

## Glossary

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

## **Indigenous production**

*Indigenous production* is the production of primary energy, i.e. hard coal, lignite, peat, crude oil, NGLs, natural gas, combustible renewables & waste, nuclear, hydro, geothermal, solar and the heat from heat pumps that is extracted from the ambient environment. Production is calculated after removal of impurities.

## **Imports and exports**

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

### **a) Oil and gas**

Quantities of crude oil and oil products imported or exported under processing agreements (i.e. refining on account) are included. Quantities of oil in transit are excluded. Crude oil, NGL and natural gas are reported as coming from the country of origin; refinery feedstocks and oil products are reported as coming from the country of last consignment.

Re-exports of oil imported for processing within bonded areas are shown as exports of product from the processing country to the final destination.

### **b) Coal**

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

### **c) Electricity**

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

## **International marine bunkers**

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

## **Stock changes**

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

**Total Primary Energy Supply (TPES)**

*Total primary energy supply (TPES)* is made up of indigenous production + imports - exports - international marine bunkers ± stock changes. For the World Total, international marine bunkers are not subtracted from TPES.

**Transfers**

*Transfers* include both interproduct transfers and products transferred.

**Statistical differences**

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

**Electricity plants**

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

**Combined heat and power plants**

*Combined heat and power plants* refers to plants which are designed to produce both heat and electricity. UNIPED refers to these as co-generation power stations. If possible, fuel inputs and electricity/heat outputs are on a unit basis rather than on a plant basis. However, if data are not available on a unit basis, the convention for defining a CHP plant noted above is adopted. Both main activity producers and autoproducer plants are included here.

**Heat plants**

*Heat plants* refers to plants (including heat pumps and electric boilers) designed to produce heat only, which is sold to a third party under the provisions of a contract. Both main activity producers and autoproducer plants are included here.

**Gas works**

*Gas works* is treated similarly to electricity generation, with the quantity produced appearing as a positive figure in the gas column, inputs as negative entries in the coal and petroleum products columns, and conversion losses appearing in the total column.

**Petroleum refineries**

The row *Petroleum refineries* shows the use of primary energy for the manufacture of finished petroleum products and the corresponding output. Thus, the total reflects transformation losses. In certain cases the data in the total column are positive numbers. This can be due to either problems in the primary refinery balance or to the fact that the IEA is using standardised net calorific values for the petroleum products.

<b>Coal transformation</b>	<i>Coal transformation</i> contains losses in transformation of coal from primary to secondary fuels and from secondary to tertiary fuels (hard coal to coke, coke to blast furnace gas, lignite to BKB, etc.).
<b>Liquefaction</b>	<i>Liquefaction</i> includes diverse liquefaction processes, such as coal liquefaction plants and gas-to-liquid plants.
<b>Other transformation</b>	<i>Other transformation</i> covers non-specified transformation not shown elsewhere. It also includes backflows from the petrochemical sector.
<b>Own use</b>	<i>Own use</i> contains the primary and secondary energy consumed by transformation industries for heating, pumping, traction and lighting purposes [International Standard Industrial Classification (ISIC) Divisions 10, 11, 12, 23 and 40]. These are shown as negative figures. Included here are, for example, coal mines' own use of energy, power plants' own consumption (which includes net electricity consumed for pumped storage), and energy used for oil and gas extraction.
<b>Distribution and transmission losses</b>	<i>Distribution and transmission losses</i> includes losses in gas distribution, electricity transmission and coal transport.
<b>Total Final Consumption (TFC)</b>	<i>Total final consumption (TFC)</i> is the sum of consumption by the different end-use sectors. Backflows from the petrochemical industry are not included in final consumption.
<b>Industry sector</b>	Consumption in the <i>Industry</i> sector includes the following sub-sectors (energy used for transport by industry is not included here but reported under transport): <ul style="list-style-type: none"> <li>■ <i>Iron and steel industry</i> [ISIC Group 271 and Class 2731];</li> <li>■ <i>Chemical industry</i> [ISIC Division 24];</li> <li>■ <i>Non-ferrous metals basic industries</i> [ISIC Group 272 and Class 2732];</li> <li>■ <i>Non-metallic mineral products</i> such as glass, ceramic, cement, etc. [ISIC Division 26];</li> <li>■ <i>Transport equipment</i> [ISIC Divisions 34 and 35];</li> <li>■ <i>Machinery</i>. Fabricated metal products, machinery and equipment other than transport equipment [ISIC Divisions 28, 29, 30, 31 and 32];</li> <li>■ <i>Mining (excluding fuels) and quarrying</i> [ISIC Divisions 13 and 14];</li> <li>■ <i>Food and tobacco</i> [ISIC Divisions 15 and 16];</li> <li>■ <i>Paper, pulp and print</i> [ISIC Divisions 21 and 22];</li> </ul>

**Industry sector (ctd.)**

- *Wood and wood products* (other than pulp and paper) [ISIC Division 20];
- *Construction* [ISIC Division 45];
- *Textile and leather* [ISIC Divisions 17, 18 and 19];
- *Non-specified* (any manufacturing industry not included above) [ISIC Divisions 25, 33, 36 and 37].

**Transport sector**

The *Transport sector* includes all fuels for transport except international marine bunkers [ISIC Divisions 60, 61 and 62]. It includes transport in the industry sector and covers road, railway, aviation, domestic navigation, fuels used for transport of materials by pipeline and non-specified transport. Fuel used for ocean, coastal and inland fishing should be included in fishing (other sectors).

**Other sectors**

*Other sectors* cover agriculture/forestry [ISIC Divisions 01 and 02], fishing [ISIC Division 05], residential, commercial and public services [ISIC Divisions 41, 50, 51, 52, 55, 63, 64, 65, 66, 67, 70, 71, 72, 73, 74, 75, 80, 85, 90, 91, 92, 93, 95 and 99], and non-specified consumption.

**Non-energy use**

*Non-energy use* covers use of *other petroleum products* such as white spirit, paraffin waxes, lubricants, bitumen and other products. They are shown separately under the heading *non-energy use* and are included in total final consumption. It is assumed that the use of these products is exclusively *non-energy use*. An exception to this treatment is petroleum coke which is shown as *non-energy use* only when there is evidence of such use; otherwise it is shown under energy use in industry or in other sectors. Non-energy use of coal includes carbon blacks, graphite electrodes, etc. and is also shown separately by sector. Non-energy use also includes petrochemical feedstocks. The petrochemical industry includes cracking and reforming processes for the purpose of producing ethylene, propylene, butylene, sythesis gas, aromatics, butadiene and other hydrocarbon-based raw materials in processes such as steam cracking, aromatics plants and steam reforming.