

COAL INFORMATION

Corrigendum

Please note that despite our best efforts to ensure quality control, errors have slipped into the **Coal Information 2015**.

New pages from IV.435 to IV.444

(Plus, “Achévé d’imprimer” changed to “second edition, October 2015”)

See next pages

2015



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COUNTRY NOTES

In many cases, data submitted by Member countries to the secretariat do not conform to the standard reporting methodology or have other particular characteristics. Information set out below will assist readers to interpret data for particular countries and aid in the comparison of data among countries.

The notes given below refer to data for the years 1960 to 2013 and may also refer to 2014p preliminary data as well as the information on CD-ROM and the online data service. In general, more detailed notes are available for data since 1990.

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

All data refer to the fiscal year, (e.g. July 2012 to June 2013 for 2013).

In the 2013 edition, data for Australia were revised back to 2003 due to the adoption of the National

Greenhouse and Energy Reporting (NGER) data 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 problems. The national statistics appear to have problems 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. More detail is given in the notes below.

For the 2002 data, the Australian administration began to use a new survey methodology which has caused shifts in the structure of industry consumption. The Australian administration is planning to revise the historical series.

Increases of production and consumption of other bituminous coal in 2013 are due to both new mine capacity and improved classification data. At this stage it has not been possible to revisit earlier years, so there additionally appears to be switching between sub-bituminous coal and other bituminous coal, when it is more likely that some other bituminous coal was reported as sub-bituminous coal in earlier cycles, and in some flows, vice versa. Data on blast furnace gas for electricity production by autoproducers begins in 1986. Consumption in wood and wood products is included in paper, pulp and print from 2001 onwards. The drop in BKB production in 2004 was due to a fire in the main production plant. Only anthracite for export is reported separately; the remainder that is consumed domestically is included with other bituminous coal. Reclassification of some coal types in 2013 were calculated on an energy basis and resulted in a net increase of quantities of primary coal from 2003 to 2011. Export trade in coke oven coke between 2005 and 2011 exists, but data are unavailable for reasons of confidentiality. Until 2005, natural gas consumed to fuel the distribution of natural gas in natural gas networks is reported as transformation for gas works gas production

instead of in energy industry own-use. 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. Breaks in the time series for gas works gas between 2008 and 2009 are due to a change of survey. 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 between the revised data and consumption statistics.

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

Austria

Historical revisions by the Austrian administration have resulted in some breaks in series between 1989 and 1990.

Other bituminous coal includes hard coal briquettes. "Trockenkohle" is included with BKB because of its high calorific value. Since 1996, gas works gas is 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. The last lignite mine closed in the second quarter of 2004 and lignite use for power generation ceased in 2006. LD gas, which should normally be reported as other recovered gases, is reported with blast furnace gas

Belgium

Sub-bituminous coal data reported in *from other sources* refer to coal recuperated from coal dumps. Production of other bituminous coal ceased on 31 August 1992. The use of coke oven gas in chemical and petrochemical activities ceased in 1996. The decrease of bituminous coal and coke oven coke in the iron and steel industry in 2002 is due to the closure of several plants. Supply-side data are obtained through survey questionnaires to consumers in lieu of customs data.

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

Canada

Due to confidentiality constraints, production of coke oven coke and lignite were estimated by Natural Resources

Canada for 2014p. Production of coking coal and other bituminous coal were estimated by the IEA secretariat.

In the 2014 and 2015 edition of this publication, the Canadian administration revised time series for 2005 to 2012, 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 NRCan Office of Energy Efficiency.

Breaks in time series also between appear 1989 and 1990, due to changes in methodology, incorporated in 2002.

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. 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.

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. In the 2014 and 2015 editions, some revisions to the 2004 to 2006 data (mentioned above) were received in addition to some time series and products for 2007 to 2011. The Canadian administration is planning to further refine its reporting.

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) in the *Oil Information* publication.

Chile

Data for Chile for 2014p have been estimated by the IEA secretariat.

Data are available starting in 1971.

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.

Other bituminous coal includes sub-bituminous coals for all years. Because of this, sub-bituminous coal, if present, is included in hard coal.

Czech Republic

Data are available starting in 1971.

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. In the 2015 edition, improved reporting enabled further revisions to be adopted for some primary coal consumption flows between 2010 and 2012. Due to economic restructuring in the consumption sectors in the late 1990s (large state enterprises subdividing and/or privatising and the utilisation of new technologies by businesses), there may be breaks in time series in these sectors. 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. Revisions by the Czech administration have resulted in some breaks in series between 2001 and 2002. Production *from other sources* of other bituminous coal is from coal slurries.

Coal which had been previously classified as sub-bituminous coal until the 2008 edition is now reported under lignite for all years, while actual sub-bituminous coal is included in other bituminous coal.

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.

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.

Declines in stocks on hand of thermal 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

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

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. Fuels reported as coke oven coke and gas works gas are by-products of oil shale liquefaction.

Finland

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.

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.

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. Likewise, peat production is highly dependant 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. Coal tars used for non-energy purposes or exported are not reported in production and trade or consumption. 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. Prior to 2008, peat products are included with peat.

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

France

Prior to 1985, consumption of colliery gas is included with the use of coke oven gas by autoproducers. Final consumption in industry is estimated by the secretariat from 1986 to 2001 for some products. For 1989 to 1998, the IEA secretariat has estimated industry consumption based on *Consommations d'Énergie dans l'Industrie*, SESSI. Other manufactured gases (oxygen steel furnace gas) are included in blast furnace gas. Distinction between coke oven gas consumption, and consumption of other gases produced in the iron and steel sector is ill defined, resulting in jumps in time series and unusual efficiencies.

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

Germany

Stock changes for other bituminous coal and coking coal have been estimated by the IEA secretariat for 2014p.

German data include the new federal states of Germany from 1970 onwards.

The German administration has changed the methodology for reporting heat. Between 2003 and 2006, autoproducer heat output was provided, but not inputs. Starting in 2007, more information is available on main activity heat plants and additional inputs started to be reported for this category. This causes breaks in series between 2006 and 2007.

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.

Due to earlier reclassifications of several sectors by the German administration, breaks in series may occur between 1990 and 1992. This particularly affects BKB, lignite and coke oven coke. BKB inputs to gas works plants stopped in 1997. Breaks in time series

may occur between 1998 and 2005 for coke oven gas and blast furnace gas. Up to 2002, other bituminous coal includes anthracite. 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.

Greece

Electricity production using hard coal ceased in 1989. A new main activity producer electricity plant using imported bituminous coal was brought on-line in 1991. Production of gas works gas ceased in 1997. Lignite has been used in main activity producer CHP plants since 1997. Production of BKB ceased partway through 2008.

Hungary

Data are available from 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. Auto-producer heat and power plants using coke oven gas and blast furnace gas were reclassified in 1998 as main activity power plants.

Iceland

Data for Iceland for 2014p have been estimated by the IEA secretariat.

Prior to 1970, final consumption includes inputs and outputs to heat production. The industrial classifications used by the Icelandic administration were changed in 1987. Final consumption increased in 2000 due to a new iron and steel plant coming on-line.

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

Ireland

Production data for peat briquettes are available from 1975. Low production of peat in 1985 was due to a poor "harvest", as was the case in 2012 where record

lows were due to an unusually wet summer. 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. A reclassification causes a break in the time series for peat consumption in the energy industry own use in BKB/(peat products) plants from 1989 to 1990.

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

Prior to 1990, possible imports of BKB, if present, are included with imports of peat products, as is the case for consumption. Rainfall in 2012 led to the lowest peat harvest since IEA records began in 1960, requiring large stock drawdown and increased use of biomass 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.

Israel

Israel was unable to provide data for 2014p. These data have been estimated by the IEA secretariat.

Data are available starting in 1971.

Oil shale data for 2013 are confidential.

Italy

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

From 1986 onwards, figures from lignite are given using the same methodology as in the *Bilancio Energetico Nazionale*. In 1991, all industrial activities were reclassified on the basis of ISTAT/NACE 91. This has implied some transfer of activities which may result in some anomalies between 1991 and earlier years. Due to a change in the survey system, breaks in time series may occur between 1997 and 1998 for final consumption. The apparent jump in production of coke oven gas in 2012 was the consequence of improvements in scope of reporting, rather than a marked increase in production. As such, coke oven gas data in prior years should be viewed as under-representing production and consumption of coke

oven gas, and likewise, coke oven efficiencies will appear lower than actual.

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

Calorific values for imports of other bituminous coal and sub-bituminous coal are derived from inputs for main activity electricity generation starting in 2001.

Japan

Between 2004 and 2007, the IEA received a series of revisions from the Japanese administration. The first set of revisions received in 2004 increased the 1990 supply by 5% for coal, 2% for natural gas and 0.7% for oil compared to the previous data. This led to an increase of 2.5% in 1990 CO₂ emissions calculated using the Reference Approach while the Sectoral Approach remained fairly constant. For the 2006 edition, the IEA received revisions to the coal and oil data which had a significant impact on both the energy data and the CO₂ emissions. The most significant revisions occurred for coke oven coke, naphtha, blast furnace gas and petroleum coke. These revisions affected consumption rather than supply in the years concerned. As a result, the Sectoral Approach CO₂ emissions increased for all the years, however at different rates. For example, the Sectoral Approach CO₂ emissions for 1990 were 4.6% higher than those calculated for the 2005 edition, while the 2003 emissions were 1.1% higher than those of the previous edition.

Due to the impact these successive revisions have had on the final energy balance, as well as on CO₂ emissions, the IEA was in close contact with the Japanese administration to better understand the reasons behind these changes. These changes were mainly due to the Government of Japan's efforts to improve the input-output balances in the production of oil products and coal products in response to inquiries from the UN-FCCC secretariat. To cope with this issue, the Japanese administration established a working group in March 2004. The working group completed its work in April 2006. Many of its conclusions were incorporated in the 2006 edition, but some further revisions to the time series (especially in industry and *other*) were submitted for the 2007 edition.

In the 2014 edition, further supply-side revisions to data from 1990 through 2011 were received, primarily to imports of other bituminous coal in order to reconcile differences between submissions to the IEA and UNFCCC. In this edition, imports of other bituminous coal and coking coal from partner countries have been

estimated by the IEA for the period 1990-2014p based on customs data and total imports by coal type.

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

Starting in 1990, data are reported on a fiscal year basis (e.g. April 2013 to March 2014 for 2013).

From 1982, residential use of coke oven coke is included in commercial/public services sector. Other recovered gas data are available from 1982. 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 starting in 1990. From 1998, inputs of coke oven gas, blast furnace gas and other recovered gases into autoproducter electricity plants include the amount used to produce electricity with TRT technology (Top pressure Recovery Turbines) which was previously included in industry. The net calorific values for coal have been recalculated by the IEA secretariat based upon gross values submitted by Japan.

Coal injected in blast furnaces (PCI) is classified as coking coal in order to be consistent with Japanese trade statistics. With the 2008 edition, Japan has reclassified part of the coal inputs to coke ovens as inputs to blast furnaces.

Electricity and heat produced in CHP plants are not included in the CHP data series, but instead are reported as separate electricity or heat components. Data on heat produced for sale by autoproducter heat plants are not available. Inputs of manufactured gases to main activity electricity and heat plants are calculated based on outputs and using efficiencies of main activity producers from other fuels. For autoproducters, 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.

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

Other bituminous coal includes sub-bituminous coal.

Korea

Data are available from 1971.

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 permit.

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.

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, basic oxygen steel furnaces and other iron and steel processing plants. Blast furnace gas used for energy purposes in blast furnaces prior to 2007 are reported in the iron and steel industry. Coal tar production prior to 2007 is not available at this time. The national administration is working to improve reporting of coal-derived gases consumption.

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

Luxembourg

Steel production from blast furnaces ceased at the end of 1997. For the 2011 edition, the Luxembourgian administration revised the time series from 2000 for most coal and coal products. Time series for brown coal briquettes consumption were revised from 1990.

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

Mexico

For 2014p, for coking coal and sub-bituminous coal, trade data were estimated by the IEA secretariat based on partner data; consumption and implied stock changes in data were also estimated by the IEA secretariat.

The Mexican administration is currently undertaking major work on revisions of the time series back to 1990. These revisions could not be implemented in the 2015 edition. As a consequence, wholesale breaks

in time series appear between 2012 and 2013. Revisions to historical data are pending.

Data are available starting in 1971 and are partly estimated based on the publication *Balance Nacional - Energía*. The Mexican administration submitted data directly by questionnaire for the first time with 1992 data. As a result, some breaks in time series may occur between 1991 and 1992.

The time series for blast furnace gas and inputs of coke oven coke to blast furnaces start in 1991. Production and some consumption of coke oven gas are conservatively estimated by the IEA secretariat for 1990 to 2012 with agreement from the Mexican administration. Other bituminous coal is either reported as coking coal or sub-bituminous coal, depending upon usage, while anthracite and indigenously produced lignite prior to 2013 were included with sub-bituminous coal. Calorific values currently in use may not accurately reflect any of this. Significant statistical differences are currently included in stock changes for some products.

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

Netherlands

In the national statistical system of the Netherlands, use of fuel in manufacturing industries for CHP production is considered to be consumption in the transformation sector. 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.

For 1984 to 1986, production *from other sources* of other bituminous coal represents a stock of "smalls" washed for re-use. Prior to 1989, non-energy use is included with industry consumption.

Coal exports until 2014 primarily consist of re-exported volumes after blending. 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, so constitutes neither the country of origin or destination and these data have been removed where possible.

In the 2015 edition, a conscious decision was made by the Central Bureau of Statistics to move away from

accounting for transit, to aligning more closely with gross trade data, as can be seen with the very large increase in both imports and exports of other bituminous coal in 2013. Additionally, the majority of coking coal imports and exports are similarly included within other bituminous coal trade figures. For data prior to 2011, stock changes for primary coal types were estimated by the Dutch administration, based on trade and consumption 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.

New Zealand

Where data refer to the fiscal year (prior to 1994), April 2013 to March 2014 is shown as 2013. From 1994, data refer to calendar year.

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.

A reorganisation of government departments during 1987 leading to the cessation of certain data series has resulted in several breaks in time series between 1987 and 1988. Production of gas works gas ceased in 1988. Peat, although produced in New Zealand, is not used as a fuel. It is used for agricultural purposes only. In final consumption, some industry data are reported in non-specified industry for confidentiality reasons. Breaks in time series between 2008 and 2009 are due to changes in data collector and improvements in reporting scope. Prior to 2009, mining and quarrying is included in agriculture. Prior to 2010, construction is included with commercial/public services.

Sub-bituminous coal input 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 a 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.

A detailed breakdown of exports of coking coal by country of destination between 2001 and 2011, and for 2014p is estimated by the IEA, based on secondary sources and partner data.

Prior to 1978, the portion of sub-bituminous coal believed to be reported in hard coal was estimated by the secretariat and relocated to brown coal.

Norway

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

Other bituminous coal includes lignite.

Poland

Prior to 2010, own use in coal mines included workers' take home allowance which should be included in residential consumption. Other recovered gases which appear in the balances as output from blast furnaces include off-gases from zinc and copper smelting, ceramics kilns and steel production.

Portugal

Between 1997 and 2001, gas works gas was gradually replaced by natural gas in the commercial/public services 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.

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

Slovak Republic

Data are available starting in 1971.

There are some breaks in series between 1992 and 1993. A new survey system in 2001 leads to major breaks in series for most products. 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.

Slovenia

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.

Spain

Lignite mining was halted indefinitely in 2008. For 1999-2003, anthracite is included in other bituminous coal. Data associated with the coke oven coke transformation process are under review by Spain and revised data are pending. 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.

Sweden

Other bituminous coal production is coal recovered during the quarrying of clay. Autoproducer inputs to waste heat production that is sold are reported in the respective final consumption sectors and not in transformation. Some mixture of LNG with air to form a lower calorie product is reported as gas works gas production replacing traditional gas works gas manufacture.

Switzerland

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

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. Calorific values for anthracite, other bituminous coal and coke oven coke are taken from a shared default figure. Lignite calorific values are also default data.

Turkey

Production and consumption of sub-bituminous coal and lignite were estimated by the IEA for 2014p.

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. The privatisation of state owned coke ovens in recent years results in incomplete information on coke oven gas distribution. Data from 2008 are provided from the results of an improved questionnaire. Therefore, 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. Until 2012, some coal used in cement kilns is reported under construction instead of non-metallic minerals. Submitted 2012 data utilised the latest census data, causing significant breaks in time series between 2011 and 2012.

United Kingdom

Consumption shown for the commercial/public services includes consumption of some of non-specified *other*. Prior to 1994, the consumption of substitute natural gas is included with natural gas, while its

production is included with gas works gas. Oxygen steel furnace gas is reported with blast furnace gas rather than as other recovered gases.

United States

Due to technical difficulties, the Energy Information Administration was unable to provide some data for 2014p, which have been estimated by the IEA secretariat based on secondary sources and partial submissions.

Due to problems in reporting, there are numerous breaks in series for the US data, particularly in 1992, 1999, 2001 and 2002. Care should be taken when evaluating consumption by sector since inputs of fuel to autoproducers are included in final consumption for some years. No data are available for most energy products in the construction and mining and quarrying industries.

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. 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 of patent fuel are included in the exports of other bituminous coal for this period. Coal tar as a by-product of coke ovens is not currently reported.

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

2013 COUNTRY SPECIFIC AVERAGE NET CALORIFIC VALUES [kJ/kg]

	Anthracite	Coking coal	Other bituminous coal	Sub-bituminous coal	Lignite / Oil shale and oil sands ¹	Peat	Patent fuels	Coke oven coke	Coal tar	BKB / Peat products ²
Australia	26 700	28 500	25 700	18 478	9 800	-	-	27 000	35 714	20 995
Austria	26 700	29 296	27 632	21 853	9 700	-	31 000	29 000	41 800	19 300
Belgium	24 283	29 250	26 292	-	-	-	30 480	29 308	38 519	20 682
Canada	26 381	29 831	27 809	17 429	14 286	-	-	27 457	-	-
Chile	-	28 591	24 378	-	-	-	-	28 591	41 800	-
Czech Republic	28 953	28 772	26 064	-	12 296	-	-	28 478	37 770	20 830
Denmark	-	-	24 501	-	-	-	-	29 300	-	18 300
Estonia	-	-	27 156	-	8 900 ¹	10 388	-	28 500	-	15 200 ²
Finland	26 700	29 300	24 878	-	-	10 207	-	29 300	37 000	16 900 ²
France	-	30 500	26 000	-	17 000	-	32 000	28 000	38 000	-
Germany	29 862	29 000	26 275	-	9 070	-	31 400	28 650	-	21 208
Greece	-	-	27 825	-	5 222	-	-	-	-	-
Hungary	27 600	32 290	24 860	16 856	7 025	-	-	29 180	38 000	19 800
Iceland	28 050	-	-	-	-	-	-	26 670	-	-
Ireland	28 709	-	25 543	-	-	8 123	-	-	-	19 816
										18 548 ²
Israel	-	-	25 060	20 771	2 931 ¹	-	-	-	-	-
Italy	-	30 984	25 475	18 853	10 468	-	-	29 000	-	-
Japan	27 246	28 076	24 879	-	-	-	-	29 181	35 393	-
Korea	24 127	28 219	24 660	21 353	-	-	18 631	28 889	37 000	-
Luxembourg	26 700	-	24 400	-	-	-	-	28 500	-	22 200
Mexico	26 497	28 469	-	19 886	11 158	-	-	28 526	37 970	18 000
Netherlands	29 300	28 671	24 676	-	20 000	-	-	28 500	41 900	-
New Zealand	-	30 026	28 499	20 558	14 531	-	-	29 500	-	-
Norway	-	-	28 100	-	-	-	-	28 500	-	-
Poland	-	29 634	22 461	-	8 340	-	23 200	27 701	37 720	17 640
Portugal	29 412	-	24 911	-	-	-	-	29 567	-	-
Slovak Republic	27 337	29 490	25 005	-	11 012	-	28 000	28 064	33 490	17 000
Slovenia	-	-	26 175	19 531	11 613	-	-	29 937	-	-
Spain	30 673	29 000	22 657	13 321	-	-	-	26 795	38 519	-
Sweden	-	30 000	27 400	-	-	12 583	-	28 080	-	-
Switzerland	25 500	-	25 500	-	20 100	-	-	25 500	-	-
Turkey	-	28 041	27 095	22 700	10 173	-	-	29 747	-	-
United Kingdom	-	30 640	24 957	-	-	-	31 065	29 800	34 968	-
United States	28 745	29 655	25 727	18 926	13 834	-	-	28 865	-	-

Source: IEA/OECD Coal Statistics

Data are weighted averages of supply side statistics, on a net as received (NAR) basis.