

COAL INFORMATION  
JULY 2022 EDITION



# Database documentation

This documentation provides support information for the IEA *Coal Information* database. This document can be found online at:

[http://wds.iea.org/wds/pdf/coal\\_documentation.pdf](http://wds.iea.org/wds/pdf/coal_documentation.pdf).

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# Changes from last edition

## Geographical coverage

Costa Rica joined the OECD in May 2021. Accordingly, starting with this edition, Costa Rica appears in the list of OECD Members for data starting in 1971.

Lithuania joined the IEA in February 2022. However, data for Lithuania are not included in the IEA aggregates for this edition, with the exception of the IEA and Accession/Association countries aggregate (IEAFAMILY).

Starting with this edition, IEA Association members Argentina, Egypt, and Ukraine are included in the IEA and Accession/Association countries aggregate (IEAFAMILY), for data starting in 1990 and for the entire time series.

The IEA continues to expand the coverage of its statistics reports and encourages more countries to collaborate on data exchange. As detailed data have become consistently available for the Kingdom of Eswatini, Madagascar, Rwanda and Uganda, the associated time series are now shown explicitly in the main list of countries in the World Coal Supply file for all years, and have been removed from the Other Africa region.

All files			
Old longname	New longname	Shortname	Old shortname (if changed)
Turkey	Republic of Turkiye	TURKEY	

World Coal Supply			
Old longname	New longname	Shortname	Old shortname (if changed)
	Kingdom of Eswatini	ESWATINI	
	Madagascar	MADAGASCAR	
	Rwanda	RWANDA	
	Uganda	UGANDA	

# Database structure

The database *Coal information* contains six files with the following annual data.

## OECD files (updated July 2022)

- Countries: 38 OECD countries, 14 non-OECD countries  
7 regional aggregates  
(see section *Geographical coverage*);
- Years: 1960-2021 (OECD countries and regions unless otherwise specified.);  
1978-2021 (OECD Imports and Exports to partner countries)

### COAL BALANCE OECD.IVT

#### **OECD, Coal Balance. (ktoe, ktce, TJ, Tcal)**

Full balance data for different types of coal and coal products, including manufactured gases. (17 products + 4 aggregates; 95 flows; 52 countries + 7 aggregates)

### COAL NCV OECD.IVT

#### **OECD, Coal Net Calorific Values. (MJ/tonne)**

The calorific values used to convert physical tonnes of coal and coal products into energy for the OECD Coal Balance data. (13 products + 2 aggregates; 14 flows; 52 countries). The aggregates, hard coal and brown coal, are included for years prior to 1978 only.

### COAL STATISTICS OECD.IVT

#### **OECD, Coal Supply and Consumption with Full OECD Data. (kt, TJ)**

Supply and consumption statistics for different types of coal and coal products, including manufactured gases. (17 products + 3 aggregates; 100 flows; 52 countries + 7 aggregates). The aggregates hard coal, brown coal and steam coal are also included.

COAL EXPORTS.IVT

**OECD, Exports by Destination. (kt)**

Detailed coal export data by country of destination for OECD member states.

(11 products + 3 aggregates; 164 flows; 52 countries + 7 aggregates)

COAL IMPORTS.IVT

**OECD, Imports by Origin. (kt)**

Detailed coal import data by country of origin for OECD member states. (11 products +

3 aggregates; 164 flows; 52 countries + 7 aggregates)

## WORLD files (last updated July 2022)

- Countries: 177 countries and regional aggregates (see section *Geographical coverage*);
- Years: 1971-2020 (non-OECD countries and regions; world unless otherwise specified.); 2021 (provisional energy supply data).

COAL WORLD SUPPLY.IVT

**World Coal Supply (kt, TJ)**

World supply statistics for different types of coal and coal products, including manufactured gases. (17 products + 3 aggregates; 12 flows; 177 countries + 24 aggregates)

# Flow definitions

OECD, Coal Statistics (kt,TJ): COAL STATISTICS OECD.IVT  
WORLD, World Coal Supply: COAL WORLD SUPPLY.IVT

## Supply

Flow	Short name	Definition
Production	INDPROD	Refers to the quantities of fuels extracted or produced, calculated after any operation for removal of inert matter or impurities (e.g. sulphur from natural gas). For “other hydrocarbons” (shown with crude oil), production should include synthetic crude oil (including mineral oil extracted from bituminous minerals such as oil shale and tar sands, etc.). Production of secondary oil products represents the gross refinery output. Secondary coal products and gases represent the output from coke ovens, gas works, blast furnaces and other transformation processes.
From other sources – coal	OSCOAL	Refers to both primary energy that has not been accounted for under production and secondary energy that has been accounted for in the production of another fuel. For example, under primary coal: recovered slurries, middlings, recuperated coal dust and other low-grade coal products that cannot be classified according to type of coal from which they are obtained; under gas works gas: natural gas, refinery gas, and LPG, that are treated or mixed in gas works (i.e. gas works gas produced from sources other than coal).
From other sources – natural gas	OSNATGAS	Refers to both primary energy that has not been accounted for under production and secondary energy that has been accounted for in the production of another fuel.
From other sources – oil products	OSOIL	Refers to both primary energy that has not been accounted for under production and secondary energy that has been accounted for in the production of another fuel. For example, under additives: benzol, alcohol and methanol produced from natural gas; under refinery feedstocks: backflows from the petrochemical industry used as refinery feedstocks; under “other hydrocarbons” (included with crude oil): liquids obtained from coal liquefaction and GTL plants.
From other sources – renewables	OSRENEW	Refers to both primary energy that has not been accounted for under production and secondary energy that has been accounted for in the production of another fuel.
From other sources – not elsewhere specified	OSNONSPEC	Refers to both primary energy that has not been accounted for under production and secondary energy that has been accounted for in the production of another fuel. This flow is used if the source is not known.
Imports	IMPORTS	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 should not be included.

Flow	Short name	Definition
Exports	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 should not be included.
International marine bunkers	MARBUNK	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. See definitions of <i>transport</i> , <i>fishing</i> , and <i>other non-specified</i> . <i>International marine bunkers</i> are excluded from the <i>supply</i> at the country and regional level, but not for world, where they are included in <i>transport</i> under <i>World marine bunkers</i> .
International aviation bunkers	AVBUNK	Includes deliveries of aviation fuels to aircraft for international aviation. Fuels used by airlines for their road vehicles are excluded. The domestic/international split should be determined on the basis of departure and landing locations and not by the nationality of the airline. For many countries this incorrectly excludes fuel used by domestically owned carriers for their international departures. <i>International aviation bunkers</i> are excluded from the <i>supply</i> at the country and regional level, but not for world, where they are included in <i>transport</i> under <i>World aviation bunkers</i> .
Stock changes	STOCKCHA	Reflects the difference between opening stock levels on the first day of the year and closing levels on the last day of the year of stocks on national territory held by producers, importers, energy transformation industries and large consumers. Oil and gas stock changes in pipelines are not taken into account. With the exception of large users mentioned above, changes in final users' stocks are not taken into account. A stock build is shown as a negative number, and a stock draw as a positive number.
Domestic supply	DOMSUP	Domestic supply is defined as <i>production + from other sources + imports - exports - international marine bunkers ± stock changes</i> . Note, exports, bunkers and stock changes incorporate the algebraic sign directly in the number.
Transfers	TRANSFER	Comprises <i>interproduct transfers</i> , products transferred and recycled products. <i>Interproduct transfers</i> results from reclassification of products either because their specification has changed or because they are blended into another product, e.g. kerosene may be reclassified as gasoil after blending with the latter in order to meet its winter diesel specification. The net balance of <i>interproduct transfers</i> is zero. <i>Products transferred</i> is intended for oil products imported for further processing in refineries. For example, fuel oil imported for upgrading in a refinery is transferred to the feedstocks category. <i>Recycled products</i> are finished products which pass a second time through the marketing network, <b>after</b> having been once delivered to final consumers (e.g. used lubricants which are reprocessed).



Flow	Short name	Definition
Statistical differences	STATDIFF	Defined as deliveries to <i>final consumption</i> + use for <i>transformation processes</i> + consumption by <i>energy industry own use</i> + <i>losses</i> - <i>domestic supply</i> - <i>transfers</i> . Statistical differences arise because the data for the individual components of supply are often derived from different data sources by the national administration. Furthermore, the inclusion of changes in some large consumers' stocks in the supply part of the balance introduces distortions which also contribute to the statistical differences.

## Transformation processes

Flow	Short name	Definition
Transformation processes	TOTTRANF	Transformation processes comprise the conversion of primary forms of energy to secondary and further transformation (e.g. coking coal to coke, crude oil to oil products, and fuel oil to electricity).
Main activity producer electricity plants	MAINELEC	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 cannot be distinguished on a unit basis) then the whole plant is designated as a CHP plant. Main activity producers generate electricity and/or heat for sale to third parties, as their primary activity. They may be privately or publicly owned. Note that the sale need not take place through the public grid.
Autoproducer electricity plants	AUTOELEC	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 cannot be distinguished on a unit basis) then the whole plant is designated as a CHP plant. Autoproducer undertakings generate electricity and/or heat, wholly or partly for their own use as an activity which supports their primary activity. They may be privately or publicly owned.
Main activity producer CHP plants	MAINCHP	Refers to plants which are designed to produce both heat and electricity (sometimes referred to 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 should be adopted. Main activity producers generate electricity and/or heat for sale to third parties, as their primary activity. They may be privately or publicly owned. Note that the sale need not take place through the public grid.
Autoproducer CHP plants	AUTOCHP	Refers to plants which are designed to produce both heat and electricity (sometimes referred to 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 should be adopted. Note that for autoproducer's CHP plants, all fuel inputs to electricity production are taken into account, while only the part of fuel inputs to heat sold is shown. Fuel inputs for the production of heat consumed within the autoproducer's establishment are not included here but are included with figures for the final consumption of fuels in the appropriate consuming sector. Autoproducer undertakings generate electricity and/or heat, wholly or partly for their own use as an activity which supports their primary activity. They may be privately or publicly owned.
Main activity producer heat plants	MAINHEAT	Refers to plants designed to produce heat only and who sell heat to a third party (e.g. residential, commercial or industrial consumers) under the provisions of a contract. Main activity producers generate electricity and/or heat for sale to third parties, as their primary activity. They may be privately or publicly owned. Note that the sale need not take place through the public grid.

Flow	Short name	Definition
Autoproducer heat plants	AUTOHEAT	Refers to plants designed to produce heat only and who sell heat to a third party (e.g. residential, commercial or industrial consumers) under the provisions of a contract. Autoproducer undertakings generate electricity and/or heat, wholly or partly for their own use as an activity which supports their primary activity. They may be privately or publicly owned.
Heat pumps	THEAT	Includes heat produced by heat pumps in transformation. Heat pumps that are operated within the residential sector where the heat is not sold are not considered a transformation process and are not included here – the electricity consumption would appear as residential use.
Electric boilers	TBOILER	Includes electric boilers used to produce heat.
Chemical heat for electricity production	TELE	Includes heat from chemical processes that is used to generate electricity.
Blast furnaces	TBLASTFUR	Blast furnaces covers the quantities of fuels used for the production of blast furnace gas and oxygen steel furnace gas. The production of pig-iron from iron ore in blast furnaces uses fuels for supporting the blast furnace charge and providing heat and carbon for the reduction of the iron ore. Accounting for the calorific content of the fuels entering the process is a complex matter as transformation (into blast furnace gas) and consumption (heat of combustion) occur simultaneously. Some carbon is also retained in the pig-iron; almost all of this reappears later in the oxygen steel furnace gas (or converter gas) when the pig-iron is converted to steel. In the 1992/1993 annual questionnaires, Member Countries were asked for the first time to report in the <i>transformation processes</i> the quantities of all fuels (e.g. pulverised coal injection [PCI] coal, coke oven coke, natural gas and oil) entering blast furnaces and the quantity of blast furnace gas and oxygen steel furnace gas produced. The Secretariat then needed to split these inputs into the transformation and consumption components. The transformation component is shown in the row <i>blast furnaces</i> in the column appropriate for the fuel, and the consumption component is shown in the row <i>iron and steel</i> , in the column appropriate for the fuel. The secretariat decided to assume a transformation efficiency such that the carbon input into the blast furnaces should equal the carbon output. This is roughly equivalent to assuming an energy transformation efficiency of 40%.
Gas works	TGASWKS	Includes the manufacture of town gas.
Coke ovens	TCOKEOVS	Includes the manufacture of coke and coke oven gas.
Patent fuel plants	TPATFUEL	Includes the manufacture of patent fuels.
BKB/PB plants	TBKB	Includes the manufacture of BKB and peat briquettes.
Oil refineries	TREFINER	Includes the manufacture of finished oil products.
Petrochemical industry	TPETCHEM	Covers backflows returned from the petrochemical industry. Note that backflows from oil products that are used for non-energy purposes (i.e. white spirit and lubricants) are not included here, but in non-energy use.

Flow	Short name	Definition
Coal liquefaction plants	TCOALLIQ	Includes coal, oil and tar sands used to produce synthetic oil.
Gas-to-liquids (GTL) plants	TGTL	Includes natural gas used as feedstock for the conversion to liquids, e.g. the quantities of fuel entering the methanol production process for transformation into methanol.
For blended natural gas	TBLENDGAS	Includes other gases for blending with natural gas.
Charcoal production plants	TCHARCOAL	Includes the transformation of solid biofuels into charcoal.
Not elsewhere specified (Transformation)	TNONSPEC	Includes non-specified transformation.

## Energy industry own use and losses

Flow	Short name	Definition
Energy industry own use	TOTENGY	Energy industry own use covers the amount of fuels used by the energy producing industries (e.g. for heating, lighting and operation of all equipment used in the extraction process, for traction and for distribution). It includes energy consumed by energy industries for heating, pumping, traction and lighting purposes [ISIC Rev. 4 Divisions 05, 06, 19 and 35, Group 091 and Classes 0892 and 0721].
Coal mines	EMINES	Represents the energy which is used directly within the coal industry for hard coal and lignite mining. It excludes coal burned in pithead power stations (included under electricity plants in transformation processes) and free allocations to miners and their families (considered as part of household consumption and therefore included under <i>residential</i> ).
Oil and gas extraction	EOILGASEX	Represents the energy which is used for oil and gas extraction. Flared gas is not included.
Blast furnaces	EBLASTFUR	Represents the energy which is used in blast furnaces.
Gas works	EGASWKS	Represents the energy which is used in gas works.
Gasification plants for biogas	EBIOGAS	Represents own consumption of biogas necessary to support temperatures needed for anaerobic fermentation.
Coke ovens	ECOKEOVS	Represents the energy used in coke ovens.
Patent fuel plants	EPATFUEL	Represents the energy used in patent fuel plants.
BKB/PB plants	EBKB	Represents the energy used in BKB and peat briquette plants.
Oil refineries	EREFINER	Represents the energy used in oil refineries.
Coal liquefaction plants	ECOALLIQ	Represents the energy used in coal liquefaction plants.
Liquefaction (LNG) / re-gasification plants	ELNG	Represents the energy used in LNG and regasification plants.
Gas-to-liquids (GTL) plants	EGTL	Represents the energy used in gas-to-liquids plants.
Own use in electricity, CHP and heat plants	EPOWERPLT	Represents the energy used in electricity, CHP and heat plants.
Used for pumped storage	EPUMPST	Represents electricity consumed in hydro-electric plants for pumped storage.
Nuclear industry	ENUC	Represents the energy used in the nuclear industry.
Charcoal production plants	ECHARCOAL	Represents the energy used in charcoal production plants.
Not elsewhere specified (Energy)	ENONSPEC	Represents use in non-specified energy industries.
Losses	DISTLOSS	Losses in energy distribution, transmission and transport.

## Final consumption

Flow	Short name	Definition
Final consumption	FINCONS	<p>Equal to the sum of the consumption in the end-use sectors. Energy used for transformation processes and for own use of the energy producing industries is excluded. Final consumption reflects for the most part deliveries to consumers (see note on <i>stock changes</i>).</p> <p>Backflows from the petrochemical industry are not included in final consumption (see <i>from other sources</i> under supply and <i>petrochemical plants</i> in transformation processes).</p> <p>Note that <i>international aviation bunkers</i> and <i>international marine bunkers</i> are not included in final consumption except for the world total, where they are reported as <i>World aviation bunkers</i> and <i>World marine bunkers</i> in <i>transport</i>.</p> <p>Starting with the 2009 edition, <i>international aviation bunkers</i> is no longer included in final consumption at the country level.</p>
Industry	TOTIND	Industry consumption is specified as follows: (energy used for transport by industry is not included here but is reported under transport):
Mining and quarrying	MINING	[ISIC Rev. 4 Divisions 07 and 08 and Group 099] Mining (excluding fuels) and quarrying.
Construction	CONSTRUC	[ISIC Rev. 4 Division 41 to 43]
Manufacturing	MANUFACT	<p>Manufacturing refers to the sum of the following industrial subsectors:</p> <ul style="list-style-type: none"> <li>• Iron and Steel:</li> <li>• Chemical and petrochemical:</li> <li>• Non-ferrous metals</li> <li>• Non-metallic minerals</li> <li>• Transport equipment</li> <li>• Machinery</li> <li>• Food and tobacco</li> <li>• Paper, pulp and print</li> <li>• Wood and wood products</li> <li>• Textile and leather</li> </ul> <p>Definitions of the sub-sectors themselves can be found under the listing for each respective sub-sector below.</p>
Iron and steel	IRONSTL	[ISIC Rev. 4 Group 241 and Class 2431]
Chemical and petrochemical	CHEMICAL	[ISIC Rev. 4 Divisions 20 and 21] Excluding petrochemical feedstocks.
Non-ferrous metals	NONFERR	[ISIC Rev. 4 Group 242 and Class 2432] Basic industries.
Non-metallic minerals	NONMET	[ISIC Rev. 4 Division 23] Such as glass, ceramic, cement, etc.
Transport equipment	TRANSEQ	[ISIC Rev. 4 Divisions 29 and 30]
Machinery	MACHINE	[ISIC Rev. 4 Divisions 25 to 28] Fabricated metal products, machinery and equipment other than transport equipment.

Flow	Short name	Definition
Food and tobacco	FOODPRO	[ISIC Rev. 4 Divisions 10 to 12]
Paper, pulp and print	PAPERPRO	[ISIC Rev. 4 Divisions 17 and 18]
Wood and wood products	WOODPRO	[ISIC Rev. 4 Division 16] Wood and wood products other than pulp and paper.
Textile and leather	TEXTILES	[ISIC Rev. 4 Divisions 13 to 15]
Not elsewhere specified (Industry)	INONSPEC	[ISIC Rev. 4 Divisions 22, 31 and 32] Any manufacturing industry not included above. Note: Most countries have difficulties supplying an industrial breakdown for all fuels. In these cases, the <i>not elsewhere specified</i> industry row has been used. Regional aggregates of industrial consumption should therefore be used with caution.
Transport	TOTTRANS	Consumption in transport covers all transport activity (in mobile engines) regardless of the economic sector to which it is contributing [ISIC Rev. 4 Divisions 49 to 51], and is specified as follows:
Domestic aviation	DOMESAIR	Includes deliveries of aviation fuels to aircraft for domestic aviation - commercial, private, agricultural, etc. It includes use for purposes other than flying, e.g. bench testing of engines, but not airline use of fuel for road transport. The domestic/international split should be determined on the basis of departure and landing locations and not by the nationality of the airline. Note that this may include journeys of considerable length between two airports in a country (e.g. San Francisco to Honolulu). For many countries this incorrectly includes fuel used by domestically owned carriers for outbound international traffic.
Road	ROAD	Includes fuels used in road vehicles as well as agricultural and industrial highway use. Excludes military consumption as well as motor gasoline used in stationary engines and diesel oil for use in tractors that are not for highway use.
Rail	RAIL	Includes quantities used in rail traffic, including industrial railways.
Pipeline transport	PIPELINE	Includes energy used in the support and operation of pipelines transporting gases, liquids, slurries and other commodities, including the energy used for pump stations and maintenance of the pipeline. Energy for the pipeline distribution of natural or manufactured gas, hot water or steam (ISIC Rev. 4 Division 35) from the distributor to final users is excluded and should be reported in <i>energy industry own use</i> , while the energy used for the final distribution of water (ISIC Rev. 4 Division 36) to household, industrial, commercial and other users should be included in <i>commercial/public services</i> . Losses occurring during the transport between distributor and final users should be reported as <i>losses</i> .
Domestic navigation	DOMESNAV	Includes fuels delivered to vessels of all flags not engaged in international navigation (see <i>international marine bunkers</i> ). The domestic/international split should be determined on the basis of port of departure and port of arrival and not by the flag or nationality of the ship. Note that this may include journeys of considerable length between two ports in a country (e.g. San Francisco to Honolulu). Fuel used for ocean, coastal and inland fishing and military consumption are excluded.

Flow	Short name	Definition
Not elsewhere specified (Transport)	TRNONSPE	Includes all transport not elsewhere specified. Note: <i>International marine bunkers</i> and <i>international aviation bunkers</i> are shown in <i>Supply</i> and are not included in transport as part of final consumption.
Other	TOTOTHER	Includes <i>residential, commercial/public services, agriculture/forestry, fishing and non-specified (other)</i> .
Residential	RESIDENT	Includes consumption by households, excluding fuels used for transport. Includes households with employed persons [ISIC Rev. 4 Division 97 and 98] which is a small part of total residential consumption.
Commercial and public services	COMMPUB	[ISIC Rev. 4 Divisions 33, 36-39, 45-47, 52, 53, 55-56, 58-66, 68-75, 77-82, 84 (excluding Class 8422), 85-88, 90-96 and 99]
Agriculture/forestry	AGRICULT	Includes deliveries to users classified as agriculture, hunting and forestry by the ISIC, and therefore includes energy consumed by such users whether for traction (excluding agricultural highway use), power or heating (agricultural and domestic) [ISIC Rev. 4 Divisions 01 and 02].
Fishing	FISHING	Includes fuels used for inland, coastal and deep-sea fishing. Fishing covers fuels delivered to ships of all flags that have refuelled in the country (including international fishing) as well as energy used in the fishing industry [ISIC Rev. 4 Division 03].
Not elsewhere specified (Other)	ONONSPEC	Includes all fuel use not elsewhere specified as well as consumption in the above-designated categories for which separate figures have not been provided. Military fuel use for all mobile and stationary consumption is included here (e.g. ships, aircraft, road and energy used in living quarters) regardless of whether the fuel delivered is for the military of that country or for the military of another country.
Non-energy use	NONENUSE	Non-energy use covers those fuels that are used as raw materials in the different sectors and are not consumed as a fuel or transformed into another fuel. Non-energy use is shown separately in final consumption under the heading <i>non-energy use</i> . Note that for biomass commodities, only the amounts specifically used for energy purposes (a small part of the total) are included in the energy statistics. Therefore, all non-energy use quantities are null by definition.
Non-energy use ind./transf./energy	NEINTREN	Non-energy in industry, transformation processes and energy industry own use.
<i>Of which: Non-energy use in chemical/ petrochemical industry</i>	NECHEM	The petrochemical industry includes cracking and reforming processes for the purpose of producing ethylene, propylene, butylene, synthesis gas, aromatics, butadiene and other hydrocarbon-based raw materials in processes such as steam cracking, aromatics plants and steam reforming [part of ISIC Rev. 4 Group 201]. <i>Note: this flow was called "of which petrochemical feedstocks" in previous editions.</i>
Non-energy use in transport	NETRANS	Non-energy use in transport.
Non-energy use in other sectors	NEOTHER	Non-energy use in other sectors such as residential, commercial/public services, agriculture/forestry and fishing.



## Electricity output (GWh)

Flow	Short name	Definition
Electricity output in GWh	ELOUTPUT	Shows the total number of GWh generated by thermal power plants separated into electricity plants and CHP plants. Electricity production for hydro pumped storage is also given separately for main activity producers and autoproducers.
Electricity output-main activity producer electricity plants	ELMAINE	Total electricity generated in main activity producer electricity plants.
Electricity output-auto-producer electricity plants	ELAUTOE	Total electricity generated in autoproducer electricity plants.
Electricity output-main activity producer CHP plants	ELMAINC	Total electricity generated in main activity producer CHP plants.
Electricity output-auto-producer CHP plants	ELAUTOC	Total electricity generated in autoproducer CHP plants.

## Heat output (TJ)

Flow	Short name	Definition
Heat output in TJ	HEATOUT	Shows the total amount of TJ generated by power plants separated into CHP plants and heat plants.
Heat output-main activity producer CHP plants	HEMAINC	Total heat generated in main activity producer CHP plants.
Heat output-autoproducer CHP plants	HEAUTOC	Total electricity generated in autoproducer CHP plants.
Heat output-main activity producer heat plant	HEMAINH	Total electricity generation in main activity producer heat plants.
Heat output-autoproducer heat plants	HEAUTOH	Total electricity generation in autoproducer heat plants.

## OECD, Coal Balance (ktce, ktce, TJ, Tcal): COAL BALANCE OECD.IVT

## Supply

Flow	Short name	Definition
Production	INDPROD	Comprises the production of primary energy, i.e. hard coal, lignite/brown coal, peat, crude oil, NGLs, natural gas, combustible renewables and waste, nuclear, hydro, geothermal, solar and the heat from heat pumps that is extracted from the ambient environment. Production is calculated after removal of impurities (e.g. sulphur from natural gas). Calculation of production of hydro, geothermal, etc. and nuclear electricity is explained in the section <i>Units and conversions</i> .
Imports	IMPORTS	Comprise amounts having crossed the national territorial boundaries of the country whether or not customs clearance has taken place. Comprise the amount of fuels obtained from other countries, whether or not there is an economic or customs union between the relevant countries. Coal in transit should not be included.
Exports	EXPORTS	Comprise amounts having crossed the national territorial boundaries of the country whether or not customs clearance has taken place. Exports comprise the amount of fuels supplied to other countries, whether or not there is an economic or customs union between the relevant countries. Coal in transit should not be included.
International marine bunkers	MARBUNK	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. See <i>domestic navigation, fishing and other non-specified</i> .
International aviation bunkers	AVBUNK	Includes deliveries of aviation fuels to aircraft for international aviation. Fuels used by airlines for their road vehicles are excluded. The domestic/international split should be determined on the basis of departure and landing locations and not by the nationality of the airline. For many countries this incorrectly excludes fuel used by domestically owned carriers for their international departures.
Stock changes	STOCKCHA	Reflects the difference between opening stock levels on the first day of the year and closing levels on the last day of the year of stocks on national territory held by producers, importers, energy transformation industries and large consumers. A stock build is shown as a negative number, and a stock draw as a positive number.
Total energy supply	TES	Total energy supply (TES) is made up of <i>production + imports - exports - international marine bunkers - international aviation bunkers ± stock changes</i> . Note, exports, bunkers and stock changes incorporate the algebraic sign directly in the number.

Flow	Short name	Definition
Transfers	TRANSFER	<p>Comprises <i>interproduct transfers</i>, <i>products transferred</i> and <i>recycled products</i>.</p> <p><i>Interproduct transfers</i> results from reclassification of products either because their specification has changed or because they are blended into another product, e.g. kerosene may be reclassified as gasoil after blending with the latter in order to meet its winter diesel specification. The net balance of <i>interproduct transfers</i> is zero.</p> <p><i>Products transferred</i> is intended for oil products imported for further processing in refineries. For example, fuel oil imported for upgrading in a refinery is transferred to the feedstocks category.</p> <p><i>Recycled products</i> are finished products which pass a second time through the marketing network, <b>after</b> having been once delivered to final consumers (e.g. used lubricants which are reprocessed).</p>
Statistical differences	STATDIFF	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.

## Transformation processes

Flow	Short name	Definition
Transformation processes	TOTTRANF	Transformation processes comprises the conversion of primary forms of energy to secondary and further transformation (e.g. coking coal to coke, crude oil to oil products, and fuel oil to electricity). Inputs to transformation processes are shown as negative numbers and output from the process is shown as a positive number. Transformation losses will appear in the "total" column as negative numbers.
Main activity producer electricity plants	MAINELEC	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 cannot be distinguished on a unit basis) then the whole plant is designated as a CHP plant. Main activity producers generate electricity for sale to third parties, as their primary activity. They may be privately or publicly owned. Note that the sale need not take place through the public grid.
Autoproducer electricity plants	AUTOELEC	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 cannot be distinguished on a unit basis) then the whole plant is designated as a CHP plant. Autoproducer undertakings generate electricity wholly or partly for their own use as an activity which supports their primary activity. They may be privately or publicly owned.
Main activity producer CHP plants	MAINCHP	Refers to plants which are designed to produce both heat and electricity (sometimes referred to 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 should be adopted. Main activity producers generate electricity and/or heat for sale to third parties, as their primary activity. They may be privately or publicly owned. Note that the sale need not take place through the public grid.

Flow	Short name	Definition
Autoproducer CHP plants	AUTOCHP	Refers to plants which are designed to produce both heat and electricity (sometimes referred to 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 should be adopted. Note that for autoproducer CHP plants, all fuel inputs to electricity production are taken into account, while only the part of fuel inputs to heat sold is shown. Fuel inputs for the production of heat consumed within the autoproducer's establishment are not included here but are included with figures for the final consumption of fuels in the appropriate consuming sector. Autoproducer undertakings generate electricity and/or heat, wholly or partly for their own use as an activity which supports their primary activity. They may be privately or publicly owned.
Main activity producer heat plants	MAINHEAT	Refers to plants (including heat pumps and electric boilers) designed to produce heat only and who sell heat to a third party (e.g. residential, commercial or industrial consumers) under the provisions of a contract. Main activity producers generate heat for sale to third parties, as their primary activity. They may be privately or publicly owned. Note that the sale need not take place through the public grid.
Autoproducer heat plants	AUTOHEAT	Refers to plants (including heat pumps and electric boilers) designed to produce heat only and who sell heat to a third party (e.g. residential, commercial or industrial consumers) under the provisions of a contract. Autoproducer undertakings generate heat, wholly or partly for their own use as an activity which supports their primary activity. They may be privately or publicly owned.
Heat pumps	THEAT	Includes heat produced by heat pumps in transformation. Heat pumps that are operated within the residential sector where the heat is not sold are not considered a transformation process and are not included here – the electricity consumption would appear as residential use.
Electric boilers	TBOILER	Includes electric boilers used to produce heat.
Chemical heat for electricity production	TELE	Includes heat from chemical processes that is used to generate electricity.

Flow	Short name	Definition
Blast furnaces	TBLASTFUR	Blast furnaces covers the quantities of fuels used for the production of blast furnace gas and oxygen steel furnace gas. The production of pig-iron from iron ore in blast furnaces uses fuels for supporting the blast furnace charge and providing heat and carbon for the reduction of the iron ore. Accounting for the calorific content of the fuels entering the process is a complex matter as transformation (into blast furnace gas) and consumption (heat of combustion) occur simultaneously. Some carbon is also retained in the pig-iron; almost all of this reappears later in the oxygen steel furnace gas (or converter gas) when the pig-iron is converted to steel. In the 1992/1993 annual questionnaires, Member Countries were asked for the first time to report in <i>transformation processes</i> the quantities of all fuels (e.g. pulverised coal injection [PCI] coal, coke oven coke, natural gas and oil) entering blast furnaces and the quantity of blast furnace gas and oxygen steel furnace gas produced. The Secretariat then needed to split these inputs into the transformation and consumption components. The transformation component is shown in the row <i>blast furnaces</i> in the column appropriate for the fuel, and the consumption component is shown in the row <i>iron and steel</i> , in the column appropriate for the fuel. The Secretariat decided to assume a transformation efficiency such that the carbon input into the blast furnaces should equal the carbon output. This is roughly equivalent to assuming an energy transformation efficiency of 40%.
Gas works	TGASWKS	Includes the manufacture of town gas. <i>Note: in the summary balances this item also includes other gases blended with natural gas (TBLENDGAS).</i>
Coke ovens	TCOKEOVS	Includes the manufacture of coke and coke oven gas.
Patent fuel plants	TPATFUEL	Includes the manufacture of patent fuels.
BKB/PB plants	TBKB	Includes the manufacture of BKB and peat products.
Oil refineries	TREFINER	Includes the manufacture of finished oil products.
Petrochemical plants	TPETCHEM	Covers backflows returned from the petrochemical industry. Note that backflows from oil products that are used for non-energy purposes (i.e. white spirit and lubricants) are not included here, but in non-energy use.
Coal liquefaction plants	TCOALLIQ	Includes coal, oil and tar sands used to produce synthetic oil.
Gas-to-liquids (GTL) plants	TGTL	Includes natural gas used as feedstock for the conversion to liquids, e.g. the quantities of fuel entering the methanol product process for transformation into methanol.
For blended natural gas	TBLENDGAS	Includes other gases that are blended with natural gas.
Charcoal production plants	TCHARCOAL	Includes the transformation of solid biofuels into charcoal.
Not elsewhere specified (Transformation)	TNONSPEC	Includes other non-specified transformation.

## Energy industry own use and losses

Flow	Short name	Definition
Energy industry	TOTENGY	Energy industry own use covers the amount of fuels used by the energy producing industries (e.g. for heating, lighting and operation of all equipment used in the extraction process, for traction and for distribution). It includes energy consumed by energy industries for heating, pumping, traction and lighting purposes [ISIC Rev. 4 Divisions 05, 06, 19 and 35, Group 091 and Classes 0892 and 0721].
Coal mines	EMINES	Represents the energy which is used directly within the coal industry for hard coal and lignite mining. It excludes coal burned in pithead power stations (included under electricity plants in transformation processes) and free allocations to miners and their families (considered as part of household consumption and therefore included under <i>residential</i> ).
Oil and gas extraction	EOILGASEX	Represents the energy which is used for oil and gas extraction. Flared gas is not included.
Blast furnaces	EBLASTFUR	Represents the energy which is used in blast furnaces.
Gas works	EGASWKS	Represents the energy which is used in gas works.
Gasification plants for biogases	EBIOGAS	Represents own consumption of biogases necessary to support temperatures needed for anaerobic fermentation.
Coke ovens	ECOKEOVS	Represents the energy used in coke ovens.
Patent fuel plants	EPATFUEL	Represents the energy used in patent fuel plants.
BKB plants	EBKB	Represents the energy used in BKB plants.
Oil refineries	EREFINER	Represents the energy used in oil refineries.
Coal liquefaction plants	ECOALLIQ	Represents the energy used in coal liquefaction plants.
Liquefaction (LNG) / regasification plants	ELNG	Represents the energy used in LNG and regasification plants.
Gas-to-liquids (GTL) plants	EGTL	Represents the energy used in gas-to-liquids plants.
Own use in electricity, CHP and heat plants	EPOWERPLT	Represents the energy used in main activity producer electricity, CHP and heat plants.
Used for pumped storage	EPUMPST	Represents electricity consumed in hydro-electric plants for pumped storage.
Nuclear industry	ENUC	Represents the energy used in the nuclear industry.
Charcoal production plants	ECHARCOAL	Represents the energy used in charcoal production plants.
Non-specified (energy)	ENONSPEC	Represents use in non-specified energy sector.
Losses	DISTLOSS	Losses in energy distribution, transmission and transport.

## Final consumption

Flow	Short name	Definition
Total final consumption	TFC	Equal to the sum of the consumption in the end-use sectors. Energy used for transformation processes and for own use of the energy producing industries is excluded. Final consumption reflects for the most part deliveries to consumers (see note on <i>stock changes</i> ). Backflows from the petrochemical industry are not included in final consumption (see <i>from other sources</i> under supply and <i>petrochemical plants</i> in transformation). <i>Starting with the 2009 edition, international aviation bunkers is no longer included in final consumption at the country level.</i>
Industry	TOTIND	Industry consumption is specified as follows: (energy used for transport by industry is not included here but is reported under transport):
Mining and quarrying	MINING	[ISIC Rev. 4 Divisions 07 and 08 and Group 099] Mining (excluding fuels) and quarrying.
Construction	CONSTRUC	[ISIC Rev. 4 Division 41 to 43]
Manufacturing	MANUFACT	Manufacturing refers to the sum of the following industrial subsectors: <ul style="list-style-type: none"> <li>• Iron and Steel:</li> <li>• Chemical and petrochemical:</li> <li>• Non-ferrous metals</li> <li>• Non-metallic minerals</li> <li>• Transport equipment</li> <li>• Machinery</li> <li>• Food and tobacco</li> <li>• Paper, pulp and print</li> <li>• Wood and wood products</li> <li>• Textile and leather</li> </ul> Definitions of the sub-sectors themselves can be found under the listing for each respective sub-sector below.
Iron and steel	IRONSTL	[ISIC Rev. 4 Group 241 and Class 2431]
Chemical and petrochemical	CHEMICAL	[ISIC Rev. 4 Divisions 20 and 21] Excluding petrochemical feedstocks.
Non-ferrous metals	NONFERR	[ISIC Rev. 4 Group 242 and Class 2432] Basic industries.
Non-metallic minerals	NONMET	[ISIC Rev. 4 Division 23] Such as glass, ceramic, cement, etc.
Transport equipment	TRANSEQ	[ISIC Rev. 4 Divisions 29 and 30]
Machinery	MACHINE	[ISIC Rev. 4 Divisions 25 to 28] Fabricated metal products, machinery and equipment other than transport equipment.
Food and tobacco	FOODPRO	[ISIC Rev. 4 Divisions 10 to 12]

Flow	Short name	Definition
Paper, pulp and print	PAPERPRO	[ISIC Rev. 4 Divisions 17 and 18]
Wood and wood products	WOODPRO	[ISIC Rev. 4 Division 16] Wood and wood products other than pulp and paper.
Textile and leather	TEXTILES	[ISIC Rev. 4 Divisions 13 to 15]
Not elsewhere specified (Industry)	INONSPEC	[ISIC Rev. 4 Divisions 22, 31 and 32] Any manufacturing industry not included above. Note: Most countries have difficulties supplying an industrial breakdown for all fuels. In these cases, the <i>not elsewhere specified</i> industry row has been used. Regional aggregates of industrial consumption should therefore be used with caution.
Transport	TOTTRANS	Consumption in transport covers all transport activity (in mobile engines) regardless of the economic sector to which it is contributing [ISIC Rev. 4 Divisions 49 to 51], and is specified as follows:
Domestic aviation	DOMESAIR	Includes deliveries of aviation fuels to aircraft for domestic aviation - commercial, private, agricultural, etc. It includes use for purposes other than flying, e.g. bench testing of engines, but not airline use of fuel for road transport. The domestic/international split should be determined on the basis of departure and landing locations and not by the nationality of the airline. Note that this may include journeys of considerable length between two airports in a country (e.g. San Francisco to Honolulu). For many countries this incorrectly includes fuel used by domestically owned carriers for outbound international traffic.
Road	ROAD	Includes fuels used in road vehicles as well as agricultural and industrial highway use. Excludes military consumption as well as motor gasoline used in stationary engines and diesel oil for use in tractors that are not for highway use.
Rail	RAIL	Includes quantities used in rail traffic, including industrial railways.
Pipeline transport	PIPELINE	Includes energy used in the support and operation of pipelines transporting gases, liquids, slurries and other commodities, including the energy used for pump stations and maintenance of the pipeline. Energy for the pipeline distribution of natural or manufactured gas, hot water or steam (ISIC Rev. 4 Division 35) from the distributor to final users is excluded and should be reported in <i>energy industry own use</i> , while the energy used for the final distribution of water (ISIC Rev. 4 Division 36) to household, industrial, commercial and other users should be included in <i>commercial/public services</i> . Losses occurring during the transport between distributor and final users should be reported as <i>losses</i> .
Domestic navigation	DOMESNAV	Includes fuels delivered to vessels of all flags not engaged in international navigation (see <i>international marine bunkers</i> ). The domestic/international split should be determined on the basis of port of departure and port of arrival and not by the flag or nationality of the ship. Note that this may include journeys of considerable length between two ports in a country (e.g. San Francisco to Honolulu). Fuel used for ocean, coastal and inland fishing and military consumption are excluded.
Not elsewhere specified (Transport)	TRNONSPE	Includes all transport not elsewhere specified. Note: <i>International marine bunkers</i> and <i>international aviation bunkers</i> are shown in <i>Supply</i> and are not included in the transport sector as part of final consumption.



Flow	Short name	Definition
Other	TOTOTHER	Includes residential, commercial/public services, agriculture/forestry, fishing and non-specified (other).
Residential	RESIDENT	Includes consumption by households, excluding fuels used for transport. Includes households with employed persons [ISIC Rev. 4 Division 97] which is a small part of total residential consumption.
Commercial and public services	COMMPUB	[ISIC Rev. 4 Divisions 33, 36-39, 45-47, 52, 53, 55-56, 58-66, 68-75, 77-82, 84 (excluding Class 8422), 85-88, 90-96 and 99]
Agriculture/forestry	AGRICULT	Includes deliveries to users classified as agriculture, hunting and forestry by the ISIC, and therefore includes energy consumed by such users whether for traction (excluding agricultural highway use), power or heating (agricultural and domestic) [ISIC Rev. 4 Divisions 01 and 02].
Fishing	FISHING	Includes fuels used for inland, coastal and deep-sea fishing. Fishing covers fuels delivered to ships of all flags that have refuelled in the country (including international fishing) as well as energy used in the fishing industry [ISIC Rev. 4 Division 03].
Not elsewhere specified (Other)	ONONSPEC	Includes all fuel use not elsewhere specified as well as consumption in the above-designated categories for which separate figures have not been provided. Military fuel use for all mobile and stationary consumption is included here (e.g. ships, aircraft, road and energy used in living quarters) regardless of whether the fuel delivered is for the military of that country or for the military of another country.
Non-energy use	NONENUSE	Non-energy use covers those fuels that are used as raw materials in the different sectors and are not consumed as a fuel or transformed into another fuel. Non-energy use is shown separately in final consumption under the heading non-energy use. Note that for biomass commodities, only the amounts specifically used for energy purposes (a small part of the total) are included in the energy statistics. Therefore, the non-energy use of biomass is not taken into consideration and the quantities are null by definition.
Non-energy use industry/ transformation/ energy	NEINTREN	Non-energy in industry, transformation processes and energy industry own use.
<i>Of which: Non-energy use in chemical/ petrochemical industry</i>	NECHEM	The petrochemical industry includes cracking and reforming processes for the purpose of producing ethylene, propylene, butylene, synthesis gas, aromatics, butadiene and other hydrocarbon-based raw materials in processes such as steam cracking, aromatics plants and steam reforming [part of ISIC Rev. 4 Group 201].
Non-energy use in transport	NETRANS	Non-energy use in transport.
Non-energy use in other	NEOTHER	Non-energy use in other sectors such as residential, commercial/public services, agriculture/forestry and fishing.

## Electricity output (GWh)

Flow	Short name	Definition
Electricity output in GWh	ELOUTPUT	Shows the total number of GWh generated by power plants separated into electricity plants and CHP plants. Contrary to the <i>Basic Energy Statistics</i> , electricity production for hydro pumped storage is excluded.
Electricity output-main activity producer electricity plants	ELMAINE	Shows the total number of GWh generated by main activity producer electricity plants.
Electricity output-autoproducer electricity plants	ELAUTOE	Shows the total number of GWh generated by autoproducer electricity plants.
Electricity output-main activity producer CHP plants	ELMAINC	Shows the total number of GWh generated by main activity producer CHP plants.
Electricity output-autoproducer CHP plants	ELAUTOC	Shows the total number of GWh generated by autoproducer CHP plants.

## Heat output (TJ)

Flow	Short name	Definition
Heat output in TJ	HEATOUT	Shows the total heat generated by plants separated into CHP plants and heat plants.
Heat output-main activity producer CHP plants	HEMAINC	Shows the total number of TJ generated by main activity producer CHP plants.
Heat output-autoproducer CHP plants	HEAUTOC	Shows the total number of TJ generated by autoproducer CHP plants.
Heat output-main activity producer heat plant	HEMAINH	Shows the total number of TJ generated by activity producer heat plant.
Heat output-autoproducer heat plants	HEAUTOH	Shows the total number of TJ generated by autoproducer heat plants.

## OECD, Coal Net Calorific Values (MJ/tonne): COAL NCV OECD.IVT

## Net calorific values

Expressed in Megajoules / tonne or kilojoules / kilogramme

Flow	Short name	Definition
Average NCV of supply	NAVERAGE	Weighted average of production, imports and exports.
NCV of production	NINDPROD	
NCV of imports	NIMPORTS	
NCV of exports	NEXPORTS	
NCV of coke ovens	NCOKEOVS	Weighted net calorific value of transformation inputs to coke ovens and energy support, for each specific fuel.
NCV of blast furnaces	NBLAST	As per coke ovens, but for blast furnaces.
NCV in main activity producer electricity plants	NMAIN	
NCV in autoproducer electricity plants	NAUTOELEC	
NCV in main activity CHP plants	NMAINCHP	
NCV in autoproducer CHP plants	NAUTOCHP	
NCV in main activity heat plants	NMAINHEAT	
NCV in autoproducer heat plants	NAUTOHEAT	
NCV in industry	NIND	
NCV for other uses	NOTHER	Energy values for aggregated totals should be the sum of their components multiplied by the specific calorific value for each component, rather than using the aggregated total and this flow.

# Product definitions

## Coal and coal products

With the exception of the coal gases, the fuels in this section are expressed in thousand tonnes. The coal gases are expressed in terajoules on a gross calorific value basis.

Flow	Short name	Definition
Coal and coal products	COAL	(For balances only.) This is the sum of all primary coals (not peat, peat products or oil shale and oil sands) and all derived coal products (cokes, gases, tars, briquettes etc.).
Hard coal	HARDCOAL	Hard coal refers to coal of gross calorific value greater than 24 MJ/kg (~5 732 kcal/kg) on an ash-free but moist basis and with a mean random reflectance of vitrinite of at least 0.6. Hard coal may include coals with a GCV greater than or equal to 24 MJ/kg and a mean R <sub>r</sub> < 0.6%. Hard coal is the sum of anthracite, coking coal, other bituminous coal and for some countries, prior to 1978 (see Note on Coal Classification above), hard coal includes sub-bituminous coal.
Brown coal	BROWN	Brown coal is the sum of lignite and sub-bituminous coal. For some countries prior to 1978 (see Note on Coal Classification above), brown coal excludes sub-bituminous coal.
Steam coal	STEAMCOAL	Steam coal is coal used for steam raising and space heating purposes and includes all anthracite and bituminous coals not included under coking coal and for all countries; steam coal also includes sub-bituminous coal.
Anthracite	ANTCOAL	A high rank coal used for industrial and residential applications. It is generally less than 10% volatile matter and a high carbon content (about 90% fixed carbon). Its gross calorific value is greater than 24 MJ/kg (~5 732 kcal/kg) on an ash-free but moist basis. It has a vitrinite mean random reflectance greater than or equal to 2% and is non-agglomerating.
Coking coal	COKCOAL	Coal with a quality that allows the production of a coke suitable to support a blast furnace charge. Its gross calorific value is greater than 24 MJ/kg (~5 732 kcal/kg) on an ash-free but moist basis.
Other bituminous coal	BITCOAL	Other bituminous coal is used for steam raising and space heating purposes and includes all bituminous coal that is not included under coking coal. It usually contains more than 10% volatile matter and relatively high carbon content (less than 90% fixed carbon). Its gross calorific value is greater than 24 MJ/kg (~5 732 kcal/kg) on an ash-free but moist basis and can include parabituminous and orthobituminous coals.
Sub-bituminous coal	SUBCOAL	Non-agglomerating coals with a gross calorific value between 20 MJ/kg (~4 777 kcal/kg) and 24 MJ/kg (~5 732 kcal/kg) on a moist but ash free basis, and containing more than 31 per cent volatile matter on an ash-free but moist basis.
Lignite	LIGNITE	Non-agglomerating coal with a gross calorific value of less than 20 MJ/kg (4 777 kcal/kg) on an ash-free but moist basis.

Flow	Short name	Definition
Patent fuel	PATFUEL	A composition fuel manufactured from hard coal fines with the addition of a binding agent. The amount of patent fuel produced therefore can be slightly higher than the actual amount of coal consumed in the transformation process.
Coke oven coke	OVENCOKE	The solid product obtained from the carbonisation of coal, principally coking coal, at high temperature. It is low in moisture content and volatile matter. Also included are semi-coke, a solid product obtained from the carbonisation of coal at a low temperature, lignite coke, semi-coke made from lignite/brown coal, coke breeze and foundry coke. Cokes obtained from other sources such as process residues or flue gas precipitation may also be shown here.
Gas coke	GASCOKE	A by-product of hard coal used for the production of town gas in gas works. Gas coke is used for heating purposes.
Coal tar	COALTAR	Coal tar is a result of the destructive distillation of bituminous coal. Coal tar is the liquid by-product of the distillation of coal to make coke in the coke oven process. Coal tar can be further distilled into different organic products (e.g. benzene, toluene, naphthalene), which normally would be reported as a feed-stock to the petrochemical industry.
Brown coal briquettes	BKB	Composition fuels manufactured from lignite/brown coal, produced by briquetting under high pressure. These figures include dried lignite fines and dust.
Gas works gas	GASWKS GS	Covers all types of gas produced in public utility or private plants, whose main purpose is the manufacture, transport and distribution of gas. It includes gas produced by carbonisation (including gas produced by coke ovens and transferred to gas works), by total gasification (with or without enrichment with oil products), by cracking of natural gas, and by reforming and simple mixing of gases and/or air. This heading also includes substitute natural gas, which is a high calorific value gas manufactured by chemical conversion of a hydrocarbon fossil fuel. Coal seam gas is reported on the natural gas questionnaire as colliery gas, as most likely will be the case for underground coal gasification (UGC).
Coke oven gas	COKEOVGS	Coke oven gas is obtained as a by-product of solid fuel carbonisation and gasification operations carried out by coke producers and iron and steel plants. It is calorifically rich, and when cleaned is predominantly H <sub>2</sub> .
Blast furnace gas	BLFURGS	Produced during the combustion of coke in blast furnaces in the iron and steel industry. It is recovered and used as a fuel partly within the plant and partly in other steel industry processes or in power stations equipped to burn it. It is mainly nitrogen (N <sub>2</sub> ), with roughly equal amounts of carbon dioxide and carbon monoxide, and will contain other trace gases. Off gases from direct reduced iron and other similar processes may also be reported here.
Other recovered gases	OGASES	Other recovered gases were previously known as oxygen steel furnace gas, which is most commonly obtained as a by-product of the production of steel in an oxygen-fired furnace; it is recovered upon leaving the furnace. The gas is also known as converter gas, LD gas or BOS gas. Other gases of similar nature are also reported in this category, hence the change of name to be intrinsically more inclusive.

Flow	Short name	Definition
Peat	PEAT	Combustible soft, porous or compressed, fossil sedimentary deposit of plant origin with high water content (up to 90 per cent in the raw state), easily cut, of light to dark brown colour. Peat used for non-energy purposes is not included.
Peat products	PEATPROD	Peat products include peat briquettes and peat pellets. Milled peat is included in peat, not peat products.
Oil shale and oil sands	OILSHALE	Oil shale should not be confused with shale oil. Shale oil (often obtained by in situ thermally enhanced mining practices) is reported as an oil product. Oil shale is a sedimentary rock which contains organic matter in the form of kerogen – a waxy hydrocarbon-rich material regarded as a precursor of petroleum. In solid form, it contains more inert matter than coal, while the sand in oil sands may often be in the form of sandstone. Oil shale may be burned directly, or retorted to extract shale oil, the process of which is reported as coal liquefaction transformation.

# Geographical coverage

## Countries and Regions

This document is without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries and to the name of any territory, city or area. In this publication, 'country' refers to country or territory, as the case may be. Data start in 1960 for OECD countries and regions, and in 1971 for non-OECD countries and regions, unless otherwise specified.

Long name	Short name	Definition
Australia	AUSTRALI	Excludes the overseas territories. Data are reported on a fiscal year basis. By convention data for the fiscal year that starts on 1 July Y-1 and ends on 30 June Y are labelled as Year Y.
Austria	AUSTRIA	
Belgium	BELGIUM	
Canada	CANADA	
Chile	CHILE	Data start in 1971.
Colombia	COLOMBIA	Colombia joined the OECD in 2020. Data start in 1971.
Costa Rica	COSTARICA	Costa Rica joined the OECD in 2021. Data start in 1970.
Czech Republic	CZECH	Data start in 1971.
Denmark	DENMARK	Excludes the Faroe Islands and Greenland.
Estonia	ESTONIA	
Finland	FINLAND	
France	FRANCE	From 2011 data onwards, France includes Monaco, and the following overseas departments (Guadeloupe; French Guiana; Martinique; Mayotte; and Réunion); and excludes the overseas collectivities (New Caledonia; French Polynesia; Saint Barthélemy; Saint Martin; Saint Pierre and Miquelon; and Wallis and Futuna). Prior to 2011, France includes Monaco and excludes the following overseas departments and collectivities: Guadeloupe; French Guiana; Martinique; Mayotte and Réunion; New Caledonia; French Polynesia; Saint Barthélemy; Saint Martin; Saint Pierre and Miquelon; and Wallis and Futuna.
Germany	GERMANY	Includes the new federal states of Germany from 1970 onwards.
Greece	GREECE	
Hungary	HUNGARY	Data start in 1965.

Long name	Short name	Definition
Iceland	ICELAND	
Ireland	IRELAND	
Israel	ISRAEL	The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law. Data start in 1971.
Italy	ITALY	Includes San Marino and the Holy See.
Japan	JAPAN	Includes Okinawa. Starting 1990, data are reported on a fiscal year basis. By convention data for the fiscal year that starts on 1 April Y and ends on 31 March Y+1 are labelled as Year Y.
Korea	KOREA	Data start in 1971.
Latvia	LATVIA	Data start in 1990. Prior to that, they are included within Former Soviet Union.
Lithuania	LITHUANIA	Data start in 1990. Prior to that, they are included in Former Soviet Union.
Luxembourg	LUXEMBOU	
Mexico	MEXICO	Data start in 1971.
Netherlands	NETHLAND	Excludes Suriname, Aruba and the other former Netherlands Antilles (Bonaire, Curaçao, Saba, Saint Eustatius and Sint Maarten).
New Zealand	NZ	
Norway	NORWAY	
Poland	POLAND	
Portugal	PORTUGAL	Includes the Azores and Madeira.
Slovak Republic	SLOVAKIA	Data start in 1971.
Slovenia	SLOVENIA	Data start in 1990. Prior to that, they are included within Former Yugoslavia. .
Spain	SPAIN	Includes the Canary Islands.
Sweden	SWEDEN	
Switzerland	SWITLAND	Does not include Liechtenstein.
Republic of Turkiye	TURKEY	
United Kingdom	UK	Does not includes the Channel Islands and the Isle of Man.
United States	USA	For 2017 onwards, includes the 50 states, the District of Columbia, and Puerto Rico. Prior to 2017, includes the 50 states and the District of Columbia.



Long name	Short name	Definition
OECD Total	OECDTOT	Includes Australia, Austria, Belgium, Canada, Chile, Colombia, Costa Rica, the Czech Republic, Denmark, Estonia <sup>1</sup> , Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel <sup>2</sup> , Italy, Japan, Korea, Latvia <sup>1</sup> above, Lithuania <sup>1</sup> , Luxembourg, Mexico, the Netherlands, New Zealand, Norway, Poland, Portugal, the Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Türkiye, the United Kingdom and the United States. Estonia, Latvia, Lithuania and Slovenia are included starting in 1990. Prior to 1990, data for Estonia, Latvia and Lithuania are included in Former Soviet Union, and data for Slovenia in Former Yugoslavia.
OECD Americas	OECDAM	Includes Canada, Chile, Colombia, Costa Rica, Mexico and the United States.
OECD Asia Oceania	OECDAO	Includes Australia, Israel <sup>2</sup> , Japan, Korea and New Zealand.
OECD Europe	OECDEUR	Includes Austria, Belgium, the Czech Republic, Denmark, Estonia <sup>1</sup> , Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia <sup>1</sup> , Lithuania <sup>1</sup> , Luxembourg, the Netherlands, Norway, Poland, Portugal, the Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom. Estonia, Latvia, Lithuania and Slovenia are included starting in 1990. Prior to 1990, data for Estonia, Latvia and Lithuania are included in Former Soviet Union, and data for Slovenia in Former Yugoslavia.
IEA Total	IEATOT	Includes Australia, Austria, Belgium, Canada, the Czech Republic, Denmark, Estonia <sup>1</sup> , Finland, France, Germany, Greece, Hungary, Ireland, Italy, Japan, Korea, Lithuania, Luxembourg, Mexico, the Netherlands, New Zealand, Norway, Poland, Portugal, the Slovak Republic, Spain, Sweden, Switzerland, Turkey, the United Kingdom and the United States. Lithuania joined the IEA in February 2022; however, its data have not been included in this aggregate for this edition.
The IEA and Accession/Association countries	IEAFAMILY	Includes: IEA member countries: Australia, Austria, Belgium, Canada, the Czech Republic, Denmark, Estonia <sup>1</sup> , Finland, France, Germany, Greece, Hungary, Ireland, Italy, Japan, Korea, Lithuania, Luxembourg, Mexico, the Netherlands, New Zealand, Norway, Poland, Portugal, the Slovak Republic, Spain, Sweden, Switzerland, Türkiye, the United Kingdom and the United States; Accession countries: Chile, Colombia and Israel ; Association countries: Argentina, Brazil, the People's Republic of China, Egypt, India, Indonesia, Morocco, Singapore, South Africa, Thailand and Ukraine.
Argentina	ARGENTINA	
Bolivia	BOLIVIA	
Brazil	BRAZIL	
Cuba	CUBA	

<sup>1</sup> Estonia, Latvia and Lithuania are included starting in 1990. Prior to 1990, data for Estonia, Latvia and Lithuania are included in Former Soviet Union.

<sup>2</sup> The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

Long name	Short name	Definition
Netherlands Antilles/ Curaçao	CURACAO	The Netherlands Antilles was dissolved on 10 October 2010, resulting in two new constituent countries, Curaçao and Sint Maarten, with the remaining islands joining Netherlands as special municipalities. In this edition, the methodology for accounting for the energy statistics of Netherlands Antilles has been revised in order to follow the above-mentioned geographical changes. From 2012 onwards, data now account for the energy statistics of Curaçao Island only. Prior to 2012, data remain unchanged and still cover the entire territory of the former Netherlands Antilles.
Dominican Republic	DOMINICANR	
Ecuador	ECUADOR	
El Salvador	ELSALVADOR	
Guatemala	GUATEMALA	
Guyana	GUYANA	
Haiti	HAITI	
Honduras	HONDURAS	
Jamaica	JAMAICA	
Nicaragua	NICARAGUA	
Panama	PANAMA	
Paraguay	PARAGUAY	
Peru	PERU	
Suriname	SURINAME	Data for Suriname are available starting in 2000. Prior to that, they are included in Other non-OECD Americas.
Trinidad and Tobago	TRINIDAD	
Uruguay	URUGUAY	
Venezuela	VENEZUELA	
Other non-OECD Americas	OTHERLATIN	Includes Anguilla, Antigua and Barbuda; Aruba; the Bahamas; Barbados; Belize; Bermuda; Bonaire (from 2012); the British Virgin Islands; the Cayman Islands; Dominica; the Falkland Islands (Malvinas); French Guiana (until 2010); Grenada; Guadeloupe (until 2010); Martinique (until 2010); Montserrat; Puerto Rico (for natural gas and – up to 2016 data, electricity); Saba (from 2012); Saint Eustatius (from 2012); Saint Kitts and Nevis; Saint Lucia; Saint Pierre and Miquelon; Saint Vincent and the Grenadines; Sint Maarten (from 2012); Suriname (until 1999); and Turks and Caicos Islands.
Non-OECD Americas	LATINAMERI	Includes Argentina; Plurinational State of Bolivia (Bolivia); Brazil; Costa Rica; Cuba; Curaçao; the Dominican Republic; Ecuador; El Salvador; Guatemala; Haiti; Honduras; Jamaica; Nicaragua; Panama; Paraguay; Peru; Suriname; Trinidad and Tobago; Uruguay; Bolivarian Republic of Venezuela (Venezuela) and Other non-OECD Americas.
Albania	ALBANIA	

Long name	Short name	Definition
Bosnia and Herzegovina	BOSNIAHERZ	Data for Bosnia and Herzegovina are available starting in 1990. Prior to that, they are included in Former Yugoslavia.
Bulgaria	BULGARIA	
Croatia	CROATIA	Data for Croatia are available starting in 1990. Prior to that, they are included in Former Yugoslavia.
Cyprus	CYPRUS	<p>Note by the Republic of Türkiye:</p> <p><i>The information in this document with reference to “Cyprus” relates to the southern part of the Island. There is no single authority representing both Turkish and Greek Cypriot people on the Island. The Republic of Türkiye recognizes the Turkish Republic of Northern Cyprus (TRNC). Until a lasting and equitable solution is found within the context of the United Nations, the Republic of Türkiye shall preserve its position concerning the “Cyprus issue”.</i></p> <p>Note by all the European Union Member States of the OECD and the European Union:</p> <p><i>The Republic of Cyprus is recognised by all members of the United Nations with the exception of the Republic of Türkiye. The information in this report relates to the area under the effective control of the Government of the Republic of Cyprus.</i></p>
Gibraltar	GIBALTAR	
Kosovo	KOSOVO	<p>Data for Kosovo are available starting in 2000. Between 1990 and 1999, data for Kosovo are included in Serbia<sup>3</sup>. Prior to 1990, they are included in Former Yugoslavia.</p> <p>This designation is without prejudice to positions on status, and is in line with United Nations Security Council Resolution 1244/99 and the Advisory Opinion of the International Court of Justice on Kosovo’s declaration of independence.</p>
Malta	MALTA	
Montenegro	MONTENEGRO	Data for Montenegro are available starting in 2005. Between 1990 and 2004, data for Montenegro are included in Serbia <sup>3</sup> . Prior to 1990, they are included in Former Yugoslavia.
Romania	ROMANIA	
Republic of North Macedonia	NORTHMACED	Data for the Republic of North Macedonia are available starting in 1990. Prior to that, they are included in Former Yugoslavia.
Serbia	SERBIA	Data for Serbia are available starting in 1990. Prior to that, they are included in Former Yugoslavia. Serbia includes Montenegro until 2004 and Kosovo <sup>3</sup> until 1999.
Former Yugoslavia (if no detail)	YUGOND	Before 1990, includes Bosnia and Herzegovina; Croatia; Kosovo; Montenegro; the Republic of North Macedonia; Slovenia and Serbia.

<sup>3</sup> Serbia includes Montenegro until 2004 and Kosovo until 1999.

Long name	Short name	Definition
Non-OECD Europe and Eurasia	EURASIA	Includes Albania; Armenia; Azerbaijan; Belarus; Bosnia and Herzegovina; Bulgaria; Croatia; Cyprus <sup>4</sup> ; Georgia; Gibraltar; Kazakhstan; Kosovo; Kyrgyzstan; Lithuania; Malta; Republic of Moldova (Moldova); Montenegro; Republic of North Macedonia; Romania; Russian Federation; Serbia <sup>3</sup> ; Tajikistan; Turkmenistan; Ukraine; Uzbekistan; Former Soviet Union (prior to 1990) and Former Yugoslavia (prior to 1990).
Armenia	ARMENIA	Data for Armenia are available starting in 1990. Prior to that, they are included in Former Soviet Union.
Azerbaijan	AZERBAIJAN	Data for Azerbaijan are available starting in 1990. Prior to that, they are included in Former Soviet Union.
Belarus	BELARUS	Data for Belarus are available starting in 1990. Prior to that, they are included in Former Soviet Union.
Georgia	GEORGIA	Data for Georgia are available starting in 1990. Prior to that, they are included in Former Soviet Union.
Kazakhstan	KAZAKHSTAN	Data for Kazakhstan are available starting in 1990. Prior to that, they are included in Former Soviet Union.
Kyrgyzstan	KYRGYZSTAN	Data for Kyrgyzstan are available starting in 1990. Prior to that, they are included in Former Soviet Union.
Republic of Moldova	MOLDOVA	Data for Moldova are available starting in 1990. Prior to that, they are included in Former Soviet Union.
Russian Federation	RUSSIA	Data for Russia are available starting in 1990. Prior to that, they are included in Former Soviet Union.
Tajikistan	TAJIKISTAN	Data for Tajikistan are available starting in 1990. Prior to that, they are included in Former Soviet Union.
Turkmenistan	TURKMENIST	Data for Turkmenistan are available starting in 1990. Prior to that, they are included in Former Soviet Union.
Ukraine	UKRAINE	Data for Ukraine are available starting in 1990. Prior to that, they are included in Former Soviet Union.
Uzbekistan	UZBEKISTAN	Data for Uzbekistan are available starting in 1990. Prior to that, they are included in Former Soviet Union.
Former Soviet Union (if no detail)	FSUND	Before 1990, includes Armenia; Azerbaijan; Belarus; Estonia; Georgia; Kazakhstan; Kyrgyzstan; Latvia; Lithuania; Republic of Moldova; Russian Federation; Tajikistan; Turkmenistan; Ukraine and Uzbekistan.
Algeria	ALGERIA	
Angola	ANGOLA	

<sup>4</sup>. Note by Turkey:

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

**Note by all the European Union member states of the OECD and the European Union:**

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

Long name	Short name	Definition
Benin	BENIN	
Botswana	BOTSWANA	Data for Botswana are available from 1981. Prior to that, they are included in Other Africa.
Cameroon	CAMEROON	
Congo	CONGO	
Democratic Republic of the Congo	CONGOREP	
Côte d'Ivoire	COTEIVOIRE	
Egypt	EGYPT	Data for Egypt are reported on a fiscal year basis. By convention, data for the fiscal year that starts on 1 July Y and ends on 30 June Y+1 are labelled as year Y.
Equatorial Guinea	EQGUINEA	
Eritrea	ERITREA	Data for Eritrea are available from 1992. Prior to that, they are included in Ethiopia.
Kingdom of Eswatini	ESWATINI	Data for the Kingdom of Eswatini are available from 1971.
Ethiopia	ETHIOPIA	Ethiopia includes Eritrea prior to 1992.
Gabon	GABON	
Ghana	GHANA	
Kenya	KENYA	Electricity data are reported on a fiscal year basis. By convention, data for the fiscal year that starts on 1 July Y and ends on 30 June Y+1 are labelled as year Y.
Libya	LIBYA	
Madagascar	MADAGASCAR	Data for Madagascar are available from 1971.
Mauritius	MAURITIUS	
Morocco	MOROCCO	
Mozambique	MOZAMBIQUE	
Namibia	NAMIBIA	Data for Namibia are available starting in 1991. Prior to that, data are included in Other Africa.
Niger	NIGER	
Nigeria	NIGERIA	
Senegal	SENEGAL	
Rwanda	RWANDA	Data for Madagascar are available from 1971.
South Africa	SOUTHAFRIC	
South Sudan	SSUDAN	Data for South Sudan are available from 2012. Prior to 2012, they are included in Sudan.

Long name	Short name	Definition
Sudan	SUDAN	South Sudan became an independent country on 9 July 2011. From 2012, data for South Sudan are reported separately.
United Republic of Tanzania	TANZANIA	Oil data are reported on a fiscal year basis, beginning on the 1 July Y and ending on the 30 June Y+1.
Togo	TOGO	
Tunisia	TUNISIA	
Uganda	UGANDA	Data for Uganda are available from 1971.
Zambia	ZAMBIA	
Zimbabwe	ZIMBABWE	
Other Africa	OTHERAFRIC	Includes Botswana (until 1980); Burkina Faso; Burundi; Cabo Verde; Central African Republic; Chad; Comoros; Djibouti; Gambia; Guinea; Guinea-Bissau; Lesotho; Liberia; Malawi; Mali; Mauritania; Namibia (until 1990); Réunion (until 2010); Sao Tome and Principe; Seychelles; Sierra Leone; Somalia and Western Sahara (from 1990).
Africa	AFRICA	Includes Algeria; Angola; Benin; Botswana; Burkina Faso; Burundi; Cabo Verde; Cameroon; Central African Republic; Chad; Comoros; the Republic of the Congo (Congo); Côte d'Ivoire; the Democratic Republic of the Congo; Djibouti; Egypt; Equatorial Guinea; Eritrea; the Kingdom of Eswatini; Ethiopia; Gabon; Gambia; Ghana; Guinea; Guinea-Bissau; Kenya; Lesotho; Liberia; Libya; Madagascar; Malawi; Mali; Mauritania; Mauritius; Morocco; Mozambique; Namibia; Niger; Nigeria; Réunion (until 2010); Rwanda; Sao Tome and Principe; Senegal; the Seychelles; Sierra Leone; Somalia; South Africa; South Sudan (from 2012); Sudan; the United Republic of Tanzania (Tanzania); Togo; Tunisia; Uganda; Zambia; Zimbabwe.
Bahrain	BAHRAIN	
Islamic Republic of Iran	IRAN	Data are reported according to the Iranian calendar year. By convention data for the year that starts on 20 March Y and ends on 19 March Y+1 are labelled as year Y.
Iraq	IRAQ	
Jordan	JORDAN	
Kuwait	KUWAIT	
Lebanon	LEBANON	
Oman	OMAN	
Qatar	QATAR	
Saudi Arabia	SAUDIARABI	
Syrian Arab Republic	SYRIA	
United Arab Emirates	UAE	

Long name	Short name	Definition
Yemen	YEMEN	
Middle East	MIDDLEEAST	Includes Bahrain, Islamic Republic of Iran, Iraq, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, Syrian Arab Republic, United Arab Emirates and Yemen.
Bangladesh	BANGLADESH	Data are reported on a fiscal year basis. By convention data for the fiscal year that starts on 1 July Y-1 and ends on 30 June Y are labelled as Year Y.
Brunei	BRUNEI	
Cambodia	CAMBODIA	Data for Cambodia are available starting in 1995. Prior to that, they are included in Other Asia.
India	INDIA	Data are reported on a fiscal year basis. By convention data for the fiscal year that starts on 1 April Y and ends on 31 March Y+1 are labelled as Year Y.
Indonesia	INDONESIA	
Democratic People's Republic of Korea	KOREADPR	
Lao People's Democratic Republic	LAO	
Malaysia	MALAYSIA	
Mongolia	MONGOLIA	Data for Mongolia are available starting in 1985. Prior to that, they are included in Other Asia.
Myanmar	MYANMAR	Data were reported on a fiscal year basis until 2015 data. By convention data for the fiscal year that starts on 1 April Y and ends on 31 March Y+1 are labelled as Year Y.
Nepal	NEPAL	Data are reported on a fiscal year basis. By convention data for the fiscal year that starts on 1 July Y and ends on 30 June Y+1 are labelled as Year Y.
Pakistan	PAKISTAN	Data are reported on a fiscal year basis. By convention fiscal year Y/Y+1 is labelled as year Y.
Philippines	PHILIPPINE	
Singapore	SINGAPORE	
Sri Lanka	SRILANKA	
Chinese Taipei	TAIPEI	
Thailand	THAILAND	
Vietnam	VIETNAM	
Other non-OECD Asia	OTHERASIA	Includes Afghanistan; Bhutan; Cambodia (until 1994); Cook Islands; Fiji; French Polynesia; Kiribati; Macau, China; Maldives; Mongolia (until 1984); New Caledonia; Palau (from 1994); Papua New Guinea; Samoa; the Solomon Islands; Timor-Leste; Tonga and Vanuatu.

Long name	Short name	Definition
Non-OECD Asia excluding China	ASIA	Includes Bangladesh; Brunei Darussalam; Cambodia (from 1995); India; Indonesia; the Democratic People's Republic of Korea; Malaysia; Mongolia (from 1985); Myanmar; Nepal; Pakistan; the Philippines; Singapore; Sri Lanka; Chinese Taipei; Thailand; Viet Nam; Other non-OECD Asia.
People's Republic of China	CHINA	
Hong Kong, China	HONGKONG	
China Region	CHINAREG	Includes the People's Republic of China and Hong Kong, China.
Non-OECD Total	NONOECDTOT	Includes Africa; Asia (excluding China); China (People's Republic of China and Hong Kong, China); Non-OECD Americas; Middle East and Non-OECD Europe and Eurasia.
World	WORLD	Includes OECD Total; Africa; Non-OECD Americas; Non-OECD Asia (excluding China); China (People's Republic of China and Hong Kong, China); Non-OECD Europe and Eurasia; Middle East; World aviation bunkers and World marine bunkers. It is also the sum of Africa, Americas, Asia, Europe, Oceania, World aviation bunkers and World marine bunkers.
Africa (UN)	AFRICATOT	Includes Algeria; Angola; Benin; Botswana; Burkina Faso; Burundi; Cabo Verde; Cameroon; Central African Republic; Chad; Comoros; the Republic of the Congo (Congo); Côte d'Ivoire; the Democratic Republic of the Congo; Djibouti; Egypt; Equatorial Guinea; Eritrea; the Kingdom of Eswatini; Ethiopia; Gabon; Gambia; Ghana; Guinea; Guinea-Bissau; Kenya; Lesotho; Liberia; Libya; Madagascar; Malawi; Mali; Mauritania; Mauritius; Morocco; Mozambique; Namibia; Niger; Nigeria; Réunion (until 2010); Rwanda; Sao Tome and Principe; Senegal; the Seychelles; Sierra Leone; Somalia; South Africa; South Sudan (from 2012); Sudan; the United Republic of Tanzania (Tanzania); Togo; Tunisia; Uganda; Zambia; Zimbabwe.
Americas (UN)	AMERICAS	Includes Antigua and Barbuda; Argentina; Aruba; the Bahamas; Barbados; Belize; Bermuda; the Plurinational State of Bolivia (Bolivia); Bonaire (from 2012); the British Virgin Islands; Brazil; Canada; the Cayman Islands; Chile; Colombia; Costa Rica; Cuba; Curaçao; Dominica; the Dominican Republic; Ecuador; El Salvador; the Falkland Islands (Malvinas); Guatemala; French Guiana (until 2010); Grenada; Guadeloupe (until 2010); Guyana; Haiti; Honduras; Jamaica; Martinique (until 2010); Mexico; Montserrat; Nicaragua; Panama; Paraguay; Peru; Puerto Rico (for natural gas and electricity); Saba (from 2012); Saint Kitts and Nevis; Saint Lucia; Saint Pierre and Miquelon; Saint Vincent and the Grenadines; Sint Eustatius (from 2012); Sint Maarten (from 2012); Suriname; Trinidad and Tobago; the Turks and Caicos Islands; the United States; Uruguay; the Bolivarian Republic of Venezuela (Venezuela).



Long name	Short name	Definition
Asia (UN)	ASIATOT	Includes Afghanistan; Armenia; Azerbaijan; Bahrain; Bangladesh; Bhutan; Brunei Darussalam; Cambodia; the People's Republic of China; Cyprus <sup>4</sup> ; Georgia; Hong Kong, China; India; Indonesia; the Islamic Republic of Iran; Iraq; Israel; Japan; Jordan; the Democratic People's Republic of Korea; Korea; Kazakhstan; Kuwait; Kyrgyzstan; the Lao People's Democratic Republic; Lebanon; Macau, China; Malaysia; the Maldives; Mongolia; Myanmar; Nepal; Oman; Pakistan; the Philippines; Qatar; Saudi Arabia; Singapore; Sri Lanka; the Syrian Arab Republic; Tajikistan; Chinese Taipei; Thailand; Timor-Leste; the Republic of Türkiye; Turkmenistan; the United Arab Emirates; Uzbekistan; Viet Nam; and Yemen.
Europe (UN)	EUROPE	Includes Albania; Austria; Belarus; Belgium; Bosnia and Herzegovina; Bulgaria; Croatia; the Czech Republic; Denmark; Estonia; Finland; France <sup>5</sup> ; Germany; Gibraltar; Greece; Hungary; Iceland; Ireland; Italy; Kosovo <sup>6</sup> ; Latvia; Lithuania; Luxembourg; Malta; the Republic of Moldova (Moldova); Montenegro; the Netherlands; the Republic of North Macedonia; Norway; Poland; Portugal; Romania; the Russian Federation; Serbia <sup>7</sup> ; the Slovak Republic; Slovenia; Spain; Sweden; Switzerland; Ukraine; the United Kingdom.
Oceania (UN)	OCEANIA	Includes Australia; New Zealand; Cook Islands; Fiji; French Polynesia; Kiribati; New Caledonia; Palau; Papua New Guinea; Samoa; the Solomon Islands; Tonga; Vanuatu.

Please note that the following countries have not been considered:

- **Non-OECD Europe and Eurasia:** Andorra; Faroe Islands (after 1990); Liechtenstein; the Palestinian Authority; Svalbard; Jan Mayen Islands;
- **Africa:** British Indian Ocean Territory; French Southern and Antarctic Lands; Mayotte (until 2010); Saint Helena; Western Sahara;
- **Non-OECD Americas:** Bouvet Island; Saint Barthélemy; Greenland (after 1990); Saint Martin (French Part); South Georgia and the South Sandwich Islands;
- Antarctica;

**Non-OECD Asia excluding China:** American Samoa; Cocos (Keeling) Islands; Christmas Island; Heard Island and McDonald Islands; Marshall Islands; Micronesia (Federated States of); Nauru; Niue; Norfolk Island; Northern Mariana Islands; Pitcairn; Tokelau; Tuvalu; United States Minor Outlying Islands; Wallis and Futuna Islands.

<sup>5</sup> Data for the French overseas departments are included in Europe from 2011, and in other regions as appropriate (America or Africa) before 2011.

<sup>6</sup> This designation is without prejudice to positions on status, and is in line with United Nations Security Council Resolution 1244/99 and the Advisory Opinion of the International Court of Justice on Kosovo's declaration of independence.

<sup>7</sup> Serbia includes Montenegro until 2004 and Kosovo until 1999.

## Fiscal year

This table lists the countries for which data are reported on a fiscal year basis. More information on beginning and end of fiscal years by country is reported in the column 'Definition'.

This document is without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries and to the name of any territory, city or area. In this publication, 'country' refers to country or territory, as case may be. Data start in 1960 for OECD countries and regions, and in 1971 for non-OECD countries and regions, unless otherwise specified.

Country/Region	Short name	Definition
Australia	AUSTRALI	Data are reported on a fiscal year basis. By convention, data for the fiscal year that starts on 1 July Y-1 and ends on 30 June Y are labelled as year Y.
Bangladesh	BANGLADESH	Data are reported on a fiscal year basis. By convention data for the fiscal year that starts on 1 July Y-1 and ends on 30 June Y are labelled as year Y.
Egypt	EGYPT	Data are reported on a fiscal year basis. By convention, data for the fiscal year that starts on 1 July Y and ends on 30 June Y+1 are labelled as year Y.
Ethiopia	ETHIOPIA	Data are reported on a fiscal year basis. By convention, data for the fiscal year that starts on 1 July Y and ends on 30 June Y+1 are labelled as year Y.
India	INDIA	Data are reported on a fiscal year basis. By convention, data for the fiscal year that starts on 1 April Y and ends on 31 March Y+1 are labelled as year Y. This convention is different from the one used by Government of India, whereby fiscal year starts on 1 April Y and ends on 31 March Y+1 are labelled as year Y+1.
Islamic Republic of Iran	IRAN	Data are reported according to the Iranian calendar year. By convention data for the year that starts on 20 March Y and ends on 19 March Y+1 are labelled as year Y.
Japan	JAPAN	Starting 1990, data are reported on a fiscal year basis. By convention, data for the fiscal year that starts on 1 April Y and ends on 31 March Y+1 are labelled as year Y.
Kenya	KENYA	Electricity data are reported on a fiscal year basis, beginning on the 1 July Y and ending on the 30 June of Y+1.
Myanmar	MYANMAR	Data are reported on a fiscal year basis. By convention data for the fiscal year that starts on 1 April Y and ends on 31 March Y+1 are labelled as year Y.
Nepal	NEPAL	Data are reported on a fiscal year basis. By convention data for the fiscal year that starts on 1 July Y and ends on 30 June Y+1 are labelled as year Y.
Pakistan	PAKISTAN	Data are reported on a fiscal year basis. By convention fiscal year Y begins on 1st of July year Y and ends on 30th of June year Y+1.

# Country notes and sources

## General notes

Energy data for OECD countries are submitted to the IEA secretariat in a common reporting format and methodology to allow for international comparisons to be made.

## Qualifiers

Data marked as “c” mean that the data are confidential due to country specific regulations. Data marked as “..” mean that data are not available (either not collected or not submitted by national government). Data marked as “x” mean that the data point is not applicable or there is no meaningful explanation of a value there. For example, the price cannot be shown if the consumption in the country is forbidden or the country itself did not exist as an independent entity at a given point in time. The year marked as “p” (e.g. 2020p) refers to provisional data.

## Treatment of blast furnace coke and PCI data

Data on coke used in and pulverised coal injected into blast furnaces (PCI), are harmonized for all OECD countries in order to ensure that blast furnace transformation data are consistently presented and that comparisons between countries for consumption are meaningful. The main effect of these revisions has been, where necessary, to revise the reported consumption of coal in the iron and steel industry and in blast furnace transformation, so discrepancies between IEA and national accounts may ensue. In effect, inputs to blast furnaces may be calibrated to be proportionate to production of blast furnace gas and some inputs to blast furnace consumption may be reported as consumption in the iron and steel industry if there are lower than normal outputs of blast furnace gas.

It should be noted that in IEA statistics of coal trade and consumption, PCI is not separately specified as a product in its own right. Rather it is included in some form of hard coal. This methodology is based on the fact that pulverised coal injection is a process, and this process, unlike for coke oven coke manufacture, is somewhat independent of coal type.

For Japan and Korea, PCI consumption is reported in this book as a coking coal to be consistent with the national practice of including imports of PCI coal with coking coal without regard to coal type. Other countries that report some usage of

coking coal as inputs to blast furnaces (the Netherlands, Poland, the Slovak Republic, Turkey and the United Kingdom) may do so for this reason, or because of the respective coal quality.

## Other sources

### Quarterly energy statistics

Readers who are interested in more recent data should consult the OECD/IEA *Coal Quarterly Statistics* which are published in January, April, July and October each year

This publication provides current, accurate and detailed statistics on quarterly production, supply and demand and trade of the major energy forms mainly in, but not limited to, the OECD area.

Coal quarterly data include

- World steam and coking coal, and lignite production;
- World steam coal and coking coal trade; and
- Coking coal and steam coal imports and exports for major OECD countries.

This information and data were previously included in the publication OECD/IEA publication *Oil, Gas, Coal and Electricity Quarterly Statistics*.

## Country notes

The notes given below refer to the years 1960 to 2021.

In general, more detailed notes are available for data since 1990.

In some instances it has been necessary for the IEA Secretariat to estimate some data; explanations of the estimates are provided in the country notes. Information set out below will assist readers to interpret data for particular countries and aid in the comparison of data among countries.

Data for anthracite, coking coal, other bituminous coal, sub-bituminous coal and lignite are available separately from 1978. Prior to 1978, only data for hard coal (anthracite + coking coal + other bituminous coal) and brown coal (lignite + sub-bituminous coal) are available. In prior editions to *Coal Information 2014*, sub-bituminous coal was included under hard coal for the following countries, namely; Australia, Belgium, Chile, Finland, France, Iceland, Japan, Korea, Mexico, New Zealand, Portugal and the United States. While this is no longer the case since 1978, data earlier than this were aggregated into either hard coal or brown coal, and unless specified, there has been no attempt to reclassify portions of data from hard coal to brown coal in this period.

In 1996, the IEA Secretariat extensively revised data on coal and coke use in blast furnaces, and in the iron and steel industry (for those countries with blast furnaces), based on data provided to the OECD Steel Committee and other sources. Where necessary, the quantities of fuels transformed into blast furnace gas have been estimated by the IEA Secretariat based on its blast furnace model.

## Australia

### Source

Department of Industry, Science, Energy and Resources, Canberra.

### General notes

All data refer to the fiscal year (e.g. July 2019 to June 2020 for 2020).

Stock change and statistical difference are both subject to further review for black coal grade by the Australian administration.

In the 2022, 2021 and 2020 editions, part of the demand side data for **other bituminous coal**, **subbituminous coal**, **lignite** and **coal tar** have been estimated by the IEA Secretariat for the years 2018, 2019 and 2020. Due to confidentiality reasons, some flows for those products were suppressed in the data submission to the IEA. The figures estimated have been qualified in the dataset as estimated. Some subtotals are not qualified as estimated but many flows within them are, this is because the subtotals were submitted but not their breakdown or part of it.

In the 2022, 2021 and 2020 editions, part of the demand side for **anthracite** is confidential. Some of the quantities reported under “Industry, not elsewhere specified” could refer to other flows.

In the 2021 edition, the split between underground and surface production of **coking coal** and **other bituminous coal** was revised back to 2015 based on new available data.

In the 2013 edition and following, data for Australia were revised back to 2003 due to the adoption of the National Greenhouse and Energy Reporting (NGER) as the main energy consumption data source for the Australian Energy Statistics. As a result, there are breaks in the time series for many data between 2002 and 2003. The revisions have also introduced some methodological issues, including identifying inputs and outputs to certain transformation processes such as gas works plants, electricity plants and CHP plants. Energy industry own use and inputs to the transformation processes are sometimes not reported separately in the correct categories.

In the 2019 edition, the decrease of lignite production and consumption was due to the closure of brown coal fired Hazelwood power plant in early 2017, contributing to a higher consumption of other bituminous coal.

In the 2017 edition, the Australian administration revised data on **coal tar** back to 2010 resulting in breaks in time series between 2009 and 2010.

In the 2016 edition, extensive revisions were made to 2010 to 2013 data for many primary and manufactured products causing breaks in production, trade and consumption between 2009 and 2010. Series which begin in 2010 may be reported in other flows until 2009. 2014 data were reported on the same basis as 2010 to 2013.

In the 2015 edition, increases of production and consumption of **other bituminous coal** for 2013 are due to both new mine capacity and improved classification data. In the 2016 edition, these revisions were extended back to 2010. Apparent switching between **sub-bituminous coal** and **other bituminous coal** between 2009 and 2010 suggests that some **other bituminous coal** was reported as **sub-bituminous coal** prior to this, across several flows.

In the 2013 edition, production data for all **manufactured gases** were revised downwards as part of the new national methodology, leading to significant statistical differences.

Reclassification of some **coal** types in the 2013 edition were calculated on an energy basis and resulted in a net increase of quantities of primary coal from 2003 to 2011.

Breaks in the time series for **gas works gas** between 2008 and 2009 are due to a change of survey, while reduced production and consumption between 2006 and 2008 are due to the removal of some **natural gas** inputs.

Data on **blast furnace gas** for electricity production by autoproducers begins in 1986.

**Hard coal** data prior to 1978 may include **sub-bituminous coal**.

## Supply

In 2018, a substantial stock draw of **coking coal** followed a 2017 stock build caused by meteorological phenomena.

The decrease of lignite production and consumption in 2017 and 2018 was due to the closure of brown coal fired Hazelwood power plant in early 2017, contributing to a higher consumption of **other bituminous coal**.

Only **anthracite** trade is reported separately; the remainder that is consumed domestically is included with **other bituminous coal** due to confidentiality

requirements. There were no recorded anthracite exports or estimated anthracite production in 2018.

**Anthracite** production data is unavailable and is estimated by the Australian administration as a balance of trade and consumption. There is no visibility over stock movements of this fuel.

Registers show large sporadic shipments of **anthracite** rather than steady supply streams.

Export trade in **coke oven coke** between 2005 and 2011 exists, but data are unavailable for reasons of confidentiality. From 2012 onward exports are estimated by the Australian administration but without providing information on the destination country.

## Transformation

In 2015 a new plant within the mining sector started its operations increasing the consumption of **coke oven coke**.

The one company producing **BKB** closed its operation during 2015. As such, production and consumption declined significantly.

For 2003 to 2012, **Coke oven gas** reported as energy industry own-use in electricity or CHP plants is used for generation purposes, while **natural gas** used for own-use plant support is reported in the transformation sector.

**Natural gas** consumed to fuel the distribution of **natural gas** in natural gas networks is reported as transformation for **gas works gas** production until 2005.

The drop in **BKB** production in 2004 was due to a fire in the main production plant.

## Consumption

Decline in **coking coal** use alongside rising steel production appears commensurate with process changes in Iron and Steel sector.

In the 2016 edition, revisions for 2010 onwards have increased the quantities of **sub-bituminous coal** and decreased the quantities of **other bituminous coal** being used in the non-metallic minerals industry as more accurate information has become available.

Consumption in wood and wood products is included in paper, pulp and print from 2001 onwards.



## Austria

### Source

Bundesanstalt Statistik Österreich, Vienna.

### General notes

In the 2021 edition, revisions were made in several products for the period 2005-2018; most of them were small in absolute and/or relative value.

Starting with the 2016 edition and following, widespread data revisions were received due to enhanced reporting from 2005 onwards as a consequence of improved Austrian Final Energy Consumption surveys. For some time series, these revisions were extrapolated back to 1990. As a consequence, there may be breaks between 2004 and 2005, and 1989 and 1990.

In the 2019 edition, revisions concerning the iron and steel industry were received for data since 2005. The revisions impacted the energy sector for **coke oven gas** and **blast furnace gas**.

In 2018 data, **blast furnace gas** decreased following maintenance work in one of the blast furnaces. Additionally, **other recovered gases** (LD-gas) are reported separately following an improvement in reporting from the 2020 edition (in previous editions it was reported under **blast furnace gas**). In the 2016 edition, revisions concerning the iron and steel industry were received for data since 1990. The following flows were impacted by these revisions: inputs to blast furnaces, the breakdown between transformation and own-use energy support, and calorific values.

The last **lignite** mine closed in the second quarter of 2004 and **lignite** use for power generation ceased in 2006.

Since 1996, **gas works gas** data are reported with **natural gas** because it is distributed in the same network. The amount of **gas works gas** is negligible and it is mostly consumed by households.

“Trockenkohle” is included with **BKB** because of its high calorific value.

### Supply

In 2018 there were high values of **patent fuel** imported and consumed in the paper and pulp industry, which was not the case in 2019.

## Consumption

One of the revisions made in the 2021 edition was the reallocation of some quantities from Blast furnace (energy) to Coke oven (Energy) for the products **blast furnace gas, coke oven gas** and **other recovered gases**.

Among the revisions made in the 2021 edition, some quantities of **coke oven coke** were reallocated from the industry Iron & Steel (TFC) to the category Non-Energy Use-Chemical/ Petrochemical.

## Belgium

### Source

Observatoire de l'Energie, Brussels.

### General notes

**Oil shales** and **sub-bituminous coal** have been grouped due to confidentiality reasons.

In the 2020 edition, data from 2013 was revised, and **sub-bituminous coal** figures are now reported under this category, whilst previously they were under **other bituminous coal**. **BKB** figures have been also revised back to 2013.

In the 2016 Edition, improved data collection has led to some breaks in time series. These revisions include **hard coal** classifications, products and processes in integrated iron and steel manufacture and may be extended further back in future editions.

Data for **anthracite** prior to 2014 may include a small portion of **other bituminous coal**.

**Hard coal** data prior to 1978 may include **sub-bituminous coal**.

**Other bituminous coal** and **sub-bituminous coal** data reported in *from other sources* refer to coal recuperated from coal dumps.

### Supply

For the year 2020, the trade flows for **anthracite** include transit trade. This will be amended in the next publication, *Coal Information 2022 April Release*.

Supply-side data are obtained through surveying questionnaires instead of customs data.

Imports and exports data for **coal tar** have been anonymised (in non-specified) due to confidentiality reasons.

Transit trade is excluded. For each country (trade partner), the imported and exported quantities are compared and cleared. In the case of Belgium, this decreases the final figure of exports. 2019 data shows a rise in exports of **other bituminous coal**; the imports decreased during that year but some companies continued to export the stocks originated from those countries in 2019, leading to this rise.

In the 2019 edition, the calorific values of imported **bituminous coal** were revised upwards by the Belgian administration since 2015, resulting in a significant increase in the coal primary energy supply. Historical revisions are pending.

Conventional production of **other bituminous coal** ceased on 31 August 1992.

## Transformation

In the 2019 edition, **anthracite** previously reported as consumption in the *iron and steel industry* was reclassified as part of the transformation process in *blast furnaces* since 2013.

In 2016, the decrease of **other bituminous coal** inputs to main activity producer electricity plants was due to the permanent closure of Langerlo, Belgium's last coal-fired main activity electricity.

In 2015, the decrease of **coke oven gas** inputs to autoproducer CHP plants is due to a power plant closure in 2015.

In 2014 and 2015, **coking coal** inputs to coke ovens decreased due to a coke oven closure in June 2014.

In 2014, the decrease of **other bituminous coal** inputs to main activity producer electricity plants is due to a power plant closure in 2014.

## Consumption

In the 2021 edition, consumption of **other bituminous coal** in the sectors of Transport/Rail and Other sectors/Agriculture were included starting in 2015.

In the 2018 edition, industrial consumption for the period 2013 through 2015 was revised for **coking coal** and **anthracite**, as more accurate consumption data became available. Data for **coking coal** prior to 2013 may include a small portion of **anthracite**.

The decrease of **other bituminous coal** and **coke oven coke** in the iron and steel industry in 2002 is due to the closure of several plants.

The use of **coke oven gas** in chemical and petrochemical activities ceased in 1996.

## Canada

### Source

Natural Resources Canada, Ottawa.

### General notes

The 2022 edition includes revisions to coal production starting in 2015.

The 2021 edition includes some revised data as the methodology implemented in the previous edition was further refined by the Canadian administration.

The 2020 edition includes revisions for all the time series by the Canadian administration as more accurate data was available.

Significant statistical differences can be observed for several coal products. This is under investigation and further improvements are expected in further editions.

In the 2018 edition, data for Canada were revised back to 2005 following a ten year revision of the Report on Energy Supply and Demand (RESO), the main set of Canadian annual data. The revision standardizes the methodology used for the IEA data submission and has mainly affected the demand side.

In the 2017 edition, due to the extensive revisions of the Report on Energy Supply and Demand (RESO), significant statistical differences can be observed for several coal products for the period 2005-2015.

In the 2016 and 2017 edition, extensive revisions for the period 2005 to 2015 were received as more data became available due to improvements in data collection.

In the 2014 and 2015 editions, some revisions to the 2004 to 2006 data were received in addition to some time series and products for 2007 to 2011.

From the 2014 edition, the Canadian administration revised time series back to 2005, using additional data from the Annual Industrial Consumption of Energy, the Annual Survey of Secondary Distributors, the Report on Energy Supply and Demand and the Natural Resources Canada Office of Energy Efficiency. Breaks in time series also between appear 1989 and 1990, due to changes in methodology, incorporated in 2002.

Due to a Canadian confidentiality law, it is not possible for the Canadian administration to submit disaggregated series for all of the **coal** types. Between 2002 and 2006, the IEA Secretariat has estimated some of the missing series. The data for 2007 onwards

are given directly as reported, however data may be present in non-representative products, and additionally these ad hoc reclassification methodologies contribute significantly to larger than normal statistical differences across products.

At this point in time, **oil shale and oil sands** data are not submitted, and this energy source is deemed to enter the supply stream as shale oil (**other hydrocarbons**).

## Supply

Due to confidentiality constraints, from 2014 the breakdown of production by type of coal is estimated by the Canadian administration, while stock changes and statistical differences are estimated since 2001.

## Transformation

In December 2018, Canada announced regulations to phase out traditional coal-fired electricity by 2030.

Injection of pulverised coal into blast furnaces (**PCI**) occurs, but is not available for confidentiality reasons. Coals consumed in this manner are reported in the iron and steel industry along with other consumption.

Before 1978, **lignite** inputs to main activity producer heat plants are included in final consumption. Starting in 1979, these inputs are included in main activity producer electricity plants.

## Consumption

Data of consumption of **anthracite** in the iron & steel sector is confidential. The Canadian administration provides an estimate.

Since 2001 consumption of **anthracite** in non-energy use is estimated by the Canadian administration.

Due to the unavailability of data, non-energy use of **coke oven coke** and **hard coal** is included with final consumption sectors prior to 1978 and 1980, respectively.

## Chile

### Source

Energía Abierta, Comisión Nacional de Energía, Ministerio de Energía, Santiago.

### General notes

Data are available starting in 1971.

**Other bituminous coal** data includes **sub-bituminous coal** for all years, if present.

In the 2017 edition, data for 2014 and 2015 were revised to replace figures previously estimated by the Secretariat.

### Supply

Stock change data for the year 2020p is not currently available. It will be completed in the next publication, *Coal Information 2022 April Release*.

Data for **sub-bituminous coal** is reported for the first time for the year 2020.

In the 2021 edition, imports and consumption of **anthracite** are reported for the first time. The time series has been completed back to 2015.

### Consumption

From 1990, consumption in paper and pulp includes forestry and consumption in agriculture is included in non-specified industry. In general, a new methodology has been applied for data since 1990, leading to other breaks in series between 1989 and 1990.

## Colombia

### Source

Ministry of Mines and Energy, Bogota.

### General notes

Colombia joined the OECD in April 2020. Consequently, from the April 2021 edition it is included in the *Coal Information* data service. Prior to that, data for Colombia was included in the IEA *World Energy Statistics* data service.

Historical revisions were not provided and some breaks in the time series can appear for 2018/2019.

### Supply

**Coking coal** production was estimated by the IEA Secretariat for the data year 2020.

### Consumption

Data for non-energy use is not currently available.



## Costa Rica

### Source

Secretaría Planificación Subsector Energía (SEPSE), San José

### General notes

Costa Rica joined the OECD in May 2021. Costa Rica submitted questionnaires with data for 2020 starting in 2022 edition.

In the 2022 edition, data were revised for years 2016 to 2019, leading to some breaks in 2015/2016.

**Other bituminous coal** and **anthracite** are reported together until 2015 and separated from 2016.

## Czech Republic

### Source

Czech Statistical Office, Prague.

### General notes

Data are available starting in 1971.

**Other bituminous coal** data includes **sub-bituminous coal** for all years, if present.

The use of **gas works gas** ceased in 2020.

In the 2022 edition, calorific values were revised for the historical time series leading to revised input to main electricity producer plants and TES.

In the 2018 edition, data for the Czech Republic were revised back to 2010 based on administrative data causing breaks in time series between 2009 and 2010. These revisions impacted mainly industrial consumption for **lignite**, **BKB** and **other recovered gases**.

In the 2017 edition, coal consumption in the residential sector has been revised back to 2010 due to a new survey in households made by Czech Statistical Office, creating breaks in time series between 2009 and 2010.

Increased production and consumption of **other recovered gases** in 2014 is due to improved tracking of by-products from various transformation processes. Tail gases from the production of carbon black from **coal tar** are reported here, as are off gases from the manufacture and cleaning of syngas from **lignite** for an IGCC plant.

Coal which had been previously classified as **sub-bituminous coal** until the 2008 edition is now reported under **lignite** for all years.

Revisions by the Czech administration have resulted in some breaks in series between 2001 and 2002.

Data for 1990 to 1995 were estimated based on the Czech publication *Energy Economy Year Book*.

In 1995, town gas production (included in **gas works gas**) ceased.

Since 2010 **BKB** includes multipurpose brown coal dust for both supply and consumption.

## Supply

In the 2021 edition, revisions were made for the period 2010-2018 to the consumption of **other bituminous coal** and **lignite** in Main Activity Producer CHP Plants and Main Activity Producer Electricity Plants. Only the structure changed, the total did not change. Revisions were also made to the calorific values of these products and flows for the same time period.

Mining in Lazy Mine was lowered until the closure of the mine in November 2019. This shows in the decrease of production of **coking coal**.

**Other recovered gases** are combustible gases obtained during the production of **gas works gas** and as a result of chemical processes.

Production *from other sources* of **other bituminous coal** is from coal slurries, and these data are not available for 2018p.

A portion of **other bituminous coal** reported under *from other sources* for the period 2010-2015 correspond to reclassified **coking coal**.

Statistical differences for **coking coal** for the period 2010-2015 are partly due to the reclassification of coking coal to **other bituminous coal**.

## Consumption

In the 2019 edition, **coke oven gas** in energy own-use consumed by electricity, CHP and heat plants was revised for 2016 resulting in a break in the series.

In the 2015 edition, improved reporting enabled revisions to be made for some primary **coal** consumption flows between 2010 and 2012.

In the 2014 edition, residential consumption for the period 1990 through 2011 was revised for **other bituminous coal**, **lignite**, **coke oven coke** and **BKB**, as more accurate consumption data became available.

Due to economic restructuring in consumption in the late 1990s (big state enterprises subdividing and/or privatising and the utilisation of new technologies by businesses), there may be breaks in time series in these sectors.

## Denmark

### Source

Danish Energy Agency, Copenhagen.

### General note

In the 2020 edition, the historical series for **gas works gas** have been revised and set to 0 for all flows. After a revisions of the definitions it was concluded that there is no **gas works gas** transformation taking place in Denmark.

In the 2004 edition, major revisions were made by the Danish administration for the 1990 to 2001 data, which may cause breaks in time series between 1989 and 1990.

### Supply

Trade data for **other bituminous coal** might include transit trade.

A large increase of **steam coal** imports in 2003 was related to a drought in Scandinavia. Thermal power plants were operated more intensively to replace hydro-generated electricity that was consumed in the country. Additionally, more coal-generated electricity was exported to other countries in the region. Significant fluctuations in demand are also evident for other years for similar reasons, including 2006 and 2013, but exist to a lesser extent.

Declines in stocks of steam coal stem from extensive deployment of renewable generation technologies and policy to further reduce Denmark's utilisation of coal-fired power and implement co-firing with renewable fuels as a part of their *Energy Strategy 2050*.

## Estonia

### Source

Statistics Estonia, Tallinn.

### General notes

Fuels reported as **coke oven gas** and **gas works gas** are the gaseous by-products of **oil shale** liquefaction. Shale oil production has two technologies: solid heat carrier (SHC) and gas generators (GG). SHC output byproduct (in addition to oil shale) is semi-coke oven gas, which is categorized under **coke oven gas**. The GG byproducts (in addition to oil shale, fenols) are generator gas, which is categorized under **gas work gas** and semi-coke, which is categorized under **coke oven coke**. Inputs of **oil shale** to “gas works”, “coke ovens” and for “coal liquefaction plants”, while reported separately, combined, are the inputs for retorting in liquefaction plants. These definitions and classification were applied to all the time series, back to 1990, in the 2022 edition.

In 2019, the production and consumption of **oil shale** decreased significantly. This was due to two factors: CO<sub>2</sub> and Russian electricity prices made the power generation from this fuel less accessible to the market; and at the same time Estonia was developing a strategy to reduce the direct burning of oil shale into electricity.

In the 2013 edition, data for **oil shale** production for the period 1991 to 1997 were revised to match Estonian GHG National Inventory values. Consumption data remained unchanged.

Data for Estonia are available starting in 1990. Prior to that, they are included in Former Soviet Union in World Energy Statistics.

### Supply

Indigenous production of **peat products** stopped in 2017.

## Finland

### Source

Statistics Finland, Helsinki.

### General notes

**Coal tar** used for non-energy purposes or exported is not reported in either production or consumption.

In the 2015 edition, revisions were received for some consumption flows of **other bituminous coal** and **coke oven coke**, while **other recovered gases** (from ferrochromium manufacture) were reported separately for the first time, with revisions back to 2000. Prior to 2000, off-gases from ferrochromium manufacture are included in **blast furnace gas**, and inputs of **coke oven coke** for ferrochromium manufacture in inputs to blast furnaces instead of non-specified transformation.

In 2014, a new survey system and a reclassification of the data lead to breaks in the time series between 1999 and 2000 for most products and sectors. The new survey system is more detailed and has better product coverage, especially in electricity, CHP and heat production, as well as in industry.

Prior to 2008, **peat products** are included with **peat** data.

A large increase of **steam coal** imports in 2003 is related to a drought in Scandinavia. Thermal power plants were operated more intensively to replace hydro-generated electricity that is consumed in the country. Additionally, more coal-generated electricity was exported to other countries in the region.

The increase of **other bituminous coal** inputs into main activity producer electricity plants from 1993 to 1994 was due to coal replacing imported electricity and hydro power.

Production of **gas works gas** ceased in April 1994.

**Hard coal** data prior to 1978 may include **sub-bituminous coal**.

### Supply

**Peat products** refer to peat briquettes and pellets, which were supplied from old stocks for 2019 and 2020.

## Transformation

The consumption of **other bituminous coal** in the energy sector (own use in electricity, CHP and heat plants) covers the use of coal in the pilot phase of a new power plant (the amount of coal was not used for producing any useful heat or electricity).

In 2017, the consumption of coal in main activity producer electricity plants decreased considerably following the move of a large plant to the national capacity reserve.

In the 2017 edition, fuel inputs and heat production from **peat** main activity heat plants have been revised from 2000 as a result of new data access for smaller peat heat plant units.

The significant increases and decreases of **other bituminous coal** inputs into main activity producer electricity plants from year to year are due to coal replacing imported electricity and hydro power.

Likewise, **peat** production is highly dependent upon favourable weather conditions and the pricing of other fuels. The decrease in **peat** and **other bituminous coal** usage in main activity electricity plants in 2008 was due to record electricity generation from hydro plants. A similar circumstance occurred in 2012.

The first coking plant started operation in 1987, hence imports of **coking coal** and production of **coke oven coke** and **coke oven gas** started in that year.

## Consumption

Some consumption of **other bituminous coal** is reported for the first time in 2019 as energy industry own use. This covers the use of coal in the pilot phase of a new power plant (the amount of coal was not used for producing any useful heat or electricity).

Food, tobacco and beverages reports 1kt consumption of **coke oven coke** in 2019 after zero in 2018. This is due to rounding (2018: 0,46 kt and 2019: 0,72 kt).

## France

### Source

Ministère de la Transition Écologique et Solidaire, Paris.

### General notes

From 2011 data onwards, France includes Monaco, and the following overseas departments (Guadeloupe; French Guiana; Martinique; Mayotte; and Réunion); and excludes the overseas collectivities (New Caledonia; French Polynesia; Saint Barthélemy; Saint Martin; Saint Pierre and Miquelon; and Wallis and Futuna).

Due to confidentiality reasons, some demand flows have been merged for the products **other bituminous coal** and **anthracite**, starting in 2020. Those aggregations are: paper, pulp and printing, food, beverage and tobacco, and not elsewhere specified (industry); machinery, non ferrous metals and non-metallic minerals.

Due to confidentiality reasons, the flows iron and steels and non ferrous metals have been merged for **coke oven coke**, starting in 2020.

Due to confidentiality reasons, some demand flows have been merged for the products **lignite** and **BKB**, starting in 2020. The flows merged are iron & steel, chemical and petrochemical, non ferrous metals and non metallic minerals.

Due to confidentiality reasons, **blast furnace gas** includes **blast furnace gas**, **coke oven gas** and **other recovered gases** from the year 2018. This aggregation may lead to unusual figures and efficiencies in the energy balance and CO<sub>2</sub> emissions.

The losses of **blast furnace gas**, **coke oven gas** and **other recovered gases** are included under statistical difference until 2016. From 2017 onwards these losses are reported under “other energy uses”.

In the 2018 edition, data for France were revised back to 2011 following changes in methodology and procedures used by the energy statistics sub-department (SDSE) within the Ministry for the ecological and inclusive transition. As a result, the revisions, to bring the reporting more in line with the international standards, impacted all fuels. Additional details are given under each fuel.

In 2018 edition, the calorific value of coking coal has been revised in agreement with Eurostat and the IEA. The revision was made for the period 1990 to 2016.



In the 2017 edition, the French administration undertook comprehensive revisions on sectoral coal consumption back to 2011. Starting this edition, new information became available for **anthracite**, **BKB** and **other recovered gases**. Breaks in time series for **coke oven gas** and **blast furnace gas** consumption between 2010 and 2011 are due to a change in the methodology, impacting significantly consumption in the iron and steel sector.

From 2012, the energy consumption is more detailed due to a more precise national survey.

Prior to 2011, **other manufactured gases** (oxygen steel furnace gas) are included in **blast furnace gas**.

For 1989 to 1998, the IEA Secretariat has estimated industry consumption based on *Consommations d'Énergie dans l'Industrie*, SESSI.

Prior to 1985, consumption of colliery gas is included with the use of **coke oven gas** by autoproducers.

Hard coal data prior to 1978 may **include sub-bituminous coal**.

## Supply

For the year 2021E the production of **coke oven coke** has been merged with stock change due to confidentiality reasons.

## Transformation

In the 2021 edition, revisions were made on the split of **other bituminous coal** between Main Activity Producer Electricity Plants and Main Activity Producer CHP Plants for the period 2011-2018.

In the 2021 edition, following a methodological change, a power plant was reallocated from main activity producer to autoproducer. Hence, there is no more figure for **other manufactured gases** in the first. This was done for 2018 and 2019.

In 2017 the use of **other bituminous coal** into transformation for electricity increased by more than 20% to compensate lower generation from nuclear and hydro plants.

In 2016 the company that consumed **blast furnace gas** for electricity and heat generation ceased its activity.

## Consumption

In the 2018 edition, the split of energy consumption between the residential sector and the commerce and public services sector has been revised back to 1990 by the French Administration for **other bituminous coal, lignite, coke oven coke, BKB** and **patent fuel**.

**Blast furnace gas** and **coke oven gas** used for energy purposes in blast furnaces are no longer reported under the iron and steel industry. As of the 2018 edition these quantities are reported under the energy sector.

Final consumption in industry is estimated by the secretariat from 1986 to 2001 for some products.

## Germany

### Source

Federal Ministry for Economic Affairs and Energy, Berlin.

### General notes

Data start in 1960. German data include the new federal states of Germany from 1970 onwards.

Comprehensive official data are only collected for the aggregate of hard coal. Due to the unavailability of detailed data, the split into **anthracite**, **coking coal** and **other bituminous coal** is partly estimated by the National administration.

In the 2018 edition, more detailed information on the breakdown of **other bituminous coal** and **coking coal** imports became available for 2017p. Prior to 2017, the large amount of **coking coal** imports allocated to *Other OECD* corresponds to Netherlands and therefore may not constitute the country of origin. For more details please refer to the country note of Netherlands.

In the 2014 edition, significant revisions were submitted for all primary coal types, derived products and manufactured gases for the period 2003 to 2011 as previous estimations were updated with more accurate information. Revisions primarily affected consumption, including industry and other sectors; but also supply, statistical differences and weighted calorific values.

Between 1998 and 2005, breaks in series may occur for **coke oven gas** and **blast furnace gas**.

Between 1990 and 1992, breaks in series may occur due to earlier reclassification of several sectors by the German administration; this particularly affects **BKB**, **lignite** and **coke oven coke**.

### Supply

**Hard coal** mining in Germany ceased in 2018 with the last two hard coal mines being closed on 21 December 2018 due to profitability reasons. **Anthracite**, **coking coal** and **other bituminous coal** show null production from 2019.

Data on stock changes in the coal production sector (provided individually for all coal products) are no longer available from 2019 onwards as the companies in this sector no longer operate. For the other sectors (electricity and heat producers,

and industry), data on stock changes are only available for **hard coal** as an aggregate, and that is all reported under **other bituminous coal**.

## Transformation

Breaks in time series between 2014 and 2015 for **coke oven gas** and **blast furnace gas** are due to a reclassification of main activity producers and autoproducers.

In 1997, **BKB** inputs to gas works plants stopped.

For some years of the period 1990-2002, discrepancies can appear between the publications *Coal Information* and *Electricity Information* in Electricity and CHP plants for the products **lignite**, **gas works gas**, **coke oven gas** and **blast furnace gas**.

## Consumption

Consumption of **non-renewable municipal waste** and **other solid biofuels** as a reductant occurs in German blast furnaces, but is not currently quantified. Likewise, **coal tar** is a by-product of coke ovens, but not currently reported.

The data providers for the *commercial* and *residential* sectors were coal producers and import statistics, the first reporting the biggest amounts. As the **hard coal** production ceased in Germany, coal producer do not longer operate, and this data is not available from 2019. As consequence, the year 2019 shows a significant decrease in consumption in these sectors. In 2019, there was no increase in the imports delivered to these sectors.

## Greece

### Source

Ministry for Environment and Energy, Athens.

### Supply

In 2019 there was a significant decrease in **lignite** production and consumption due less power generation in the country using this fuel.

## Hungary

### Source

Hungarian Energy and Public Utility Regulatory Authority, Budapest.

### General notes

Data are available starting in 1965.

From 1992, the production of **sub-bituminous** coal has been included with **lignite** due to the low quality of the coal. For 1990 to 1999, the use of this domestic coal in main activity producer electricity and CHP plants has also been reclassified to **lignite**. Since 2017, imports, transformation and consumption of **sub-bituminous coal** were reclassified as **lignite** by the Hungarian administration to align with foreign trade statistics.

### Transformation

Some CHP units consuming **blast furnace gas** and **lcoke oven gas** were under maintenance in 2018.

In 2017, a main activity CHP plant using **other bituminous** coal was merged with an industrial unit of the pulp, paper and print sector and was since reclassified as an autoproducer.

Autoproducer heat and power plants using **coke oven gas** and **blast furnace gas** were reclassified in 1998 as main activity power plants.

### Consumption

In the 2022 edition, revisions back to 2017 were made for the non-metallic minerals industry, by reallocating some quantities previously reported as **lignite** to **BKB**.

The cement industry in Hungary is progressively replacing the consumption of coal by waste. This situation is translated to a decreasing trend in consumption of **other bituminous coal** in the non-metallic minerals industry.

The consumption of **coal tar** in the category Non-Energy Use (petrochemical sector) increases in the year 2019. In previous years, CO<sub>2</sub> quotes prevented companies of this sector from using more **coal tar**, but in 2019 they installed new CO<sub>2</sub> filters, that enabled them to use more **coal tar** keeping CO<sub>2</sub> emission on the same level.

In the 2020 edition, revisions back to 2014 were done for **blast furnace gas** to report separately the energy consumption for the support of blast furnaces. Previously, this consumption was reported as final consumption in the industry iron & steel.

## Iceland

### Source

National Energy Authority, Reykjavik

### General notes

Data on stock changes of **anthracite** and **coke oven coke** are not available. The statistical difference could include that flow.

The industrial classifications used by the Icelandic administration were changed in 1987.

Hard coal data prior to 1978 may include **sub-bituminous coal**.

Prior to 1970, final consumption includes inputs and outputs to heat production.

### Consumption

**Anthracite** is used as a carbon donor in silicon metal and ferrosilicon production plants. In the 2021 edition, the quantities involved in these processes were reallocated from TFC/Iron & Steel to Non-Energy Use Industry/Transformation/Energy for the period 2016-2018.

**Coke oven coke** is used as carbon donor for ferrosilicon production. In the 2021 edition, the quantities involved in this process were reallocated from TFC/Iron & Steel to Non-Energy Use Industry/Transformation/Energy for the period 2016-2018.

Final consumption increased in 2000 as a new iron and steel plant came on-line.



## Ireland

### Sources

Department of Communications, Energy and Natural Resources, Dublin.

Sustainable Energy Authority of Ireland, Cork.

### General notes

In the 2022 edition, the Irish administration modified the methodology to estimate supply of solid fuels. Consequently, revisions were made back to 2011 for **anthracite**, **other bituminous coal** and **BKB**.

In the 2021 edition, SEAI revised their methodology for **anthracite** imports. The figures for the years 2012 to 2018 were revised up and are now aligned with those from the Central Statistics Office of Ireland. The difference with the old values was assigned to the residential sector.

Due to confidentiality reasons, **anthracite** imports include **anthracite** and manufactured ovoids.

In the 2021 edition, SEAI revised **other bituminous coal** consumption by sector for the period 2005-2011. The same methodology that was used from 2012 was applied to the period 2005-2011 to align the time series.

Due to confidentiality reasons, **patent fuel** quantities are reported aggregated to **anthracite** figures.

Due to confidentiality reasons, inputs of **anthracite**, **other bituminous coal** and **peat briquettes** for patent fuel transformation are reported with residential consumption.

Prior to 1990, any imports of **BKB**, were included with imports of **peat products**, as is the case for consumption.

The calorific value for **peat** production is weighted according to the origin: sod peat and milled peat. Sod peat has a higher calorific value than milled peat. In 2019, the production of milled peat decreased while sod peat stayed stable; this resulted in an overall higher weighted value.

### Supply

Ireland stopped harvesting **peat** in 2020 and will phase out production of **peat briquettes** by 2024.

The country of origin for imports of **other bituminous coal** is known for 2018p, but unavailable for reasons of confidentiality.

Rainfall in 2012 led to the lowest **peat** harvest since IEA records began in 1960, requiring large stock drawdown and increased use of **biofuels** for electricity generation. In 2013, production targets were met before the end of the year however production continued in order to further build stocks to alleviate the potential impacts of future weather events.

Low production of **peat** in 1985 was due to a poor “harvest” due to an unusually wet summer.

Production data for **peat products** (briquettes) are available from 1975.

## Transformation

From 2018 the consumption of **other bituminous coal** decreases significantly as a result of the decline in coal-fired power generation. Imports of this product decrease accordingly.

A reclassification caused a break in the series for **peat** consumption in the energy industry own use in BKB/peat product plants from 1989 to 1990.

The production of **gas works gas** ceased in 1987 due to fuel switching to **natural gas**.

**Other bituminous coal** inputs to main activity producer electricity plants increased from 1986 due to three new generating units at Moneypoint coming on-line.

## Consumption

The decrease in residential consumption of **anthracite** in 2019 is consequence of warmer weather, among other reasons.

The consumption of **other bituminous coal** and **peat** in the food, tobacco and beverages industry stopped in 2019.

## Israel

### Source

Israel Central Bureau of Statistics, Jerusalem.

### General notes

Data are available starting in 1971.

From 2018, due to confidentiality constraints, only the total quantity of imports of **other bituminous coal** is available.

The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD and/or the IEA is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

### Transformation

In 2018 (data year) the methodology for calculating consumption in the transformation sector (electricity and heat producers) was modified. This creates a break in the time series between 2017 and 2018.

## Italy

### Sources

Ministry of Economic Development, Rome.

Terna, Rome.

### General notes

The increase in production of **coke oven gas** in 2012 was the consequence of improvements in scope of reporting. As such, coke oven gas data in prior years should be viewed as under-representing production and consumption, and coke oven efficiencies will likewise appear lower than actual.

A change in methodology lead to breaks in series for industry and transformation between 2003 and 2004.

Due to a change in the survey system, breaks in series may occur between 1997 and 1998 for final consumption.

From 1986 onwards, figures from **lignite** are given using the same methodology as in the *Bilancio Energetico Nazionale*.

### Supply

In the 2018 edition, production of **coke oven coke**, **coke oven gas**, **coal tar** and **other recovered gases** was revised back to 2014 due to new available information. The revisions increased efficiencies of coke ovens and blast furnaces and led to breaks between 2013 and 2014.

**Other bituminous coal** production ceased in 2016 due to the closure of the one coal mine in 2015.

### Transformation

Breaks in the time series between 2014 and 2015 for **coke oven gas**, **blast furnace gas** and **other recovered gases** are due to a reclassification of main activity producers and autoproducers.

Prior to 2009, **sub-bituminous coal** used in main activity electricity plants was included with **other bituminous coal**.

For data since 2001, calorific values for imports of **other bituminous coal** and **sub-bituminous coal** are derived from inputs to main activity electricity generation.

## Consumption

In 1991, all industrial activities were reclassified on the basis of ISTAT/NACE 91. This has implied some transfers of activities which may result in some anomalies between 1991 and earlier years.

## Japan

### Source

The Institute of Energy Economics Japan, Tokyo.

### General notes

From 1990, data are reported on a fiscal year basis (e.g. April 2020 to March 2021 for 2020).

Other bituminous coal includes sub-bituminous coal.

The net calorific values for **coal** and **coal products** have been recalculated by the IEA Secretariat based upon gross values submitted by Japan.

In the 2019 edition, imports of **other bituminous coal** and **coking coal** - by partner country - have been estimated by the IEA Secretariat for data from 1990 to 2018, based on customs data and total imports by coal type.

In the 2019 edition, Japan revised their data back to 1990 based on new methodology in all questionnaires.

Consumption data for commercial/public services may include consumption in small and medium-size industries. The Japanese administration expects that this shortcoming will be corrected in the near future.

**Hard coal** data prior to 1978 may include **sub-bituminous coal**.

### Supply

In the 2022 edition, revisions were made by the Japanese administration to imports by origin and exports by destination, back to 1990.

In the 2020 edition, revisions were made by the Japanese administration to the imports of other bituminous coal for the years 1991, 2015 and 2017.

In the 2020 edition, the imports' origin of **coking coal** and **other bituminous coal** were revised for all the time series.

Statistical differences for **hard coal** include stock changes since 2001. Large positive differences for several years since 2004 are partly due to stock build by final consumers.

## Transformation

The inputs of **coke oven coke** to blast furnaces as well as the final consumption of **coke oven coke** in the iron and steel industry have been estimated by the IEA Secretariat since 1990.

From 1998, inputs of **coke oven gas**, **blast furnace gas** and **other recovered gases** into autoproducer electricity plants include the amount used to produce electricity with TRT technology (Top pressure Recovery Turbines) which was previously included in industry.

Inputs of manufactured gases (**coke oven gas**, **blast furnace gas** and **other recovered gases**) to main activity electricity and heat plants are calculated based on outputs and using efficiencies of main activity producers from other fuels. For autoproducers, the specific inputs are known, however the specific electricity production by each gas is estimated based on a pro-rata of the total electricity generation from all gas types.

Coal injected in blast furnaces (PCI) is classified as **coking coal** in order to be consistent with Japanese trade statistics.

## Consumption

In the 2020 edition, **anthracite** consumption in agriculture/forestry has been revised.

In the 2020 edition, after investigation by the Japanese administration the **coal tar** previously reported under Total Final Consumption in the chemical sector has been reallocated under the category non-energy use.

In the 2019 edition, **coal tar** consumption in the chemical and petrochemical industry was estimated by the IEA since 1990.

## Korea

### Source

Korea Energy Economics Institute, Ulsan.

### General notes

Data are available from 1971.

**Coal tar** production data prior to 2007 are not available at this time.

Data for 2002 onwards have been reported on a different basis, causing breaks in series between 2001 and 2002, especially for inputs and outputs to electricity generation and consumption in the iron and steel industry. The Korean administration is planning to revise the historical series as time and resources allow.

Data for **coal** and **coal products** from 1971 to 2001 are based on information provided by the Korean administration, as well as information from the *Yearbook of Energy Statistics 2002*, the *Yearbook of Coal Statistics 2001* (both from the Ministry of Commerce, Industry and Energy), and *Statistics of Electric Power in Korea 2001* (from the Korea Electric Power Corporation). During this period, import data by coal type were estimated by the IEA Secretariat, based on statistics of the exporting countries.

**Hard coal** data prior to 1978 may include **sub-bituminous coal**.

### Transformation

Statistical differences for **manufactured gases** in 2012 are partly the result of classification issues. The national administration is working to improve reporting of coal-derived gases production and consumption.

### Consumption

In the **anthracite** balance, the category Non-specified (Industry) includes manufacture of cement, lime, plaster and its products, and small businesses. Currently the breakdown of those is not available.

The consumption of **other bituminous coal** in the Food, beverages and tobacco industry stopped in 2018.

Data on **blast furnace gas** used for energy purposes in blast furnaces prior to 2007 are reported in the iron and steel industry.



Consumption of imported **coke oven coke** starting in 2002 is reported under non-specified industry.

Consumption of **manufactured gases** in the iron and steel industry starting in 2002 includes the consumption in blast furnaces, oxygen steel furnaces and other iron and steel processing plants.

## Latvia

### Source

Central Statistical Bureau, Riga

### General note

Data for Latvia are available starting in 1990. Prior to that, they are included in Former Soviet Union in the publication *World Energy Statistics*.

### Supply

The increase of distribution losses for peat in 2003 is due to a fire in one of the warehouses.

### Consumption

The increase in **other bituminous coal** consumption in 2018 in the non-metallic minerals sector is due to a new heat plant that started operation that year.

The decrease in the iron and steel industry in 2014 is due to the bankruptcy of the major company in the market.

## Lithuania

### Source

Statistics Lithuania, Vilnius.

### General note

Data for Lithuania are available starting in 1990. Prior to that, they are included in Former Soviet Union in the publication *World Energy Statistics*.

## Luxembourg

### Source

STATEC, Institut national de la statistique et des études économiques du Grand-Duché du Luxembourg, Luxembourg.

### General notes

For the 2011 edition, the Luxembourgian administration revised the time series from 2000 for most **coal** and coal products. Time series for **BKB** consumption were revised from 1990.

Prior to 1978, some **sub-bituminous coal** may be included in **hard coal**.

Steel production from blast furnaces ceased at the end of 1997.

## Mexico

### Source

Ministry of Energy (SENER), Mexico City.

### General notes

Data are available starting in 1971.

The Mexican administration submitted data directly by questionnaire for the first time with 1992 data. As result, some breaks in series may occur between 1991 and 1992. For prior years, data are partly estimated based on the publication *Balance Nacional - Energía*.

In the 2016 edition, the Mexican administration completed a major work on revisions of the time series back to 1990.

In the 2016 edition, the Mexican administration completed a major work on revisions of the time series back to 1990. Revisions for some products include reporting of new consumption flows, increased quantities of coal and higher calorific values, resulting in increases of total primary energy supply. Prior to 2003, **other bituminous coal** is either reported as **coking coal** or **sub-bituminous coal**, depending upon usage, while **anthracite** and indigenously produced **lignite** were included with **sub-bituminous coal**. Calorific values currently in use may not accurately reflect any of this.

The time series for **blast furnace gas** and inputs of **coke oven coke** to blast furnaces start in 1991.

**Hard coal** data prior to 1978 may include **sub-bituminous coal**.

### Supply

Many coal mining units reduced production during 2019, specifically mines in Coahuilla (the largest coal producer state). This is reflected in the production figures of **coking coal** and **sub-bituminous coal**.

### Consumption

The category Non-specified (Industry) in the **coking coal** balance includes the industries of transport equipment, chemical, food and glass. Disaggregated values are not available.

Use of pulverised coal injection in blast furnaces occurs in Mexico, but is not currently reported.

Oxygen steel furnace gas production and production of **other recovered gases** occur as by-products of heavy industry, but are not reported.

## IEA Estimations

For **coking coal**, amounts reported for consumption in main activity electricity generation and associated imports for the years 2003 to 2016 have been reallocated to other bituminous coal by the IEA Secretariat.

Imports by country of origin for other **bituminous coal** and **coking coal** for 2017 have been estimated by the IEA Secretariat, based on partner data.

**Blast furnace gas** production and consumption have been estimated by the IEA for 1990 to 2017 based on inputs of **coke oven coke** to blast furnaces.

**Coke oven coke** production was estimated by the IEA for some years between 1999 and 2012 based off historical and commodities data, as were inputs of **coking coal** to coke ovens between 1990 and 2012.

Current Mexican methodology estimates production of **coal tar** and **coke oven gas** using **coke oven coke** production as a guide. This was extended for 1990 to 2001 and for years where **coke oven coke** production was estimated by the IEA.

## Netherlands

### Source

Statistics Netherlands, The Hague.

### General notes

The Netherlands Central Bureau of Statistics has conducted reviews and revisions of their energy balance three times; in 2005, 2011 and 2015. The 2005 revisions were to improve basic energy statistics, particularly with respect to carbon and CO<sub>2</sub> reporting, while the 2011 revisions were part of a harmonization programme with international energy statistics. The 2015 revisions were the result of increased data collection, availability of new source information, and further alignment with international energy definitions. More details are available here: <http://www.cbs.nl>

In the national statistical system of the Netherlands, use of fuel in manufacturing industries for CHP production is considered to be consumption in transformation. However, in IEA statistics, this own use for heat production (autoproduced heat) is reported under the relevant industry sub-sector, based on estimates provided by the Central Bureau of Statistics.

International trade into and through the hub ports of Amsterdam and Rotterdam is complicated by the capacity to purchase coal directly at these points. The majority of coal passing through these ports is intended for consumption in European countries other than the Netherlands, which is neither the country of origin or destination, therefore these data have been removed where possible. In the 2019 edition, the Central Bureau of Statistics proceeded to major revisions of trade and stock changes for anthracite, coking coal, other bituminous coal and lignite since 1990. Imports now should only relate to coal for inland consumption according to Eurostat's statistical regulation, thus eliminating transits to other countries and stock changes of trading companies.

### Supply

From 2013 onwards, trade reported by the Central Bureau of Statistics includes **coal** in transit, to align more closely with gross trade data.

In the 2013 edition, non-specified exports for 2011 were estimated by the Central Bureau of Statistics due to a lack of information from key market players.

For data prior to 2011, stock changes for primary coal types were estimated by the Dutch administration based on trade and consumption data.

For 1984 to 1986, production *from other sources* of other bituminous coal represents a stock of “smalls” washed for re-use.

## Transformation

In the 2022 edition, revisions back to 2015 were made in the reporting of blast furnaces, coke ovens and iron and steel industry.

At the end of 2015 three low-efficiency plants running on bituminous coal input closed down. In the course of 2017 another two old installations ceased operating. These closures were part of the so-called Agreement on Energy for Sustainable Growth in the Netherlands agreed upon by the Social and Economic Council of the Netherlands (SER) and more than forty representative organisations and stakeholders.

## Consumption

For the year 2020, consumption of **coking coal** in the industry sector was observed for the first time. Potential revisions and completion of the time series will be included in the next publication, Coal Information 2022 April Release.

In 2019 the consumption of **lignite** decreased significantly as result of a company partly ceasing activities. That company totally ceased its activities in 2020.

Prior to 1989, non-energy use is included with industry consumption.



## New Zealand

### Source

Ministry of Business, Innovation and Employment, Wellington.

### General notes

In the 2021 edition, the New Zealand administration provided revisions for some flows back to 2009.

Prior to 1994, data refer to fiscal year (April 1993 to March 1994 for 1993). From 1994, data refer to calendar year.

**Peat**, although produced in New Zealand, is not used as a fuel, and is used for agricultural purposes only.

In the 2020 edition, the New Zealand administration has done historical revisions on the data as a new data system and methodology was implemented.

In the 2020 edition, some high statistical differences can be found for many types of coal in various time periods. In the 2014 edition, the definition of **hard coal** was aligned with the International Recommendations for Energy Statistics. Prior to this, **hard coal** for New Zealand from 1960 to 1977 had contained **sub-bituminous coal**. The portion of **sub-bituminous coal** production and residential consumption has been estimated by the IEA Secretariat for this period and moved to **brown coal**.

In the 2011 edition, the New Zealand administration has revised some of the **coal**, natural gas, oil, renewable and electricity time series back to 1990.

### Supply

In the 2021, a mine was reclassified from **other bituminous coal** to **sub-bituminous coal**. The time series was revised accordingly.

In 2018 a mine of **other bituminous coal** that was not in production in 2017 restarted activity.

In 2017 the underground mine producing coking coal switched to opencast operation.

Breakdown of exports of **coking coal** by country of destination in 2018p has been estimated by the IEA Secretariat, based on partner data.

The decrease of **other bituminous coal** production in 2015 is due to a temporary shutdown in one of the coal mines at the beginning of 2015 and another one at the end of 2015.

A detailed breakdown of exports of **coking coal** by country of destination between 2001 and 2011 is estimated by the IEA, based on secondary sources and partner data.

## Transformation

**Sub-bituminous coal** inputs into coke ovens refers to coal that is merged with iron sands and limestone to form the inputs for the multi-hearth-furnaces, kilns and melters that produce direct reduced iron (Glenbrook Steel Site), with off-gases and supplemental and natural gas driving CHP plants. This method, while not the typical iron and steel process, produces similar by-products. The **sub-bituminous coal** inputs are reported under coke oven coke transformation and the resulting off-gases are reported as production of **coke oven gas** and **blast furnace gas**.

**Blast furnace gas** production and distribution losses prior to 1998 are IEA Secretariat estimates. Portions of this gas will have been used for energy purposes in the multi-hearth furnaces or elsewhere in the plant. Some transformation efficiencies will appear higher than normal due to non-reporting of certain inputs, including some confidential data.

## Consumption

In the 2020 edition, some quantities of **sub-bituminous coal** previously reported under **other bituminous coal** were reported under **sub-bituminous coal**. This reclassification led to a break in the consumption time series between 2018 and 2019 as the new classification starts in 2019.

In 2018, some **other bituminous coal** quantities previously reported under non-specified were reallocated into industry sectors.

In final consumption, some industry data are reported in non-specified industry for confidentiality reasons.

In 2014, the increase in consumption of **sub-bituminous coal** in mines included the combustion of some unsold coal fines for safety reasons.

Prior to 2010, the construction sector is included with commercial/public services.

Prior to 2009, mining and quarrying is included in agriculture.

## Norway

### Source

Statistics Norway, Oslo.

### General notes

Other bituminous coal includes lignite.

In the 2018 edition, data for Norway were revised back to 2010, following the introduction of a new system for energy balances and energy accounts. Breaks in series may appear between 2009 and 2010 as a result. For more detailed information regarding the methodological changes, please refer to the documentation of statistics production since statistics year 2010 on the Statistics Norway website. At the time of writing, the document was available in Norwegian as “Dokumentasjon av statistikkproduksjonen fra statistikkår 2010 og fremover”.

Production of coking coal, coke oven coke and coke oven gas ceased in the late 1980s.

### Supply

A downward trend of **other bituminous coal** production started in 2017..

The decrease of **other bituminous coal** production in 2015 is due to a temporary shutdown in one of the coal mines.

The decrease of **other bituminous coal** production in 2005 is due to a fire in one of the coal mines; this entailed a break in the production for a large part of the year.

## Poland

### Source

Central Statistical Office, Warsaw.

### General notes

**Other recovered gases** which appear in the balances as output from blast furnaces also include off-gases from zinc and copper smelting, ceramics kilns and steel production, thus artificially increasing the overall efficiency of blast furnaces when calculated.

The decrease in exports and consumption of **coking coal**, as well as the stock built in 2019 are consequence of a reduction of the external and internal demand of iron and steel, which was impacted, among other factors, by the carbon and electricity prices.

**Patent fuel** trade data may include transit trade.

Prior to 2016 data, **other bituminous coal** includes **anthracite**.

### Transformation

In 2019 the use of **other bituminous coal** for electricity generation decreased as consequence of high CO<sub>2</sub> prices and high mining costs, which made more competitive other generation technologies such as natural gas or renewables, as well as electricity imports.

The decrease in the consumption of **lignite** in Main Activity Producer CHP Plants in 2019 is a result of the shutdown of a large power unit for renovation.

In the 2018 and 2019 editions, the Central Statistical Office has revised their methodology which accounts for sold heat produced from autoproducer heat plants using **coking coal** and **other bituminous coal**, resulting in lower, but more accurate data for 2007 onwards.

### Consumption

In the 2022 edition, revisions were made in for 2017-2019 **coke oven coke**. This product is used as a reducing agent for the production of zinc concentrates. In previous years, it was treated as energy use. The values are currently shown as non-energy use.

Introduction of anti-smog resolution led to reduction of **hard coal** consumption in households in 2019.

Consumption in agriculture/forestry for **BKB**, and own use in power stations for lignite are residual flows, so may contain statistical differences and other consumption not reported elsewhere. As a consequence, changes in these time series may not be wholly representative of the activities shown.

Prior to 2010, own use in coal mines included workers' take home allowance, which should be included in residential consumption.\

## Portugal

### Source

Direcção-Geral de Energia e Geologia, Lisbon.

### General note

**Hard coal** data prior to 1978 may include **sub-bituminous coal**.

### Consumption

Between 1997 and 2001 **gas works gas** was gradually replaced by **natural gas** in the commercial/public service and residential sectors.

The production of pig iron ceased in the first quarter of 2001, leading to decreases in supply and consumption of **coking coal**, **coke oven coke**, **coke oven gas** and **blast furnace gas** in 2001.

## Slovak Republic

### Source

Statistical Office of the Slovak Republic, Bratislava.

### General notes

Data are available starting in 1971.

**BKB** includes peat **products**.

In 2019 there is a general decrease in coal supply affecting all products, which is driven by less coal-fired power generation and reduced operation in the iron & steel sector.

The Slovak Republic became a separate state in 1993 and harmonised its statistics to EU standards in 2000. These two facts lead to several breaks in time series between 1992 and 1993, and between 2000 and 2001.

Data for **anthracite**, **patent fuel** and **coal tar** all begin in 2005. Prior to this, **anthracite** was included with other hard coals, and **patent fuel** and **coal tar** data were not reported.

Since 2005, data for **coal tar** and **patent fuel** are based solely on trade receipts. Production of **coal tar** which is consumed within the national boundary is not reported. Consumption of **patent fuel** adopts the residual methodology for statistical differences described above.

Breaks in time series may exist between 2000 and 2001 as the result of the implementation of a new survey system.

Commercial/public services also includes statistical differences for **other bituminous coal**, **lignite**, **patent fuel** and **coke oven coke** from 1980 onwards and **BKB** from 1989 onwards.

### Supply

Coal mining is scheduled to end in the Slovak Republic by 2023.

## Slovenia

### Source

Statistical Office of the Republic of Slovenia, Ljubljana.

### General notes

Data for Slovenia are available starting in 1990. Prior to that, they are included in *Energy Statistics of Non-OECD Countries* in Former Yugoslavia.

A new energy data collection system was implemented in January 2001, causing some breaks in time series between 1999 and 2000.

### Transformation

From 2018, there is a change in methodology for reporting CHP generation which reflects in new figures in only-electricity production. Revisions prior to 2018 are not expected.

In 2015, a main activity electricity plant burning **lignite** ceased its operations.



## Spain

### Source

Ministerio para la Transición Ecológica y el Reto Demográfico, Madrid.

### General notes

The calorific values for **sub-bituminous coal** are correct on an as received basis, and comply with definitions of **sub-bituminous coal** on a moist, but ash free basis.

### Supply

Since 2019, capacity of coke oven coke production has decreased in Spain. As a consequence, the imports of **coke oven coke** have increased and the imports of **coking coal** have decreased.

Hard coal mining ceased in Spain at the end of 2018. Consequently, the production figures for **other bituminous coal**, **sub-bituminous coal** and **anthracite** are zero from 2019.

Import and exports figures include transit trade. This affects specially **anthracite**. There is ongoing work to improve this situation.

The main **coke oven coke** producer closed in 2019, which meant a significant reduction of the quantities of coke oven coke produced. This also affected the coking coal imports.

**Lignite** mining ceased in 2008.

Underground production of **sub-bituminous coal** ceased in 2016.

### Transformation

Half of the coal power plants closed in Spain in June 2020. Due to this great reduction of the coal plants in Spain, figures in transformation have decreased greatly, especially in Main Activity Producer and **other bituminous coal**.

The main Activity Producer plant consuming **coke oven gas** has had several stops within 2020, which have affected the consumption and the efficiency figures.

In the 2018 edition, a reclassification of plants from autoproducer to main activity has led to breaks between 2015 and 2016.



## Sweden

### Sources

Statistics Sweden, Örebro.

Swedish Energy Agency, Energimyndigheten, Eskilstuna.

### General notes

**Peat products** data may be reported under the category of **peat**, particularly for imports.

In the 2021 edition, there was a revision of the products included under **gas works gas**. As a result, the figures for the years 2011 to 2018 were put to zero. Previously this product included some mixture of **LNG** with air to form a lower calorie product.

Autoproducer inputs to waste heat production that are sold are reported in the respective final consumption sectors and not in transformation.

### Supply

**Other bituminous coal** production until 1992 is coal recovered during the quarrying of clay.

### Transformation

The figures in the *Transformation* section for the products **coke oven gas** and **blast furnace gas** were estimated until 2018; from 2019 onwards the data is obtained from surveys.

## Switzerland

### Sources

Swiss Federal Office of Energy (SFOE), Ittigen.

Carbura, Swiss Organisation for Stockholding of Oil Products, Zurich.

### General notes

From 1999, data on consumption result from a new survey and are not comparable with data for previous years.

Calorific values for **anthracite**, **other bituminous coal** and **coke oven coke** are taken from a common default figure. **Lignite** calorific values are also default data, but are based on dried **lignite** fines which have a higher calorific value.

### Consumption

From 1985, industrial consumption of **gas works gas** is reported in non-specified industry to prevent the disclosure of commercially confidential data.

Allocation of consumption data between certain coal types is estimated by the Swiss administration.

## Turkey

### Sources

Ministry of Energy and Natural Resources (*Enerji ve Tabii Kaynaklar Bakanlığı*), Ankara.

### General notes

In the 2018 edition, revisions were conducted by the Turkish administration back to 1990 impacting the transformation and industrial sector. The revisions in the transformation sector were the result of new data submitted by the Turkish Electricity Transmission Company (TECT).

In the 2017 edition, historical revisions on **coal tar** data were conducted by the Turkish administration due to new available information.

Data from 2012 onwards utilised the latest census data, causing breaks in time series between 2011 and 2012.

Data from 2008 are provided from the results of an improved questionnaire. Significant changes occur in consumption patterns within the iron and steel industry, coal mining as well as across industry, residential and commercial/public services for **other bituminous coal**.

Calorific values for fuels consumed in electricity, CHP and heat plants are obtained from data submitted to the Ministry of Energy and Natural Resources (MENR) by the Turkish Electricity Transmission Company and these values may differ significantly from production and import values provided by MENR, causing imbalances for some years.

Production of **gas works gas** declined in 1989 due to plant closures; the last plant closed in 1994. Use of **gas coke** and **gas works gas** ceased in 1994.

Due to government regulations in industry and residential, in particular, there has been a shift from the use of domestically produced **coal** to imported **coal** and **natural gas**.

### Supply

Production of **sub-bituminous coal**, **coke oven gas** and **blast furnace gas** have been estimated by the IEA Secretariat for 2020p.

## Transformation

In the middle of 2014, most autoproducer plants in Turkey were reclassified as main activity producer due to a change in the legislation. Although the licences of these plants changed, the Administration decided to restore the affected plants' classification back to autoproducer in 2017 to harmonise with plant definitions in the IEA questionnaire.

## Consumption

In 2018 the consumption of **lignite** in the mining & quarrying sector strongly decreased as an important company operating in this sector stopped its operation for a long time that year.

In the 2018 edition, revisions on industrial coal consumption were conducted by the Turkish administration back to 2010 due to new available information.

Privatisation of state owned coke ovens in recent years results in incomplete information on **coke oven gas** distribution.

In 2017 edition, consumption of **sub-bituminous coal** in construction has been reclassified by the Turkish administration as consumption in the non-metallic minerals industry.

In 2015, a new survey was introduced by the Turkish administration to collect more detailed industrial consumption data, resulting in breaks in time series between 2014 and 2015.

## United Kingdom

### Source

Department for Business, Energy & Industrial Strategy (BEIS), London.

### General notes

In the 2021 edition, BEIS revised the coal production by type (**other bituminous coal** and **coking coal**) as a result of an update of their models. The revisions go back to 2016 and reallocate some production quantities from **other bituminous coal** to **coking coal**. Some adjustments were done on TFC/Industry/ Not elsewhere specified to adjust the statistical difference to the new production figures.

Oxygen steel furnace gas data are reported with blast furnace gas rather than as **other recovered gases**.

In the 2017 edition, calorific values of **other bituminous coal** were revised for the period 2002-2015 due to a change in the methodology, impacting all flows.

Prior to 1994, the consumption of substitute natural gas is included with natural gas while its production is included with gas works gas.

### Supply

Underground production of **coking coal** increased in 2019 as Aberpergwm mine came back into operation in September 2018.

Underground production of **other bituminous coal** in 2016 decreased due to the closure of Hatfield, Thoresby and Kellingley mines.

### Transformation

The consumption of **solid biofuels** has increased in 2015, as the largest power station in the UK converted a further unit from **coal** to **biomass** midyear, and the previously converted unit had a full year of operation in 2015 rather than just the last few months of 2014.

The market decline in use of **other bituminous coal** from 2013 onwards for autoproducer electricity generation was due to a plant being sold to a dedicated main-activity electricity producer.

## Consumption

Consumption data shown for the commercial/public services includes consumption of some of *other non-specified*.



## United States

### Source

US Energy Information administration, Washington, DC.

### General notes

The statistical difference for **anthracite** is significant for some parts of the time series as some consumption falls below the reporting thresholds, such as residential usage. Additionally, some anthracite is exported blended with other bituminous coal, and reported with the other fuel.

From the 2022 edition, **coke oven gas** and **blast furnace gas** production and most consumption data are no longer available due to confidentiality. Those figures were estimated by the IEA Secretariat.

Starting with 2017 data, inputs to and outputs from electricity and heat generation include Puerto Rico.

Since the Energy Information administration (EIA) and the US Department of Commerce do not collect separate data on **patent fuel** exports by country, total exports data of **patent fuel** are included in the exports of **other bituminous coal**.

End-use energy consumption data for the United States present a break in series with historical data due to a change in methodology in 2014. The break in series occurs between 2011 and 2012 for oil; and between 2001 and 2002 for electricity and natural gas. The new methodology is based on the last historical year of the most recent Annual Energy Outlook (AEO) publication. Changes occur primarily in reported end-use energy consumption in the industrial sector and its subsectors, including the non-manufacturing industries of mining, construction and agriculture. Historical revisions are pending. Due to other changes in reporting methodologies, there are numerous breaks in series for the US data, particularly in 1992, 1999, 2001, 2002 and 2013. Care should be taken when evaluating consumption by sector since inputs of fuel to autoproducers are included in final consumption for some years.

**Coal tar** as a by-product of coke ovens is not currently reported.

In 2002, the United States reported “synfuel” production as **patent fuel** for the first time. Prior to 2002, the consumption of this fuel was reported with **other bituminous coal**. Production ceased in 2007 for economic reasons.

**Hard coal** data prior to 1978 may include **sub-bituminous coal**.

## Supply

*Other sources* **coal** production represents coal production that does not have a Mine Health and Safety administration (MSHA) identifier.

**Other bituminous coal** exports could include some **anthracite** quantities. Anthracite is often blended with bituminous coal when exported.

## Transformation

**Anthracite** calorific values for Main Activity & Other Uses is mainly Anthracite waste coal. As such heat content is much lower than expected for this product.

**Coking coal** calorific values for coke ovens and blast furnaces are reported by most data providers on an “dry heat content” basis rather than on an “as is” or “as received” basis. As such, they are on the higher end of the range expected for this product.

# Units and conversions

## General conversion factors for energy

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

## Conversion factors for mass

To:	kg	t	lt	st	lb
From:	multiply by:				
kilogramme (kg)	1	0.001	$9.84 \times 10^{-4}$	$1.102 \times 10^{-3}$	2.2046
tonne (t)	1000	1	0.984	1.1023	2204.6
long ton (lt)	1016	1.016	1	1.120	2240
short ton (st)	907.2	0.9072	0.893	1	2000
pound (lb)	0.454	$4.54 \times 10^{-4}$	$4.46 \times 10^{-4}$	$5.0 \times 10^{-4}$	1

## Conversion factors for volume

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

## Decimal prefixes

10 <sup>1</sup>	deca (da)	10 <sup>-1</sup>	deci (d)
10 <sup>2</sup>	hecto (h)	10 <sup>-2</sup>	centi (c)
10 <sup>3</sup>	kilo (k)	10 <sup>-3</sup>	milli (m)

$10^6$	mega (M)	$10^{-6}$	micro ( $\mu$ )
$10^9$	giga (G)	$10^{-9}$	nano (n)
$10^{12}$	tera (T)	$10^{-12}$	pico (p)
$10^{15}$	peta (P)	$10^{-15}$	femto (f)
$10^{18}$	exa (E)	$10^{-18}$	atto (a)

The conversion factors shown above are available online with greater precision at: <https://www.iea.org/reports/unit-converter-and-glossary>

## Coal classification

The definitions of products presented are based on those of the Joint IEA/Eurostat/UNECE annual energy questionnaires, and on the United Nations International Recommendations on Energy Statistics.

The IEA collects statistics on coal production, trade and consumption according to a technically precise classification based on the quality of coal as follows:

- Anthracite is a high rank, non-agglomerating coal with a gross calorific value not less than 24 000 kJ/kg (5 732 kcal/kg) on an ash-free but moist basis and with a mean random reflectance of vitrinite of at least 2.0;
- Coking coal is hard coal suitable for the production of coke that can support a blast furnace charge;
- Other bituminous coal is an agglomerating coal with a gross calorific value not less than 24 000 kJ/kg (5 732 kcal/kg) on an ash-free but moist basis and with a mean random reflectance of vitrinite of at least 0.6;
- Sub-bituminous coal is a non-agglomerating coal with a gross calorific value between 24 000 kJ/kg (5 732 kcal/kg) and 20 000 kJ/kg (4 777 kcal/kg) and with a mean random reflectance of vitrinite of less than 0.6; and
- Lignite is a non-agglomerating coal with a gross calorific value less than 20 000 kJ/kg (4 777 kcal/kg).

However, when publishing these data, the IEA sometimes adopts a simplified classification of hard coal, steam coal and brown coal. The correspondence is as follows:

- Total coal is the sum of hard coal and brown coal;
- Hard coal is the sum of coking coal, anthracite and other bituminous coal for all countries, plus, prior to 1978, may include sub-bituminous coal for Australia, Belgium, Chile, Finland, France, Iceland, Japan, Korea, Mexico, New Zealand, Portugal and the United States;
- Brown coal contains lignite and sub-bituminous coal for all countries barring the exceptions prior to 1978 above; and
- Steam coal consists of anthracite, other bituminous coal and sub-bituminous coal.

The term *total coal* also refers to the sum of hard coal and brown coal after conversion to a common energy unit (tonne of coal equivalent - tce). The conversion is done by multiplying the calorific value of the coal in question (the conversion factors are submitted by national administrations to the IEA Secretariat each year) by the total volume of hard and brown coal used, measured in physical units, i.e. in tonnes. One tce has an energy content of 29.3 Giga-joules (GJ) or 7 000 kcal and corresponds to 0.7 tonnes of oil equivalent (toe).

## Defining coal consumption

Energy statistics are compiled and presented to take account of the complexity in the way fuels are used and to avoid double counting. Misunderstandings can arise when statistics on coal consumption are used because of the particular terminology used by energy statisticians.

Coal is used in four possible ways:

- As a *primary input* to produce electricity or a secondary/tertiary fuel that is used elsewhere or sold - this is referred to as use in *transformation processes*; e.g. coking coal used to *produce* coke in a coke oven or steam coal used to *produce* electricity.
- As a *fuel* used to *support* a transformation process - this is referred to as *energy industry own use*; e.g. coke oven gas used to heat the coke oven or steam coal used to operate the power plant.
- As a *fuel* consumed in manufacturing, industry, mining and construction, in transport, in agriculture, in commercial and public services and in households - this is referred to as use in the *final consumption* sectors; e.g. steam coal used to produce heat in cement kilns, steam coal used to produce industrial process steam.
- As a *raw material* - this is referred to as non-energy use; e.g. coal tar used as a chemical feedstock.

In the wider community, the term “consumption” is commonly understood to include all of the above end-uses. In Parts IV and V of this book, the term “consumption” refers only to use in the *final consumption* sectors (i.e. in the third item above). In Parts II and III, “consumption”, unless otherwise specified, refers to Total Primary Energy Supply as defined in the section in *Flows: energy balance* in Part I Definitions.

# Abbreviations

## Units and technical abbreviations

t:	metric ton = tonne = 1000 kg
kt:	thousand tonnes
Mt:	million tonnes
toe:	tonne of oil equivalent
Mtoe:	million tonnes of oil equivalent
tce:	tonne of coal equivalent (= 0.7 toe)
Mtce:	million tonnes of coal equivalent
kcal:	kilocalories ( $10^3$ calories)
MBtu:	million British thermal units
GWh:	million kilowatt hours
USD:	US dollars
GDP:	Gross Domestic Product
GCV:	gross calorific value
PCI:	coals for pulverised injection
TES:	Total energy supply
EU:	European Union
FSU:	Former Union of Soviet Socialist Republics/Soviet Union
OECD:	Organisation for Economic Co-operation and Development
UN:	United Nations
UNECE:	United Nations Economic Commission for Europe
0 or 0.0:	negligible
c:	confidential
..:	not available
-:	nil
x:	not applicable

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IEA Publications

International Energy Agency

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Typeset in France by IEA – March 2021

Cover design: IEA