
Other	0.04	0.05	0.05	0.06	0.07	0.07	0.06	0.07	0.07	0.07
Total	27.26	27.37	27.15	28.00	28.25	28.66	28.76	28.93	29.80	30.05
Eastern Europe & Former U.S.S.R.										
Albania	0.10	0.10	0.09	0.09	0.08	0.07	0.06	0.05	0.04	0.03
Armenia	--	--	--	--	--	--	--	--	--	0.08
Azerbaijan	--	--	--	--	--	--	--	--	--	0.35
Belarus	--	--	--	--	--	--	--	--	--	1.04
Bulgaria	0.67	0.67	0.67	0.65	0.63	0.63	0.53	0.44	0.27	0.16
Former Czechoslovakia	0.73	0.71	0.69	0.67	0.73	0.71	0.71	0.63	0.52	0.46
Estonia	--	--	--	--	--	--	--	--	--	0.07
Georgia	--	--	--	--	--	--	--	--	--	0.12
Hungary	0.49	0.50	0.51	0.47	0.45	0.42	0.40	0.39	0.35	0.31
Kazakhstan	--	--	--	--	--	--	--	--	--	0.78
Kyrgyzstan	--	--	--	--	--	--	--	--	--	0.08
Latvia	--	--	--	--	--	--	--	--	--	0.10
Lithuania	--	--	--	--	--	--	--	--	--	0.19
Moldova	--	--	--	--	--	--	--	--	--	0.15
Poland	0.71	0.73	0.73	0.73	0.75	0.77	0.76	0.61	0.60	0.50
Romania	0.72	0.69	0.73	0.73	0.77	0.75	0.78	0.87	0.63	0.63
Russia	--	--	--	--	--	--	--	--	--	9.46
Tajikistan	--	--	--	--	--	--	--	--	--	0.05
Turkmenistan	--	--	--	--	--	--	--	--	--	0.08
Ukraine	--	--	--	--	--	--	--	--	--	1.76
Former U.S.S.R.	19.72	19.69	19.70	19.85	19.86	19.56	19.25	18.45	18.36	--
Uzbekistan	--	--	--	--	--	--	--	--	--	0.42
Total	23.15	23.09	23.12	23.20	23.26	22.92	22.49	21.44	20.77	16.81

See footnotes at the end of table.

Table B10. World Petroleum Consumption, 1983-1992 (Continued)
(Exa (10¹⁸) Joules)

Region Country	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992 ¹
Middle East										
Bahrain	0.03	0.03	0.04	0.03	0.04	0.04	0.05	0.05	0.06	0.06
Cyprus	0.05	0.05	0.05	0.05	0.05	0.06	0.07	0.07	0.07	0.07
Iran	1.76	1.71	1.75	1.86	1.93	1.95	2.14	2.23	2.38	2.48
Iraq	0.55	0.54	0.57	0.62	0.63	0.70	0.76	0.87	0.59	0.80
Israel	0.34	0.32	0.29	0.30	0.32	0.35	0.37	0.37	0.39	0.40
Jordan	0.12	0.12	0.13	0.14	0.15	0.14	0.14	0.15	0.14	0.14
Kuwait	0.27	0.27	0.27	0.26	0.25	0.27	0.28	0.19	0.10	0.22
Lebanon	0.10	0.09	0.11	0.10	0.10	0.10	0.07	0.07	0.12	0.12
Saudi Arabia	1.78	1.92	2.07	2.12	2.12	2.15	2.23	2.31	2.16	2.38
Syria	0.31	0.34	0.36	0.36	0.40	0.43	0.44	0.46	0.39	0.39
United Arab Emirates	0.34	0.35	0.42	0.48	0.49	0.55	0.56	0.56	0.77	0.77
Yemen	0.11	0.14	0.15	0.15	0.15	0.14	0.16	0.17	0.17	0.17
Other	0.09	0.11	0.11	0.13	0.13	0.11	0.14	0.15	0.17	0.17
Total	5.85	5.99	6.32	6.59	6.75	6.99	7.41	7.65	7.51	8.18
Africa										
Algeria	0.28	0.32	0.34	0.33	0.34	0.35	0.38	0.40	0.43	0.43
Angola	0.05	0.04	0.06	0.06	0.05	0.06	0.06	0.06	0.06	0.06
Egypt	0.84	0.92	0.97	0.97	0.99	0.98	0.99	1.05	1.02	1.11
Ivory Coast	0.07	0.06	0.07	0.07	0.08	0.08	0.09	0.08	0.09	0.09
Kenya	0.08	0.08	0.08	0.09	0.08	0.09	0.09	0.09	0.08	0.07
Libya	0.28	0.27	0.29	0.28	0.30	0.32	0.32	0.34	0.37	0.38
Morocco	0.20	0.19	0.20	0.21	0.20	0.21	0.24	0.25	0.25	0.25
Nigeria	0.44	0.45	0.48	0.45	0.47	0.51	0.54	0.59	0.60	0.65
South Africa	0.74	0.79	0.77	0.76	0.76	0.76	0.77	0.83	0.88	0.88
Sudan	0.05	0.05	0.05	0.06	0.06	0.07	0.06	0.06	0.08	0.13
Tunisia	0.13	0.13	0.12	0.14	0.11	0.13	0.14	0.14	0.16	0.16
Zaire	0.05	0.04	0.04	0.05	0.04	0.05	0.05	0.04	0.05	0.05
Other	0.53	0.54	0.55	0.55	0.56	0.58	0.64	0.68	0.65	0.65
Total	3.74	3.89	4.01	4.01	4.04	4.19	4.37	4.61	4.71	4.91
Far East & Oceania										
Australia	1.27	1.31	1.33	1.32	1.36	1.38	1.44	1.50	1.50	1.51
China	3.90	3.96	4.27	4.51	4.76	5.10	5.31	5.12	5.56	5.86
Guam	0.06	0.02	0.01	0.02	0.01	0.01	0.01	0.03	0.03	0.03
Hong Kong	0.27	0.26	0.25	0.26	0.26	0.27	0.28	0.28	0.30	0.32
India	1.72	1.84	1.97	2.10	2.18	2.41	2.53	2.57	2.62	2.75
Indonesia	1.04	1.04	1.02	1.04	1.09	1.16	1.28	1.44	1.53	1.70
Japan	9.47	9.85	9.39	9.50	9.57	10.22	10.70	11.01	11.32	11.68
Korea, North	0.12	0.13	0.14	0.15	0.15	0.14	0.14	0.16	0.17	0.17
Korea, South	1.28	1.33	1.28	1.35	1.42	1.62	1.87	2.27	2.67	3.34
Malaysia	0.43	0.43	0.43	0.43	0.43	0.45	0.48	0.58	0.62	0.64
Myanmar (Burma)	0.06	0.07	0.06	0.06	0.06	0.07	0.07	0.08	0.07	0.07
New Zealand	0.17	0.18	0.16	0.18	0.19	0.20	0.22	0.23	0.22	0.23
Pakistan	0.30	0.31	0.36	0.37	0.40	0.44	0.46	0.49	0.50	0.55
Philippines	0.45	0.38	0.34	0.36	0.42	0.44	0.51	0.53	0.53	0.53
Singapore	0.51	0.54	0.53	0.60	0.67	0.71	0.77	0.84	0.90	0.93
Sri Lanka	0.08	0.09	0.07	0.07	0.08	0.08	0.07	0.08	0.08	0.08
Taiwan	0.76	0.86	0.84	0.90	0.93	1.08	1.17	1.21	1.21	1.29
Thailand	0.47	0.51	0.50	0.51	0.56	0.62	0.76	0.89	0.96	1.05
Vietnam	0.06	0.06	0.06	0.06	0.08	0.09	0.11	0.12	0.12	0.14
Other	0.36	0.40	0.40	0.37	0.31	0.31	0.32	0.32	0.33	0.33
Total	22.79	23.57	23.42	24.14	24.94	26.80	28.51	29.75	31.22	33.19
World Total	127.40	130.14	129.92	133.82	136.22	140.44	142.64	142.85	143.76	143.82

¹ Preliminary.

--=Not applicable.

Note: Sum of components may not equal total due to independent rounding.

Sources: See sources at the end of Chapter 3.

Table B11. World Dry Natural Gas Consumption, 1983-1992
(Exa (10¹⁸) Joules)

Region Country	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992 ¹
North America										
Canada	1.90	1.96	2.16	2.15	2.12	2.31	2.50	2.51	2.63	2.75
Mexico	1.10	1.01	0.97	0.94	0.88	0.94	0.96	0.96	1.01	1.03
United States	18.31	19.53	18.82	17.63	18.72	19.57	20.45	20.36	20.79	21.46
Total	21.31	22.49	21.95	20.71	21.72	22.82	23.91	23.83	24.43	25.24
Central & South America										
Argentina	0.44	0.56	0.57	0.61	0.59	0.74	0.79	0.70	0.71	0.67
Colombia	0.12	0.17	0.17	0.17	0.17	0.18	0.18	0.18	0.19	0.18
Trinidad and Tobago	0.11	0.21	0.24	0.17	0.16	0.17	0.18	0.20	0.22	0.25
Venezuela	0.69	0.73	0.74	0.81	0.79	0.84	0.92	1.04	0.99	1.01
Other	0.16	0.20	0.21	0.20	0.09	0.22	0.27	0.23	0.23	0.24
Total	1.52	1.88	1.94	1.96	1.81	2.14	2.33	2.34	2.34	2.36
Western Europe										
Austria	0.13	0.19	0.19	0.19	0.18	0.19	0.21	0.25	0.26	0.25
Belgium and Luxembourg	0.38	0.37	0.37	0.34	0.36	0.35	0.40	0.38	0.41	0.42
France	1.09	1.07	1.13	1.10	1.16	1.07	1.14	1.09	1.36	1.36
Germany	2.20	2.40	2.55	2.42	2.57	3.09	2.72	2.13	2.63	2.52
Italy	1.05	1.24	1.30	1.34	1.48	1.56	1.70	1.84	1.90	1.84
Netherlands	1.39	1.42	1.28	1.41	1.53	1.43	1.46	1.39	1.64	1.60
Spain	0.09	0.08	0.11	0.11	0.13	0.16	0.21	0.22	0.26	0.27
United Kingdom	2.02	2.17	2.28	2.34	2.41	2.29	2.23	2.27	2.35	2.31
Former Yugoslavia	0.16	0.21	0.22	0.24	0.27	0.29	0.30	0.26	0.28	0.22
Other	0.22	0.24	0.28	0.29	0.30	0.39	0.52	0.62	0.70	0.72
Total	8.74	9.39	9.71	9.78	10.39	10.82	10.87	10.44	11.78	11.51
Eastern Europe & Former U.S.S.R.										
Albania	0.01	0.01	0.01	0.02	0.02	0.03	0.03	0.01	0.01	0.01
Bulgaria	0.18	0.18	0.22	0.22	0.22	0.24	0.22	0.26	0.22	0.22
Former Czechoslovakia	0.34	0.36	0.40	0.42	0.44	0.42	0.45	0.59	0.55	0.51
Hungary	0.41	0.42	0.45	0.46	0.43	0.44	0.46	0.47	0.46	0.40
Poland	0.42	0.44	0.45	0.46	0.47	0.50	0.48	0.47	0.43	0.42
Romania	1.70	1.64	1.57	1.66	1.65	1.45	1.59	1.53	1.23	1.05
Russia	--	--	--	--	--	--	--	--	--	15.86
Turkmenistan	--	--	--	--	--	--	--	--	--	0.28
Ukraine	--	--	--	--	--	--	--	--	--	3.87
Former U.S.S.R.	16.50	18.15	19.93	21.13	22.10	23.74	24.12	24.54	24.60	--
Uzbekistan	--	--	--	--	--	--	--	--	--	1.34
Other	0.00	0.00	(s)	0.00	0.00	0.00	(s)	0.00	(s)	2.37
Total	19.56	21.20	23.02	24.36	25.32	26.81	27.34	27.87	27.51	26.32
Middle East										
Bahrain	0.15	0.15	0.18	0.20	0.24	0.18	0.21	0.23	0.26	0.28
Iran	0.35	0.53	0.67	0.60	0.63	0.79	0.87	0.93	0.90	0.96
Kuwait	0.14	0.16	0.15	0.21	0.31	0.39	0.46	0.28	0.02	0.24
Oman	0.12	0.05	0.06	0.08	0.09	0.10	0.11	0.11	0.14	0.16
Qatar	0.19	0.23	0.21	0.21	0.22	0.25	0.24	0.30	0.23	0.23
Saudi Arabia	0.22	0.28	0.79	0.98	1.05	1.14	1.16	1.19	1.25	1.33
United Arab Emirates	0.20	0.27	0.42	0.48	0.64	0.63	0.78	0.73	0.87	0.94
Other	0.03	0.03	0.03	0.04	0.07	0.12	0.14	0.20	0.18	0.24
Total	1.41	1.70	2.52	2.80	3.24	3.60	3.96	3.98	3.85	4.38
Africa										
Algeria	0.73	0.76	0.65	0.67	0.73	0.75	0.74	0.76	0.87	0.86
Egypt	0.12	0.16	0.19	0.22	0.24	0.27	0.30	0.32	0.35	0.38
Libya	0.12	0.13	0.16	0.19	0.18	0.17	0.18	0.19	0.21	0.22
Nigeria	0.09	0.11	0.12	0.13	0.14	0.15	0.18	0.14	0.19	0.21
Other	0.05	0.06	0.07	0.07	0.08	0.07	0.09	0.10	0.06	0.05
Total	1.12	1.23	1.20	1.27	1.38	1.41	1.49	1.51	1.68	1.72
Far East & Oceania										
Australia	0.43	0.44	0.49	0.53	0.54	0.55	0.59	0.61	0.62	0.65
China	0.48	0.48	0.50	0.53	0.55	0.56	0.56	0.56	0.58	0.55
India	0.12	0.12	0.15	0.20	0.25	0.33	0.34	0.44	0.49	0.51
Indonesia	0.33	0.40	0.57	0.49	0.60	0.54	0.60	0.60	0.62	0.72
Japan	1.13	1.53	1.58	1.64	1.67	1.74	1.80	2.08	2.16	2.21
Malaysia	0.08	0.17	0.25	0.30	0.29	0.31	0.32	0.34	0.42	0.49
New Zealand	0.11	0.11	0.14	0.17	0.16	0.20	0.19	0.14	0.20	0.21
Pakistan	0.36	0.36	0.38	0.40	0.43	0.46	0.49	0.43	0.55	0.60
Other	0.27	0.29	0.39	0.37	0.48	0.69	0.71	0.78	0.81	0.92
Total	3.31	3.91	4.45	4.64	4.96	5.38	5.61	5.99	6.45	6.86
World Total	56.98	61.80	64.78	65.53	68.83	72.98	75.53	75.96	78.02	78.40

¹ Preliminary.

--=Not applicable.

(s)=Value less than 5 Peta (10¹⁵) Joules.

Note: Sum of components may not equal total due to independent rounding.

Sources: See sources at the end of Chapter 4.

Table B12. World Coal¹ Consumption, 1983-1992
(Exa (10¹⁸) Joules)

Region Country	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992 ²
North America										
Canada	1.05	1.27	1.18	1.10	1.07	1.25	1.35	1.17	1.27	1.32
Mexico	0.10	0.11	0.12	0.08	0.06	0.08	0.09	0.10	0.11	0.13
United States ³	16.77	18.01	18.44	18.21	19.00	19.88	19.97	20.15	19.80	19.92
Total	17.92	19.40	19.73	19.39	20.13	21.22	21.41	21.43	21.19	21.38
Central & South America										
Brazil	0.36	0.41	0.47	0.46	0.48	0.42	0.44	0.38	0.43	0.48
Chile	0.03	0.05	0.04	0.06	0.06	0.08	0.10	0.11	0.15	0.10
Colombia	0.16	0.17	0.20	0.15	0.14	0.12	0.22	0.23	0.24	0.23
Other	0.04	0.04	0.02	0.07	0.07	0.06	0.11	0.07	0.08	0.08
Total	0.59	0.67	0.72	0.74	0.75	0.69	0.86	0.80	0.89	0.89
Western Europe										
Austria	0.17	0.17	0.16	0.16	0.19	0.15	0.15	0.15	0.13	0.14
Belgium and Luxembourg ..	0.47	0.55	0.52	0.48	0.37	0.35	0.44	0.45	0.50	0.45
Denmark	0.26	0.23	0.35	0.33	0.29	0.22	0.28	0.25	0.34	0.33
France	1.06	1.14	1.01	0.93	0.78	0.70	0.85	0.96	0.94	0.90
Germany	5.79	5.69	6.10	6.06	5.71	5.76	4.95	5.22	4.41	4.26
Greece	0.17	0.21	0.26	0.26	0.28	0.30	0.32	0.33	0.38	0.40
Italy	0.54	0.60	0.65	0.62	0.61	0.52	0.55	0.54	0.63	0.52
Netherlands	0.22	0.32	0.32	0.28	0.31	0.32	0.31	0.39	0.43	0.33
Spain	0.92	0.96	1.03	1.01	0.88	0.97	1.13	1.06	0.77	1.40
Turkey	0.44	0.59	0.66	0.77	0.80	0.67	0.67	0.86	1.34	1.33
United Kingdom	2.82	1.43	2.56	2.86	2.73	2.90	2.90	2.52	3.19	2.87
Former Yugoslavia	0.84	0.88	0.91	0.93	0.94	0.92	0.97	0.96	0.73	0.69
Other	0.47	0.43	0.56	0.45	0.44	0.46	0.56	0.54	0.48	0.49
Total	14.17	13.19	15.08	15.13	14.33	14.25	14.08	14.24	14.27	14.12
Eastern Europe & Former U.S.S.R.										
Bulgaria	0.69	0.67	0.68	0.66	0.69	0.66	0.65	0.60	0.33	0.33
Former Czechoslovakia ..	2.02	2.00	1.97	1.99	1.94	1.93	1.85	1.69	1.49	1.35
Hungary	0.40	0.41	0.43	0.41	0.35	0.34	0.32	0.30	0.25	0.21
Kazakhstan	--	--	--	--	--	--	--	--	--	1.67
Poland	4.23	4.06	4.38	4.76	5.15	5.23	4.83	4.08	3.68	3.19
Romania	0.60	0.87	0.84	0.87	0.86	0.94	1.09	0.74	0.44	0.41
Russia	--	--	--	--	--	--	--	--	--	6.00
Ukraine	--	--	--	--	--	--	--	--	--	2.73
Former U.S.S.R.	12.63	12.51	12.60	12.89	12.96	13.11	13.11	13.40	9.08	--
Other	0.03	0.03	0.03	0.04	0.04	0.04	0.04	0.03	0.01	0.40
Total	20.60	20.56	20.92	21.63	21.99	22.25	21.89	20.83	15.29	16.29
Middle East										
Iran	0.03	0.04	0.02	0.04	0.04	0.04	0.04	0.04	0.06	0.05
Other	0.05	0.08	0.09	0.09	0.09	0.09	0.10	0.11	0.12	0.15
Total	0.08	0.12	0.11	0.13	0.13	0.12	0.14	0.16	0.18	0.21
Africa										
Morocco	0.03	0.03	0.03	0.04	0.04	0.04	0.05	0.05	0.06	0.06
South Africa	2.90	3.07	3.16	3.22	3.32	3.42	3.28	3.21	3.89	3.72
Zimbabwe (Rhodesia)	0.08	0.06	0.08	0.10	0.12	0.14	0.13	0.14	0.16	0.16
Other	0.12	0.13	0.13	0.12	0.12	0.11	0.12	0.11	0.14	0.14
Total	3.14	3.29	3.41	3.47	3.60	3.71	3.58	3.52	4.24	4.08
Far East & Oceania										
Australia	1.32	1.04	1.10	1.28	1.45	1.54	1.70	1.70	1.48	1.81
China	14.77	16.10	17.52	18.54	19.75	20.40	22.40	22.35	22.97	22.98
India	2.97	3.13	3.75	4.13	3.93	3.93	4.38	4.75	4.59	4.90
Japan	2.61	2.88	3.12	2.92	3.11	3.14	2.95	3.06	2.91	2.86
Korea, North	1.33	1.33	1.37	1.37	1.46	1.48	1.51	1.50	1.46	1.39
Korea, South	0.74	0.85	0.99	1.10	1.26	1.33	1.14	1.00	1.04	1.05
Mongolia	0.06	0.06	0.07	0.06	0.08	0.08	0.08	0.08	0.09	0.09
New Zealand	0.05	0.05	0.06	0.04	0.05	0.07	0.05	0.07	0.05	0.05
Pakistan	0.05	0.05	0.04	0.07	0.08	0.08	0.08	0.08	0.10	0.10
Philippines	0.03	0.04	0.02	0.06	0.04	0.06	0.06	0.08	0.07	0.08
Thailand	0.02	0.03	0.05	0.06	0.09	0.07	0.18	0.13	0.18	0.19
Vietnam	0.15	0.12	0.12	0.13	0.14	0.15	0.13	0.11	0.11	0.13
Other	0.25	0.43	0.50	0.54	0.78	0.81	0.96	1.03	1.06	1.18
Total	24.35	26.12	28.72	30.31	32.21	33.16	35.64	35.94	36.12	36.82
World Total	80.85	83.34	88.69	90.80	93.14	95.40	97.61	96.91	92.18	93.79

¹ Coal includes anthracite, subanthracite, bituminous, subbituminous, lignite, and brown coal.

² Preliminary.

³ Consumption data do not reflect net exports of coke.

--=Not applicable.

Note: Sum of components may not equal total due to independent rounding.

Sources: See sources at the end of Chapter 5.

Table B13. World Net Hydroelectric Power Consumption,¹ 1983-1992
(Exa (10¹⁸) Joules)

Region Country	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992 ²
North America										
Canada	2.50	2.68	2.85	3.00	2.95	3.00	3.05	3.20	3.10	3.12
Mexico	0.22	0.26	0.28	0.20	0.18	0.21	0.25	0.24	0.26	0.27
United States	4.11	4.01	3.59	3.64	3.29	2.81	3.04	3.11	3.29	2.96
Total	6.84	6.94	6.72	6.84	6.42	6.02	6.34	6.56	6.65	6.34
Central & South America										
Argentina	0.20	0.22	0.22	0.23	0.24	0.17	0.15	0.21	0.19	0.19
Brazil	1.68	1.84	1.96	2.12	2.21	2.35	2.46	2.51	2.66	2.76
Chile	0.10	0.10	0.11	0.12	0.13	0.12	0.10	0.10	0.11	0.11
Colombia	0.20	0.22	0.24	0.27	0.23	0.27	0.29	0.30	0.30	0.31
Peru	0.09	0.09	0.10	0.11	0.12	0.11	0.11	0.11	0.12	0.13
Uruguay	0.04	0.04	0.04	0.05	0.05	0.04	0.03	0.06	0.05	0.05
Venezuela	0.20	0.21	0.24	0.29	0.34	0.38	0.40	0.36	0.37	0.36
Other	0.13	0.16	0.21	0.21	0.23	0.23	0.24	0.25	0.25	0.26
Total	2.64	2.89	3.13	3.41	3.55	3.68	3.79	3.91	4.06	4.17
Western Europe										
Austria	0.28	0.28	0.30	0.30	0.33	0.34	0.34	0.32	0.32	0.36
Finland	0.17	0.16	0.15	0.15	0.17	0.17	0.17	0.15	0.16	0.18
France	0.75	0.69	0.65	0.66	0.73	0.77	0.50	0.56	0.59	0.71
Germany	0.33	0.29	0.27	0.29	0.32	0.32	0.29	0.29	0.25	0.28
Italy	0.53	0.56	0.56	0.54	0.53	0.57	0.50	0.48	0.58	0.58
Norway	1.01	1.07	1.09	1.05	1.10	1.12	1.13	1.14	1.14	1.22
Portugal	0.09	0.11	0.12	0.10	0.11	0.14	0.07	0.10	0.10	0.05
Spain	0.32	0.38	0.36	0.30	0.30	0.39	0.22	0.29	0.31	0.23
Sweden	0.69	0.72	0.74	0.63	0.75	0.74	0.74	0.75	0.67	0.79
Switzerland	0.28	0.24	0.24	0.26	0.28	0.28	0.26	0.25	0.27	0.27
Turkey	0.13	0.15	0.14	0.13	0.20	0.32	0.19	0.25	0.24	0.29
United Kingdom	0.04	0.04	0.04	0.06	0.07	0.11	0.11	0.11	0.11	0.12
Former Yugoslavia	0.24	0.28	0.27	0.30	0.28	0.28	0.26	0.22	0.21	0.19
Other	0.16	0.16	0.16	0.15	0.16	0.17	0.17	0.18	0.16	0.16
Total	5.03	5.13	5.08	4.91	5.32	5.70	4.96	5.08	5.11	5.42
Eastern Europe & Former U.S.S.R.										
Former Czechoslovakia	0.06	0.05	0.06	0.05	0.07	0.06	0.07	0.06	0.05	0.04
Poland	0.05	0.05	0.06	0.06	0.07	0.08	0.07	0.06	0.05	0.05
Romania	0.11	0.13	0.14	0.13	0.14	0.17	0.16	0.15	0.17	0.17
Russia	--	--	--	--	--	--	--	--	--	1.84
Former U.S.S.R.	1.95	2.19	2.21	2.30	2.34	2.45	2.37	2.48	2.52	--
Other	0.13	0.12	0.12	0.10	0.11	0.12	0.12	0.10	0.08	0.66
Total	2.29	2.54	2.59	2.65	2.72	2.88	2.79	2.86	2.87	2.76
Middle East										
Iran	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
Other	0.04	0.03	0.04	0.03	0.04	0.07	0.06	0.07	0.08	0.08
Total	0.10	0.10	0.10	0.10	0.11	0.14	0.14	0.15	0.15	0.15
Africa										
Egypt	0.11	0.11	0.09	0.09	0.09	0.09	0.09	0.11	0.11	0.11
Zaire	0.05	0.05	0.05	0.06	0.05	0.06	0.06	0.06	0.07	0.07
Zambia	0.07	0.07	0.07	0.07	0.08	0.07	0.06	0.07	0.08	0.06
Zimbabwe (Rhodesia)	0.07	0.07	0.06	0.06	0.04	0.04	0.04	0.04	0.03	0.03
Other	0.24	0.19	0.22	0.23	0.25	0.25	0.27	0.28	0.28	0.29
Total	0.54	0.49	0.50	0.51	0.50	0.51	0.52	0.56	0.58	0.56
Far East & Oceania										
Australia	0.14	0.13	0.15	0.16	0.15	0.15	0.16	0.16	0.18	0.17
China	0.95	0.96	1.02	1.04	1.11	1.19	1.29	1.39	1.37	1.44
India	0.55	0.59	0.55	0.59	0.52	0.63	0.68	0.72	0.74	0.74
Japan	0.96	0.83	0.96	0.94	0.88	1.05	1.06	1.04	1.15	1.06
Korea, North	0.28	0.29	0.30	0.31	0.32	0.34	0.34	0.34	0.34	0.35
Korea, South	0.03	0.03	0.04	0.04	0.06	0.04	0.05	0.07	0.05	0.05
New Zealand	0.21	0.22	0.21	0.24	0.24	0.25	0.24	0.25	0.25	0.25
Pakistan	0.12	0.14	0.13	0.15	0.17	0.18	0.18	0.18	0.20	0.21
Philippines	0.03	0.06	0.06	0.07	0.06	0.07	0.07	0.07	0.06	0.05
Thailand	0.04	0.05	0.04	0.06	0.05	0.04	0.06	0.06	0.05	0.06
Other	0.20	0.24	0.28	0.29	0.30	0.32	0.35	0.38	0.35	0.38
Total	3.52	3.53	3.75	3.89	3.84	4.28	4.51	4.67	4.74	4.76
World Total	20.97	21.63	21.87	22.30	22.46	23.21	23.03	23.77	24.15	24.16

¹ Accounts for thermal equivalent conversion losses. Data are reported as net generation as opposed to gross. Net generation excludes the energy consumed by the generating plants.

² Preliminary.

--=Not applicable.

Note: Sum of components may not equal total due to independent rounding.

Sources: See sources at the end of Chapter 6.

Table B14. World Net Nuclear Electric Power Consumption,¹ 1983-1992
(Exa (10¹⁸) Joules)

Region Country	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992 ²
North America										
Canada	0.57	0.60	0.70	0.82	0.89	0.95	0.92	0.84	0.98	0.93
Mexico	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.04	0.04
United States	3.38	3.75	4.38	4.72	5.18	5.97	5.99	6.50	6.94	7.01
Total	3.94	4.35	5.07	5.54	6.06	6.93	6.91	7.36	7.96	7.98
Central & South America										
Argentina	0.04	0.05	0.07	0.07	0.08	0.06	0.06	0.09	0.10	0.08
Brazil	(s)	0.03	0.03	(s)	0.01	(s)	0.02	0.02	0.01	0.02
Total	0.04	0.08	0.10	0.07	0.09	0.06	0.08	0.11	0.11	0.10
Western Europe										
Belgium	0.24	0.28	0.34	0.39	0.40	0.41	0.40	0.41	0.42	0.43
Finland	0.19	0.21	0.21	0.22	0.22	0.23	0.23	0.24	0.23	0.23
France	1.39	1.80	2.08	2.35	2.42	2.49	2.73	2.80	3.01	3.08
Germany	0.89	1.18	1.55	1.48	1.60	1.75	1.69	1.62	1.52	1.64
Italy	0.10	0.15	0.18	0.20	0.10	0.12	0.13	0.13	0.15	0.15
Netherlands	0.05	0.05	0.06	0.05	0.05	0.06	0.06	0.07	0.08	0.08
Spain	0.13	0.27	0.32	0.42	0.46	0.54	0.60	0.59	0.57	0.57
Sweden	0.41	0.51	0.58	0.68	0.66	0.67	0.65	0.66	0.77	0.63
Switzerland	0.12	0.15	0.17	0.18	0.19	0.20	0.22	0.23	0.23	0.23
United Kingdom	0.60	0.61	0.67	0.67	0.65	0.75	0.85	0.79	0.91	1.04
Former Yugoslavia	0.04	0.05	0.05	0.05	0.05	0.04	0.05	0.06	0.05	0.05
Other	0.05	0.07	0.08	0.07	0.07	0.08	0.10	0.10	0.10	0.10
Total	4.20	5.33	6.28	6.76	6.88	7.34	7.71	7.69	8.02	8.22
Eastern Europe & Former U.S.S.R.										
Bulgaria	0.14	0.15	0.16	0.15	0.15	0.19	0.19	0.17	0.15	0.14
Former Czechoslovakia	0.09	0.11	0.17	0.24	0.29	0.30	0.32	0.33	0.30	0.31
Hungary	0.05	0.08	0.11	0.13	0.16	0.20	0.20	0.20	0.17	0.17
Lithuania	--	--	--	--	--	--	--	--	--	0.18
Russia	--	--	--	--	--	--	--	--	--	1.36
Ukraine	--	--	--	--	--	--	--	--	--	0.81
Former U.S.S.R.	1.30	1.68	2.01	1.79	2.07	2.39	2.50	2.37	2.39	--
Other	0.01	0.02	0.03	0.05	0.06	0.08	0.08	0.08	0.07	0.06
Total	1.58	2.03	2.48	2.35	2.74	3.16	3.28	3.15	3.09	3.03
Middle East	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Africa										
South Africa	0.00	0.04	0.06	0.10	0.07	0.11	0.12	0.09	0.10	0.10
Total	0.00	0.04	0.06	0.10	0.07	0.11	0.12	0.09	0.10	0.10
Far East & Oceania										
India	0.04	0.05	0.06	0.06	0.06	0.06	0.05	0.07	0.06	0.08
Japan	1.19	1.43	1.68	1.78	2.12	1.95	1.96	2.05	2.18	2.24
Korea, South	0.09	0.12	0.17	0.29	0.41	0.42	0.49	0.55	0.57	0.57
Pakistan	(s)	(s)	(s)	0.01	0.01	(s)	(s)	(s)	(s)	0.01
Taiwan	0.20	0.26	0.30	0.28	0.34	0.32	0.29	0.34	0.35	0.33
Total	1.52	1.86	2.22	2.42	2.93	2.75	2.79	3.01	3.17	3.23
World Total	11.30	13.70	16.21	17.23	18.77	20.35	20.90	21.41	22.44	22.66

¹ Accounts for thermal equivalent conversion losses. Data are reported as net generation as opposed to gross. Net generation excludes the energy consumed by the generating plants.

² Preliminary.

--=Not applicable.

(s)=Value less than 5 Peta (10¹⁵) Joules.

Note: Sum of components may not equal total due to independent rounding.

Sources: See sources at the end of Chapter 6.

Table B15. Consumption of Primary Energy Sources by Selected Country Groups, 1983-1992
(Exa (10¹⁸) Joules)

Type of Energy Country Groups	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992 ¹
Petroleum										
World Total	127.40	130.14	129.92	133.82	136.22	140.44	142.64	142.85	143.76	143.82
OECD ²	73.01	74.55	73.72	75.98	77.09	79.83	80.61	80.35	80.84	82.38
Non OECD	54.40	55.59	56.21	57.83	59.13	60.61	62.04	62.49	62.92	61.44
Other Groups:										
OECD Europe	26.64	26.62	26.39	27.28	27.51	27.91	28.02	28.17	29.20	29.67
OPEC ³	7.66	7.77	8.09	8.38	8.56	8.87	9.42	10.08	9.89	10.83
EEC ⁴	23.21	23.26	22.89	23.67	23.69	24.18	24.37	24.45	25.44	25.83
IEA ⁵	72.98	74.53	73.69	75.96	77.06	79.80	80.58	80.32	80.81	82.35
Natural Gas										
World Total	56.98	61.80	64.78	65.53	68.83	72.98	75.53	75.96	78.02	78.40
OECD ²	30.47	32.74	32.68	31.66	33.33	34.90	36.10	35.89	37.90	38.58
Non OECD	26.51	29.05	32.10	33.87	35.50	38.08	39.42	40.07	40.13	39.82
Other Groups:										
OECD Europe	8.58	9.18	9.49	9.54	10.12	10.53	10.57	10.18	11.50	11.29
OPEC ³	3.09	3.63	4.51	4.80	5.34	5.75	6.24	6.27	6.19	6.77
EEC ⁴	8.32	8.85	9.14	9.19	9.75	10.09	9.97	9.48	10.73	10.50
IEA ⁵	30.47	32.74	32.68	31.66	33.33	34.90	36.10	35.89	37.90	38.58
Coal										
World Total	80.85	83.34	88.69	90.80	93.14	95.40	97.61	96.91	92.18	93.79
OECD ²	35.13	35.56	38.04	37.75	38.07	39.21	39.12	39.43	39.07	39.41
Non OECD	45.72	47.78	50.65	53.05	55.08	56.19	58.48	57.48	53.12	54.39
Other Groups:										
OECD Europe	13.33	12.31	14.16	14.19	13.38	13.32	13.10	13.27	13.54	13.42
OPEC ³	0.09	0.10	0.10	0.16	0.17	0.16	0.25	0.27	0.32	0.32
EEC ⁴	12.38	11.26	12.92	12.94	12.12	12.21	11.93	11.95	11.81	11.70
IEA ⁵	35.12	35.56	38.04	37.74	38.06	39.21	39.12	39.43	39.06	39.41
Hydroelectric Power										
World Total	20.97	21.63	21.87	22.30	22.46	23.21	23.03	23.77	24.15	24.16
OECD ²	12.71	12.73	12.57	12.58	12.54	12.70	12.26	12.63	12.86	12.79
Non OECD	8.26	8.90	9.30	9.72	9.91	10.51	10.77	11.14	11.29	11.37
Other Groups:										
OECD Europe	4.79	4.86	4.81	4.61	5.04	5.43	4.70	4.86	4.90	5.23
OPEC ³	0.36	0.39	0.42	0.48	0.54	0.58	0.61	0.57	0.58	0.56
EEC ⁴	2.18	2.18	2.11	2.05	2.17	2.42	1.82	1.96	2.05	2.08
IEA ⁵	12.67	12.69	12.53	12.54	12.50	12.65	12.22	12.59	12.82	12.74
Nuclear Electric Power										
World Total	11.30	13.70	16.21	17.23	18.77	20.35	20.90	21.41	22.44	22.66
OECD ²	9.29	11.07	12.99	14.03	15.01	16.18	16.53	17.02	18.07	18.35
Non OECD	2.01	2.64	3.22	3.20	3.76	4.18	4.37	4.40	4.37	4.30
Other Groups:										
OECD Europe	4.16	5.28	6.23	6.71	6.83	7.30	7.66	7.63	7.97	8.17
OPEC ³	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EEC ⁴	3.42	4.39	5.23	5.60	5.73	6.17	6.54	6.48	6.70	7.03
IEA ⁵	9.29	11.07	12.99	14.03	15.01	16.18	16.53	17.02	18.07	18.35
Total Energy										
World Total	297.50	310.60	321.48	329.68	339.41	352.38	359.71	360.90	360.55	362.83
OECD ²	160.61	166.65	170.01	172.00	176.04	182.81	184.62	185.32	188.73	191.51
Non OECD	136.89	143.95	151.47	157.67	163.38	169.57	175.09	175.58	171.82	171.32
Other Groups:										
OECD Europe	57.50	58.24	61.08	62.34	62.88	64.48	64.04	64.12	67.11	67.79
OPEC ³	11.42	12.12	13.35	14.06	14.85	15.62	16.77	17.26	17.26	18.77
EEC ⁴	49.51	49.94	52.30	53.45	53.46	55.06	54.63	54.32	56.73	57.15
IEA ⁵	160.54	166.58	169.94	171.93	175.96	182.73	184.55	185.24	188.66	191.43

¹ Preliminary.

² The Organization for Economic Cooperation and Development (OECD) includes Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Japan, Luxembourg, the Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, the United Kingdom, the United States, and the U.S. Territories. Refer to Appendix G for a listing of OECD Europe.

³ The Organization of Petroleum Exporting Countries (OPEC) includes Algeria, Gabon, Indonesia, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, the United Arab Emirates, and Venezuela.

⁴ European Economic Community (EEC) includes Belgium, Denmark, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, and the United Kingdom.

⁵ International Energy Agency (IEA) includes Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Japan, Luxembourg, the Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, the United Kingdom, the United States, and the U.S. Territories.

Note: Sum of components may not equal total due to independent rounding. The country groups, OECD, EEC, and IEA, include the unified Germany.

Sources: See sources at the end of Chapters 3, 4, 5, 6.

For consistency, data reflect 1992 membership (as of December 31, 1992) for all years.

Appendix C

Primary Energy Sources by Selected Country Groups

Note: Tables in Appendix C are provided for statistical comparison. The data shown reflect actual country group membership for each year in the series.

- The country groups, The Organization for Economic Cooperation and Development (OECD), OECD Europe, European Economic Community (EEC), and the International Energy Agency (IEA), exclude the former East Germany through 1990. Beginning in 1991, however, all information is reported for a unified Germany.
- The country group, EEC, excludes Spain and Portugal for the years 1983 through 1985.
- The country group, IEA, excludes France and Finland for the years 1983 through 1991.
- The country group, The Organization of Petroleum Exporting Countries (OPEC), includes Ecuador from 1983 through 1992.

Table C1. Production of Primary Energy Sources by Selected Country Groups, 1983-1992

Type of Energy Country Groups	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992 ¹
Petroleum (thousand barrels per day)²										
World Total	58,056	59,645	59,264	61,771	62,410	64,673	65,854	66,722	66,623	67,067
OECD ³	16,757	17,598	18,021	17,856	17,795	17,713	16,988	17,030	17,455	17,685
Non OECD	41,299	42,047	41,243	43,915	44,615	46,960	48,866	49,691	49,168	49,382
Other Groups:										
OECD Europe	3,740	4,055	4,254	4,425	4,484	4,484	4,414	4,575	4,815	5,077
OPEC ⁴	18,750	18,808	17,608	19,773	19,922	21,930	23,814	25,095	25,235	26,701
EEC ⁵	2,932	3,181	3,288	3,419	3,321	3,163	2,692	2,683	2,702	2,738
IEA ⁶	16,668	17,505	17,915	17,742	17,678	17,594	16,871	16,918	17,346	17,685
Natural Gas (trillion cubic feet)										
World total	54.40	59.46	61.78	63.40	66.33	69.65	72.09	73.68	74.81	75.00
OECD ³	25.31	27.01	26.59	26.30	27.35	27.96	28.70	29.67	30.62	31.13
Non OECD	29.09	32.45	35.19	37.10	38.98	41.69	43.39	44.01	44.20	43.87
Other Groups:										
OECD Europe	6.15	6.36	6.50	6.68	6.94	6.49	6.78	7.01	7.72	7.76
OPEC ⁴	3.99	5.11	5.65	5.88	6.51	7.00	7.65	7.84	8.12	8.71
EEC ⁵	5.23	5.38	5.51	5.63	5.84	5.39	5.64	5.98	6.71	6.72
IEA ⁶	25.08	26.79	26.40	26.14	27.22	27.85	28.59	29.57	30.51	31.13
Coal (million short tons)										
World Total	4,314	4,534	4,779	4,882	4,987	5,105	5,252	5,214	4,952	4,975
OECD ³	1,505	1,571	1,652	1,668	1,707	1,727	1,777	1,818	1,986	1,939
Non OECD	2,809	2,963	3,126	3,213	3,280	3,378	3,475	3,395	2,966	3,036
Other Groups:										
OECD Europe	506	438	495	507	495	486	489	471	663	608
OPEC ⁴	2	2	3	4	5	8	13	16	20	30
EEC ⁵	427	353	403	452	439	440	442	415	602	552
IEA ⁶	1,483	1,550	1,634	1,650	1,690	1,711	1,760	1,804	1,972	1,939
Hydroelectric Power (billion kilowatthours)										
World Total	1,909.7	1,971.2	1,992.4	2,031.6	2,046.4	2,117.4	2,102.1	2,169.1	2,202.7	2,203.5
OECD ³	1,160.0	1,161.9	1,147.6	1,145.6	1,143.4	1,160.7	1,122.5	1,157.3	1,176.6	1,169.8
Non OECD	749.7	809.4	844.8	886.1	903.0	956.7	979.6	1,011.8	1,026.1	1,033.7
Other Groups:										
OECD Europe	442.1	445.8	441.8	421.9	461.5	498.2	432.6	448.8	449.9	480.1
OPEC ⁴	34.8	38.9	42.0	47.8	53.8	57.4	60.2	57.0	57.5	56.5
EEC ⁵	142.6	139.8	134.5	173.2	180.7	201.6	143.1	156.1	172.8	175.6
IEA ⁶	1,072.2	1,077.6	1,068.1	1,064.8	1,054.1	1,065.9	1,055.3	1,085.7	1,098.8	1,165.5
Nuclear Electric Power (billion kilowatthours)										
World Total	981.7	1,196.9	1,425.7	1,517.7	1,654.1	1,794.9	1,843.4	1,894.0	1,990.4	2,017.0
OECD ³	802.9	966.3	1,146.2	1,242.9	1,332.5	1,438.2	1,471.0	1,525.7	1,621.8	1,647.0
Non OECD	178.8	230.6	279.5	274.8	321.6	356.7	372.5	368.3	368.6	370.0
Other Groups:										
OECD Europe	357.8	462.4	555.7	602.9	615.8	659.2	691.8	697.7	727.8	745.0
OPEC ⁴	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EEC ⁵	277.4	356.7	433.8	497.9	512.4	553.7	589.4	591.9	614.2	644.0
IEA ⁶	650.2	768.1	917.0	985.4	1,064.7	1,159.5	1,164.3	1,209.9	1,288.4	1,647.0

¹ Preliminary.

² Data include the production of crude oil, and natural gas liquids.

³ The Organization for Economic Cooperation and Development (OECD) includes Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany (since 1991), Greece, Iceland, Ireland, Italy, Japan, Luxembourg, the Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, the United Kingdom, the United States, the U.S. Territories, and West Germany (through 1990). Refer to Appendix G for a listing of OECD Europe.

⁴ The Organization of Petroleum Exporting Countries (OPEC) includes Algeria, Ecuador, Gabon, Indonesia, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, the United Arab Emirates, and Venezuela.

⁵ European Economic Community (EEC) includes Belgium, Denmark, France, Germany, (since 1991), Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal (since 1986), Spain (since 1986), the United Kingdom, and West Germany (through 1990).

⁶ International Energy Agency (IEA) includes Australia, Austria, Belgium, Canada, Denmark, Finland (since 1992), France (since 1992), Germany (since 1991), Greece, Ireland, Italy, Japan, Luxembourg, the Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, the United Kingdom, the United States, the U.S. Territories, and West Germany (through 1990).

Note: Sum of components may not equal total due to independent rounding.

Sources: See sources at the end of Chapters 3, 4, 5, 6.

Tables in Appendix C are provided for statistical comparison. The data shown reflect actual country group membership for each year in the series.

Table C2. Consumption of Primary Energy Sources by Selected Country Groups, 1983-1992

Type of Energy Country Groups	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992 ¹
Petroleum (thousand barrels per day)										
World Total	58,744	59,836	60,098	61,762	63,010	64,832	66,030	66,155	66,707	66,744
OECD ²	33,793	34,500	34,271	35,279	35,911	37,093	37,570	37,475	38,067	38,772
Non OECD	24,951	25,336	25,828	26,484	27,099	27,739	28,460	28,679	28,640	27,973
Other Groups:										
OECD Europe	11,765	11,736	11,681	12,102	12,255	12,427	12,531	12,629	13,391	13,606
OPEC ³	3,552	3,581	3,778	3,909	4,001	4,139	4,394	4,608	4,627	5,055
EEC ⁴	9,014	9,123	9,059	10,457	10,508	10,720	10,852	10,912	11,658	11,839
IEA ⁵	31,740	32,528	32,276	33,288	33,883	35,055	35,476	35,418	35,892	38,760
Natural Gas (trillion cubic feet)										
World Total	54.37	58.84	61.58	62.94	66.07	69.40	72.32	73.13	74.50	74.74
OECD ²	27.89	29.78	29.57	29.16	30.69	31.57	33.16	33.77	35.40	36.00
Non OECD	26.48	29.07	32.01	33.78	35.39	37.83	39.16	39.36	39.10	38.74
Other Groups:										
OECD Europe	7.76	8.11	8.26	8.72	9.21	8.87	9.39	9.99	11.11	10.89
OPEC ³	2.74	3.23	4.02	4.27	4.76	5.18	5.57	5.59	5.52	6.04
EEC ⁴	7.42	7.71	7.83	8.32	8.79	8.44	8.83	9.37	10.42	10.19
IEA ⁵	26.81	28.72	28.45	28.00	29.57	30.55	32.09	32.66	34.15	36.00
Coal (million short tons)										
World Total	4,353	4,488	4,779	4,887	4,990	5,112	5,269	5,172	4,981	5,001
OECD ²	1,584	1,598	1,717	1,706	1,725	1,773	1,812	1,808	2,010	2,000
Non OECD	2,769	2,889	3,063	3,182	3,265	3,339	3,457	3,363	2,971	3,002
Other Groups:										
OECD Europe	599	555	638	641	610	601	632	619	835	804
OPEC ³	4	4	4	6	7	7	11	11	12	12
EEC ⁴	495	441	508	565	533	534	563	539	758	725
IEA ⁵	1,533	1,547	1,665	1,661	1,687	1,738	1,771	1,763	1,966	2,000
Hydroelectric Power (billion kilowatthours)										
World Total	1,909.7	1,971.2	2,092.4	2,031.6	2,046.4	2,117.4	2,102.0	2,169.0	2,202.5	2,203.5
OECD ²	1,152.9	1,156.8	1,141.6	1,142.3	1,139.1	1,155.8	1,116.7	1,150.3	1,173.7	1,166.8
Non OECD	756.8	814.4	850.8	889.3	907.3	961.7	985.3	1,018.7	1,028.8	1,036.7
Other Groups:										
OECD Europe	434.9	440.6	435.7	417.3	455.3	491.4	425.3	440.4	446.7	476.8
OPEC ³	34.9	39.0	42.1	47.9	53.9	57.6	60.4	57.1	57.4	56.5
EEC ⁴	159.8	153.0	146.2	183.9	193.9	217.3	163.1	175.9	187.0	189.8
IEA ⁵	1,065.9	1,075.8	1,064.8	1,064.3	1,053.8	1,066.0	1,051.4	1,081.4	1,101.2	1,162.5
Nuclear Electric Power (billion kilowatthours)										
World Total	981.6	1,196.8	1,425.6	1,517.7	1,654.1	1,794.9	1,843.4	1,893.9	1,990.2	2,016.9
OECD ²	800.0	961.2	1,139.2	1,234.2	1,322.1	1,428.0	1,460.1	1,513.3	1,613.1	1,638.2
Non OECD	181.6	235.6	286.4	283.5	332.0	366.9	383.3	380.6	377.1	378.6
Other Groups:										
OECD Europe	354.9	457.3	548.7	594.1	605.3	649.0	680.8	685.3	719.1	736.3
OPEC ³	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EEC ⁴	275.4	350.6	426.7	490.3	503.7	544.0	576.6	577.9	600.7	630.5
IEA ⁵	655.1	777.8	925.6	995.3	1,076.2	1,175.1	1,184.7	1,230.2	1,317.5	1,638.2

¹ Preliminary.

² The Organization for Economic Cooperation and Development (OECD) includes Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany (since 1991), Greece, Iceland, Ireland, Italy, Japan, Luxembourg, the Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, the United Kingdom, the United States, the U.S. Territories, and West Germany (through 1990). Refer to Appendix G for a listing of OECD Europe.

³ The Organization of Petroleum Exporting Countries (OPEC) includes Algeria, Ecuador, Gabon, Indonesia, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, the United Arab Emirates, and Venezuela.

⁴ European Economic Community (EEC) includes Belgium, Denmark, France, Germany (since 1991), Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal (since 1986), Spain (since 1986), the United Kingdom, and West Germany (through 1990).

⁵ International Energy Agency (IEA) includes Australia, Austria, Belgium, Canada, Denmark, Finland (since 1992), France (since 1992), Germany (since 1991), Greece, Ireland, Italy, Japan, Luxembourg, the Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, the United Kingdom, the United States, the U.S. Territories, and West Germany (through 1990).

Note: Sum of components may not equal total due to independent rounding.

Sources: See sources at the end of Chapters 3, 4, 5, 6.

Tables in Appendix C are provided for statistical comparison. The data shown reflect actual country group membership for each year in the series.

Table C3. Production of Primary Energy Sources by Selected Country Groups, 1983-1992
(Quadrillion (10¹⁵) Btu)

Type of Energy Country Groups	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992 ¹
Petroleum²										
World Total	119.32	122.57	121.12	126.24	127.33	132.39	134.49	136.31	135.89	136.82
OECD ³	32.18	33.72	34.47	33.98	33.71	33.55	31.92	31.91	32.62	32.90
Non OECD	87.14	88.84	86.65	92.25	93.62	98.83	102.57	104.39	103.27	103.92
Other Groups:										
OECD Europe	7.30	7.91	8.29	8.61	8.72	8.72	8.54	8.88	9.37	9.93
OPEC ⁴	39.62	39.76	36.95	41.58	41.86	46.24	50.08	52.92	53.26	56.54
EEC ⁵	5.70	6.18	6.37	6.59	6.38	6.06	5.06	5.05	5.09	5.17
IEA ⁶	32.07	33.62	34.33	33.83	33.55	33.39	31.76	31.76	32.48	32.90
Natural Gas										
World total	53.33	58.33	60.62	61.89	64.93	68.07	70.56	72.00	73.96	74.27
OECD ³	25.39	27.11	26.74	26.15	27.30	27.94	28.65	29.35	31.00	31.52
Non OECD	27.95	31.22	33.88	35.74	37.63	40.13	41.91	42.64	42.97	42.75
Other Groups:										
OECD Europe	5.75	5.95	6.16	6.16	6.50	6.17	6.35	6.38	7.47	7.50
OPEC ⁴	4.25	5.43	6.00	6.24	6.90	7.49	8.11	8.32	8.62	9.23
EEC ⁵	4.72	4.84	5.03	5.01	5.22	4.96	5.06	5.24	6.36	6.37
IEA ⁶	25.17	26.91	26.57	26.02	27.17	27.84	28.56	29.26	30.88	31.52
Coal										
World Total	76.14	79.84	84.24	86.50	88.22	90.32	92.88	92.81	86.74	87.63
OECD ³	29.34	30.56	32.10	32.73	33.57	33.96	34.81	35.70	36.47	35.97
Non OECD	46.79	49.28	52.14	53.77	54.65	56.35	58.07	57.11	50.27	51.66
Other Groups:										
OECD Europe	7.85	6.27	7.46	7.74	7.46	7.30	7.22	6.79	8.70	8.06
OPEC ⁴	0.04	0.05	0.07	0.10	0.11	0.17	0.31	0.36	0.48	0.73
EEC ⁵	6.66	5.01	6.11	7.03	6.75	6.70	6.62	6.07	7.44	6.90
IEA ⁶	28.85	30.08	31.67	32.31	33.17	33.58	34.43	35.36	36.15	35.97
Hydroelectric Power										
World Total	19.90	20.51	20.73	21.14	21.29	22.00	21.84	22.54	22.89	22.90
OECD ³	12.10	12.10	11.95	11.93	11.90	12.05	11.65	12.02	12.22	12.15
Non OECD	7.80	8.42	8.79	9.21	9.39	9.95	10.19	10.52	10.67	10.75
Other Groups:										
OECD Europe	4.60	4.64	4.59	4.39	4.80	5.18	4.50	4.67	4.68	4.99
OPEC ⁴	0.36	0.40	0.44	0.50	0.56	0.60	0.63	0.59	0.60	0.59
EEC ⁵	1.48	1.45	1.40	1.80	1.88	2.10	1.49	1.62	1.80	1.83
IEA ⁶	11.19	11.22	11.12	11.09	10.97	11.07	10.95	11.27	11.41	12.11
Nuclear Electric Power										
World Total	10.71	12.99	15.36	16.33	17.79	19.29	19.81	20.30	21.27	21.47
OECD ³	8.70	10.39	12.21	13.23	14.17	15.29	15.63	16.17	17.20	17.49
Non OECD	2.01	2.59	3.15	3.10	3.62	4.00	4.18	4.13	4.07	3.99
Other Groups:										
OECD Europe	3.83	4.91	5.81	6.30	6.41	6.87	7.22	7.27	7.63	7.84
OPEC ⁴	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EEC ⁵	3.00	3.81	4.55	5.23	5.36	5.80	6.18	6.19	6.48	6.81
IEA ⁶	7.12	8.33	9.88	10.61	11.44	12.45	12.50	12.95	13.74	17.49
Total Energy										
World Total	279.40	294.24	302.08	312.09	319.55	332.07	339.58	343.95	340.76	343.10
OECD ³	107.71	113.88	117.47	118.02	120.63	122.80	122.66	125.16	129.52	130.03
Non OECD	171.69	180.36	184.61	194.07	198.92	209.28	216.91	218.80	211.24	213.07
Other Groups:										
OECD Europe	29.33	29.68	32.32	33.20	33.90	34.24	33.83	33.98	37.85	38.31
OPEC ⁴	44.81	46.25	44.13	49.10	49.86	55.22	59.79	62.87	63.68	67.85
EEC ⁵	21.56	21.30	23.47	25.66	25.59	25.62	24.40	24.17	27.17	27.08
IEA ⁶	104.41	110.15	113.57	113.86	116.29	118.33	118.21	120.61	124.66	130.04

¹ Preliminary.

² Data include the production of crude oil, and natural gas liquids.

³ The Organization for Economic Cooperation and Development (OECD) includes Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany (since 1991), Greece, Iceland, Ireland, Italy, Japan, Luxembourg, the Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, the United Kingdom, the United States, the U.S. Territories, and West Germany (through 1990). Refer to Appendix G for a listing of OECD Europe.

⁴ The Organization of Petroleum Exporting Countries (OPEC) includes Algeria, Ecuador, Gabon, Indonesia, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, the United Arab Emirates, and Venezuela.

⁵ European Economic Community (EEC) includes Belgium, Denmark, France, Germany (since 1991), Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal (since 1986), Spain (since 1986), the United Kingdom, and West Germany (through 1990).

⁶ International Energy Agency (IEA) includes Australia, Austria, Belgium, Canada, Denmark, Finland (since 1992), France (since 1992), Germany (since 1991), Greece, Ireland, Italy, Japan, Luxembourg, the Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, the United Kingdom, the United States, the U.S. Territories, and West Germany (through 1990).

Note: Sum of components may not equal total due to independent rounding.

Sources: See sources at the end of Chapters 3, 4, 5, 6.

Tables in Appendix C are provided for statistical comparison. The data shown reflect actual country group membership for each year in the series.

Table C4. Consumption of Primary Energy Sources by Selected Country Groups, 1983-1992
(Quadrillion (10¹⁵) Btu)

Type of Energy Country Groups	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992 ¹
Petroleum										
World Total	120.75	123.35	123.14	126.83	129.11	133.11	135.20	135.39	136.25	136.31
OECD ²	68.48	69.94	69.10	71.26	72.35	74.99	75.78	75.58	76.62	78.08
Non OECD	52.27	53.41	54.04	55.58	56.76	58.12	59.42	59.82	59.63	58.23
Other Groups:										
OECD Europe	24.54	24.50	24.24	25.10	25.36	25.78	25.93	26.12	27.67	28.12
OPEC ³	7.43	7.54	7.84	8.13	8.29	8.60	9.11	9.75	9.59	10.48
EEC ⁴	18.77	19.03	18.79	21.67	21.74	22.24	22.48	22.59	24.11	24.49
IEA ⁵	64.23	65.86	65.00	67.16	68.18	70.79	71.46	71.35	72.14	78.06
Natural Gas										
World Total	54.01	58.57	61.40	62.11	65.23	69.17	71.59	71.99	73.95	74.31
OECD ²	28.56	30.66	30.59	29.62	31.22	32.38	33.82	34.01	35.92	36.56
Non OECD	25.45	27.91	30.81	32.49	34.01	36.79	37.76	37.98	38.03	37.74
Other Groups:										
OECD Europe	7.81	8.33	8.61	8.65	9.23	9.28	9.62	9.65	10.90	10.70
OPEC ³	2.94	3.45	4.28	4.55	5.06	5.45	5.92	5.95	5.87	6.42
EEC ⁴	7.47	7.93	8.18	8.31	8.87	8.87	9.06	8.99	10.17	9.96
IEA ⁵	27.50	29.63	29.49	28.53	30.07	31.31	32.67	32.88	34.52	36.56
Coal										
World Total	76.63	78.99	84.07	86.06	88.28	90.43	92.51	91.85	87.37	88.90
OECD ²	30.82	31.14	33.29	33.04	33.47	34.44	34.41	34.94	37.03	37.35
Non OECD	45.80	47.85	50.77	53.02	54.81	55.99	58.10	56.91	50.34	51.55
Other Groups:										
OECD Europe	10.16	9.11	10.66	10.72	10.08	9.90	9.74	10.14	12.83	12.72
OPEC ³	0.09	0.09	0.10	0.15	0.16	0.15	0.24	0.26	0.30	0.30
EEC ⁴	8.37	7.19	8.46	9.53	8.88	8.85	8.63	8.90	11.19	11.09
IEA ⁵	29.66	29.96	32.11	32.02	32.60	33.64	33.46	33.88	36.01	37.35
Hydroelectric Power										
World Total	19.88	20.50	20.73	21.14	21.28	22.00	21.83	22.53	22.89	22.90
OECD ²	12.02	12.03	11.89	11.89	11.85	12.00	11.59	11.94	12.19	12.12
Non OECD	7.86	8.46	8.84	9.24	9.43	10.00	10.24	10.59	10.70	10.78
Other Groups:										
OECD Europe	4.50	4.57	4.53	4.34	4.74	5.11	4.42	4.58	4.65	4.96
OPEC ³	0.36	0.41	0.44	0.50	0.56	0.60	0.63	0.59	0.60	0.59
EEC ⁴	1.64	1.58	1.52	1.91	2.02	2.26	1.70	1.83	1.95	1.97
IEA ⁵	11.11	11.19	11.09	11.08	10.96	11.07	10.91	11.23	11.44	12.08
Nuclear Electric Power										
World Total	10.71	12.99	15.36	16.33	17.79	19.29	19.81	20.30	21.27	21.47
OECD ²	8.67	10.35	12.16	13.16	14.08	15.19	15.52	16.05	17.12	17.39
Non OECD	2.04	2.64	3.21	3.17	3.71	4.10	4.28	4.25	4.15	4.08
Other Groups:										
OECD Europe	3.81	4.87	5.76	6.22	6.33	6.77	7.12	7.15	7.56	7.75
OPEC ³	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EEC ⁴	2.99	3.76	4.50	5.17	5.29	5.70	6.05	6.06	6.35	6.67
IEA ⁵	7.18	8.44	9.98	10.73	11.58	12.61	12.72	13.17	14.05	17.39
Total Energy										
World Total	281.98	294.39	304.70	312.47	321.70	333.99	340.94	342.07	341.74	343.90
OECD ²	148.55	154.13	157.04	158.97	162.98	169.00	171.12	172.52	178.88	181.51
Non OECD	133.42	140.26	147.67	153.50	158.72	165.00	169.81	169.54	162.86	162.38
Other Groups:										
OECD Europe	50.82	51.37	53.79	55.03	55.73	56.84	56.84	57.65	63.61	64.25
OPEC ³	11.02	11.69	12.88	13.56	14.31	15.04	16.13	16.61	16.63	18.06
EEC ⁴	39.23	39.50	41.45	46.60	46.80	47.92	47.92	48.36	53.77	54.17
IEA ⁵	139.68	145.08	147.67	149.53	153.40	159.42	161.23	162.51	168.16	181.44

¹ Preliminary.

² The Organization for Economic Cooperation and Development (OECD) includes Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany (since 1991), Greece, Iceland, Ireland, Italy, Japan, Luxembourg, the Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, the United Kingdom, the United States, the U.S. Territories, and West Germany (through 1990). Refer to Appendix G for a listing of OECD Europe.

³ The Organization of Petroleum Exporting Countries (OPEC) includes Algeria, Ecuador, Gabon, Indonesia, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, the United Arab Emirates, and Venezuela.

⁴ European Economic Community (EEC) includes Belgium, Denmark, France, Germany (since 1991), Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal (since 1986), Spain (since 1986), the United Kingdom, and West Germany (through 1990).

⁵ International Energy Agency (IEA) includes Australia, Austria, Belgium, Canada, Denmark, Finland (since 1992), France (since 1992), Germany (since 1991), Greece, Ireland, Italy, Japan, Luxembourg, the Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, the United Kingdom, the United States, the U.S. Territories, and West Germany (through 1990).

Note: Sum of components may not equal total due to independent rounding.

Sources: See sources at the end of Chapters 3, 4, 5, 6.

Tables in Appendix C are provided for statistical comparison. The data shown reflect actual country group membership for each year in the series

Appendix D
Production of Crude Oil, NGL,
Other Liquids and Refinery Gain

Table D1. World Production of Crude Oil, NGL, and Other Liquids, 1983-1992
(Thousand Barrels per Day)

Region Country	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992 ¹
North America										
Canada	1,665	1,774	1,808	1,802	1,902	1,997	1,970	1,979	1,979	2,057
Mexico	2,954	3,037	3,016	2,787	2,886	2,882	2,904	2,981	3,137	3,115
United States	10,300	10,554	10,635	10,289	10,009	9,818	9,219	8,994	9,168	8,996
Other	0	0	0	0	0	(s)	0	0	(s)	0
Total	14,919	15,365	15,459	14,878	14,797	14,697	14,093	13,955	14,284	14,168
Central & South America										
Argentina	499	493	480	465	464	484	487	510	515	588
Bahama Islands	0	0	0	0	0	0	0	0	0	0
Brazil	447	601	721	713	741	718	761	790	808	807
Chile	49	49	47	41	40	34	32	28	24	23
Colombia	156	172	180	310	391	382	411	448	425	446
Cuba	13	16	19	20	20	17	17	16	16	17
Ecuador	239	260	283	295	176	304	281	287	301	321
Netherlands Antilles	0	0	0	0	0	0	0	0	0	0
Panama Republic	0	0	0	0	0	0	0	0	0	0
Peru	172	185	191	179	165	142	130	130	116	117
Puerto Rico	0	0	0	0	0	0	0	0	0	0
Trinidad and Tobago	160	170	175	168	157	157	154	150	154	142
Venezuela	1,858	1,855	1,740	1,884	1,846	2,001	2,015	2,251	2,492	2,447
U.S. Virgin Islands	0	0	0	0	0	0	0	0	0	0
Other	36	34	32	32	30	31	34	35	35	39
Total	3,629	3,835	3,868	4,107	4,030	4,271	4,323	4,645	4,886	4,949
Western Europe										
Austria	26	25	23	23	22	24	24	23	27	26
Belgium	0	0	0	0	0	0	0	0	0	0
Denmark	45	46	58	76	97	99	117	121	143	157
Finland	0	0	0	0	0	0	0	0	0	0
France	55	55	67	74	77	79	77	72	69	67
Germany	106	108	110	110	105	113	105	105	95	91
Greece	26	28	27	27	26	23	19	17	17	15
Ireland	0	0	0	0	0	0	0	0	0	0
Italy	46	46	47	52	69	92	84	89	82	87
Luxembourg	0	0	0	0	0	0	0	0	0	0
Netherlands	62	70	87	104	98	88	77	84	84	64
Norway	652	733	829	923	1,077	1,233	1,628	1,782	1,984	2,217
Portugal	0	0	0	0	0	0	0	0	0	0
Spain	58	46	44	45	40	37	30	27	33	31
Sweden	0	0	0	(s)	(s)	(s)	0	0	0	0
Switzerland	0	0	0	0	0	0	0	0	0	0
Turkey	44	41	41	46	51	50	56	73	88	82
United Kingdom	2,402	2,616	2,675	2,691	2,568	2,391	1,942	1,928	1,938	1,985
Former Yugoslavia	87	84	90	88	90	86	78	74	68	26
Other	0	0	0	0	0	0	(s)	(s)	(s)	0
Total	3,609	3,898	4,098	4,259	4,320	4,316	4,238	4,395	4,628	4,848
Eastern Europe & Former U.S.S.R.										
Albania	75	55	55	55	54	44	47	30	19	20
Bulgaria	3	4	6	6	6	4	5	4	4	4
Former Czechoslovakia	2	2	2	3	3	3	3	2	3	3
Hungary	61	62	62	62	57	62	51	55	47	48
Poland	5	5	5	5	4	4	4	3	4	3
Romania	255	252	235	236	230	206	193	171	148	145
Russia	--	--	--	--	--	--	--	--	--	7,704
Former U.S.S.R.	12,302	12,201	11,935	12,335	12,480	12,503	12,140	11,400	10,412	--
Other	(s)	(s)	(s)	(s)	(s)	0	(s)	(s)	(s)	1,209
Total	12,703	12,581	12,300	12,702	12,834	12,827	12,443	11,665	10,636	9,136

See footnotes at end of table.

Table D1. World Production of Crude Oil, NGL, and Other Liquids, 1983-1992 (Continued)
(Thousand Barrels per Day)

Region Country	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992 ¹
Middle East										
Bahrain	51	50	48	52	51	52	51	47	43	44
Iran	2,448	2 184	2,260	2,050	2,318	2,260	2,837	3,123	3,362	3,489
Iraq	1,010	1,214	1,443	1,700	2,089	2,705	2,951	2,070	305	450
Israel	1	1	1	1	(s)	(s)	(s)	(s)	(s)	(s)
Kuwait	1,119	1,224	1,077	1,494	1,680	1,592	1,888	1,240	190	1,044
Oman	377	417	502	564	588	623	651	695	708	744
Qatar	320	422	331	330	317	376	404	446	445	446
Saudi Arabia	5,416	5,018	3,783	5,255	4,683	5,585	5,567	7,030	8,795	9,159
Syria	167	170	178	195	231	266	342	390	494	533
United Arab Emirates	1,269	1,276	1,353	1,515	1,686	1,695	1,990	2,252	2,551	2,486
Other	0	0	0	11	21	174	194	193	197	182
Total	12,178	11,976	10,956	13,167	13,664	15,328	16,876	17,487	17,090	18,576
Africa										
Algeria	1,024	1,119	1,157	1,065	1,188	1,160	1,225	1,305	1,370	1,362
Angola	177	208	231	282	360	452	455	475	500	532
Egypt	752	847	914	837	921	883	910	913	919	926
Gabon	157	157	172	166	155	159	208	270	294	298
Kenya	0	0	0	0	0	0	0	0	0	0
Libya	1,135	1,124	1,085	1,064	1,002	1,205	1,185	1,410	1,523	1,523
Morocco	1	1	1	(s)	(s)	(s)	(s)	(s)	(s)	(s)
Nigeria	1,241	1,388	1,495	1,467	1,341	1,450	1,716	1,810	1,892	1,982
South Africa	55	55	60	60	65	60	70	70	70	100
Tunisia	120	120	114	111	109	108	110	98	109	114
Other	255	324	375	356	354	354	368	361	343	361
Total	4,917	5,343	5,604	5,409	5,495	5,831	6,247	6,712	7,021	7,197
Far East & Oceania										
Australia	468	546	640	580	612	605	555	638	606	602
Brunei	187	175	169	181	150	148	142	160	171	177
China	2,120	2,296	2,505	2,620	2,690	2,730	2,757	2,774	2,835	2,838
Hong Kong	0	0	0	0	0	0	0	0	0	0
India	481	521	622	635	616	644	710	670	625	568
Indonesia	1,437	1,487	1,369	1,420	1,373	1,372	1,481	1,539	1,662	1,642
Japan	12	10	15	15	14	14	13	14	18	20
Korea, South	0	0	0	0	0	0	0	0	0	0
Malaysia	365	450	450	513	508	551	596	631	658	666
New Zealand	17	19	23	41	42	50	54	56	56	55
Pakistan	13	17	35	42	42	45	48	62	64	79
Philippines	13	12	9	8	6	6	5	5	3	14
Singapore	0	0	0	0	0	0	0	0	0	0
Taiwan	6	6	4	4	5	4	4	4	3	3
Thailand	17	29	52	51	47	52	51	68	72	77
Other	30	32	31	26	23	30	49	65	97	179
Total	5,166	5,601	5,923	6,136	6,129	6,251	6,465	6,686	6,870	6,922
World Total	57,121	58,599	58,208	60,658	61,269	63,521	64,684	65,545	65,416	65,796

¹ Preliminary.

--=Not applicable.

(s)=Value less than 500 barrels per day.

Note: Sum of components may not equal total due to independent rounding.

Sources: See sources at the end of Chapter 3

Table D2. World Production of Crude Oil, NGL, Other Liquids and Refinery Gain, 1983-1992
(Thousand Barrels per Day)

Region Country	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992 ¹
North America										
Canada	1,695	1,809	1,848	1,845	1,950	2,042	2,027	2,025	2,032	2,117
Mexico	2,982	3,065	3,044	2,815	2,914	2,910	2,932	3,009	3,165	3,143
United States	10,788	11,107	11,192	10,905	10,648	10,473	9,880	9,677	9,883	9,768
Other	0	0	0	0	0	(s)	0	0	0	(s)
Total	15,465	15,981	16,084	15,565	15,512	15,425	14,839	14,712	15,080	15,028
Central & South America										
Argentina	504	498	485	470	469	489	492	515	520	593
Bahama Islands	0	0	0	0	0	0	0	0	0	0
Brazil	460	614	734	726	754	731	774	803	821	820
Chile	50	50	48	42	41	35	33	29	25	24
Colombia	158	174	182	312	393	384	413	450	427	448
Cuba	13	16	19	20	20	17	17	16	16	17
Ecuador	240	261	284	296	177	305	282	288	302	322
Netherlands Antilles	4	4	4	6	6	6	6	6	6	6
Panama Republic	1	1	0	1	1	1	1	1	1	1
Peru	174	187	193	181	167	144	132	132	118	119
Puerto Rico	(1)	2	(1)	0	0	0	0	0	0	0
Trinidad and Tobago	163	173	178	171	160	160	157	153	157	145
Venezuela	1,874	1,872	1,757	1,901	1,863	2,018	2,032	2,268	2,509	2,464
U.S. Virgin Islands	(1)	(1)	(s)	(s)	(s)	(s)	(s)	(s)	(s)	(s)
Other	37	35	33	33	31	32	35	36	36	40
Total	3,676	3,887	3,916	4,159	4,082	4,323	4,375	4,697	4,938	5,001
Western Europe										
Austria	28	27	25	25	24	26	26	25	29	28
Belgium	10	11	11	12	12	12	12	12	12	12
Denmark	49	50	62	80	101	103	121	125	147	161
Finland	0	0	0	0	0	0	0	0	0	0
France	89	93	106	114	117	119	117	112	109	107
Germany	138	144	147	148	143	151	143	143	133	129
Greece	29	31	30	30	29	26	22	20	20	18
Ireland	1	1	1	1	1	1	1	1	1	1
Italy	78	82	84	90	107	130	122	127	120	125
Luxembourg	0	0	0	0	0	0	0	0	0	0
Netherlands	91	102	120	138	132	122	111	118	118	98
Norway	655	736	832	926	1,080	1,236	1,631	1,785	1,987	2,220
Portugal	2	2	2	2	2	2	2	2	2	2
Spain	70	59	57	59	54	51	44	41	47	45
Sweden	4	4	4	4	4	4	4	4	4	4
Switzerland	1	1	1	1	1	1	1	1	1	1
Turkey	48	45	45	50	55	54	60	77	92	86
United Kingdom	2,449	2,668	2,728	2,746	2,623	2,446	1,997	1,983	1,993	2,040
Former Yugoslavia	87	84	90	88	90	86	78	74	68	26
Other	0	0	0	0	0	0	(s)	(s)	(s)	0
Total	3,828	4,140	4,345	4,514	4,575	4,571	4,493	4,650	4,883	5,103
Eastern Europe & Former U.S.S.R.										
Albania	75	55	55	55	54	44	47	30	19	20
Bulgaria	3	4	6	6	6	4	5	4	4	4
Former Czechoslovakia	2	2	2	3	3	3	3	2	3	3
Hungary	61	62	62	62	57	62	51	55	47	48
Poland	5	5	5	5	4	4	4	3	4	3
Romania	255	252	235	236	230	206	193	171	148	145
Russia	--	--	--	--	--	--	--	--	--	7,704
Former U.S.S.R.	12,302	12,201	11,935	12,335	12,480	12,503	12,140	11,400	10,412	--
Other	(s)	(s)	(s)	(s)	(s)	0	(s)	(s)	(s)	1,209
Total	12,703	12,581	12,300	12,702	12,834	12,827	12,443	11,665	10,636	9,136

See footnotes at end of table.

Table D2. World Production of Crude Oil, NGL, Other Liquids and Refinery Gain, 1983-1992 (Continued)
(Thousand Barrels per Day)

Region Country	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992 ¹
Middle East										
Bahrain	52	51	49	53	52	53	52	48	44	45
Iran	2,460	2,196	2,272	2,062	2,330	2,272	2,849	3,135	3,374	3,501
Iraq	1,014	1,218	1,447	1,704	2,093	2,709	2,955	2,074	305	450
Israel	1	1	1	1	(s)	(s)	(s)	(s)	(s)	(s)
Kuwait	1,127	1,233	1,086	1,503	1,689	1,601	1,897	1,245	190	1,044
Oman	377	417	502	564	588	623	651	695	708	744
Qatar	321	423	332	331	318	377	405	447	446	447
Saudi Arabia	5,430	5,033	3,778	5,270	4,698	5,600	5,582	7,045	8,810	9,174
Syria	167	170	178	195	231	266	342	390	494	533
United Arab Emirates	1,272	1,279	1,356	1,518	1,689	1,698	1,993	2,255	2,554	2,489
Other	0	0	0	11	21	174	194	193	197	182
Total	12,221	12,021	11,001	13,212	13,709	15,373	16,921	17,528	17,122	18,608
Africa										
Algeria	1,025	1,120	1,158	1,066	1,189	1,161	1,226	1,306	1,371	1,363
Angola	177	208	231	282	360	452	455	475	500	532
Egypt	753	848	915	838	922	884	911	914	920	927
Gabon	158	158	173	167	156	160	209	271	295	299
Kenya	1	1	1	1	1	1	1	1	1	1
Libya	1,135	1,124	1,085	1,064	1,002	1,205	1,185	1,410	1,523	1,523
Morocco	2	2	2	1	1	1	1	1	1	1
Nigeria	1,246	1,393	1,500	1,472	1,346	1,455	1,721	1,815	1,897	1,987
South Africa	57	57	62	62	67	62	72	72	72	102
Tunisia	120	120	114	111	109	108	110	98	109	114
Other	256	325	376	357	355	355	369	362	344	362
Total	4,930	5,356	5,617	5,422	5,508	5,844	6,260	6,725	7,034	7,210
Far East & Oceania										
Australia	480	559	653	593	625	618	568	651	619	615
Brunei	187	175	168	181	150	148	142	160	171	177
China	2,120	2,296	2,505	2,620	2,690	2,730	2,757	2,774	2,835	2,838
Hong Kong	0	0	0	0	0	0	0	0	0	0
India	485	525	626	639	620	648	714	674	629	572
Indonesia	1,448	1,498	1,380	1,419	1,372	1,369	1,478	1,536	1,659	1,639
Japan	39	46	51	46	45	45	44	44	48	50
Korea, South	3	3	3	3	3	3	3	3	3	3
Malaysia	366	451	451	514	509	552	597	632	659	667
New Zealand	18	20	24	42	43	51	55	57	57	57
Pakistan	14	18	36	43	43	46	49	63	65	80
Philippines	14	13	10	9	7	7	6	6	4	15
Singapore	4	4	4	4	4	4	4	4	4	4
Taiwan	8	8	6	6	7	6	6	6	5	5
Thailand	18	30	53	52	48	53	52	69	73	78
Other	30	32	31	26	23	30	49	65	97	179
Total	5,233	5,679	6,001	6,197	6,189	6,310	6,524	6,745	6,929	6,980
World Total	58,056	59,645	59,264	61,771	62,410	64,673	65,854	66,722	66,623	67,067

¹ Preliminary.

--=Not applicable.

(s)=Value less than 500 barrels per day.

Note: Sum of components may not equal total due to independent rounding.

Sources: See sources at the end of Chapter 3.

Table D3. Oil Supply From Refinery Processing Gain and Other Liquids, 1991
(Thousand Barrels per Day)

Region Country	Refinery Processing Gain	Other Liquids
North America		
Canada	53	0
Mexico	28	(s)
United States	715	92
Total	796	92
Central & South America		
Argentina	5	0
Brazil	13	156
Chile	2	0
Colombia	2	0
Dominican Republic	1	0
Ecuador	1	0
Netherlands Antilles	6	0
Panama Republic	1	0
Peru	2	0
Trinidad and Tobago	3	0
Venezuela	17	0
U.S. Virgin Islands	(s)	0
Total	52	156
Western Europe		
Austria	2	0
Belgium	12	0
Denmark	4	0
France	40	0
Germany	38	24
Greece	3	(s)
Ireland	1	0
Italy	38	2
Netherlands	34	0
Norway	3	0
Portugal	2	0
Spain	14	0
Sweden	4	0
Switzerland	1	0
Turkey	4	0
United Kingdom	55	(s)
Total	255	26
Middle East		
Bahrain	1	0
Iran	12	0
Iraq	0	0
Kuwait	0	0
Qatar	1	0
Saudi Arabia	15	0
United Arab Emirates	3	0
Total	32	0
Africa		
Algeria	1	0
Egypt	1	0
Gabon	1	0
Ivory Coast	1	0
Kenya	1	0
Morocco	1	0
Nigeria	5	0
South Africa	2	70
Total	13	70
Far East & Oceania		
Australia	13	0
India	4	0
Indonesia	(3)	0
Japan	30	3
Korea, South	3	0
Malaysia	1	0
New Zealand	1	10
Pakistan	1	0
Philippines	1	0
Singapore	4	0
Taiwan	2	0
Thailand	1	0
Total	59	12
World Total	1,207	356

(s)=Value less than 500 barrels per day.

Note: Sum of components may not equal total due to independent rounding.

Sources: See sources at the end of Chapter 3.

Appendix E

International Energy Prices

Table E1. Selected Crude Oil Prices, 1983-1993¹
(U.S. Dollars per Barrel)

Region Country Crude Type (API Gravity)	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
North America											
Canada											
Lloydminster (22)	25.91	24.55	24.32	21.41	14.03	15.25	9.97	14.98	19.27	13.00	15.95
Mexico											
Isthmus (33)	32.50	29.00	29.00	26.21	17.00	14.83	14.53	19.90	24.80	15.80	17.25
United States											
West Texas Int (40)	32.00	30.00	28.38	28.00	17.85	16.55	16.95	21.38	23.48	17.61	17.77
Ref Acq Cost of US Imp Crude	31.40	28.80	27.49	24.93	16.45	15.45	16.04	20.51	22.30	16.10	16.78
Central & South America											
Colombia											
Cano Limon (30)	(s)	(s)	(s)	(s)	17.50	15.85	15.20	20.15	24.95	15.73	16.58
Ecuador											
Oriente (30)	32.50	27.50	27.50	26.15	15.86	15.46	13.56	18.81	22.87	13.94	15.62
Venezuela											
Tia Juana Light(31)	32.88	27.88	27.88	27.10	15.10	17.62	12.27	24.69	28.62	19.67	17.97
Western Europe											
Norway											
Ekofisk Blend (42)	34.25	30.25	28.50	26.61	16.86	17.60	15.85	20.75	27.25	18.00	18.15
United Kingdom											
Brent Blend (38)	33.50	30.00	28.65	26.00	18.25	18.00	15.80	21.00	27.20	17.75	17.90
Middle East											
Iran											
Iranian Light (34)	31.20	28.00	28.00	28.05	16.14	15.55	12.75	18.20	23.65	15.50	16.70
Iraq											
Kirkuk Blend (36)	34.83	29.83	29.83	28.18	17.60	16.20	14.40	19.45	NA	NA	NA
Kuwait											
Kuwait Blend (31)	32.30	27.30	27.55	27.10	16.70	16.67	12.30	17.35	NA	NA	15.30
Saudi Arabia											
Arabian Light (34)	34.00	29.00	29.00	28.00	16.15	17.52	13.15	18.40	24.00	15.90	16.80
United Arab Emirates											
Murban (39)	34.56	29.56	29.56	28.15	15.55	17.92	13.70	19.05	24.65	16.80	18.15
Africa											
Algeria											
Saharan Blend (44)	35.50	30.50	30.50	29.50	17.30	18.87	16.10	21.15	28.85	18.80	18.60
Angola											
Cabinda (32)	NA	NA	NA	NA	16.85	16.40	14.40	19.65	25.35	16.65	17.35
Libya											
Es Sider (37)	35.10	30.15	30.15	30.15	16.95	18.52	15.40	20.40	26.90	17.20	17.55
Nigeria											
Bonny Light (37)	35.50	30.00	28.00	28.65	17.13	18.92	15.05	21.20	27.80	18.20	18.50
Far East & Oceania											
China											
Daqing (33)	32.51	28.70	28.45	25.95	12.80	17.70	15.30	18.15	26.10	18.50	19.00
Indonesia											
Minas (34)	34.53	29.53	29.53	28.53	16.28	17.56	15.50	18.55	26.50	18.65	19.10

¹ Foreign crude oil prices are as of January 1 of the year; U.S. domestic prices are averages for the month of January. The foreign crude oils are free on board (f.o.b.) at the port of lading. The United States refiner acquisition cost for imported crude oil includes all charges associated with the acquisition, transportation, and storage of imported crude up to the time the oil is booked into the U.S. refineries.

(s)=No significant volume of exports.

NA=Not available.

Sources: McGraw-Hill, Inc, *Platt's Oilgram Price Report*. Energy Information Administration, *Weekly Petroleum Status Report*, DOE/EIA-0208, various issues. Petroleum Intelligence Group, *Petroleum Market Intelligence*, Estimated Posted Price for January.

Table E2. World Survey of Selected Petroleum Product Prices (Including Taxes) January 1, 1993

Region Country	Exchange Rate	Automotive Fuels		Light Fuel Oil	Kerosene	LPG ¹	Light Fuel Oil	Heavy Fuel Oil
	Foreign Currency per U.S. Dollar	Premium Gasoline	Diesel Fuel	Residential			Industrial	
		U.S. Dollars per Gallon					U.S. Dollars per Barrel	
North America								
Canada ²	1.28	1.85	1.55	1.12	NA	NA	26.34	15.72
Mexico ²	3.11	1.51	0.89	NA	NA	NA	35.14	11.97
United States ²	1.00	1.31	0.98	0.94	0.82	0.75	26.34	14.83
Central & South America								
Argentina	0.99	2.60	NA	0.92	0.92	NA	NA	NA
Bolivia	4.10	2.49	1.42	0.83	0.88	NA	NA	NA
Brazil	14,080.00	2.01	1.27	NA	1.15	0.46	12.79	6.95
Chile	384.04	1.59	1.26	NA	1.01	NA	NA	22.46
Colombia	740.08	0.97	0.78	NA	0.78	0.50	NA	NA
Costa Rica	137.72	1.38	1.15	NA	1.15	NA	NA	24.61
Cuba	0.74	1.64	0.72	0.33	0.43	NA	NA	12.87
Dominican Republic	12.50	1.92	1.10	1.10	1.44	0.65	46.04	24.53
Ecuador	1,865.00	1.29	0.78	0.37	0.03	NA	32.77	15.54
El Salvador	8.63	1.70	0.89	NA	0.87	0.62	40.16	17.67
Jamaica	22.20	1.22	1.12	NA	0.94	NA	44.11	17.22
Nicaragua	5.00	2.60	1.38	NA	1.38	NA	NA	17.49
Panama Republic	1.00	1.57	1.08	NA	1.06	4.37	NA	26.68
Paraguay	1,596.00	1.80	1.14	1.01	0.98	NA	47.89	26.05
Peru	1.64	2.28	1.27	NA	1.09	NA	45.79	29.41
Suriname	1.79	3.07	1.82	NA	2.27	NA	NA	NA
Trinidad and Tobago	4.25	1.67	0.87	NA	0.79	NA	NA	31.80
Uruguay	3,523.20	2.72	1.29	1.32	1.32	NA	NA	27.52
Venezuela	80.18	0.29	0.22	NA	0.14	NA	NA	7.04
Western Europe								
Austria	11.35	3.23	2.67	1.47	NA	1.82	44.76	45.08
Belgium ²	33.26	3.32	2.34	0.91	NA	NA	32.04	16.53
Denmark ²	6.24	3.38	1.92	2.49	NA	NA	39.96	18.16
Finland ²	5.42	3.28	2.26	1.17	NA	NA	40.18	20.31
France ²	5.48	3.41	2.05	1.44	NA	NA	42.85	16.29
Germany ²	1.62	3.25	2.20	1.09	NA	NA	39.75	18.34
Greece ²	215.82	3.27	1.97	1.71	NA	NA	97.76	20.19
Ireland ²	0.61	3.55	2.70	1.52	NA	NA	44.48	22.06
Italy ²	1,492.60	3.77	2.52	2.98	NA	NA	105.19	23.06
Luxembourg ²	33.26	2.48	1.85	0.97	NA	NA	36.42	17.68
Netherlands ²	1.82	3.86	2.28	1.43	NA	NA	NA	25.08
Norway ²	6.88	4.34	1.52	1.65	NA	NA	56.67	52.55
Portugal ²	145.51	3.54	2.48	2.60	NA	NA	104.07	26.18
Spain ²	114.59	3.21	2.24	1.54	NA	NA	56.20	18.35
Sweden ²	7.25	4.20	2.05	2.03	NA	NA	35.43	27.29
Switzerland ²	1.48	2.52	2.65	0.83	NA	NA	31.98	18.85
Turkey ²	8,707.70	2.60	1.89	2.01	NA	NA	NA	24.56
United Kingdom ²	0.65	2.77	2.36	0.80	NA	NA	NA	15.29
Middle East								
Israel	2.78	0.68	0.70	NA	0.69	NA	NA	16.29
Lebanon	1,871.00	1.03	NA	0.81	0.96	0.09	28.90	17.45
Africa								
Ethiopia	5.00	1.40	1.07	NA	0.73	0.82	NA	17.57
Ghana	537.47	0.64	0.63	NA	0.63	NA	NA	15.23
Kenya	35.70	1.90	1.43	NA	1.05	1.06	49.23	42.44
Morocco	8.70	2.91	1.73	0.88	NA	NA	32.77	32.35
South Africa	3.67	0.67	0.69	NA	0.68	NA	NA	15.71
Tunisia	0.95	2.11	1.24	1.18	0.72	0.63	9.62	NA

See footnotes at end of table.

Table E2. World Survey of Selected Petroleum Product Prices (Including Taxes) January 1, 1993
(Continued)

Region Country	Exchange Rate	Automotive Fuels		Light Fuel Oil	Kerosene	LPG ¹	Light Fuel Oil	Heavy Fuel Oil
	Foreign Currency per U.S. Dollar	Premium Gasoline	Diesel Fuel	Residential			Industrial	
		U.S. Dollars per Gallon					U.S. Dollars per Barrel	
Far East & Oceania								
Australia ²	1.48	1.83	1.72	NA	NA	NA	NA	NA
India	28.85	2.34	0.80	NA	0.33	0.41	26.25	21.14
Indonesia	2,058.00	1.01	0.55	0.40	0.55	NA	21.85	21.85
Japan	120.00	4.55	2.45	2.45	1.62	7.77	78.48	33.47
Myanmar (Burma)	6.07	2.19	1.44	1.17	1.85	1.17	60.49	48.96
New Zealand ²	1.95	1.92	0.96	NA	NA	NA	34.68	32.62
Pakistan	25.59	1.25	0.65	0.52	0.77	NA	21.85	27.31
Philippines	26.05	1.37	0.94	0.94	0.94	NA	39.49	16.38
Taiwan ²	25.00	2.57	1.82	NA	NA	NA	37.24	21.88

¹ Liquefied petroleum gas (LPG) prices refer to residential propane or a mixture of propane and butane

² Average for January 1993.

NA=Not available.

Note: Unleaded regular gasoline price is shown for Mexico, Costa Rica, Ecuador, Trinidad and Tobago, Switzerland, Ethiopia, Morocco, and New Zealand.

Sources: International Energy Agency, *Energy Prices and Taxes, First Quarter 1993*. Arpel, (January 22, 1993). International Monetary Fund, *International Financial Statistics*, (June 1993). Energy Information Administration, *Monthly Energy Review*, DOE/EIA-0035(93/07) (July 1993).

Appendix F

Conversions

Table F1. Conversion Factors

Product Unit	Equivalent
Refined Petroleum Products	
Barrels per Metric Ton	
Asphalt	6.06
Distillate Fuel Oil	7.46
Gasoline, Aviation	8.90
Gasoline, Motor	8.53
Greases	6.30
Jet Fuel, Kerosene-type	7.93
Jet Fuel, Naptha-type	8.27
Kerosene	7.73
Liquefied Petroleum Gas (LPG)	11.60
Lubricants	7.00
Miscellaneous Products	8.04
Naphthas	8.22
Natural Gas Liquids (NGL)	10.40
Natural Gasoline	10.00
Paraffin Oil	7.14
Paraffin Wax	7.87
Petrolatum	7.87
Petroleum Coke	5.51
Residual Fuel Oil	6.66
White Spirits	8.50
Crude Oil	
Barrels per Metric Ton	See Table F2 on page 163
Liquid Fuels	
42 U.S. gallons	1 barrel
1 cubic meter	6.289 barrels
159 liters	1 barrel
Gaseous Fuels	
35.315 cubic feet	1 cubic meter
Solid Fuels	
1 Long ton	1.120 short tons
1 Metric ton	1.102 short tons
Heat	
1 Exa (10 ¹⁸) Joule	.9478 Quadrillion (10 ¹⁵) Btu
1 Quadrillion (10 ¹⁵) Btu	1.055056 Exa (10 ¹⁸) Joules

Table F2. Barrels of Crude Oil Per Metric Ton

Region Country	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
North America										
Canada	7.453	7.453	7.453	7.453	7.453	7.453	7.453	7.453	7.453	7.453
Mexico	7.108	7.108	6.965	6.965	6.965	6.965	6.965	6.965	6.965	6.965
United States	7.333	7.333	7.333	7.333	7.333	7.333	7.333	7.333	7.333	7.333
Central & South America										
Argentina	7.149	7.149	7.149	7.149	7.149	7.149	7.149	7.149	7.149	7.149
Barbados	7.286	7.286	7.286	7.286	7.286	7.286	7.286	7.286	7.286	7.286
Bolivia	7.881	7.881	7.881	7.881	7.881	7.881	7.881	7.881	7.881	7.881
Brazil	7.268	7.268	7.268	7.268	7.268	7.268	7.268	7.268	7.268	7.268
Chile	7.506	7.506	7.506	7.506	7.506	7.506	7.506	7.506	7.506	7.506
Colombia	7.084	7.084	7.084	7.084	7.084	7.084	7.084	7.084	7.084	7.084
Cuba	6.449	6.449	6.449	6.449	6.449	6.449	6.449	6.449	6.449	6.449
Ecuador	7.130	7.130	7.130	7.130	7.130	7.130	7.130	7.130	7.130	7.130
Guatemala	7.210	7.210	7.210	7.210	7.210	7.210	7.210	7.210	7.210	7.210
Peru	7.407	7.407	7.407	7.407	7.407	7.407	7.407	7.407	7.407	7.407
Suriname	--	--	6.199	6.199	6.199	6.199	6.199	6.199	6.199	6.199
Trinidad and Tobago	7.084	7.084	7.084	7.084	7.084	7.084	7.084	7.084	7.084	7.084
Venezuela	6.795	6.795	6.880	6.880	6.880	6.880	6.880	6.880	6.880	6.880
Western Europe										
Austria	7.082	7.082	7.082	7.082	7.082	7.082	7.082	7.082	7.082	7.082
Denmark	7.689	7.689	7.689	7.689	7.689	7.689	7.689	7.689	7.689	7.689
France	7.332	7.332	7.332	7.332	7.332	7.332	7.332	7.332	7.332	7.332
Germany	7.295	7.295	7.295	7.295	7.295	7.295	7.295	7.295	7.295	7.295
Greece	7.178	7.178	7.178	7.178	7.178	7.178	7.178	7.178	7.178	7.178
Italy	6.853	6.853	6.853	6.853	6.853	6.853	6.853	6.853	6.853	6.853
Netherlands	6.853	6.853	6.853	6.853	6.853	6.853	6.853	6.853	6.853	6.853
Norway	7.810	7.810	7.810	7.810	7.810	7.810	7.810	7.810	7.810	7.810
Spain	7.506	7.506	7.506	7.506	7.506	7.506	7.506	7.506	7.506	7.506
Sweden	--	--	--	--	7.247	7.247	7.247	7.247	7.247	7.247
Turkey	7.150	7.150	7.150	7.150	7.150	7.150	7.150	7.150	7.150	7.150
United Kingdom	7.466	7.466	7.466	7.466	7.466	7.466	7.466	7.466	7.466	7.466
Former Yugoslavia	7.418	7.418	7.418	7.418	7.418	7.418	7.418	7.418	7.418	7.418
Eastern Europe & Former U.S.S.R.										
Albania	6.594	6.594	6.594	6.594	6.594	6.594	6.594	6.594	6.594	6.594
Bulgaria	7.332	7.332	7.332	7.332	7.332	7.332	7.332	7.332	7.332	7.332
Former Czechoslovakia	6.780	6.780	6.780	6.780	6.780	6.780	6.780	6.780	6.780	6.780
Hungary	6.690	6.690	6.690	6.690	6.690	6.690	6.690	6.690	6.690	6.690
Poland	7.418	7.418	7.418	7.418	7.418	7.418	7.418	7.418	7.418	7.418
Romania	7.506	7.506	7.506	7.506	7.506	7.506	7.506	7.506	7.506	7.506
Former U.S.S.R.	7.270	7.270	7.270	7.270	7.270	7.270	7.270	7.270	7.270	7.270
Middle East										
Bahrain	7.320	7.320	7.320	7.320	7.320	7.320	7.320	7.320	7.320	7.320
Iran	7.305	7.305	7.305	7.305	7.305	7.305	7.305	7.305	7.305	7.305
Iraq	7.426	7.426	7.426	7.426	7.426	7.426	7.426	7.426	7.426	7.426
Israel	7.247	7.247	7.247	7.247	7.247	7.247	7.247	7.247	7.247	7.247
Jordan	--	--	--	--	7.190	7.190	7.190	7.190	7.190	7.190
Kuwait	7.245	7.245	7.245	7.245	7.245	7.245	7.245	7.245	7.245	7.245
Oman	7.332	7.332	7.332	7.332	7.332	7.332	7.332	7.332	7.332	7.332
Qatar	7.500	7.500	7.500	7.500	7.500	7.500	7.500	7.500	7.500	7.500
Saudi Arabia	7.268	7.268	7.268	7.268	7.268	7.268	7.268	7.268	7.268	7.268
Syria	6.836	6.836	6.836	6.836	6.836	6.836	6.836	6.836	6.836	6.836
United Arab Emirates	7.480	7.480	7.480	7.480	7.480	7.480	7.480	7.480	7.480	7.480
Yemen	--	--	--	7.627	7.636	7.632	7.632	7.631	7.631	7.631

See footnotes at end of table.

Table F2. Barrels of Crude Oil Per Metric Ton (Continued)

Region Country	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
Africa										
Algeria	7.936	7.936	7.936	7.936	7.936	7.936	7.936	7.936	7.936	7.936
Angola	7.409	7.409	7.409	7.409	7.409	7.409	7.409	7.409	7.409	7.409
Benin	6.870	6.870	6.870	6.870	6.870	6.870	6.870	6.870	6.870	6.870
Cameroon	7.205	7.205	7.205	7.205	7.205	7.205	7.205	7.205	7.205	7.205
Congo	7.506	7.506	7.506	7.506	7.506	7.506	7.506	7.506	7.506	7.506
Egypt	7.256	7.256	7.256	7.256	7.256	7.256	7.256	7.256	7.256	7.256
Equatorial Guinea	--	--	--	--	--	--	--	--	8.077	8.077
Gabon	7.305	7.305	7.305	7.305	7.305	7.305	7.305	7.305	7.305	7.305
Ghana	7.285	7.285	7.285	7.285	7.285	7.285	7.285	7.285	7.285	7.285
Ivory Coast	7.285	7.285	7.285	7.285	7.285	7.285	7.285	7.285	7.285	7.285
Libya	7.515	7.515	7.515	7.515	7.515	7.515	7.515	7.515	7.515	7.515
Morocco	7.600	7.600	7.600	7.600	7.600	7.600	7.600	7.600	7.600	7.600
Nigeria	7.315	7.315	7.315	7.315	7.315	7.315	7.315	7.315	7.315	7.315
Tunisia	7.689	7.689	7.689	7.689	7.689	7.689	7.689	7.689	7.689	7.689
Zaire	7.320	7.320	7.320	7.320	7.320	7.320	7.320	7.320	7.320	7.320
Far East & Oceania										
Australia	7.720	7.855	7.855	7.855	7.855	7.855	7.855	7.855	7.855	7.855
Bangladesh	--	--	7.453	7.453	7.453	7.453	7.453	7.453	7.453	7.453
Brunei	7.340	7.340	7.340	7.340	7.340	7.340	7.340	7.340	7.340	7.340
China	7.320	7.320	7.320	7.320	7.320	7.320	7.320	7.320	7.320	7.320
India	7.600	7.600	7.600	7.600	7.600	7.600	7.600	7.600	7.600	7.600
Indonesia	7.558	7.558	7.558	7.558	7.558	7.558	7.558	7.558	7.558	7.558
Japan	7.285	7.285	7.285	7.285	7.285	7.285	7.285	7.285	7.285	7.285
Malaysia	7.641	7.641	7.641	7.641	7.641	7.641	7.641	7.641	7.641	7.641
Myanmar (Burma)	7.084	7.084	7.084	7.084	7.084	7.084	7.084	7.084	7.084	7.084
New Zealand	8.127	8.127	8.127	8.127	8.127	8.127	8.127	8.127	8.127	8.127
Pakistan	7.500	7.500	7.500	7.500	7.500	7.500	7.500	7.500	7.500	7.500
Papua New Guinea	--	--	--	--	--	--	--	--	7.809	7.809
Philippines	7.285	7.285	7.285	7.285	7.285	7.285	7.285	7.285	7.285	7.285
Taiwan	6.568	6.568	6.568	6.568	6.568	6.568	6.568	6.568	6.568	6.568
Thailand	6.758	6.758	6.758	6.758	6.758	6.758	6.758	6.758	6.758	6.758
Vietnam	--	--	--	7.082	7.082	7.082	7.082	7.082	7.082	7.082

--=No production of this form of energy.

Sources: See sources at the end of Chapter 3.

Table F3. Gross Heat Content of Crude Oil, 1983-1992
(Thousand Btu per Barrel)

Region Country	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
North America										
Canada	5,810	5,810	5,810	5,810	5,810	5,810	5,810	5,810	5,810	5,810
Mexico	6,010	6,010	6,010	6,010	6,010	6,010	6,010	6,010	6,010	6,010
United States	5,800	5,800	5,800	5,800	5,800	5,800	5,800	5,800	5,800	5,800
Central & South America										
Argentina	5,993	5,993	5,993	5,993	5,993	5,993	5,993	5,993	5,993	5,993
Barbados	5,863	5,874	5,863	5,863	5,862	5,867	5,867	5,867	5,867	5,867
Bolivia	5,574	5,574	5,574	5,574	5,575	5,574	5,574	5,574	5,574	5,574
Brazil	5,910	5,910	5,910	5,910	5,910	5,910	5,910	5,910	5,910	5,910
Chile	5,780	5,780	5,780	5,780	5,780	5,780	5,780	5,780	5,780	5,780
Colombia	6,023	6,023	6,023	6,023	6,023	6,023	6,023	6,023	6,023	6,023
Cuba	6,395	6,393	6,393	6,394	6,394	6,393	6,393	6,393	6,393	6,393
Ecuador	5,986	5,986	5,986	5,986	5,986	5,986	5,986	5,986	5,986	5,986
Guatemala	5,941	5,945	5,945	5,945	5,945	5,947	5,947	5,947	5,947	5,947
Peru	5,831	5,831	5,831	5,831	5,831	5,831	5,831	5,831	5,831	5,831
Suriname	--	--	6,329	6,315	6,315	6,321	6,321	6,321	6,321	6,321
Trinidad and Tobago	6,023	6,023	6,023	6,023	6,023	6,023	6,023	6,023	6,023	6,023
Venezuela	6,184	6,135	6,135	6,135	6,135	6,135	6,135	6,135	6,135	6,135
Western Europe										
Austria	6,021	6,020	6,021	6,021	6,021	6,020	6,020	6,020	6,020	6,020
Denmark	5,677	5,677	5,677	5,677	5,677	5,677	5,677	5,677	5,677	5,677
France	5,869	5,869	5,869	5,869	5,869	5,869	5,869	5,869	5,869	5,869
Germany	5,926	5,926	5,926	5,926	5,926	5,926	5,926	5,926	5,926	5,926
Greece	5,927	5,927	5,927	5,927	5,927	5,926	5,926	5,926	5,926	5,926
Italy	6,158	6,158	6,158	6,158	6,158	6,158	6,158	6,158	6,158	6,158
Netherlands	6,159	6,158	6,158	6,158	6,158	6,158	6,158	6,158	6,158	6,158
Norway	5,620	5,620	5,620	5,620	5,620	5,620	5,620	5,620	5,620	5,620
Spain	5,780	5,780	5,780	5,780	5,780	5,780	5,780	5,780	5,780	5,780
Sweden	--	--	--	5,936	5,936	6,148	--	--	--	--
Turkey	5,976	5,976	5,976	5,976	5,976	5,976	5,976	5,976	5,976	5,976
United Kingdom	5,803	5,803	5,803	5,803	5,803	5,803	5,803	5,803	5,803	5,803
Former Yugoslavia	5,823	5,823	5,823	5,823	5,823	5,823	5,823	5,823	5,823	5,823
Eastern Europe & Former U.S.S.R.										
Albania	6,305	6,305	6,305	6,305	6,305	6,305	6,305	6,305	6,305	6,305
Bulgaria	5,881	5,881	5,881	5,881	5,881	5,879	5,879	5,879	5,879	5,879
Former Czechoslovakia	6,205	6,216	6,205	6,210	6,210	6,211	6,211	6,211	6,211	6,211
Hungary	6,249	6,249	6,249	6,249	6,249	6,249	6,249	6,249	6,249	6,249
Poland	5,822	5,820	5,822	5,822	5,826	5,820	5,820	5,820	5,820	5,820
Romania	5,780	5,780	5,780	5,780	5,780	5,780	5,780	5,780	5,780	5,780
Former U.S.S.R.	5,880	5,880	5,880	5,880	5,880	5,880	5,880	5,880	5,880	--

See footnotes at end of table.

Table F3. Gross Heat Content of Crude Oil, 1983-1992 (Continued)
(Thousand Btu per Barrel)

Region Country	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
Middle East										
Bahrain	5,879	5,879	5,879	5,879	5,879	5,879	5,879	5,879	5,879	5,879
Iran	5,888	5,888	5,888	5,888	5,888	5,888	5,888	5,888	5,888	5,888
Iraq	5,820	5,820	5,820	5,820	5,820	5,820	5,820	5,820	5,820	5,820
Israel	5,918	5,929	5,918	5,918	5,952	5,920	5,920	5,920	5,920	5,920
Jordan	--	--	--	5,973	5,973	5,956	5,956	5,956	5,956	5,956
Kuwait	5,921	5,921	5,921	5,921	5,921	5,921	5,921	5,921	5,921	5,921
Oman	5,869	5,869	5,869	5,869	5,869	5,869	5,869	5,869	5,869	5,869
Qatar	5,777	5,777	5,777	5,777	5,777	5,777	5,777	5,777	5,777	5,777
Saudi Arabia	5,910	5,910	5,910	5,910	5,910	5,910	5,910	5,910	5,910	5,910
Syria	6,158	6,158	6,158	6,158	6,158	6,158	6,158	6,158	6,158	6,158
United Arab Emirates	5,788	5,788	5,788	5,788	5,788	5,788	5,788	5,788	5,788	5,788
Yemen	--	--	--	5,712	5,744	5,728	5,729	5,725	5,725	5,725
Africa										
Algeria	5,555	5,555	5,555	5,555	5,555	5,555	5,555	5,555	5,555	5,555
Angola	5,828	5,828	5,828	5,828	5,828	5,828	5,828	5,828	5,828	5,828
Benin	6,137	6,140	6,140	6,140	6,141	6,142	6,142	6,142	6,142	6,142
Cameroon	5,948	5,948	5,948	5,948	5,948	5,948	5,948	5,948	5,948	5,948
Congo	5,780	5,780	5,780	5,780	5,780	5,780	5,780	5,780	5,780	5,780
Egypt	5,922	5,922	5,922	5,922	5,922	5,922	5,922	5,922	5,922	5,922
Equatorial Guinea	--	--	--	--	--	--	--	--	5,464	5,464
Gabon	5,888	5,888	5,888	5,888	5,888	5,888	5,888	5,888	5,888	5,888
Ghana	5,904	5,902	5,890	5,936	--	--	--	--	--	--
Ivory Coast	5,900	5,900	5,900	5,900	5,900	5,899	5,899	5,899	5,899	5,899
Libya	5,775	5,775	5,775	5,775	5,775	5,775	5,775	5,775	5,775	5,775
Morocco	5,726	5,738	5,726	5,720	5,753	5,738	5,738	5,738	5,738	5,738
Nigeria	5,880	5,880	5,880	5,880	5,880	5,880	5,880	5,880	5,880	5,880
Tunisia	5,677	5,677	5,677	5,677	5,677	5,677	5,677	5,677	5,677	5,677
Zaire	5,879	5,879	5,879	5,879	5,879	5,879	5,879	5,879	5,879	5,879
Far East & Oceania										
Australia	5,578	5,578	5,578	5,578	5,578	5,578	5,578	5,578	5,578	5,578
Bangladesh	5,784	5,784	5,784	5,829	5,808	5,792	5,792	5,792	5,792	5,792
Brunei	5,865	5,865	5,865	5,865	5,865	5,865	5,865	5,865	5,865	5,865
China	5,879	5,879	5,879	5,879	5,879	5,879	5,879	5,879	5,879	5,879
India	5,729	5,729	5,729	5,729	5,729	5,729	5,729	5,729	5,729	5,729
Indonesia	5,740	5,740	5,740	5,740	5,740	5,740	5,740	5,740	5,740	5,740
Japan	5,900	5,902	5,900	5,901	5,900	5,899	5,899	5,899	5,899	5,899
Malaysia	5,697	5,697	5,697	5,697	5,697	5,697	5,697	5,697	5,697	5,697
Myanmar (Burma)	6,020	6,020	6,020	6,021	6,019	6,020	6,020	6,020	6,020	6,020
New Zealand	5,441	5,440	5,441	5,441	5,441	5,441	5,441	5,441	5,441	5,441
Pakistan	5,777	5,776	5,777	5,777	5,777	5,777	5,777	5,777	5,777	5,777
Papua New Guinea	--	--	--	--	--	--	--	--	5,607	5,607
Philippines	5,901	5,899	5,900	5,901	5,900	5,902	5,902	5,902	5,902	5,902
Taiwan	6,320	6,321	6,315	6,315	6,320	6,321	6,321	6,321	6,321	6,321
Thailand	6,316	6,318	6,317	6,317	6,317	6,317	6,317	6,317	6,317	6,317
Vietnam	--	--	--	6,027	6,022	6,022	6,022	6,022	6,022	6,022

--=No production of this form of energy.

Sources: See sources at the end of Chapter 3.

Table F4. Gross Heat Content of Natural Gas Plant Liquids, 1983-1992
(Thousand Btu per Barrel)

Region Country	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
North America										
Canada	3,980	3,980	3,980	3,980	3,980	3,980	3,980	3,900	3,980	3,980
Mexico	3,620	3,620	3,620	3,620	3,620	3,620	3,620	3,620	3,620	3,620
United States	3,839	3,812	3,815	3,797	3,804	3,800	3,826	3,822	3,807	3,807
Central & South America										
Argentina	3,818	3,820	3,821	3,820	3,820	3,820	3,820	3,820	3,820	3,820
Bolivia	4,128	4,130	4,128	4,132	4,130	4,130	4,130	4,130	4,130	4,130
Brazil	4,249	4,250	4,250	4,251	4,250	4,250	4,250	4,250	4,250	4,250
Chile	4,151	4,151	4,149	4,151	4,151	4,150	4,150	4,150	4,150	4,150
Colombia	3,288	3,286	3,288	3,288	3,283	3,286	3,286	3,286	3,286	3,286
Cuba	4,356	4,344	4,342	4,342	4,342	4,344	4,344	4,344	4,344	4,344
Ecuador	4,233	4,235	4,233	4,233	4,233	4,235	4,235	4,235	4,235	4,235
Peru	4,630	4,617	4,630	4,630	4,630	4,617	4,617	4,617	4,617	4,617
Suriname	--	--	--	--	--	--	--	--	--	--
Trinidad and Tobago	4,347	4,344	4,347	4,347	4,347	4,344	4,344	4,344	4,344	4,344
Venezuela	4,195	4,195	4,195	4,195	4,195	4,195	4,195	4,195	4,195	4,195
Western Europe										
Austria	4,274	4,262	4,274	4,274	4,247	4,262	4,262	4,262	4,262	4,262
France	4,385	4,385	4,385	4,386	4,386	4,385	4,385	4,385	4,385	4,385
Greece	4,050	4,050	4,050	4,050	4,050	4,050	4,050	4,050	4,050	4,050
Italy	4,247	4,262	4,247	4,247	4,258	4,259	4,259	4,259	4,259	4,259
Netherlands	4,347	4,347	4,349	4,349	4,349	4,347	4,347	4,347	4,347	4,347
Norway	4,348	4,348	4,348	4,348	4,348	4,348	4,348	4,348	4,348	4,348
Spain	--	--	--	4,348	4,347	4,348	4,348	4,348	4,348	4,348
Sweden	--	--	--	--	--	--	--	--	--	--
United Kingdom	4,490	4,490	4,490	4,490	4,490	4,490	4,490	4,490	4,490	4,490
Former Yugoslavia	4,349	4,351	4,349	4,349	4,349	4,349	4,349	4,349	4,349	4,349
Eastern Europe & Former U.S.S.R.										
Former Czechoslovakia	4,658	4,645	4,658	4,658	4,658	4,645	4,645	4,645	4,645	4,645
Hungary	4,387	4,386	4,387	4,387	4,387	4,386	4,386	4,386	4,386	4,386
Poland	4,438	4,454	4,438	4,438	4,438	4,454	4,454	4,454	4,454	4,454
Romania	4,619	4,619	4,619	4,619	4,619	4,619	4,619	4,619	4,619	4,619
Former U.S.S.R.	4,150	4,150	4,150	4,150	4,150	4,150	4,150	4,150	4,150	--
Middle East										
Bahrain	4,286	4,287	4,288	4,288	4,286	4,287	4,287	4,287	4,287	4,287
Iran	4,349	4,347	4,348	4,349	4,348	4,348	4,348	4,348	4,348	4,348
Iraq	4,351	4,350	4,348	4,348	4,348	4,348	4,348	4,348	4,348	4,348
Jordan	--	--	--	--	--	--	--	--	--	--
Kuwait	4,190	4,190	4,190	4,190	4,190	4,190	4,190	4,190	4,190	4,190
Oman	4,575	4,581	4,582	4,582	4,580	4,581	4,581	4,581	4,581	4,581
Qatar	3,790	3,790	3,790	3,790	3,790	3,790	3,790	3,790	3,790	3,790
Saudi Arabia	4,265	4,265	4,265	4,265	4,265	4,265	4,265	4,265	4,265	4,265
Syria	4,350	4,350	4,350	4,300	4,300	4,300	4,300	4,300	4,300	4,300
United Arab Emirates	4,532	4,532	4,532	4,532	4,532	4,532	4,532	4,532	4,532	4,532
Yemen	--	--	--	--	--	--	--	--	--	--

See footnotes at end of table.

Table F4. Gross Heat Content of Natural Gas Plant Liquids, 1983-1992
(Thousand Btu per Barrel)

Region Country	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
Africa										
Algeria	5,080	5,080	5,080	5,080	5,080	5,080	5,080	5,080	5,080	5,080
Egypt	4,940	4,940	4,940	4,939	4,940	4,940	4,940	4,940	4,940	4,940
Libya	4,350	4,350	4,350	4,350	4,350	4,350	4,350	4,350	4,350	4,350
Tunisia	4,300	4,300	4,300	4,300	4,300	4,300	4,300	4,300	4,300	4,300
Far East & Oceania										
Australia	4,290	4,290	4,290	4,290	4,290	4,290	4,290	4,290	4,290	4,290
Bangladesh	--	--	4,050	4,050	4,050	4,050	4,050	4,050	4,050	4,050
Brunei	4,505	4,505	4,504	4,504	4,506	4,506	4,506	4,506	4,506	4,506
India	4,600	4,600	4,600	4,600	4,600	4,600	4,600	4,600	4,600	4,600
Indonesia	4,060	4,060	4,060	4,060	4,060	4,060	4,060	4,060	4,060	4,060
Japan	4,356	4,372	4,384	4,326	4,326	4,327	4,327	4,327	4,327	4,327
Malaysia	--	4,410	4,411	4,411	4,411	4,410	4,410	4,410	4,410	4,410
Myanmar (Burma)	4,348	4,348	4,348	4,348	4,348	4,348	4,348	4,348	4,348	4,348
New Zealand	4,068	4,071	4,073	4,073	4,073	4,075	4,075	4,075	4,075	4,075
Pakistan	4,384	4,372	4,384	4,384	4,384	4,372	4,372	4,372	4,372	4,372
Taiwan	3,826	3,834	3,836	3,836	3,836	3,825	3,825	3,825	3,825	3,825
Thailand	4,352	4,349	4,350	4,349	4,350	4,349	4,349	4,349	4,349	4,349

--=No production of this form of energy.

Sources: See sources at the end of Chapter 3.

Table F5. Gross Heat Content of Dry Natural Gas, 1983-1992
(Btu per Cubic Foot)

Region Country	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
North America										
Canada	1,014	1,014	1,014	1,014	1,014	1,017	1,014	1,014	1,015	1,015
Mexico	963	963	963	963	963	963	963	963	963	963
United States	1,031	1,031	1,032	1,030	1,031	1,029	1,031	1,031	1,030	1,030
Central & South America										
Argentina	932	932	932	932	932	932	932	932	932	932
Barbados	1,050	1,050	1,050	1,050	1,033	1,050	1,050	1,050	1,047	1,047
Bolivia	932	932	932	932	932	932	932	932	932	932
Brazil	1,033	1,033	1,033	1,033	1,033	1,033	1,033	1,033	1,033	1,033
Chile	999	999	999	999	999	999	999	999	999	999
Colombia	1,145	1,145	1,145	1,145	1,145	1,145	1,145	1,145	1,145	1,145
Cuba	1,050	1,045	1,045	1,045	--	--	--	--	--	--
Ecuador	1,300	1,300	1,300	1,300	1,300	1,300	1,300	1,300	1,299	1,299
Peru	999	999	999	999	999	999	999	999	999	999
Trinidad and Tobago	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047
Venezuela	1,139	1,139	1,139	1,139	1,139	1,139	1,139	1,139	1,139	1,139
Western Europe										
Austria	1,080	1,080	1,080	1,080	1,080	1,080	967	967	1,074	1,074
Belgium	1,057	1,057	1,057	1,057	1,057	1,057	944	944	1,065	1,065
Denmark	1,101	1,101	1,101	1,101	1,101	1,101	1,100	1,089	1,092	1,092
France	1,006	1,006	1,006	1,006	1,006	1,040	1,092	1,099	1,123	1,123
Germany	893	893	893	893	893	893	893	893	893	893
Greece	1,439	1,439	1,439	1,439	1,439	1,439	1,443	1,398	1,406	1,406
Ireland	1,008	1,008	1,008	1,008	1,008	1,008	1,008	1,010	1,009	1,009
Italy	1,012	1,012	1,012	1,012	1,012	1,014	1,013	1,013	1,013	1,013
Netherlands	895	895	895	895	895	895	895	895	894	894
Norway	1,079	1,079	1,079	1,079	1,079	1,086	1,085	1,091	1,089	1,089
Spain	1,147	1,147	1,147	1,147	1,147	1,144	1,141	1,141	1,140	1,140
Switzerland	1,058	1,058	1,058	1,058	1,058	1,054	1,074	967	1,082	1,082
Turkey	1,029	1,029	1,029	1,029	1,029	1,029	1,030	1,028	1,028	1,028
United Kingdom	1,033	1,033	1,033	1,033	1,033	1,033	1,033	1,033	1,002	1,002
Former Yugoslavia	1,112	1,112	1,112	1,112	1,112	1,112	1,112	1,112	1,047	1,047
Eastern Europe & Former U.S.S.R.										
Albania	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047
Bulgaria	1,037	1,037	1,038	1,038	1,039	1,038	1,038	1,038	1,038	1,038
Former Czechoslovakia	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047
Germany	893	893	893	893	893	893	893	893	893	893
Hungary	1,114	1,114	1,114	1,114	1,114	1,114	1,114	1,114	1,114	1,114
Poland	1,023	1,023	1,023	1,023	1,023	1,023	1,023	1,023	1,023	1,023
Romania	1,123	1,123	1,123	1,123	1,123	1,123	1,123	1,123	1,123	1,123
Russia	--	--	--	--	--	--	--	--	--	932
Former U.S.S.R.	929	929	930	930	932	932	932	932	932	--
Middle East										
Bahrain	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047
Iran	1,056	1,056	1,056	1,056	1,056	1,056	1,056	1,056	1,056	1,056
Iraq	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047
Israel	1,038	1,040	1,040	1,036	1,038	1,039	1,039	1,039	--	--
Kuwait	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047
Oman	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047
Qatar	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047
Saudi Arabia	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047
Syria	1,047	1,047	1,048	1,047	1,047	1,047	1,047	1,047	1,047	1,047
United Arab Emirates	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047

See footnotes at end of table.

Table F5. Gross Heat Content of Dry Natural Gas, 1983-1992 (Continued)
(Btu per Cubic Foot)

Region Country	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
Africa										
Algeria	1,061	1,061	1,061	1,061	1,061	1,061	1,061	1,061	1,061	1,061
Angola	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047
Congo	1,043	1,043	1,045	1,050	1,045	1,047	1,047	1,047	--	--
Egypt	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047
Gabon	1,047	1,047	1,045	1,050	1,046	1,048	1,048	1,048	1,047	1,047
Libya	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047
Morocco	1,047	1,045	1,047	1,047	1,048	1,045	1,045	1,045	1,047	1,047
Nigeria	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047
Tunisia	1,235	1,235	1,235	1,235	1,235	1,235	1,235	1,235	1,235	1,235
Far East & Oceania										
Afghanistan	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047
Australia	1,050	1,050	1,050	1,050	1,050	1,052	1,041	1,047	1,050	1,050
Bangladesh	974	974	974	974	974	974	974	974	974	974
Brunel	1,114	1,114	1,114	1,114	1,114	1,114	1,114	1,114	1,114	1,114
China	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047
India	1,034	1,034	1,034	1,034	1,034	1,034	1,034	1,034	1,034	1,034
Indonesia	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047
Japan	1,068	1,068	1,068	1,068	1,068	1,044	1,044	1,044	1,043	1,043
Malaysia	1,034	1,034	1,034	1,034	1,034	1,034	1,034	1,034	1,034	1,034
Myanmar (Burma)	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047
New Zealand	988	988	988	988	988	985	921	1,019	1,009	1,009
Pakistan	974	974	974	974	974	974	974	974	974	974
Taiwan	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047
Thailand	1,050	1,050	1,050	1,050	1,050	1,050	1,050	1,050	1,050	1,050

--=No production of this form of energy.

Sources: See sources at the end of Chapter 4.

Table F6. Gross Heat Content of Coal, 1983-1992
(Thousand Btu per Short Ton)

Region Country	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
North America										
Canada	20,705	21,110	21,230	21,230	21,303	21,303	21,310	21,310	22,670	22,367
Mexico	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	19,352	19,352
United States	22,052	22,010	21,870	21,913	21,922	21,823	21,765	21,822	21,681	21,675
Central & South America										
Argentina	21,231	21,230	21,225	21,244	21,388	21,381	21,235	21,235	19,438	19,438
Brazil	20,650	20,651	20,651	20,651	20,690	20,690	20,650	20,650	17,459	17,459
Chile	24,448	24,452	24,453	24,478	24,418	24,418	24,480	24,480	24,698	24,639
Colombia	22,300	22,301	22,300	22,300	22,313	22,313	22,300	22,300	23,405	23,405
Peru	23,030	23,000	23,000	23,030	24,242	24,273	23,000	23,000	..	..
Venezuela	23,111	23,036	24,000	23,000	23,000	23,000	23,000	23,000	..	..
Western Europe										
Austria	12,601	12,599	12,600	12,600	12,691	12,693	12,600	12,600	10,493	10,493
Belgium	23,001	23,001	23,000	23,000	22,938	22,939	23,000	23,000	17,054	17,054
France	23,050	23,000	23,000	23,000	22,975	22,974	23,000	23,000	23,076	23,357
Germany	10,042	9,847	9,892	9,897	9,867	9,751	9,739	9,662	10,167	10,499
Greece	4,800	4,800	4,800	4,800	4,801	4,801	4,800	4,800	5,444	5,444
Iceland	22,500	..	..	..	..	..	..	..	..	..
Ireland	22,683	22,727	22,667	22,667	18,182	18,182	22,670	22,670	24,768	24,768
Italy	9,068	9,072	9,059	9,076	9,355	9,356	9,078	9,078	9,297	9,431
Malta	22,500	..	..	..	..	..	..	..	..	..
Norway	24,099	24,105	24,094	24,104	24,943	24,954	24,100	24,100	24,172	24,172
Portugal	22,650	22,667	22,667	22,652	20,906	20,909	22,670	22,670	14,763	14,763
Spain	16,210	16,250	16,800	16,830	16,842	16,842	16,830	16,830	12,431	13,126
Sweden	23,571	23,333	23,333	23,000	24,390	24,419	23,400	23,400	20,642	20,642
Turkey	13,115	13,115	12,600	12,800	12,803	12,803	12,800	12,800	20,859	20,841
United Kingdom	21,400	21,400	21,400	21,500	21,496	21,496	21,500	21,500	22,662	22,662
Former Yugoslavia	10,455	10,300	10,000	10,000	10,002	10,002	10,000	10,000	8,467	8,441
Eastern Europe & Former U.S.S.R.										
Albania	12,601	12,602	12,600	12,598	12,623	12,622	12,600	12,600	9,325	9,325
Bulgaria	12,655	12,700	12,720	12,720	12,725	12,724	12,720	12,720	6,741	6,722
Former Czechoslovakia	13,370	13,370	13,400	13,380	13,377	13,377	13,380	13,380	12,599	12,564
Georgia	..	..	..	..	..	..	..	..	..	15,141
Hungary	11,110	11,100	11,120	11,125	11,137	11,137	11,125	11,125	8,833	8,776
Kazakhstan	..	..	..	..	..	..	..	..	..	16,578
Kyrgyzstan	..	..	..	..	..	..	..	..	..	11,819
Poland	19,460	19,130	19,130	..	9,111	19,111	19,110	19,110	15,511	15,665
Romania	12,000	11,800	11,800	..	11,696	11,696	11,700	11,700	7,888	7,005
Russia	..	..	..	..	..	..	..	..	..	13,781
Tajikistan	..	..	..	..	..	..	..	..	..	8,343
Ukraine	..	..	..	..	..	..	..	..	..	16,415
Former U.S.S.R.	16,870	16,865	16,905	16,905	17,033	17,033	17,033	17,033	14,559	..
Uzbekistan	..	..	..	..	..	..	..	..	..	8,705

See footnotes at end of table.

Table F6. Gross Heat Content of Coal, 1983-1992 (Continued)
(Thousand Btu per Short Ton)

Region Country	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
Middle East										
Iran	21,000	21,000	21,000	21,000	21,230	21,228	21,000	21,000	26,232	26,232
Africa										
Algeria	--	21,230	21,225	22,222	22,222	22,222	22,000	22,000	24,403	24,403
Botswana	22,000	22,009	22,000	20,000	21,909	21,906	22,000	22,000	22,000	22,000
Cameroon	--	--	--	--	--	--	--	25,200	18,000	18,000
Morocco	23,502	23,500	23,503	23,497	23,866	23,868	23,500	23,500	30,103	30,103
Mozambique	23,509	23,495	23,500	24,000	21,277	21,212	23,500	23,500	24,403	24,403
Niger	22,500	22,500	22,500	22,500	22,500	22,500	22,500	22,500	25,200	25,200
Nigeria	22,500	22,500	22,500	22,516	22,500	22,500	22,500	22,500	24,403	24,403
South Africa	21,400	21,400	21,400	21,400	21,399	21,399	21,400	21,400	25,837	25,840
Swaziland	23,000	22,971	23,000	23,000	23,000	23,000	23,000	23,000	23,000	23,000
Tanzania	20,000	20,000	20,000	20,000	20,000	20,000	22,000	22,000	24,403	24,403
Zaire	22,000	22,000	22,000	22,000	19,048	19,021	22,000	22,000	23,927	23,927
Zambia	21,236	21,228	21,240	21,240	21,235	21,235	21,235	21,235	23,411	23,411
Zimbabwe (Rhodesia)	21,999	22,000	22,000	22,000	22,095	22,095	22,000	22,000	24,403	24,403
Far East & Oceania										
Afghanistan	22,000	22,000	22,000	22,000	21,739	21,727	22,000	22,000	22,000	22,000
Australia	19,000	18,150	18,500	19,700	19,899	19,899	19,900	19,900	17,498	17,729
Bhutan	--	--	--	--	--	--	--	25,200	17,500	17,500
China	18,500	18,500	18,500	18,500	18,500	18,500	18,500	18,500	18,103	18,114
India	20,270	20,270	20,275	20,450	17,599	17,599	17,598	17,598	16,812	17,081
Indonesia	23,000	23,000	23,000	23,000	23,007	23,007	23,000	23,000	24,403	24,403
Japan	21,700	21,750	21,850	21,900	21,904	21,904	21,900	21,900	21,087	21,138
Korea, North	23,000	23,000	23,000	23,000	23,000	23,000	23,000	23,000	22,505	22,505
Korea, South	18,000	18,000	18,000	18,000	18,015	18,015	18,000	18,000	16,203	16,203
Laos	--	20,000	20,000	--	--	--	--	--	22,500	22,500
Malaysia	--	--	--	--	--	25,200	25,200	25,200	24,403	24,403
Mongolia	9,300	9,301	9,300	9,376	9,349	9,349	9,375	9,375	10,243	10,313
Myanmar (Burma)	17,941	17,952	18,000	18,037	18,000	18,000	18,000	18,000	16,665	16,643
Nepal	8,000	7,778	7,778	7,500	8,000	8,000	8,000	8,000	8,000	8,000
New Zealand	19,900	19,899	19,952	20,000	19,873	19,872	20,000	20,000	24,694	27,030
Pakistan	17,641	17,641	17,639	17,639	17,801	17,800	17,640	17,640	19,443	19,443
Philippines	17,102	17,096	17,103	17,100	17,028	17,024	17,100	17,100	20,204	20,206
Taiwan	23,501	23,500	23,500	23,500	23,608	23,607	23,500	23,500	24,602	24,602
Thailand	8,316	8,315	8,315	8,315	8,345	8,345	8,315	8,315	9,909	9,910
Vietnam	23,001	23,000	23,000	23,000	23,011	23,011	23,000	23,000	24,403	24,403

--=No production of this form of energy.

Sources: See sources at the end of Chapter 5.

Table F7. Gross Heat Content of Hydroelectric Power, 1983-1992
(Btu per Kilowatthour)

Region Country	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
North America										
Canada	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400
Mexico	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400
United States	10,520	10,440	10,447	10,446	10,419	10,324	10,317	10,335	10,352	10,352
Central & South America										
Argentina	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400
Bolivia	10,398	10,397	10,401	10,397	10,403	10,403	10,403	10,403	10,403	10,402
Brazil	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400
Chile	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400
Colombia	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400
Costa Rica	10,399	10,401	10,402	10,401	10,400	10,400	10,400	10,400	10,400	10,400
Dominican Republic	10,397	10,409	10,396	10,400	10,404	10,404	10,404	10,404	10,404	10,404
Ecuador	10,403	10,401	10,401	10,400	10,400	10,400	10,400	10,400	10,400	10,400
El Salvador	10,404	10,397	10,400	10,397	10,402	10,402	10,402	10,402	10,402	10,402
Guatemala	10,402	10,403	10,402	10,401	10,401	10,401	10,401	10,401	10,401	10,401
Guyana	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000
Haiti	10,389	10,389	10,389	10,413	10,410	10,410	10,410	10,410	10,410	10,410
Honduras	10,404	10,405	10,404	10,402	10,402	10,402	10,402	10,402	10,402	10,402
Jamaica	10,403	10,375	10,403	10,403	10,403	10,403	10,403	10,403	10,403	10,403
Nicaragua	10,402	10,386	10,383	10,415	10,415	10,415	10,415	10,415	10,415	10,415
Panama Republic	10,397	10,400	10,398	10,400	10,398	10,398	10,398	10,398	10,398	10,398
Paraguay	10,399	10,400	10,402	10,400	10,401	10,401	10,401	10,401	10,401	10,401
Peru	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400
Puerto Rico	10,376	10,429	10,403	10,404	10,389	10,389	10,389	10,389	10,389	10,389
Suriname	10,406	10,404	10,395	10,402	10,400	10,400	10,400	10,400	10,400	10,400
Uruguay	10,400	10,400	10,400	10,399	10,401	10,401	10,401	10,401	10,401	10,401
Venezuela	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400
Western Europe										
Austria	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400
Belgium	10,397	10,390	10,398	10,397	10,397	10,397	10,397	10,397	10,397	10,397
Denmark	10,278	10,357	10,370	10,345	10,345	10,345	10,345	10,345	10,345	10,345
Finland	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400
France	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400
Germany	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400
Greece	10,399	10,400	10,401	10,399	10,400	10,400	10,400	10,400	10,400	10,400
Iceland	10,401	10,400	10,400	10,400	10,401	10,401	10,401	10,401	10,401	10,401
Ireland	10,403	10,397	10,398	10,404	10,398	10,398	10,398	10,398	10,398	10,398
Italy	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400
Luxembourg	10,389	10,408	10,390	10,408	10,409	10,409	10,409	10,409	10,409	10,409
Netherlands	--	--	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400
Norway	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400
Portugal	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400
Spain	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400
Sweden	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400
Switzerland	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400
Turkey	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400
United Kingdom	10,400	10,400	10,399	10,400	10,400	10,400	10,400	10,400	10,400	10,400
Former Yugoslavia	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400
Eastern Europe & Former U.S.S.R.										
Albania	10,401	10,401	10,401	10,401	10,401	10,401	10,401	10,401	10,401	10,401
Bulgaria	10,401	10,400	10,402	10,399	10,398	10,398	10,398	10,398	10,398	10,398
Former Czechoslovakia	10,401	10,399	10,399	10,400	10,400	10,400	10,400	10,400	10,400	10,400
Hungary	10,392	10,391	10,392	10,395	10,419	10,419	10,419	10,419	10,419	10,419
Poland	10,401	10,401	10,399	10,401	10,399	10,399	10,399	10,399	10,399	10,399
Romania	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400
Russia	--	--	--	--	--	--	--	--	--	10,400
Former U.S.S.R.	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400	--
Middle East										
Iran	10,400	10,400	10,399	10,399	10,401	10,401	10,401	10,401	10,401	10,401
Iraq	10,404	10,397	10,397	10,404	10,397	10,397	10,397	10,397	10,397	10,397
Jordan	--	--	--	10,000	10,526	10,526	10,526	10,526	10,526	10,526
Lebanon	10,397	10,397	10,397	10,397	10,397	10,397	10,397	10,397	10,397	10,397
Syria	10,401	10,399	10,399	10,402	10,397	10,397	10,397	10,397	10,397	10,397

See footnotes at end of table.

Table F7. Gross Heat Content of Hydroelectric Power, 1983-1992 (Continued)
(Btu per Kilowatthour)

Region Country	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
Africa										
Algeria	10,386	10,407	10,406	10,400	10,404	10,404	10,404	10,404	10,404	10,404
Angola	10,401	10,401	10,401	10,401	10,401	10,401	10,401	10,401	10,401	10,401
Cameroon	10,403	10,400	10,401	10,400	10,400	10,400	10,400	10,400	10,400	10,400
Central African Republic	10,469	10,435	10,333	10,395	10,411	10,411	10,411	10,411	10,411	10,411
Congo	10,393	10,390	10,390	10,390	10,390	10,390	10,390	10,390	10,390	10,390
Egypt	10,400	10,400	10,400	10,400	10,401	10,401	10,401	10,401	10,401	10,401
Equatorial Guinea	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000
Ethiopia	10,394	10,404	10,394	10,406	10,404	10,404	10,404	10,404	10,404	10,404
Gabon	10,407	10,397	10,394	10,406	10,404	10,404	10,404	10,404	10,404	10,404
Ghana	10,400	10,400	10,401	10,401	10,400	10,400	10,400	10,400	10,400	10,400
Guinea	10,380	10,380	10,392	10,387	10,424	10,424	10,424	10,424	10,424	10,424
Ivory Coast	10,403	10,398	10,402	10,402	10,399	10,399	10,399	10,399	10,399	10,399
Kenya	10,403	10,400	10,403	10,403	10,401	10,401	10,401	10,401	10,401	10,401
Liberia	10,389	10,413	10,386	10,413	10,411	10,411	10,411	10,411	10,411	10,411
Madagascar	10,407	10,407	10,392	10,415	10,412	10,412	10,412	10,412	10,412	10,412
Malawi	10,396	10,397	10,404	10,392	10,394	10,394	10,394	10,394	10,394	10,394
Mali	10,410	10,376	10,376	10,380	10,375	10,375	10,375	10,375	10,375	10,375
Mauritius	10,286	10,469	10,439	10,367	10,432	10,432	10,432	10,432	10,432	10,432
Morocco	10,403	10,403	10,400	10,392	10,407	10,407	10,407	10,407	10,407	10,407
Mozambique	10,400	10,401	10,404	10,400	10,339	10,339	10,339	10,339	10,339	10,339
Nigeria	10,398	10,401	10,398	10,399	10,398	10,398	10,398	10,398	10,398	10,398
Rwanda	10,397	10,380	10,370	10,427	10,417	10,417	10,417	10,417	10,417	10,417
South Africa	10,398	10,398	10,395	10,399	10,394	10,394	10,394	10,394	10,394	10,394
Sudan	10,396	10,394	10,392	10,391	10,391	10,391	10,391	10,391	10,391	10,391
Swaziland	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400
Tanzania	10,396	10,394	10,393	10,407	10,397	10,397	10,397	10,397	10,397	10,397
Togo	10,357	10,333	10,333	10,333	10,000	10,000	10,000	10,000	10,000	10,000
Tunisia	10,333	10,462	10,370	10,392	10,357	10,357	10,357	10,357	10,357	10,357
Uganda	10,394	10,406	10,408	10,406	10,392	10,392	10,392	10,392	10,392	10,392
Zaire	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400
Zambia	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400
Zimbabwe (Rhodesia)	10,399	10,400	10,401	10,400	10,401	10,401	10,401	10,401	10,401	10,401
Far East & Oceania										
Afghanistan	10,402	10,396	10,403	10,407	10,397	10,397	10,397	10,397	10,397	10,397
Australia	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400
Bangladesh	10,397	10,405	10,396	10,404	10,400	10,400	10,400	10,400	10,400	10,400
Bhutan	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000
Cambodia (Kampuchea)	10,500	10,333	10,333	10,333	10,333	10,333	10,333	10,333	10,333	10,333
China	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400
Fiji	10,400	10,387	10,414	10,395	10,405	10,405	10,405	10,405	10,405	10,405
India	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400
Japan	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400
Korea, North	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400
Korea, South	10,401	10,400	10,400	10,400	10,401	10,401	10,401	10,401	10,401	10,401
Laos	10,402	10,404	10,404	10,404	10,404	10,404	10,404	10,404	10,404	10,404
Malaysia	10,402	10,401	10,399	10,399	10,399	10,399	10,399	10,399	10,399	10,399
Myanmar (Burma)	10,397	10,400	10,403	10,396	10,397	10,397	10,397	10,397	10,397	10,397
Nepal	10,411	10,396	10,393	10,405	10,394	10,394	10,394	10,394	10,394	10,394
New Caledonia	10,396	10,403	10,397	10,402	10,394	10,394	10,394	10,394	10,394	10,394
New Zealand	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400
Pakistan	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400
Papua New Guinea	10,394	10,394	10,409	10,404	10,393	10,393	10,393	10,393	10,393	10,393
Philippines	10,398	10,401	10,399	10,399	10,401	10,401	10,401	10,401	10,401	10,401
Sri Lanka	10,398	10,401	10,401	10,401	10,399	10,399	10,399	10,399	10,399	10,399
Taiwan	10,401	10,401	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400
Thailand	10,400	10,401	10,399	10,400	10,399	10,399	10,399	10,399	10,399	10,399
Vietnam	10,398	10,398	10,399	10,399	10,399	10,399	10,399	10,399	10,399	10,399

--No production of this form of energy.

Note: There is no generally accepted practice for evaluating the thermal conversion rates for power plants that generate electricity from hydroelectric sources. Therefore, estimates of the prevailing annual average heat content for fossil-fueled, steam-electric power plants are used to evaluate the heat content for hydroelectric power. By using that factor, it is possible to evaluate fossil fuel requirements for replacing those sources during periods of interruption such as droughts.

Sources: See sources at the end of Chapter 6.

Table F8. Gross Heat Content of Nuclear Electric Power, 1983-1992
(Btu per Kilowatthour)

Region Country	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
North America										
Canada	11,589	11,567	11,550	11,550	11,550	11,550	11,550	11,550	11,550	11,550
Mexico	--	--	--	--	--	--	--	10,295	10,065	10,065
United States	10,905	10,843	10,813	10,799	10,776	10,743	10,724	10,680	10,740	10,740
Central & South America										
Argentina	11,808	11,808	11,810	11,810	11,809	11,809	11,809	11,809	11,809	11,809
Brazil	10,230	10,246	10,246	10,219	10,251	10,258	10,258	10,258	10,246	10,246
Western Europe										
Belgium	10,448	10,448	10,378	10,378	10,378	10,378	10,378	10,378	10,373	10,373
Finland	10,365	10,365	10,365	10,365	10,365	10,365	10,365	10,365	10,278	10,278
France	10,317	10,384	10,161	10,161	10,161	10,161	10,161	10,161	10,399	10,399
Germany	10,609	10,549	10,485	10,478	10,471	10,467	10,469	10,437	10,205	10,205
Italy	12,131	12,131	12,131	12,131	12,041	--	--	--	--	--
Netherlands	10,548	10,548	10,548	10,549	10,548	10,548	10,548	10,548	10,485	10,485
Spain	10,985	10,877	10,775	10,775	10,775	10,775	10,775	10,775	10,151	10,151
Sweden	10,092	10,092	10,001	10,001	10,001	10,001	10,001	10,001	10,090	10,090
Switzerland	10,556	10,632	10,632	10,632	10,632	10,632	10,632	10,632	10,540	10,540
United Kingdom	12,912	12,241	11,892	11,892	11,892	11,892	11,892	11,892	12,461	12,461
Former Yugoslavia	11,373	11,374	11,372	11,372	11,374	11,373	11,373	11,373	10,035	10,035
Eastern Europe & Former U.S.S.R.										
Bulgaria	11,006	11,006	11,006	11,006	11,006	11,006	11,006	11,006	11,006	11,006
Former Czechoslovakia	12,317	12,317	12,274	12,274	12,274	12,274	12,274	12,274	12,274	12,274
Hungary	11,374	11,372	11,372	11,374	11,373	11,373	11,373	11,373	10,065	10,065
Russia	--	--	--	--	--	--	--	--	--	11,038
Ukraine	--	--	--	--	--	--	--	--	--	10,911
Former U.S.S.R.	11,407	11,447	11,470	11,513	11,524	11,433	11,443	11,463	11,469	11,469
Africa										
South Africa	--	10,308	10,308	10,308	10,308	10,308	10,308	10,308	10,035	10,035
Far East & Oceania										
India	11,392	11,560	11,672	11,670	11,670	11,671	11,671	11,671	11,844	11,844
Japan	10,702	10,699	10,646	10,646	10,646	10,646	10,646	10,646	10,250	10,250
Korea, South	10,569	10,570	10,422	10,422	10,422	10,422	10,422	10,422	10,077	10,077
Pakistan	11,797	11,812	11,807	11,796	11,809	11,784	11,784	11,784	11,798	11,798
Taiwan	10,323	10,266	10,227	10,227	10,227	10,227	10,227	10,227	9,876	9,876

--=No production of this form of energy.

Note: The average heat content of electricity generated by nuclear electric power plants is calculated by dividing the heat content of electricity consumed in nuclear generating units (3,412 Btu per kilowatthour) by the estimated efficiency factor (the ratio of output to input) for each nuclear power plant.

Sources: See sources at the end of Chapter 6.

Appendix G

Regions and Organizations

Appendix G. Regions and Organizations

North America

Bermuda
Canada

Mexico

St. Pierre/Miquelon
United States

Central and South America

Antarctic Fisheries
Antigua & Barbuda
Argentina
Aruba
Bahama Islands
Barbados
Belize
Bolivia
Brazil
British Virgin Islands
Cayman Islands
Chile
Colombia
Costa Rica
Cuba

Dominica
Dominican Republic
Ecuador
El Salvador
Falkland Islands
French Guiana
Grenada
Guadeloupe
Guatemala
Guyana
Haiti
Honduras
Jamaica
Martinique

Montserrat
Netherlands Antilles
Nicaragua
Panama Republic
Paraguay
Peru
Puerto Rico
St. Kitts-Nevis
St. Lucia
St. Vincent/Grenadines
Suriname
Trinidad and Tobago
U.S. Virgin Islands
Uruguay
Venezuela

Western Europe

Austria
Belgium
Denmark
Faeroe Islands
Finland
France
Germany
Gibraltar

Greece
Iceland
Ireland
Italy
Luxembourg
Malta
Netherlands

Norway
Portugal
Spain
Sweden
Switzerland
Turkey
United Kingdom
Yugoslavia

Eastern Europe and Former U.S.S.R.

Albania	Georgia	Romania
Armenia	Hungary	Russia
Azerbaijan	Kazakhstan	Tajikistan
Belarus	Kyrgyzstan	Turkmenistan
Bulgaria	Latvia	Ukraine
Czechoslovakia	Lithuania	Uzbekistan
Estonia	Moldova	Former U.S.S.R.
	Poland	

Middle East

Bahrain	Jordan	Qatar
Cyprus	Kuwait	Saudi Arabia
Iran	Lebanon	Syria
Iraq	Oman	United Arab Emirates
Israel		Yemen

Africa

Algeria	Ghana	Rwanda
Angola	Guinea	Sao Tome & Principe
Benin	Guinea-Bissau	Senegal
Botswana	Ivory Coast	Seychelles
Burkina Faso (Upper Volta)	Kenya	Sierra Leone
Burundi	Lesotho	Somalia
Cameroon	Liberia	South Africa
Cape Verde	Libya	St. Helena
Central African Republic	Madagascar	Sudan
Chad	Malawi	Swaziland
Comoros	Mali	Tanzania
Congo	Mauritania	Togo
Djibouti (Afars)	Mauritius	Tunisia
Egypt	Morocco	Uganda
Equatorial Guinea	Mozambique	Western Sahara
Ethiopia	Namibia	Zaire
Gabon	Niger	Zambia
Gambia	Nigeria	Zimbabwe (Rhodesia)
	Reunion	

Far East and Oceania

Afghanistan	Japan	Niue
American Samoa	Kiribatia (Gilbert Islands)	Pakistan
Australia	Korea, North	Papua New Guinea
Bangladesh	Korea, South	Philippines
Bhutan	Laos	Samoa, Western
Brunei	Macau	Singapore
Cambodia (Kampuchea)	Malaysia	Solomon Islands
China	Maldives	Sri Lanka
Cook Islands	Mongolia	Taiwan
Fiji	Myanmar (Burma)	Thailand
French Polynesia	Nauru	Tonga
Guam	Nepal	U.S. Pacific Islands
Hong Kong	New Caledonia	Vanuatu (New Hebrides)
India	New Zealand	Vietnam
Indonesia		Wake Island

Organization for Economic Cooperation and Development (OECD)

Australia	Guam	Portugal
Austria	Iceland	Puerto Rico
Belgium	Ireland	Spain
Canada	Italy	Sweden
Denmark	Japan	Switzerland
Finland	Luxembourg	Turkey
France	Netherlands	U.S. Virgin Islands
Germany	New Zealand	United Kingdom
Greece	Norway	United States

OECD Europe

Austria	Greece	Portugal
Belgium	Iceland	Spain
Denmark	Ireland	Sweden
Finland	Italy	Switzerland
France	Luxembourg	Turkey
Germany	Netherlands	United Kingdom
	Norway	

International Energy Agency (IEA)

Australia	Guam	Portugal
Austria	Ireland	Puerto Rico
Belgium	Italy	Spain
Canada	Japan	Sweden
Denmark	Luxembourg	Switzerland
Finland	Netherlands	Turkey
France	New Zealand	U.S. Virgin Islands
Germany	Norway	United Kingdom
Greece		United States

European Economic Community (EEC)

Belgium	Greece	Netherlands
Denmark	Ireland	Portugal
France	Italy	Spain
Germany	Luxembourg	United Kingdom

Former U.S.S.R.

Armenia	Kazakhstan	Russia
Azerbaijan	Kyrgyzstan	Tajikistan
Belarus	Latvia	Turkmenistan
Estonia	Lithuania	Ukraine
Georgia	Moldova	Uzbekistan

North Atlantic Treaty Organization (NATO)

Belgium	Guam	Puerto Rico
Canada	Iceland	Spain
Denmark	Italy	Turkey
France	Luxembourg	U.S. Virgin Islands
Germany	Netherlands	United Kingdom
Greece	Norway	United States
	Portugal	

North Sea

Denmark
Germany

Netherlands

Norway
United Kingdom

Organization of Petroleum Exporting Countries (OPEC)

Algeria
Gabon
Indonesia
Iran

Iraq
Kuwait
Libya
Nigeria

Qatar
Saudi Arabia
United Arab Emirates
Venezuela

Arab OPEC

Algeria
Iraq

Kuwait
Libya
Qatar

Saudi Arabia
United Arab Emirates

Organization of Arab Petroleum Exporting Countries (OAPEC)

Algeria
Bahrain
Egypt
Iraq

Kuwait
Libya
Qatar

Saudi Arabia
Syria
Tunisia
United Arab Emirates

Persian Gulf

Bahrain
Iran

Iraq
Kuwait
Qatar

Saudi Arabia
United Arab Emirates

Appendix H

Energy Chronology

Energy Chronology: 1992

- January 17** Iraq reopens Al-Bakr oil export terminal, its only oil outlet to the sea, at a capacity of 400,000 barrels per day (half of its pre-war capacity). However, Iraq is still not permitted to export oil under United Nations sanctions. (DJ)
- February 4** Rebel factions of the Venezuelan armed forces attempt to assassinate President Carlos Andres Perez and impose a "bloody dictatorship," but are suppressed quickly by forces remaining loyal to the government. (DJ)
- February 16** OPEC oil ministers meeting in Geneva agree on new country production quotas, as well as on an overall crude oil production ceiling of 22.982 million barrels per day. Individual country production allotments are distributed as follows: Saudi Arabia - 7.887; Iran - 3.184; UAE - 2.244; Venezuela - 2.147; Nigeria - 1.751; Libya - 1.395; Indonesia - 1.374; Kuwait - 0.812; Algeria - 0.760; Iraq - 0.505; Qatar - 0.377; Gabon - 0.273; and Ecuador - 0.273. (OML)
- March 24** A leak of radioactive gas from the Russian Leningradskaya reactor located near St. Petersburg heightens concerns over the safety of obsolete Russian nuclear plants, some of which are similar in design to the Chernobyl reactors. (DJ)
- March 31** The United Nations Security Council passes a resolution imposing limited sanctions on Libya, effective April 15, 1992, unless Libya surrenders agents implicated in two instances of alleged air terrorism. (NYT)
- April 15** United Nations sanctions on Libya take effect at 12:01 a.m., eastern daylight time. (WP)
- April 24** The OPEC Ministers gather in Vienna for a Ministerial Monitoring Committee Meeting and decide not to change the crude oil production ceiling and individual country production quotas agreed to in February. The Ministers plan to discuss these issues further when they meet on May 20 for their regularly-scheduled mid-year Ministerial Meeting. (DJ)
- May 4** The United States Department of Energy announces the first purchases of oil for the Strategic Petroleum Reserve (SPR) since August 1990. Open market sales from the California Elk Hills Petroleum Reserve will be reduced by 20,000 barrels per day for 4 months beginning in June, and the oil will be shipped instead to SPR sites on the Gulf Coast. This will increase the SPR by 2.4 million barrels. (DJ)
- May 9** Representatives from more than 140 countries meeting at the United Nations approve a compromise agreement on global warming, paving the way for signature of a treaty at the United Nations Conference on Environment and Development (also known as the "Earth Summit") in Rio de Janeiro next month. The agreement contains no specific deadlines or targets, apparently alleviating concerns raised by the Bush administration. (NYT)
- May 18** Chevron Corporation and the former Soviet republic of Kazakhstan sign the long-awaited agreement on a joint venture of \$20 billion aimed at developing the vast Tengiz oil field. Tengiz is believed to contain 5-10 billion barrels of proved reserves. (DJ)
- May 29** Russian President Boris Yeltsin dismisses Viktor Lopukhin as Deputy Minister of Energy and appoints Viktor Chernomyrdin as Deputy Prime Minister with special responsibility for fuels and energy. (DJ)
- June 8** Negotiators in Rio de Janeiro approve the creation of a new United Nations body to monitor compliance with environmental treaties and review progress toward the goals of the Earth Summit. (WP)

- June 18** Conoco announces an agreement (named "Polar Lights") with the Russian government for joint development of new oil fields in the northern Timon-Pechora basin, west of the Ural Mountains and near the Arctic Circle. (DJ)
- June 21** Venezuela's state oil company, PDVSA, awards contracts to three foreign companies (Benton Oil & Gas Co. of California, Royal Dutch/Shell Group, and Teikoku Oil Co. of Japan) to help revive marginal, currently inactive Venezuelan oil fields. This award represents the first oil development contract given to foreign companies since the Venezuelan oil industry was nationalized in 1976. (NYT, WSJ, HOH)
- June 29** The leader of Algeria's Council of State, Mohammed Boudiaf, is assassinated. (DJ)
- July 6** Azerbaijan agrees to join Kazakhstan, Oman, and Chevron in a crude oil pipeline consortium formed last month. The pipeline will link oil fields in Kazakhstan and Azerbaijan with export terminals in the Persian Gulf and the Mediterranean or Black Sea. (DJ)
- July 14** The American Petroleum Institute reports that U.S. crude oil production during the first half of 1992 was the lowest since 1961 at 7.236 million barrels per day. In comparison, the Energy Information Administration estimates U.S. crude oil production for the same period averaged 7.335 million barrels per day. (DJ)
- July 15** U.S. and Mexican officials announce that Mexico has tentatively agreed to pay bonuses to U.S. and Canadian oil drillers for good performance. This marks a potentially significant move towards relaxation of Mexico's tight restrictions on its oil resources, as well as towards agreement on a North American Free Trade Agreement. (WSJ)
- August 10** Iraq reports that repairs have been completed on the offshore Mina al-Bakr oil export terminal and that the capacity port of 1.6 million barrels per day is now fully operational. (EMC)
- August 12** The United Nations Security Council agrees to maintain air and weapons embargoes, along with diplomatic sanctions, against Libya. The sanctions were initially imposed on April 15, 1992, as a means of pressuring Libya into surrendering two suspects in the Lockerbie bombing case. (DJ)
- August 24** Hurricane Andrew strikes southern Florida, then heads into the Gulf of Mexico towards the U.S. Gulf Coast. (WP)
- September 4** Sharjah, one of seven emirates in the United Arab Emirates (UAE), denounces what it claims is the "Iranian intention to occupy" the disputed Persian Gulf island of Abu Musa. Iran began expelling UAE and other non-Iranian citizens in April from the island, which it uses as a military base commanding the strategic Strait of Hormuz. (DJ)
- September 5** Vietnam demands that China immediately withdraw all oil exploration ships from disputed waters in the Gulf of Tonkin off the coast of northern Vietnam. (DJ)
- September 6** Cuban President Fidel Castro announces that work has been stopped indefinitely on construction of Cuba's first nuclear power plant, because of Russia's insistence on hard currency payment. It had been hoped that the plant would help alleviate a severe shortage of electricity in Cuba. (NYT)
- September 7** Lithuania's Chernobyl-type Ignalina nuclear power plant resumes operations following a 2-day shutdown caused by a minor accident. Although no radioactivity leakage occurred, this marks the second incident at the plant in less than 2 months. (DJ)
- September 17** OPEC oil ministers conclude a 2-day meeting in Geneva with agreement on an overall production target of 24.2 million barrels per day for the fourth quarter of 1992. (DJ, EMC)

- September 18** Ecuador announces its intention to withdraw from full membership within OPEC, effective at the time of the next OPEC Ministerial Meeting, scheduled for November 25, 1992. This marks the first time that an OPEC member has quit OPEC. (*CERA*)
- September 21** Natural gas futures prices register one of their largest 1-day increases, with the contract for October 1992 delivery rising by over 12 cents to around \$2.45 per thousand cubic feet. (*NYT*)
- October 6** South Korea's Energy Resources Ministry announces plans to increase government-owned oil stocks from 34 days to 90 days by the end of 1998. (*DJ*)
- October 7** A Brazilian judge orders the shutdown of Brazil's only nuclear reactor Angra 1 due to safety concerns and a lack of nuclear waste disposal facilities. (*DJ*)
- October 7** The U.S. Senate approves the global climate change treaty signed at the Earth Summit in Rio de Janeiro held in June 1992. (*PON*)
- October 8** The U.S. Congress approves a comprehensive Energy Bill. The bill revamps utility regulations, streamlines licensing of new nuclear power plants, sets targets for alternative-fuel vehicles, and establishes new mandatory efficiency standards for home appliances. (*HOH*)
- October 8** Ecuador's Energy Minister Andres Barreiro announces that Ecuador will open bidding for oil exploration rights to international oil companies next year. (*HOH*)
- October 13** Russian Energy Minister Viktor Chernomyrdin announces plans to create a single supervisory authority (Rosneft) to supervise Russia's fuel and energy sector. (*HOH, EMC*)
- October 13** British Coal announces plans to close 31 of its 50 remaining coal mines and to lay off 30,000 miners (75 percent) of the industry's work force. (*NYT, WP*)
- October 14** The American Petroleum Institute issues a report indicating that U.S. crude oil production fell below 7 million barrels per day in September 1992, reaching a 34-year low. This is attributed in part to the temporary effects on oil and gas production from Hurricane Andrew. (*DJ*)
- October 16** Lithuania's only nuclear power plant Ignalina is shut down due to a radioactive steam leak. Meanwhile, a reactor at the crippled Chernobyl plant in Ukraine is restarted to provide electricity to Ukraine for the winter. (*WP*)
- October 19** In response to widespread opposition, British Trade and Industry Secretary Michael Heseltine announces that British Coal will proceed with the closure of only 10 coal mines, instead of the previously-announced 31 mines. (*DJ*)
- October 22** Two U.S. oil companies (Berry Petroleum and Eastex Crude Co.) announce plans to export the first cargo of U.S. crude oil from the continental U.S. outside North America since 1973. Plans are to ship 200,000 barrels of California heavy crude to an unidentified Pacific Rim country. The shipment has been approved by the Department of Commerce and is scheduled to take place in mid-November 1992. (*HOH*)
- October 23** Bechtel International, Inc., signs a contract to build, finance, and manage an \$850 million crude oil pipeline system from the Tengiz oil field in Kazakhstan and the Azeri field near Baku, Azerbaijan to the Russian Black Sea deepwater port of Novorossysk. The pipeline's eventual capacity is expected to reach 1.5 million barrels per day. (*HOH*)
- October 24** U.S. President Bush signs the National Energy Policy Act of 1992 at an oil well near Maurice, Louisiana. (*GSJ*)

- October 29** British Petroleum announces a reserve estimate of 1.5 billion barrels for Colombia's Cusiana oil field where it has been exploring. This compares with earlier estimates of up to 10 billion barrels. (NYT)
- November 1** Winter standards for oxygenated gasoline take effect in 39 U.S. metropolitan areas with carbon monoxide levels in violation of Clean Air Act amendments passed in 1990. (WSJ)
- November 4** Russia's parliament ratifies the Strategic Arms Reduction Treaty (START), which aims to reduce the number of strategic nuclear warheads in U.S. and former Soviet arsenals by about one-third over the next 7 years. START was signed by Presidents Bush and Gorbachev in July 1991 and ratified by the U.S. Senate in October 1992. (WP)
- November 7** Kuwaiti Oil Minister Ali Ahmed Baghli says that Kuwait has now returned to its pre-war production level of 1.5 million barrels per day (just 1 year after the last oil well fire was extinguished) and plans to reach 1.75 million barrels per day sometime in the first 3 months of 1993. (WP)
- November 27** Only 10 months after the previous Venezuelan coup attempt, another such effort is put down after a few hours of fighting. (DJ)
- November 27** OPEC ministers conclude their meeting in Vienna by agreeing to an overall crude oil production ceiling of 24.6 million barrels per day (excluding Ecuador, which formally withdrew from OPEC). (DJ)
- December 1** Thousands of Norwegian seamen stage a strike, temporarily stopping oil tankers transporting Norwegian North Sea oil. (DJ)
- December 3** The oil tanker Aegean Sea runs aground and spills millions of gallons of crude oil off the coast of Spain. (WSJ)
- December 9** The U.N. Security Council decides to maintain the air and arms embargo against Libya originally imposed on April 15, 1992, and renewed on August 12, 1992. (DJ)
- December 13** Ukrainian authorities restart Chernobyl's undamaged Reactor 1, citing Ukraine's need for electricity. This move comes despite the Ukrainian Parliament's decision in October 1991 to shut down Chernobyl entirely by the end of 1993. (DJ)
- December 14** Russia's Congress of People's Deputies approves President Boris Yeltsin's nomination of Viktor Chernomyrdin to replace Yegor Gaidar as Prime Minister. (DJ)
- December 17** Hundreds of thousands of Polish coal miners go on strike to protest low wages and government restructuring plans which they believe threaten their job security. (NYT)
- December 17** The leaders of Mexico, Canada, and the United States initial the North American Free Trade Agreement, paving the way for formal ratification. (NYT)
- December 21** U.S. President-elect Clinton names Hazel O'Leary, an executive vice president with the Northern States Power Company, as his designee for Secretary of Energy. (HOH)
- December 27** U.S. F-16 fighter planes shoot down an Iraqi MiG in the U.N.-restricted "no-fly" zone in southern Iraq, the first such incident since the zone was created in August 1992. (DJ)
- December 31** The Polish government and representatives of 300,000 Polish coal miners sign an agreement aimed at ending an 18-day strike which has threatened to interfere with Polish coal exports. (DJ)

Sources are as follows: Cambridge Energy Research Associates (CERA); Dow Jones (DJ); Energy Market Consultants (EMC); Financial Times (FT); Global Securities Information, Inc. (GSI); Herold's Oil Headliner (HOH); Los Angeles Times (LAT); New York Times (NYT); Oil Market Listener (OML); Platt's Oilgram News (PON); Washington Post (WP); Wall Street Journal (WSJ).

Glossary

Alcohol: The family name of a group of organic chemical compounds composed of carbon, hydrogen, and oxygen. The series of molecules vary in chain length and are composed of a hydrocarbon plus a hydroxyl group; $\text{CH}-(\text{CH})_n-\text{OH}$. Alcohol includes methanol and ethanol.

Anthracite Coal: Anthracite, or hard coal, is the highest rank of economically usable coal. It is jet black with a high luster. The moisture content generally is less than 15 percent. It usually has a high fixed carbon and ash content and is low in volatile matter. It is a non-coking coal.

API: The American Petroleum Institute, a trade association.

API Gravity: An arbitrary scale expressing the gravity or density of liquid petroleum products. The measuring scale is calibrated in terms of degrees API. A lighter, less dense product has a higher API gravity.

Apparent Consumption (Coal): Primary coal production plus imports of coal and coke, minus exports of coal and coke plus or minus stock changes of coal and coke. Note: In the United States apparent consumption is reported data by major end-use sectors.

Apparent Consumption (Natural Gas): Dry natural gas production plus imports minus exports plus or minus stock changes.

Apparent Consumption (Petroleum): Includes internal consumption, refinery fuel and loss, and bunkering. Also included, where available, are liquefied petroleum gases sold directly from natural gas processing plants for fuel or chemical uses.

Asphalt (Natural): A natural mineral pitch, tar, or bitumen composed principally of hydrocarbons, a natural bituminous rock of dark color comparatively hard and nonvolatile. Does not include asphalt, bitumen, tar, etc., derived from petroleum processing.

Asphalt (Refined): A dark brown to black solid or semi-solid material obtained from petroleum processing in which the predominant component is bitumen. Used mainly in road construction.

Associated Gas: Gas produced in a field containing both oil and gas. The field is developed primarily for extraction of crude oil.

ASTM: The American Society for Testing and Materials.

Barrel (Petroleum): A unit of volume equal to 42 U.S. gallons.

Bitumen: A naturally occurring viscous mixture, mainly of hydrocarbons heavier than pentane, that may contain sulphur compounds and that, in its natural occurring viscous state, is not recoverable at a commercial rate through a well.

Bituminous Coal: Bituminous coal is the most common coal. It is dense, black, often with well defined bands of bright and dull materials. Its moisture content usually is less than 20 percent. It is used for generating electricity, making coke, and space heating.

British Thermal Unit (Btu): The quantity of heat needed to raise the temperature of 1 pound of water by 1 degree Fahrenheit at or near 39.2 degrees Fahrenheit.

Bunkers: Fuels supplied to ships and aircraft in international transportation, irrespective of the flag of the carrier, consisting primarily of residual, distillate, and jet fuel oils.

Butane: A normally gaseous straight-chain or branch-chain hydrocarbon, (C_4H_{10}). It is extracted from natural gas or refinery gas streams. It includes isobutane and normal butane and is covered by ASTM Specification D1835 and Gas Processors Association Specifications for commercial butane.

Coal: A black or brownish-black solid, combustible substance formed by the partial decomposition of vegetable matter without access to air. The rank of coal, which includes anthracite, subanthracite, bituminous, subbituminous, and lignite, is based on fixed carbon, volatile matter, coking and coking properties, and heating value. Coal rank includes the progressive alteration, or coalification, from lignite to anthracite.

Coal Briquets: Anthracite, bituminous, and lignite briquets comprise the secondary solid fuels manufactured from coal by a process in which the coal is partly dried, warmed to expel excess moisture, and then compressed into briquets, usually without the use of a binding substance. In the reduction of

briquets to coal equivalent, different conversion factors are applied according to their origin from hard coal, peat, brown coal, or lignite.

Coal Production: The sum of sales, mine consumption, issues to miners, and issues to coking, briquetting, and other ancillary plants at mines. Production data include quantities extracted from surface and underground working, and normally exclude wastes removed at mines or associated preparation plants.

Coke (Coal): In general, coke is made from bituminous coal (or blends of bituminous coal) from which the volatile constituents are driven off by baking in an oven at temperatures as high as 2,000 degrees Fahrenheit, so that the fixed carbon and ash are fused together. Coke is hard and porous, has gray submetallic luster, and is strong enough to support a load of iron ore in a blast furnace. It is used both as a fuel and a reducing agent in smelting iron ore in a blast furnace.

Conventional Thermal Electricity Generation: Electricity generated by an electric power plant using coal, petroleum, or gas as its source of energy.

Conversion Factor: A number that translates units of one system into corresponding values of another system. Conversion factors can be used to translate physical units of measure for various fuels into Btu equivalents.

Crude Oil (including Lease Condensate): A mixture of hydrocarbons that exists in liquid phase in underground reservoirs and remains liquid at atmospheric pressure after passing through surface separating facilities. Included are lease condensate and liquid hydrocarbons produced from tar sands, gilsonite, and oil shale. Drip gases are also included, but topped crude oil (residual) and other unfinished oils are excluded. Liquids produced at natural gas processing plants and mixed with crude oil are likewise excluded where identifiable.

Crude Oil Production: The volume of crude oil produced from oil reservoirs during given periods of time. The amount of such production for a given period is measured as volumes delivered from lease storage tanks (i.e., the point of custody transfer) to pipelines, trucks, or other media for transport to refineries or terminals with adjustments for (1) net differences between opening and closing lease inventories, and (2) basic sediment and water.

Distillate Fuel Oil: A general classification for one of the petroleum fractions produced in conventional distillation operations. It is used primarily for space heating, on-and-off-highway diesel engine fuel (including railroad engine fuel and fuel for agricultural

machinery), and electric power generation. Included are products known as No. 1, No. 2, and No. 4 fuel oils; No. 1, No. 2, and No. 4 diesel fuels.

Domestic Inland Consumption (Petroleum): Domestic inland consumption is the sum of all refined petroleum products supplied for domestic use (excludes international marine bunkers). Consumption is calculated by product by adding production, imports, crude oil burned directly, and refinery fuel and losses, and then subtracting exports and changes in primary stocks (net withdrawals is a plus quantity and net additions is a minus quantity).

Electricity Installed Capacity: The maximum load that a generating unit, generating station, or other electrical apparatus can carry under specified conditions for a given period of time and not limited by existing service conditions.

Ethane: A normally gaseous straight-chain hydrocarbon, (C_2H_6). It is a colorless paraffinic gas that boils at a temperature of -127.48 degrees Fahrenheit. It is extracted from natural gas and refinery gas streams.

Gasohol: A blend of finished motor gasoline (leaded or unleaded) and alcohol (generally ethanol but sometimes methanol) in which 10 percent or more of the product is alcohol.

Gasoline, Aviation: All special grades of gasoline for use in aviation reciprocating engines, as given in ASTM Specification D910 and Military Specification MIL-G5572. Excludes blending components that will be used in blending or compounding into finished aviation gasoline.

Gasoline Blending Components: Finished components in the gasoline range that will be used for blending or compounding into finished aviation or motor gasoline.

Gasoline, Motor (Leaded): Contains more than 0.05 grams of lead per gallon or more than 0.005 grams of phosphorus per gallon. The actual lead content of any given gallon may vary. Premium and regular grades are included, depending on the octane rating. Includes leaded gasohol. Blendstock is excluded until blending has been completed. Alcohol that is to be used in the blending of gasohol is also excluded.

Gasoline, Motor (Unleaded): Contains not more than 0.05 grams of lead per gallon and not more than 0.005 grams of phosphorus per gallon. Premium and regular grades are included, depending on the octane rating. Includes unleaded gasohol. Blendstock is excluded until blending has been completed. Alcohol

that is to be used in the blending of gasohol is also excluded.

Geothermal Electric Power Generation: Electricity derived from heat found under the earth's surface. Within the earth, there are vast amounts of molten rock and metal, covered by succeeding layers of cooler material, up to the crust of the earth's surface. Underground rivers generate steam which is liberated in the form of geysers through fissures in the earth's surface.

Gross Electricity Generation: The total amount of electric energy produced by a generating facility, as measured at the generator terminals.

Hydroelectric Power Generation: Electricity generated by an electric power plant whose turbines are driven by falling water. It includes electric utility and industrial generation of hydroelectricity, unless otherwise specified. Generation is reported on a net basis, i.e., on the amount of electric energy generated after the electric energy consumed by station auxiliaries and the losses in the transformers that are considered integral parts of the station are deducted.

Jet Fuel (Kerosene-type): A quality kerosene product with an average gravity of 40.7 degrees API, and a 10 percent distillation temperature of 400 degrees Fahrenheit. It is covered by ASTM Specification D1655 and Military Specification MIL-T-5624L (Grades JP-5 and JP-8). A relatively low-freezing point distillate of the kerosene type; it is used primarily for commercial turbojet and turboprop aircraft engines.

Jet Fuel (Naphtha-type): A fuel in the heavy naphtha boiling range with an average gravity of 52.8 degrees API and 20 to 90 percent distillation temperatures of 290 degrees to 470 degrees Fahrenheit, meeting Military Specification MIL-T-5624L (Grade JP-4). JP-4 is used for turbojet and turboprop aircraft engines, primarily by the military. Excludes ram-jet and petroleum rocket fuels.

Joule: The meter-kilogram-second unit of work or energy, equal to the work done by a force of one newton when its point of application moves through a distance of one meter in the direction of the force; equivalent to 10^7 and one watt-second.

Kerosene: Light hydrocarbon distillates in the 150 degrees to 280 degrees Centigrade (300 degrees to 550 degrees Fahrenheit) distillation range. Includes vaporizing oil for use in reciprocating engines (primarily tractors), lamp oil, and kerosene and heating oil.

Kilowatt (kW): One thousand watts.

Kilowatthour (kWh): One thousand watthours.

Lease Condensate: A liquid recovered from natural gas at the well or at small gas/oil separators in the field. Consists primarily of pentanes and heavier hydrocarbons. Also called field condensate. Does not include plant condensate.

Lignite: Lignite, the lowest rank of coal, is a young coal. It is brownish black in color and has a high moisture content, sometimes as high as 45 percent, and a high ash content. It tends to disintegrate when exposed to the weather. The heat content of lignite is one of the lower coals, usually less than 5700 Kcal/kg.

Liquefied Natural Gas (LNG): Conventional natural gas which is liquefied by reducing its temperature to minus 260 degrees Fahrenheit at atmospheric pressure. The volume of the LNG is 1/600 that of the gas in its vapor state.

Liquefied Petroleum Gases (LPG): Ethane, ethylene, propane, propylene, normal butane, butylene, and isobutane produced at refineries or natural gas processing plants, including plants that fractionate raw natural gas plant liquids.

Liquefied Refinery Gases (LRG): Liquefied petroleum fractionated from refinery or still gases. Through compression and/or refrigeration, they are retained in the liquid state. The reported categories are ethane/ethylene, propane/propylene, normal butane/butylene, and isobutane. Excludes still gas used for chemical or rubber manufacture, which is reported as petrochemical feedstock, and also excludes liquefied petroleum gases intended for blending into gasoline, which are reported as gasoline blending components.

Lubricants (Greases): Mixtures of lubricating oils that contain substances that reduce their ability to flow.

Lubricants (Lubricating Oils): Substances used to reduce friction between bearing surfaces. Petroleum lubricants may be produced either from distillates or residues. Other substances may be added to impart or improve certain required properties. "Lubricants" include all grades of lubricating oils from spindle oil to cylinder oil and those used in greases.

Metallurgical Coke: A strong, hard coke produced mainly for use in the iron and steel industry, where it serves as a chemical agent and source of energy. It is used mainly in blast furnaces to absorb the oxygen contained in iron oxides and provide energy for smelting. A portion of its potential energy is captured in the gases generated in the smelting process, then recycled in the form of blast furnace

gas to provide additional energy inside or outside the smelting process. Metallurgical coke is also used to some extent as a domestic fuel and as a raw material for the manufacture of gas.

Naphthas: Refined or partly refined light distillates with an approximate boiling point range of 27 degrees to 221 degrees Centigrade. Blended further or mixed with other materials, they make high-grade motor gasoline or jet fuel. Also used as solvents, petrochemical feedstocks, or as raw materials for the production of town gas.

Natural Gas: A mixture of hydrocarbon compounds, primarily methane and small quantities of various nonhydrocarbons existing in gaseous phase or in solution with crude oil in natural underground reservoirs at reservoir conditions.

Natural Gas Dry Production: Gross withdrawals of natural gas from reservoirs less gas used for reinjection into reservoirs for repressuring, gas which is flared or vented, gas lost in transmission, and shrinkage. Derived by subtracting shrinkage or extraction loss from marketed production. It represents the amount of natural gas that can be marketed and consumed as a gas.

Natural Gas Gross Production: Total withdrawals of natural gas from oil/gas and gas reservoirs.

Natural Gas Liquids (NGL): Those portions of reservoir gas which are liquefied at the surface in lease separators, field facilities, or natural gas processing plants. Natural gas liquids include natural gas plant liquids and lease condensate.

Natural Gas Marketed Production: Gross withdrawals of natural gas from reservoirs less gas used for reinjection into reservoirs for repressuring, gas that is flared and/or vented, and gas that is lost in transmission before the natural gas liquids have been extracted.

Natural Gas Plant Liquids (NGPL): Products obtained from processing natural gas at natural gas processing plants, including natural gasoline plants, cycling plants, and fractionators. Products obtained include ethane, liquefied petroleum gases, (propane, butane, propane-butane mixtures, and ethane-propane mixtures), isopentane, natural gasoline, unfractionated streams, plant condensate, and other minor quantities of finished products, such as motor gasoline, special naphthas, jet fuel, kerosene, and distillate fuel oil.

Natural Gasoline: A mixture of hydrocarbons, mostly pentanes and heavier, extracted from natural gas, that meets vapor pressure, end-point, and other specifications for natural gasoline set by the Gas

Processors Association. Includes isopentane, which is a saturated branch-chain hydrocarbon, (C_5H_{12}), obtained by fractionation of natural gasoline or isomerization of normal pentane.

Net Electricity Consumption: Consumption of electricity computed as generation, plus imports, minus exports, minus transmission and distribution losses.

Net Electricity Generation: Gross generation less the electric energy consumed at the generating station for station use.

Nuclear Electric Power Generation: Electricity generated by nuclear reactors of various types such as heavy water, light water, and boiling water. Generation is reported on a net basis and excludes energy that is generally used by the electric powerplant for its own operating purposes and not for commercial use.

Other Hydrocarbons: Materials received by a refinery and consumed as raw materials. Includes hydrogen, coal tar derivatives, gilsonite, and natural gas received by the refinery for reforming into hydrogen. Natural gas to be used as fuel is excluded.

Paraffin (Oil): A light-colored, wax-free oil obtained by pressing paraffin distillate.

Paraffin (Wax): The wax removed from paraffin distillates by chilling and pressing. When separating from solutions, it is a colorless, more or less translucent, crystalline mass, without odor and taste, slightly greasy to touch, and consisting of a mixture of solid hydrocarbons in which the paraffin series predominates.

Petrochemical Feedstocks: Products from petroleum refineries and natural gas liquids processing plants to be processed further at a petrochemical plant. Includes products primarily in the naphtha range, still gas (refinery gas), and liquefied gases for petrochemical use.

Petroleum: A generic term applied to oil and oil products in all forms, such as crude oil, lease condensate, unfinished oils, refined petroleum products, natural gas plant liquids, and nonhydrocarbon compounds blended into finished petroleum products.

Petroleum Coke: A solid refinery residue; the final product of the condensation process in cracking. Includes green or calcined petroleum coke and coke deposited on catalysts.

Petroleum Jelly: A semi-solid oily product produced from de-waxing lubricating oil basestocks.

Petroleum Products: Products obtained from the processing of crude oil, unfinished oils, natural gas liquids, and other miscellaneous hydrocarbon compounds. Includes aviation gasoline, motor gasoline, naphtha-type jet fuel, kerosene-type jet fuel, kerosene, distillate fuel oil, residual fuel oil, ethane, liquefied petroleum gases, petrochemical feedstocks, special naphthas, lubricants, paraffin wax, petroleum coke, asphalt and road oil, still gas, and other miscellaneous products.

Petroleum Stocks: Primary stocks of crude oil and petroleum products held in storage at (or in) leases, refineries, natural gas processing plants, pipelines, tankfarms, and bulk terminals that can store at least 50,000 barrels of petroleum products or that can receive petroleum products by tanker, barge, or pipeline. Crude oil that is in-transit by water from Alaska or that is stored on Federal leases or in the Strategic Petroleum Reserve is included. Primary stocks exclude stocks of foreign origin that are held in bonded warehouse storage.

Plant Condensate (Petroleum): Mixture of hydrocarbons, mostly pentanes and heavier hydrocarbons, recovered at natural gas liquids processing plants. Does not include field or lease condensate.

Primary Coal: All coal mined and, when necessary, washed and sorted.

Propane: A normally gaseous straight-chain hydrocarbon, (C_3H_8). It is a colorless paraffinic gas that boils at a temperature of -43.67 degrees Fahrenheit. It is extracted from natural gas or refinery gas streams. It includes all products covered by Gas Processors Association Specifications for commercial propane and HD-5 propane and ASTM Specification D1835.

Proved Reserves of Coal: Proved reserves of coal are the estimated quantities, which analysis of geological and engineering data demonstrate with reasonable certainty to be recoverable in future years from known reservoirs under existing economic and operating conditions.

Proved Reserves of Crude Oil: Proved reserves of crude oil are the estimated quantities of all liquids defined as crude oil, which geological and engineering data demonstrate with reasonable certainty to be recoverable in future years from known reservoirs under existing economic and operating conditions.

Proved Reserves of Natural Gas: Proved reserves of natural gas are the estimated quantities which analysis of geological and engineering data demonstrate with reasonable certainty to be recoverable in

future years from known reservoirs under existing economic and operating conditions.

Refinery Fuel: Crude oil and petroleum products consumed at the refinery for all purposes.

Refinery Losses and Gains (Petroleum): Processing gain and loss that takes place during the refining process itself. Excludes losses that do not take place during the refining process, e.g., spills, fire losses, and contamination during blending, transportation, or storage.

Refinery Processing Gain: The volumetric amount by which total refinery output is greater than input for a given period of time. This difference is due to the processing of crude oil into products which, in total, have a higher specific gravity than the crude oil processed.

Reinjected (Natural Gas): The forcing of gas under pressure into an oil reservoir in an attempt to increase recovery.

Residual Fuel Oil: The topped crude of refinery operations which includes No. 5 and No. 6 fuel oils as defined in ASTM Specification D396 and Federal Specification VV-F-815C, Navy Special fuel oil as defined in Military Specification MIL-F-859E including Amendment 2 (NATO Symbol F-77), and Bunker C fuel oil. Residual fuel oil is used for the production of electric power, space heating, vessel bunkering, and various industrial purposes. Imports of residual fuel oil include "Imported Crude Oil Burned Directly as Fuel."

Road Oil: Any heavy petroleum oil, including residual asphaltic oil used as a dust palliative and surface treatment on roads and highways. It is generally produced in six grades from 0, the most liquid, to 5, the most viscous.

Secondary Coal: (e.g. coke, briquets) is derived from primary coal.

Short Ton (coal): A unit of weight equal to 2,000 pounds.

Shrinkage (Natural Gas): The volume of natural gas that is transformed into liquid products during processing, primarily at natural gas liquids processing plants.

Special Naphthas: All finished products within the gasoline range that are used as paint thinners, cleaners, or solvents. These products are refined to a specified flash point and have a boiling range of 90 degrees to 220 degrees Fahrenheit. "Special Naphthas" include all commercial hexane and cleaning solvents conforming to ASTM Specification D1836 and D484, respectively. Naphthas to be blended or

marketed as motor gasoline or aviation gasoline or that are to be used as petrochemical and synthetic natural gas (SNG) feedstocks are excluded.

Still Gas (Refinery Gas): Any form or mixture of gas produced in refineries by distillation, cracking, reforming, and other processes. The principal constituents are methane, ethane, ethylene, normal butane, butylene, propane, propylene, etc. Still gas is reported for petrochemical feedstock use and/or refinery fuel use. The conversion factor from gas to barrels is 6.000 million Btu per fuel oil equivalent barrel.

Subbituminous Coal: Similar to the poorer grades of bituminous coal; low in carbon, high in volatile matter and moisture. Its energy value is somewhat below that of bituminous coal.

Transmission and Distribution Loss: Electric energy lost due to the transmission and distribution of electricity. Much of the loss is thermal in nature.

Unfinished Oils: Includes all oils requiring further processing, except those requiring only mechanical blending.

Vented/Flared (Natural Gas): The release (venting) or burning (flaring) of associated gas as a means of disposal.

Watt: The electrical unit of power. The rate of energy transfer equivalent to one ampere flowing under a pressure of one volt at unity power factor.

Watthour (Wh): An electrical energy unit of measure equal to 1 watt of power supplied to, or taken from, an electric circuit steadily for 1 hour.

Wax: A solid or semi-solid material derived from petroleum distillates or residues by such treatments as chilling, precipitating with a solvent, or de-oiling. It is a light-colored, more-or-less translucent crystalline mass, slightly greasy to the touch, consisting of a mixture of solid hydrocarbons in which the paraffin series predominates. Includes all marketable wax whether crude scale or fully refined. The three grades included are microcrystalline, crystalline-fully refined, and crystalline-other.

White Spirit: A highly refined distillate with a boiling point range of about 150 degrees to 200 degrees Centigrade. It is used as a paint solvent and for dry-cleaning purposes.

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