ENERGY PRICES AND TAXES

DOCUMENTATION FOR BEYOND 2020 FILES

INTERNATIONAL ENERGY AGENCY

1. Coal and Natural Gas Import Costs and Export Prices

The following notes apply to these 4 files:

1) Australia, Canada, US: Coal export prices by destination (US dollars/tonne)
2) OECD: Coal import costs and indices by importing country
3) EU, Japan: Coal import costs and volumes by origin
4) OECD: Natural gas imports costs by importing country and by origin

Please consult individual files for data coverage.

NOTES ON DEFINITIONS AND REGULATIONS FOR COAL TRADED INTERNATIONALLY

General Notes

Gross calorific values are generally used to identify varieties of coal in a commercial context. Net calorific values are more appropriate for inter-fuel analysis (please see General Notes and Definitions at the beginning of Part II).

Starting on 1 January 1988, Australia, Japan and the European Community adopted the Harmonised Commodity Description and Coding System (HS) for classifying internationally traded commodities. Commodity codes used for classifying coking and steam coal are given for both the old and new systems.

Differences between export and import average unit values can be significantly different due to variations in shipping/handling cost, but also to time lags between the reporting of contracted exports and reporting of landed imports. It may, therefore, take time for changes in export unit values to be reflected in the import unit values.

Australia

Australian average export prices are derived from volume and value data of Australian export statistics.

Source: Australian submission to the IEA Annual Coal Questionnaire (NCV) and Australian Bureau of Statistics (GCV).

Definitions used for steam coal and coking coal are derived from the national foreign trade classification which is based on the HS. From 1 July 1995 onwards, items recorded under HS item 2701.12.19 are now recorded under HS item 2701.1214.

Steam Coal

From 1Q88 onwards, bituminous coal excluding metallurgical coal (e.g. steaming coal), item 2701.11299. Prior to 1Q88, non metallurgical coal (item 3251005) and non- high-ranking coking coal (item 3251013), as long as it was shipped to Europe.

Coking Coal

From 1Q88 onwards, high-ranking metallurgical coal, item 2701.11213. Prior to 1Q88, high-ranking metallurgical coal (item 3251003) and non-high-ranking coking coal (item 3251005), as long as it was not shipped to Europe.

Canada

Canadian average export prices are derived from volume and value data of Natural Resources Canada.

Source: Natural Resources Canada, Mineral and Metal Sector.

Steam Coal

Prices refer to other bituminous coal and anthracite.

Coking Coal

Prices refer to metallurgical bituminous coal.

E.U. Member States

Import Duties: There is no EU import duty on coal. However Germany and Spain apply import duties on volumes beyond a certain threshold (Germany: 10.23 EUR/t). The Spanish threshold is redefined every year. Neither country has had actual imports reach the threshold.

Prices in the related files on coal imports have been derived from the monthly customs statistics in volumes and values as they are reported by member countries to the statistical office of the European Communities. From 1999 onwards, prices for Belgium and Luxembourg are shown separately. Prior to 1986, prices do not include Spain and Portugal.

Source: Statistical office of the European Communities.

The definitions of steam coal and coking coal in terms of the Combined Nomenclature are based on the HS.

Steam Coal

From 1Q88 onwards, bituminous coal excluding coking coal (items 2701.12-90 and 2701.19-00). Prior to 1Q88, other hard coal (item 2701-18), excluding anthracite (item 2701-11) and dry steam coal (item 2701-14).

Coking Coal

From 1Q98 onwards, coking coal (item 2701.12-10). Prior to 1Q88, coking coal (item 2701-16).

Japan

Import Duties: There are no import duties levied on coal imports.

Average import prices have been derived from volume and value data in monthly customs statistics. The definitions used for steam and coking coal were derived from the terms of the national foreign trade classification, based on the HS.

Steam Coal and Anthracite

From 1Q88 onwards, item 2701.12-099 and 2701.19-090. Prior to 1Q88, sub-item 199 of item 2701.

Coking Coal

From 1Q88 onwards, items 2701.12-011, 2701.12-091, 2701.12-092, 2701.12-019 and 2701.19-010. Prior to 1Q88, sub-items 121, 129, 191 and 192 of item 2701.

South Africa

Average export prices are derived from volume and value data in South African export statistics. The definitions used for steam coal and coking coal are derived from the terms of the national categories.

Source*:* South African Coal Report.

Steam Coal

Prices refer to other bituminous coal.

Coking Coal

Prices refer to bituminous low ash coal.

United States

Average export prices are derived from volume and value data of U.S. custom statistics published by the Bureau of Census. The definitions used for steam coal and coking coal are in terms of national tariff positions. From 3Q2006 average export prices are taken from the Quarterly Coal Report of the Energy Information Administration.

Source: Bureau of Census and Energy Information Administration.

Steam Coal

Bituminous coal, anthracite, and lignite (items 2701.11-0000; 2701.12-0050, respectively).

Coking Coal

Low-volatile bituminous coal and blends for use in the manufacture of coke (item 2701120010).

NOTES ON DEFINITIONS OF NATURAL GAS TRADED INTERNATIONALLY

E.U. Member States

Import prices have been derived from customs statistics reported by the member countries to Eurostat. The import values reported by the Member countries are in thousand EUR, imported quantities are reported in thousand tonnes.

The IEA has converted these data from thousand EUR/tonne to USD/MBtu, using the following average energy conversion factors for natural gas:

Product	Country of origin	Tonne/ MBtu
LNG (at 15 ^{o} C)	All	51.3
Gas (by pipeline)	Denmark	49.9
	Norway	49.9
	Netherlands	42.9
	UK	51.0
	Russia	51.8
	Algeria	48.0

The derived import price merely gives an indication of the average import cost rather than a precise and exact import price. Please note that for some countries (e.g. Germany) there is no breakdown available by origin.

Japan

The Customs Statistics of Japan's Ministry of Finance publish import data for liquefied natural gas in JPY/tonne.

The factors above have been used to compute the average unit import values per heat unit in the preceding tables on natural gas. They represent gross calorific values (as they are used to define natural gas in commercial contracts) for a volume unit at 15^{o} Celsius and 760 mm Hg (standard cubic meter). For purposes of cross-fuel analysis, net calorific values are more appropriate (see General Notes and Definitions at the beginning of Part II).

Net calorific values per standard cubic metre have been used in tables of Part II.B and D. Their amounts are listed in the country notes at the beginning of Part II and are equivalent to 90 % of the gross calorific value.

United States

Import prices for the United States has been converted from USD/BCF (billion cubic feet) to USD/MBtu using an average conversion factor of 1 020 Btu/cubic foot. This data is published by the Energy Information Administration, Department of Energy, *Monthly Energy Review*.

2. End-Use Prices

The following definitions apply to these 7 files:

1) Energy End-Use Prices (Nat. Cur./unit)
2) Energy End-Use Prices (Nat. Cur./toe NCV)
3) Energy End-Use Prices (USD/unit, USD/toe, USD PPP/unit)
4) Indices of Energy End-Use Prices
5) Indicators
6) End-Use Prices – OLADE (USD/unit)
7) Wholesale/Retail Indices of Energy Prices

Please consult individual files for data coverage.

GENERAL NOTE ON DEFINITIONS, METHODS AND SOURCES

References throughout the publication to national currency for the EMU countries represent Euro. Please see below for more details.

For country-specific exceptions and additional methodological information please refer to the detailed notes for each country in the country notes PDF.

All prices, taxes and indices for the most recent quarter are preliminary (e.g. the third quarter in the third quarter edition). Also, in the case of the fourth quarter edition, the most recent year is preliminary (e.g. year 2006 for the 4Q2006 edition). These prices, taxes and indices are revised and updated in the subsequent edition.

Indices of Energy End-Use Prices

These indices have been derived from the nominal end-use prices (including taxes) shown in the Energy End-Use Prices (Nat. Cur./unit) file. The methodology for calculating the real and nominal indices of energy end-use prices is as follows:

For products where more than one price is available, a representative series is created for each country. The representative heavy fuel oil price is a combination of high sulphur fuel oil and low sulphur fuel oil. The representative motor gasoline price is a combination of the most consumed unleaded gasoline for recent time periods and leaded gasoline for earlier time periods.

For oil, the industry index includes representative heavy fuel oil, light fuel oil and automotive diesel but not fuels used for electricity generation. The household index includes representative gasoline and light fuel oil.

For coal, the industry index includes representative steam coal and coking coal. The household index includes steam coal.

Indices with the base year 2000=100 were computed for each price series from prices in national currencies and then aggregated over product groups, sectors and countries. The Paasche formula was used for index computation. The weights used were the physical quantities consumed, as published in the OECD/IEA *Energy Statistics of OECD countries*. To calculate the real price index, the nominal prices were deflated with country-specific producer price indices (2000=100) for the industry sector and with country-specific consumer price indices (2000=100) for the household

sector. The regional aggregates were calculated as the weighted averages of country specific indices, using consumption quantities as the weights.

The consumer price index (CPI) and the producer price index (PPI) were taken from the OECD *Main Economic Indicators*. Missing historical series have been estimated using *International Financial Statistics* from the International Monetary Fund.

Missing data for prices in the Energy End-Use Prices (Nat. Cur./unit) file were estimated for the index calculations. Certain series with missing data for approximately 10 years or more have been omitted.

For more information on the index calculation, please contact us at prices@iea.org.

Energy End-Use Prices, Taxes and Price Indices in National Currencies

General Definitions

Unless otherwise specified, the quarterly prices since 1Q93 refer to the three-month average of the quarter. Prior to 1Q93 the prices refer to the second month of the quarter. Annual data are twelve-month averages.

If not specified otherwise, end-use prices:

- Include transport costs to the consumer;
- Are prices actually paid (i.e. net of rebates);
- Include taxes which have to be paid by the consumer as part of the transaction and which are not refundable. This excludes value added tax (VAT) paid in many European countries by industry (including electric power stations) and commercial end-users for all goods and services (including energy). In these cases VAT is refunded to the customer, usually in the form of a tax credit. Therefore, it is not included in the prices and taxes columns in the tables. This also applies to automotive diesel for the EU countries. The VAT percentages shown in the country notes refer to a pre-VAT price that includes all other taxes.

Due to lack of information, the United States is an exception to the above rule. Although all energy products are subject to non-refundable taxes at least at the state and local level, only gasoline and automotive diesel include total average taxes. All other energy product prices shown exclude taxes since the national average of local taxes remains unknown and price data are collected on an ex-tax basis.

Industry

Prices and taxes for the industry sector are the average of amounts paid for the industrial and manufacturing sectors.

Households

End-use prices for residential (heating) or individual consumer (gasoline and automotive diesel) consumption.

Electricity Generation

Prices shown refer to the price paid at the power plant.

Prices for energy use in the commerce and public services sector (i.e. shops, government, hospitals, universities) are not included in this publication.

Sources

Most of the prices in the country tables are submitted on a quarterly or annual basis to the IEA Secretariat by Administrations; others are taken from national publications or web sites. Whenever possible, reference is made to the national publication that provides additional detail and/or time periods. Please see the country specific notes for details.

Oil Products

By decision dated 26 January 1977, the European Commission initiated a weekly reporting system of end-use prices and taxes for the following products: RFO 1 (sulphur content $\leq$1 %); RFO 2 (sulphur content <2 %); heating gas oil (delivery size of 2-5 kl per transaction); automotive diesel oil, and Euro super 95 and leaded premium gasoline (pump prices). Prices are reported to the Commission as delivered prices and exclude rebates.

For some EU countries, no special series are available on heavy fuel oil prices for electricity generation and on light fuel oil for industry. They have been approximated as the ex-VAT prices for heavy fuel oil for industry and light fuel oil for households, respectively.

Coal

Given the great variety of coal qualities in domestic and international coal trade, a selection of a standard coal quality for international comparisons of end-use

prices is not possible. Therefore, prices refer to the most common qualities for each country and are not necessarily comparable between countries. This is especially true for prices shown under the heading "Steam Coal for Households", where prices shown may refer to bituminous steam coal, anthracite, lignite or even coke.

In Austria, the United Kingdom and the United States, coal prices are available as average unit values (as average expenditure per metric ton of coal by industry, power plants and households). These average unit values are the weighted average of all qualities and delivery sizes for which transactions have taken place. They are particularly useful for price comparisons between the four major energy sources when converted to a common heat unit and for price comparisons between countries on the basis of a single monetary unit.

Natural Gas and Electricity

For studies on price behaviour and policies in the field of natural gas and electricity, the concept of average unit value is also of particular importance. These two forms of energy are supplied under a multitude of contract or tariff conditions which link the prices to the quantity delivered, the continuity of the supply, load factors and the diurnal pattern of use. The contracts or tariffs may also include a fixed charge component. However, when seeking a representative overall price of electricity and natural gas for broad sectors such as industry and households, the average unit value is the most appropriate. It is obtained either from utilities as average revenue per unit delivered or from industry or households as average expenditure per unit purchased. Most of the average unit values are only available on an annual basis.

For most countries, average unit values for electricity are available. However, for a few countries, average unit values do not exist and therefore selected tariff rates have been used. The weighted average of the tariffs approximates an average value per kWh.

Most of these prices exist only on an annual basis and may be published long after the period to which they relate. More recent time periods can be estimated by using the electricity price indices as compiled for the general wholesale and retail price indices. They are shown separately in each country section.

Estimates for natural gas most recent periods can be made as in the case for electricity, i.e. by using the index numbers for wholesale and retail natural gas prices shown separately on another table in each country section. For the four countries without average unit values, representative quarterly tariff rates are shown in the main tables.

The prices for natural gas refer to 10^7 kcal using the gross calorific value of the gas. Prices for 10^7 kcal using the net calorific value would be approximately 11 per cent higher.

Prices per Heat Equivalent of One Tonne of Oil

This section refers to prices expressed in terms of the heat content of the fuel rather than price per (e.g. tonne, litre) physical unit. They have been calculated using the country specific calorific value (heat content). The net calorific value of a fuel (NCV) is the calorific value gross (GCV), less the heat content of the water formed during the combustion of the fuel. For coal and oil the net calorific values are some 5 per cent lower than the gross values; for natural gas they are 10 per cent lower.

For commercial purposes, specific varieties of a given fuel are usually characterised by the gross calorific value (GCV). For inter-fuel analysis the use of a net calorific value (NCV) is more appropriate. Prices on international gas trade (in Part I) and on natural gas use in different sectors in the following tables are based on the gross heat value. Prices of Part II Sections covering different fuels refer to a net heat value. The tables at the end of this section show the conversion factors for each country that are used to convert the prices in Tables 1 to 3 (per original physical units) to the prices in Part II. E heat equivalent. For electricity and natural gas, however, this is not necessary. For all countries, a factor of 0.000086 is used to convert electricity from kWh to 10^7 kcal, and a factor of 0.9 is used to convert natural gas from gross to net heat equivalents.

Energy Price Indices

The producer price indices (PPI) and the consumer price indices (CPI) compiled by national statistical services often contain sub-indices for energy products. Where possible the sub-indices for oil products, electricity, natural gas and coal are shown in Wholesale/Retail Indices of Energy Prices. Wholesale indices refer to industry (PPI) and retail indices refer to households (CPI). Growth rates of wholesale and retail price indices are usually close but not identical to those of similar indices which could be constructed from the absolute prices. Any differences in growth rates are due to differences in price surveys and weighting schemes used for the construction of the

wholesale and retail price indices from indices of nominal energy end-use prices.

In the context of this publication, energy sub-indices of PPI and CPI are important instruments for cross-checking growth rates of absolute prices and for estimating the absolute prices, notably for electricity and natural gas prices for periods with missing price data. Wholesale and retail indices are presented in the base year of the original source.

Energy End-Use Prices in U.S. Dollars

In general, country differentials between national end-use prices expressed in U.S. dollars are heavily influenced by exchange rate differentials. However, world market prices of primary fuels in U.S. dollars are an important parameter for the pricing of final energy consumption, particularly for countries which rely heavily on energy imports. The difference between world market prices and national end-use prices in U.S. dollars correspond to the remaining pricing parameters, i.e., transformation and distribution costs, non-internationally tradable energy sources (mainly hydro-power, but also natural gas), market structures (e.g., mix of large- and small- purchase lots), and the pricing policies of central or local authorities, which naturally include the national tax policies.

Energy Prices in U.S. Dollars (PPP)

The prices shown in Energy End-Use Prices (USD PPP/unit) are the result of converting the national currency prices per unit using average Purchasing Power Parities (PPP) for GDP in national currency per U.S. dollar from OECD *National Accounts of OECD countries*.

Due to wide fluctuations in exchange rates, there has been some concern regarding international price comparisons based on these exchange rates, which may not reflect the *relative purchasing power* in each currency. In other words, a given amount of money, when converted into different currencies at the PPP rates, buys the same basket of goods and services in all countries compared. This includes consumer goods and services, government services, equipment goods and construction projects. Consumer items include food, beverages, tobacco, clothing, footwear, rents, water supply, gas, electricity, medical goods and services, furniture and furnishings, household appliances, personal transport equipment, fuel, transport services, recreational equipment, recreational and cultural services, telephone services, education services, goods and services for personal care and household operation, repair and maintenance services.

The prices shown in Energy End-Use Prices (USD/unit) and Energy End-Use Prices (USD/toe) are the result of converting those of Energy End-Use Prices (Nat. Cur./unit) to U.S. dollars using quarterly and yearly averages of exchange rates as published by the OECD *Main Economic Indicators*. Missing historical series have been estimated according to *International Financial Statistics* from the International Monetary Fund.

The PPP are triennial benchmark results developed jointly by the Economics and Statistics Division of the OECD and the Statistical Office of the European Communities (EUROSTAT). For more information on methodology, see www.oecd.org/std/ppp.

Conversion to Euro

Prices and taxes prior to the date of entry into the Economic and Monetary Union (EMU) have been converted from the former national currency using the appropriate irrevocable conversion rate. The irrevocable conversion rate at 1 January 1999 was used for all countries, except Greece (fixed rate as of 1 January 2001) and Slovenia (fixed rate as of 1 January 2007).

Country	Rate	Country	Rate
Austria	13.7603	Italy	1936.27
Belgium	40.3399	Luxembourg	40.3399
Cyprus	0.585274	Malta	0.4293
Finland	5.94573	Netherlands	2.20371
France	6.55957	Portugal	200.482
Germany	1.95583	Slovenia	239.64
Greece	340.750	Spain	166.386
Ireland	0.787564		

This methodology facilitates comparisons within a country over time and ensures that the historical evolution (i.e. growth rates) is preserved. However, pre-EMU Euro are a notional unit and are not normally suitable to form area aggregates or to carry out cross-country comparisons.

The national currency prices have been converted to Euro and rounded using IEA Secretariat rounding conventions depending on the product and flow (see below). The total prices have not, however, been re-calculated and therefore small rounding errors may result.

Product	Decimals	Product	Decimals
HFSO	2	Natural Gas	2
LSFO	2	Steam Coal	2
LFO	2	Coking Coal	2
Diesel	3	Electricity	4
Gasoline	3		

For pre-2001 time periods, the prices in U.S. dollars have been obtained by converting the prices in euros back into the former national currencies using the irrevocable fixed Euro rate, and then converting to U.S. dollars using the appropriate national currency exchange rates. Regional totals for all time periods (before and after 1 January 1999 or 1 January 2001 for Greece) have been calculated after all series were converted to U.S. dollars.

Conversion Factors and Calorific Values

The following conversion factors and calorific values are used to convert from prices and taxes tables in national currencies per unit to prices in national currency per tonne of oil equivalent, on a net calorific value basis. Where country-specific information is not available, an "s" has been used to denote standard calorific values from IEA Energy Balances methodology, and an "e" has been used to denote an IEA Secretariat estimate.

Heavy Fuel Oil *

	Density (t//kl)	Calorific Value (kcal/kg)	Conversion Factor (10^7 kcal/ton)
Australia	0.95s	9600s	0.96
Austria	1.00	9600s	0.96
Belgium	0.93	9750	0.975
Canada	0.95	9600s	0.96
Czech Republic	0.99	9532	0.9532
Denmark	0.975	9650	0.965
Finland	-	9600s	0.96
France	-	9750	0.975
Germany	0.99	9800	0.98
Greece	-	9600s	0.96
Hungary (Industry)	-	9500	0.95
Hungary (elec. gen)	-	9700	0.97
Ireland	0.97	9480	0.948
Italy	0.94-0.97	9600	0.96
Japan	0.95	9600s	0.96
Korea	0.944	9203	0.9203
Luxembourg	0.95	9650	0.965
Mexico	0.982	10139	1.0139
Netherlands	0.94	9760	0.976
New Zealand	0.945	10129	1.0129
Norway	0.82-0.86	9974	0.9974
Poland	0.955-0.97	9793	0.9793
Portugal	0.98	9600	0.96
Slovak Republic	0.99	9699	0.9699
Spain	-	9400	0.94
Sweden	0.965	9600s	0.96
Switzerland	-	9600s	0.96
Turkey	0.97	9600	0.96
United Kingdom	0.98	9870	0.987
United States	0.944	9988	0.9988

* Fuel oil with sulphur content greater than 1%.

“s” denotes standard calorific values from IEA energy balances methodology.

“e” denotes IEA Secretariat estimate.

Light Fuel Oil

	Density (t//kl)	Calorific Value (kcal/kg)	Conversion Factor (10^7 kcal/kl)
Austria	0.84	10350s	0.8694
Belgium	0.84	10250	0.861
Canada	0.83	10350s	0.8591
Czech Republic	0.86	10031	0.8627
Denmark	0.8594	10175	0.8744
Finland	0.84	10350s	0.8694
France	0.845	10100	0.8535
Germany	0.87	10200	0.8874
Greece	0.83	10350s	0.8591
Ireland	0.838	10170	0.8522
Italy	0.83	10210	0.8474
Japan	0.8	10350s	0.828
Korea	0.87	8117	0.7062
Luxembourg	0.84	10250	0.861
Mexico	0.852	10849	0.9243
Netherlands	0.84	10100	0.8484
New Zealand	0.824	10366	0.8542
Norway (industry)	0.85	10350s	0.8798
Norway (household)	0.83	10350s	0.8591
Poland	0.845	9791	0.8273
Slovak Republic	0.91	10101	0.9192
Spain	0.855	10350s	0.8849
Sweden	0.845	10350s	0.8746
Switzerland	0.845	10350s	0.8746
Turkey	0.8	10450	0.836
United Kingdom	0.847	10260	0.869
United States	0.83e	10760	0.8931
All other countries	0.83e	10350s	0.8591

Automotive Diesel

	Density (t//kl)	Calorific Value (kcal/kg)	Conversion Factor (10^7 kcal/litre)
Austria	0.84	10350s	0.0008694
Czech Republic	0.843	10177	0.0008579
Denmark	0.845	10175	0.0008598
France	0.845	10350s	0.0008746
Germany	0.833	10350s	0.0008622
Hungary	0.83	10221	0.0008483
Italy	0.83	10350s	0.0008591
Korea	0.84	10090	0.0008476
Mexico	0.852	10849	0.0009243
Netherlands	0.84	10350s	0.0008694
New Zealand	0.822	10297	0.0008464
Poland	0.845	10203	0.0008622
Portugal	0.837	10350s	0.0008663
Slovak Republic	0.845	10350s	0.0008746
Switzerland	0.835	10350s	0.0008642
Turkey	0.85	10350s	0.0008798
United Kingdom	0.845	10350s	0.0008746
United States	0.82	10350s	0.0008487
All other countries	0.86e	10350s	0.0008901

Gasoline*

	Density (t//kl)	Calorific Value (kcal/kg)	Conversion Factor (10^7 kcal/litre)
Austria	0.75	10700s	0.0008025
Belgium	0.74	10700s	0.0007918
Czech Republic	0.76	10412	0.0007913
France	0.755	10700s	0.0008079
Germany	0.745	10700s	0.0007972
Hungary	0.735	10700s	0.0007865
Italy	0.74	10700s	0.0007918
Korea	0.74	9681	0.0007164
Mexico	0.729	10700s	0.0007800
Netherlands	0.745	10700s	0.0007972
New Zealand	0.739	10296	0.0007609
Poland	0.755	10342	0.0007808
Portugal	0.748	10700s	0.0008004
Slovakia	0.755	10700s	0.0008079
Switzerland	0.744	10700s	0.0007961
Turkey	0.775	10700s	0.0008293
United Kingdom	0.738	10700s	0.0007897
All other countries	0.78e	10700s	0.0008346

*All values refer to regular unleaded gasoline, except for the Slovak Republic (premium 95 RON).

Coal

10^7 kcal/ton	Steam Coal Industry	Steam Coal Elect. Generation	Steam Coal Households	Coking Coal Industry
Australia	0.66	0.66	-	0.6807e
Austria	0.689e	0.6609e	0.672e	0.6943e
Belgium	0.5550e	0.5338	0.6158e	0.7000e
Canada	0.7127	0.6094e	-	0.7164
Czech Republic[1]	0.375	0.255	0.375	0.65
Denmark	0.7	0.5831e	0.7	-
Finland	0.6091e	0.6091e	-	0.6998e
France	0.621	0.621	0.88	0.7285
Germany	0.7	0.6914	0.5995e	0.695
Greece[2]	0.612e	0.1252e	-	-
Hungary[3]	0.4912	0.2003	0.4341	-
Ireland	0.665e	0.6194	0.665e	-
Italy	0.6162	0.62	0.635e	0.665
Japan	0.5571	0.5571		0.6559
Korea	0.66	0.66	0.66	0.66e
Luxembourg	-	-	0.6998e	-
Mexico[4]	-	0.4575	-	-
Netherlands[5]	0.7	0.7	0.5989e	0.68
New Zealand	0.6836	-	0.6836	-
Norway	0.6712e	-	0.6712e	0.6712e
Poland	0.5567	0.5160	0.6568	0.7068
Portugal	0.6105e	0.6105e	-	0.6998e
Slovakia[6]	0611e	0.2567e	0.2938e	0.7018e
Spain	-	0.55	-	0.717e
Sweden	0.6415e	0.6664e	0.6544e	0.6454
Switzerland[7]	0.6	-	0.4801e	0.72
Turkey[8]	0.425	0.2	0.425	0.61
United Kingdom	0.6275	0.5653	0.5653e	-
United States	0.648e	0.6101e	-	0.709

1. Czech: brown coal
2. Greece: brown coal for electricity generation.
3. Hungary: brown coal for household and electricity generation from 1992 onwards.
4. Mexico: sub-bituminous coal for electricity generation.
5. Netherlands: steam coal for industry and electricity generation refers to quality hard coal.
6. Slovakia: brown coal for household and electricity generation from 2002 onwards.
7. Switzerland: steam coal for household refers to quality lignite.
8. Turkey: steam coal refers to quality lignite.

Natural Gas, Gross Calorific Values

	kcal/m^3	kJ/m^3
Australia	9506	39800
Austria	9510	39816
Belgium	8400	35169
Canada	8892	37229
Czech Republic	9030	37807
Denmark	9150	38309
Finland	10476	43861
France	8400	35169
Germany	8400	35169
Greece	9650	40403
Hungary	8500	35588
Ireland	9444	39540
Italy	9100	38100
Japan	11000	46055
Korea	10500	43961
Luxembourg	8700	36425
Mexico	9400	39356
Netherlands	8406	35194
New Zealand	9004	37698
Norway	9560s	40026s
Poland	9436	39500
Portugal	10250	42915
Slovak Republic	8972	37564
Spain	10271	43002
Sweden	..	..
Switzerland	9560	40026
Turkey	9155	38330
United Kingdom	8400	35169
United States	9139	38263

GENERAL NOTES ON SOURCES AND METHODS FOR NON-OECD COUNTRIES

Exchange Rates

Argentina, Barbados, Colombia, Estonia, Grenada, Kazakhstan, Latvia, Lithuania, Panama, Russia, Thailand, Trinidad and Tobago, Venezuela: Yearly averages of the official rate published in *International Financial Statistics*, International Monetary Fund, Washington D.C., February 2008 edition.

Cyprus, Malta, Slovenia: the Euro rate comes from the OECD *Main Economic Indicators*.

Chile, China, Dominican Republic, Ecuador, El Salvador, Guatemala, Guyana, Haiti, Honduras, Jamaica, Nicaragua, Paraguay, Romania, South Africa: Yearly averages of the principal exchange rate published in *International Financial Statistics*, International Monetary Fund, Washington D.C., August 2007 edition.

Chinese Taipei: From 2002 onwards, interbank spot market closing rates, Central Bank of China. Prior to 2002, exchange rates published in the *Economic Outlook*, OECD, Paris.

Bolivia, Brazil, Costa Rica, India, Indonesia, Peru, Suriname, Uruguay: Yearly averages of the market exchange rate published in *International Financial Statistics*, International Monetary Fund, Washington D.C., August 2007 edition.

OLADE

The end-use prices for Latin American countries were extracted in November 2007 from the OLADE Energy-Economic Information System of Latin America

and the Caribbean (SIEE database), developed in co-operation with the European Commission. This database contains historical information on prices, reserves, energy supply/demand, energy installations, general economic statistics, environmental statistics and indicators for Argentina, Barbados, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, El Salvador, Grenada, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, Surinam, Trinidad/Tobago, Uruguay and Venezuela. End-use prices in both U.S. dollars and national currencies are given on a monthly basis since 1988 and on an annual basis since 1970. In addition, some forecasted series are also available. For more information see www.olade.org.ec.

Oil Products

Heavy Fuel Oil

Original prices are in USD/litre. They have been converted to USD/tonne using the following assumed densities:

Argentina	0.98 t/kl
Colombia	0.986 t/kl
Nicaragua	0.987 t/kl
Venezuela	1.034 t/kl
All other countries	0.96 t/kl

Industry: Prices refer to the simple average of the domestic monthly reference prices with tax for fuel oil.

Light Fuel Oil

Industry: Prices refer to the simple average of the domestic monthly reference prices with tax for diesel oil. Diesel oil corresponds to the ASTM's specification fuel oil #2 or gas oil.

Households: Prices refer to the simple average of the domestic monthly reference prices with tax for kerosene.

Automotive Diesel Oil

Prices refer to the simple average of the domestic monthly reference prices with tax for diesel oil.

Premium Unleaded Gasoline

Prices refer to the simple average of the domestic monthly reference prices with tax for premium gasoline.

Regular Unleaded Gasoline

Regular unleaded is the most widely consumed gasoline in the region. For some countries, this includes alcohol. Prices refer to the simple average of the domestic monthly reference prices with tax for regular gasoline.

Natural Gas

Prices were converted from 1000 m^3 into 10^7 kcal using conversion factors provided by OLADE.

Industry: Prices refer to the simple average of the domestic monthly reference prices with tax for natural gas for industry.

Households: Prices refer to the simple average of the domestic monthly reference prices with tax for natural gas for residential.

Coal

Steam Coal

Industry: Prices refer to the simple average of the domestic monthly reference prices with tax for thermal coal.

Coking Coal

Industry: Prices refer to the simple average of the domestic monthly reference prices with tax for coking coal.

Electricity

Industry: Prices refer to the simple average of the domestic monthly reference prices with tax for electricity for industry.

Households: Prices refer to the simple average of the domestic monthly reference prices with tax for electricity for residential.

3. Spot Market and Crude Oil Import Costs

The following definitions apply to these 5 files:

1) Crude Oil Import Costs (USD/bbl) and Index (Nat. Cur.)
2) IEA Crude Oil Import Costs by Type of Crude (USD/bbl)
3) Crude Oil Spot Prices (USD/bbl)
4) Marine Bunker Spot Prices (USD/tonne)
5) Oil Product Spot Prices (USD/bbl)

Please consult individual files for data coverage.

NOTES ON DEFINITIONS AND REGULATIONS FOR OIL IMPORTS

Crude Oil

Import costs of crude oil have been obtained from the monthly Crude Oil Import Register submitted to the IEA Secretariat.

Details on national duties and regulations for crude oil imports are given below. In general, imported products are subject to the same domestic taxes as domestically refined products (exception: Japan) or to import duties which are equivalent to these taxes (Australia, Switzerland).

Following are the typical product quality specifications of the 32 most imported crude oils into IEA countries.

Source: *International Crude Oil Market Handbook 2001-2002*, Energy Intelligence Group).

	API Gravity (°)	Sulphur (%)
Abu Dhabi Murban	40.4	0.80
Abu Dhabi Upper Zakum	39.2	1.10
Algeria Saharan Blend	43.6	0.11
Canada Heavy	23.1	3.09
Canada Light Sweet	35.1	0.34
Iran Heavy	30.2	1.80
Iran Light	33.1	1.50
Iraq Basrah Light	33.7	1.92
Iraq Kirkuk	35.1	2.00
Kuwait Blend	32.4	2.60
Libya Light	41.9	0.36
Libya Medium	37.6	0.20
Mexico Maya	21.8	3.33
Mexico Olmeca	39.3	0.79
Nigeria Light	35.3	0.12
Nigeria Medium	30.0	0.28
Norway Ekofisk	37.7	0.25
Norway Gullfaks	34.7	0.29
Norway Oseberg	37.6	0.23
Norway Statfjord	38.7	0.25
Oman	33.3	1.06
Saudi Arabia Heavy	28.7	2.79
Saudi Arabia Medium	31.8	2.45
Saudi Arabia Light	34.0	1.78
Saudi Arabia Berri	38.4	1.16
Syria Light	36.5	0.66
U.K. Brent Blend	38.3	0.37
U.K. Forties	41.6	0.24
Urals	32.0	1.30
Venezuela Extra Heavy	12.6	3.57
Venezuela Medium	30.0	0.88
Venezuela Light	32.1	0.63

Oil Products

European Union

The European Union applies no quantitative restrictions (quotas) to crude and product imports. Crude oil imports are duty free, as are feedstocks for refining and petrochemical processing. Finished products are subject to duties. For HFO and gasoil (with a sulphur content greater than 0.2% by weight) it is 3.5%. For lighter products it is 4.7%, which is applied or not depending upon their origin.

Customs duty is not applied on imports from the EU, EFTA and ACP countries nor from Israel.

Under the General System of Preferences 2002-2004, (GSP) products from over 150 non-OECD countries, including the GCC, Venezuela and the ex-USSR Republics can be imported free of duty. The exceptions are Libya, Russia and Saudi Arabia whose finished products exports to the EU are now subject to a full tariff.

Therefore, duty is applied on those products destined for consumption in the EU and most imports from Saudi Arabia, Libya, Russia and some OECD countries (including the United States and Canada). The exception is gasoil (sulphur content not exceeding 0.2% by weight), for which the duty rate of 3.5% is reduced to zero for an indefinite period regardless of the origin of the product.

Austria

Tariffs (ad valorem duty)

Gasolines:	6%
Kerosenes:	6%
Gasoils:	0 - 3.5%
Fuel Oils:	≥ 3.5%

Imports from EFTA and EU Countries are duty free. Other GATT countries are subject to a preferential treatment. There are no quantitative restrictions on imports.

Source: Ministry of Economic Affairs.

France

France applies no restriction to crude or oil products imports. Nevertheless, certain oil products are subject to an import license, except those coming from countries with preferential treatment or from the EU.

Ireland

From July 2001 onwards, oil companies are no longer obliged to purchase 20% of their gasoline and middle distillate requirements from the domestic refinery.

Spain

Imports of oil products are subject to state trading but customs duties have been established recently. The right to import products is reserved to the company operator of the Oil Distribution Monopoly and to other firms if these have a delegated authority and necessary licenses.

Australia

Importers of oil products pay customs duty at a rate equal to the excise duty levied on domestically refined products.

There are no quantitative restrictions on imports.

Canada

No duties are payable on petroleum product imports and there is no quantified restrictions.

Japan

Updated using Facts Energy Insights, Issue 68, December 2005.

Crude Oil: The existing customs duties on crude oil (170 JPY/kilolitre) was abolished as of 1 April, 2006.

Oil Products: The rates as of December 2005 are listed in the table below. The government is expected to eventually abolish all of the customs duties on oil products, as they are by definition a temporary measure.

Tariffs

Product	JPY/kl
Fuel Oil A (< 0.3% sulphur)	2 593
Fuel Oil A (> 0.3%)	3 306
Fuel Oil C (< 0.3%)	2 376
Fuel Oil C (> 0.3%)	3 202
Kerosene	564
Gas oil	1 257
Gasoline	1 386

Switzerland

Importers of oil products have to pay duties equivalent to the excise tax charged to domestic refiners when they deliver products to the domestic market. Products are not eligible for preferential tariff treatment. Refineries are treated like "before tax zones". Refined products are taxed as soon as they leave refinery areas.

Turkey

There is no restriction of crude oil or oil product imports and no custom duty for crude oil. The tax and fund rates on imported petroleum products and also products which are produced by using imported crude oil are given below. The excise tax and Fuel Price Stabilising Fund are fixed. In January 1996, Turkey signed the Customs Union Agreement with the EU. Therefore, customs duty is not applied on imports from the EU and EFTA countries nor from Romania, Bulgaria, the Czech Republic, Lithuania, Hungary, Estonia or Israel.

	Customs Duties (%)	VAT (%)	Excise Tax	Fuel Price Stabilising Fund
LPG	0.7	18	363 808	9 000
Unleaded Gas.	4.7	18	780 908	-
Other Gasoline	4.7	18	793 124	-
Kerosene	4.7	18	491 700	10 600
Jet Fuel	4.7	18	-	-
Diesel Fuel	3.5	18	525 673	-
Heating Fuel	3.5	18	222 475	500
Fuel Oil	3.5	18	75 250	-

United States

The main oil products do not fall under the U.S. preferential system from which most OPEC countries are, inter alia, excluded.

	Crude Oil Import duties		Oil Product Tariffs	
	Cents/bbl	Cents/gal	Cents/bbl	Cents/gal
> 25 API	10.5	0.25	x	x
< 25 API	5.25	1.25	x	x
Naphtha	x	x	10.5	0.25
Gasoline	x	x	52.5	1.25
Diesel oils	x	x	10.5	0.25
Heavy Fuel	x	x	10.5	0.25
Lubricants	x	x	84.0	2.00

x = Not applicable.

NOTES ON DEFINITIONS AND REGULATIONS FOR SPOT PRICES

Crude Oil Spot Prices[1]

The monthly, quarterly and yearly average crude oil spot prices are calculated from daily quotations from *Platt's*.

Prices are either dated (spot price), assessed (based on Platt's weekly assessment of spot prices) or first month forward supply, which is the dated quotation for prompt physical cargoes.

Product quality specifications (based on *International Crude Oil Market Handbook 2001-2002*, Energy Intelligence Group):

Brent

A blend of crude from the Brent and Ninian systems. Prior to July 1987, the average prices were calculated from the weekly averages from various published sources.

Price: Dated
Loading point: Sullom Voe
API Gravity: 38.3º
Sulphur Content: 0.4

West Texas Intermediate (WTI)

Price: First Month Forward
Loading point: Cushing
API Gravity: 39.6º
Sulphur Content: 0.2

West Texas Sour (WTS)

Price: First Month Forward
Loading point: Midland
API Gravity: 34.2º
Sulphur Content: 1.3

Louisiana Light Sweet (LLS)

Price: First Month Forward
Loading point: St. James
API Gravity: 38.7º
Sulphur Content: 0.1

Arab Light

Price: Dated
Loading point: Ras Tanura, King Fahed, Juyamah
API Gravity: 34º
Sulphur Content: 1.78

Dubai

Prior to January 1985, the average prices were calculated from the weekly averages from various published sources

Price: First Month Forward

1. Source: Based on *Platt's* unless otherwise specified. ©2008, Platt's, a division of The McGraw-Hill Companies, Inc. No reproduction without prior written permission from Platt's. All rights reserved.

Loading point: Fateh
API Gravity: 31.0º
Sulphur Content: 2.0

Iran

Prior to January 2001, prices for Iranian Light and Heavy refer to loading point Kharg Island:
Iranian Light

Price: Dated and assessed
Loading point: Sidi Kerir
API Gravity: 33.1º
Sulphur Content: 1.5

Iranian Heavy

Price: Dated and assessed, FOB
Loading point: Sidi Kerir
API Gravity: 30.2º
Sulphur Content: 1.8

Urals

Price: Dated, CIF Med. assess.
Loading points: Novorossiysk, Odessa, Ventspils
API Gravity: 32.0º
Sulphur Content: 1.3

Minas

Price: Dated
Loading point: Dumai
API Gravity: 35.0º
Sulphur Content: 0.1

Tapis

Price: Dated
Loading point: Tapis
API Gravity: 45.5º
Sulphur Content: 0.1

Oil Product Spot Prices[1]

Oil product spot prices are calculated from daily quotations from *Platt's*. In NW Europe (Rotterdam), average prices were calculated from weekly price average using various published sources prior to January 1985 for HSFO.

Prices for NW Europe and the United States. (New York Harbour), are the average price between the high and low quotes for spot purchases of oil products, barge, FOB. Singapore represents the cargo average price. All prices exclude end-use taxes.

Product	Market	Specifications
Gasoline	NW Europe	Prior to June 1992, premium leaded 0.15 g/l. Since June 1992, regular unleaded.
	United States	Prior to November 2003, unleaded gasoline 87 PON. Since November 2003, regular unleaded 87 PON max 0.3 MTBE.
	Singapore	Prior to 1Q95, regular leaded 0.15 g/l. Since 1Q95, premium unleaded.
Gasoil	NW Europe	0.2% sulphur
	United States	Heating Oil No. 2
	Singapore	0.5% sulphur
LSFO	NW Europe	1% sulphur
	United States	1% sulphur
	Singapore	Prior to April 1996, Low Sulphur Waxy Residue (LSWR). Since April 1996, LSWR cracked.
HSFO	NW Europe	3.5% sulphur
	United States	3.0% sulphur
	Singapore	Prior to January 1998, 3.5% sulphur. Since January 1998, 4.0% sulphur.

Conversion Factors

Product		Barrels/ tonne
NW Europe	Gasoline	8.35
	Gasoil	7.46
	Jet/Kero	7.88
	Naphtha	8.82
	LSFO	6.49
	HSFO	6.31
Singapore	HSFO	6.46

Marine Bunker Spot Prices

From December 2006 onwards, the prices represent the monthly average of daily benchmark price – The Bunkerworld Benchmark Price (BBP). The assessments are typically quoted for product to be supplied within 3-7 days in the sport market. Prices are quoted in US$ per metric tonne, delivered on board basis, i.e. including barge transport and/or ex-price fees.

Prior to December 2006, prices represent the monthly average of daily spot assessments and reflect "average-sized" stems, typically between 400 and 700 tonnes. Prices for Singapore and NW Europe (Rotterdam) are "delivered". Prices shown for the United States (Houston) are "ex-wharf".

Conversion Factors

Product	Barrels/tonne
380 cst	6.45
180 cst	6.45
Marine Diesel Oil (MDO)	7.3

Sources: From December 2006 onwards, Monthly Bunker Prices from Bunkerworld website (www.bunkerworld.com). Prior to December 2006, *BunkerNews*, published by Informa Energy Publishing, a division of Informat Group plc.

Import and Export Costs of Energy Products

Costs shown for foreign trade in energy products are obtained by dividing value by volume recorded by customs administrations for each tariff position. Values recorded at the import stage include cost, insurance and freight (CIF) but exclude import duties. Values recorded at the export stage exclude transport and other costs (FOB).

For more detailed information on tariffs and duties for imported energy products please see the Notes on Definitions and Regulations in the Coal and Natural Gas Import Costs and Export Prices section.