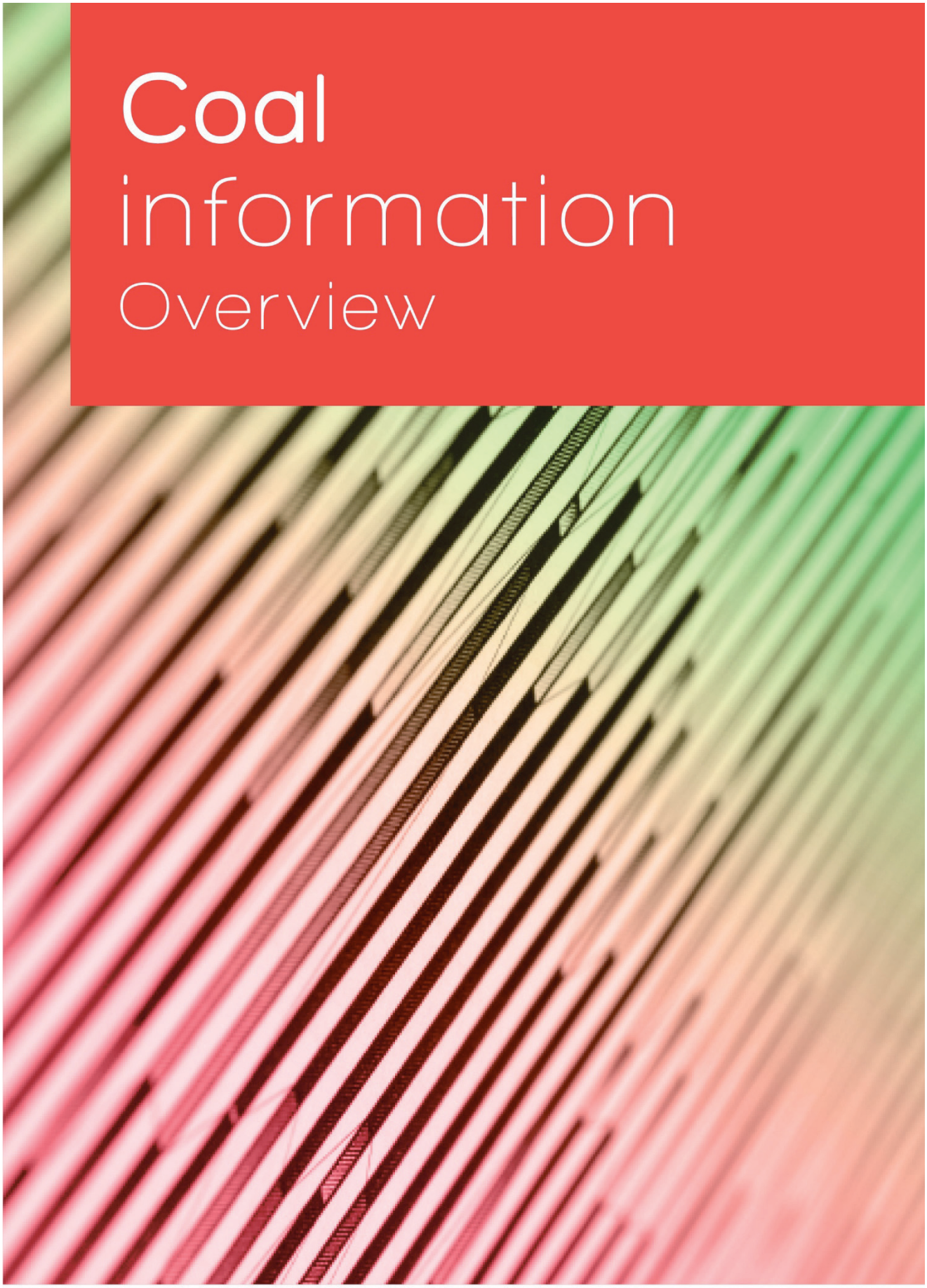
statistics

Coal information

Overview



IEA

2019

The following analysis is an overview from the publication *Coal Information 2019* which can be purchased from the IEA webstore. The data can be purchased at http://data.iea.org.

Please note that we strongly advise users to read definitions, detailed methodology and country specific notes which can be found at http://wds.iea.org/wds/pdf/coal_documentation.pdf

Please address your inquiries to coalaq@iea.org.

Please note that all IEA data are subject to the following Terms and Conditions found on the IEA's website: https://www.iea.org/t_c/

COAL OVERVIEW

Summary

World coal production increased in 2018 by 250 Mt, an increase of 3.3%, which was approximately the same as the growth rate in 2017. However, despite two years of significant growth production levels were still 162 Mt lower than peak production in 2013.

The growth was affected to a great extent by a 4.5% increase in coal production in the People's Republic of China. Conversely, coal consumption in the People's Republic of China only recorded an increase of 1.0 % in 2018.

After becoming the second largest consumer in 2015, India continued increasing its consumption in 2018 by 30.4 Mtce, a 5.5% increase compared to 2017 numbers. This growth was mainly driven by a higher coal demand for power generation. Conversely, for the fifth consecutive year, consumption in the United States decreased in 2018, reaching its lowest value since 1971, 453.4 Mtce. India and the United States experienced the largest increase and decrease of coal consumption respectively in 2018 (Figure 1).

In terms of trade, the increase in the international demand for US coal, driven by Asian and European countries, only partially offset the decline in coal consumption, contributing to lower coal production in 2018.

On a tonnage basis Indonesia (30.9%) and Australia (26.9%) remained the world's largest coal exporters in 2018, with Indonesian coal exports growing rapidly by 11.5% from the previous year and Australian exports increasing again after a decline in 2017.

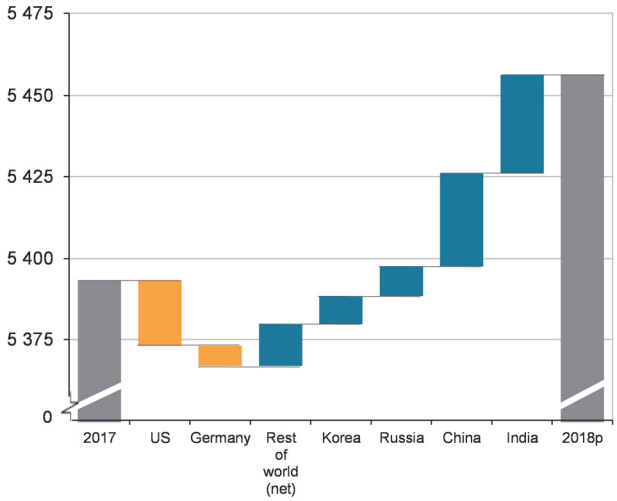
The rise in imports to the People's Republic of China benefited Indonesia, allowing for the recovery of its exports that had fallen in 2015. Indeed, exports to the People's Republic of China represented 30.0% of the total Indonesian exports in 2018.

Furthermore, the Russian Federation hit record exports exceeding 2017 levels by 10.6% while the United States coal exports grew by 19.3%.

Additionally, the major increases in coking coal exports took place in the United States (+5.7 Mt), and in the Russian Federation, with the former exceeding 2017 levels by 3.7 Mt.

Electricity generation from coal-fired power plants in OECD countries fell by 4.6% to 2 862.7 TWh continuing with the efforts for the decarbonisation of the power sector, while total gross electricity production increased by 1.2% to 11 109 TWh.

Figure 1: World coal consumption variation 2017-2018 (Mtce)



Production

Total world coal production

In 2014 world coal production declined for the first time this century. This decrease continued through 2015 and 2016. However, the trend was reversed in 2017. Coal production further increased in 2018 by 3.3%, an additional 250 Mt, driven by increases in steam and coking coal production.

This increased level, however, was still 162Mt (2.1%) lower than the peak production in 2013.

Table 1: Total world coal production[1] (Mt)

	2016	2017	2018p
Steam coal	5458.0	5726.2	5976.8
Coking coal	1033.0	1013.0	1033.3
Lignite	819.7	823.7	803.2
Total[2] coal	**7310.7**	**7562.9**	**7813.3**
Peat	9.9	10.6	..[3]
Oil Shale/sands	17.5	22.1	..[3]

1. Production includes recovered slurries and similar sources.
2. Total coal comprises steam coal, coking coal and lignite, so excludes peat, and oil shale and oil sands even though they are shown here for completeness.
3. Peat and oil shale and oil sands data are not currently compiled on a provisional basis for non-OECD countries.

The People's Republic of China remained the world's leading coal producer, as it has been since 1985, with 3 550.1 Mt of total coal produced, 152.9 Mt (4.5%) higher than in 2017.

After a brief increase in 2017, production in the United States decreased to 685.4 Mt in 2018, 2.5% lower. Since 2008, production in the United States has fallen by more than one third.

Table 2: Major coal producers[1] (Mt)

	2016	2017	2018p
PR of China	3268.2	3397.2	3550.1
India	703.1	725.5	770.9
United States	660.8	702.7	685.4
Indonesia	463.5	494.7	548.6
Australia	500.3	499.5	483.1
Russian Federation	366.3	387.7	419.8
South Africa	255.3	256.8	258.7
Germany	175.6	175.1	169.0
Poland	131.0	127.1	122.4
Kazakhstan	103.1	112.8	113.7
Other	*683.4*	*683.8*	*691.6*
World	**7310.7**	**7562.9**	**7813.3**

1. Production includes recovered slurries and production from other sources.
Data for Australia and India are provided on a fiscal basis.

The group of the ten countries currently producing more than 100 Mt/y has remained unchanged since 2008 when Kazakhstan exceeded this level. However, there is wide variation. For example, the increase in the People's Republic of China was more than the entire 2018 production of Kazakhstan, the world's 9th largest coal exporter.

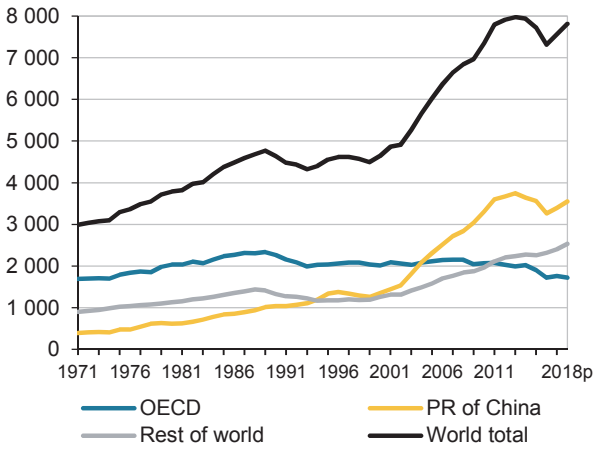
Indonesia, one of the world's leading steam coal producers and exporters, increased production in 2018 by 53.1 Mt. India also saw a significant year-on-year increase in production of 45.4 Mt.

The Russian Federation and Turkey occupied the 4th and 5th place of the largest increases in 2018 with an increase of 32.1 Mt, and 13.7 Mt respectively.

While the composition of the group of top ten producers remained unchanged, the performance of the OECD and non-OECD members differed markedly. While all of the OECD countries, namely the United States, Australia, Germany and Poland, posted decreases, all the non-OECD countries showed increases in coal production.

By way of comparison, since 2000 coal production in the People's Republic of China has increased by 162.0%, despite falling by 5.3% since 2013. In comparison, the OECD total coal production declined by 14.7% for the same period, with a 13.5% fall since 2013. The fall in 2016, 185.2Mt, was the largest annual decline.

Figure 2: World total coal production (Mt)



Historically, OECD coal production as a percentage of global production has fallen from 56.6% in 1971 to 22.0% in 2018.

Steam coal production

In 1978, the OECD accounted for 42.8% of the world steam coal production and this figure remained above 37.0% until 2000. However, since then its share has generally declined, as non-OECD countries increased

their steam coal production, predominantly led by the expansion of the Chinese coal industry since 2001 and a fall in OECD production. In 2018, the OECD's share (15.3%) was roughly one third of its 1978 share, and its production decreased to 914.6 Mt, the lowest level since 1971.

Figure 3: Steam coal production (Mt)

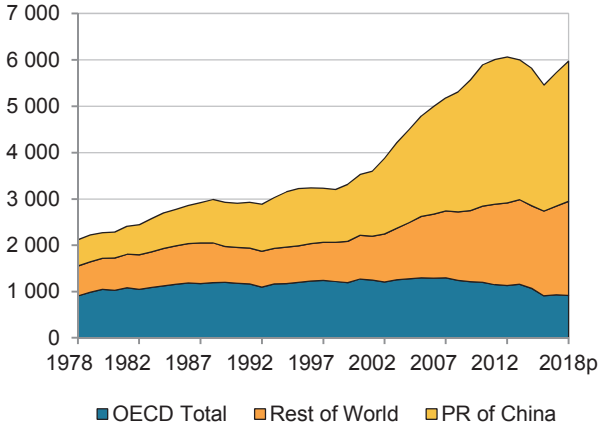
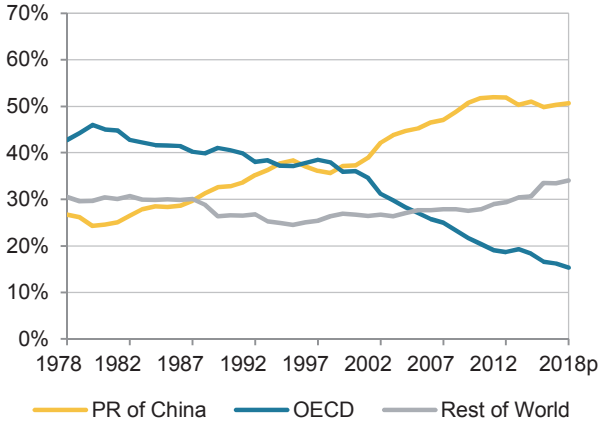


Figure 4: Shares in world steam coal production (%)



Coking coal production

2015 witnessed the first annual decrease in world coking coal production since 2002. This trend continued until 2017 falling to 1 013.0 Mt but was reversed in 2018, with world coking coal production recovering to 1 033.3 Mt.

Australia, the world's second largest producer of coking coal after the People's Republic of China, saw a significant decrease of 5.6% in 2018, with 179.4 Mt produced. This comes after peaking in 2015 at 191.1 Mt and producing at similar levels in 2017 (190.0 Mt). The decrease is related to stocks built up during 2017, attributable largely to logistical challenges posed by weather conditions.

India showed signs of recovering coking coal production in 2018 (+13.2 Mt) after a sharp fall in 2017. Major increases occurred in the Russian Federation (+6.8 Mt) and the United States (+6.5 Mt), which were mostly the result of a growth in production intended for export.

However, by far the most prominent story is production and consumption by the People's Republic of China. Chinese production increased by 322.0% since 2000 to peak at 619.8 Mt in 2014 but subsequently dropped to 515.1 Mt in 2017, before recovering to 523.7 Mt in 2018. The People's Republic of China increased its share of world production from 26.0% to 50.6% over the same period (2000-2018).

Lignite[1] production

Worldwide, lignite production decreased in 2018 by 2.5% to 803.2 Mt. This is 33.7% lower than the peak of 1 210.9 Mt in 1989 and a historical low since the start of the series in 1978.

Table 3: Major lignite[1] producers (Mt)

	2016	2017	2018p
Germany	171.5	171.3	166.3
Turkey	70.2	71.5	85.2
Russian Federation	73.5	74.9	81.4
Poland	60.2	61.2	58.6
United States	66.3	63.6	51.7
Australia	61.5	56.7	46.0
India	45.2	46.3	45.3
Czech Republic	38.5	39.3	39.5
Serbia	38.4	39.8	37.6
Greece	32.6	37.7	36.1
Other	*161.6*	*161.5*	*155.5*
World	**819.7**	**823.7**	**803.2**

1. Lignite does not include oil shale and oil sands.

Data for Australia and India are provided on a fiscal basis.

OECD lignite production decreased by 3.8%, from 524.5 Mt in 2017 to 504.5 Mt. The decreases were led by the United States (-11.9 Mt), Australia (-10.8 Mt) and Germany (-5.0 Mt).

On the other hand, Turkey increased its lignite production to 85.2 Mt outpacing the Russian Federation,

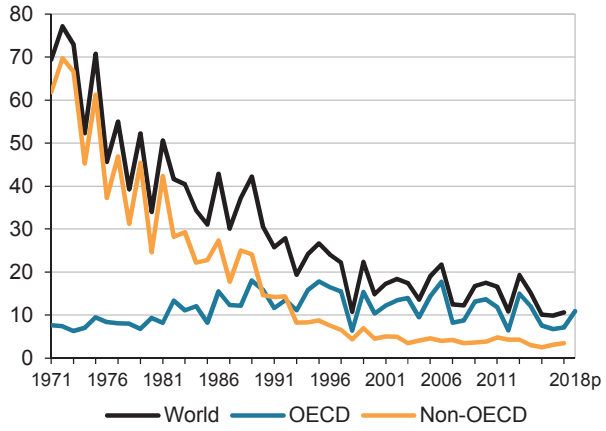
1. Production and consumption of lignite are reported as sub-bituminous coal in Indonesia, and under other bituminous coal (along with sub-bituminous coal) in the People's Republic of China. Both reclassifications significantly affect lignite statistics, as Indonesia has extensive lignite resources and reserves and markets for coals of lower quality exist, while the People's Republic of China is most likely the second largest producer and consumer of lignite globally.

which itself posted a considerable increase of 6.5 Mt. Other European countries like Poland, Greece and Serbia decreased their production or showed modest increases (Czech Republic).

Peat production

Productions (or harvests) can be highly variable and are weather dependent for both access to the peat bogs and for outdoor drying. Disruptions in 2012 for Ireland and Finland were prominent, with Ireland's production of 1.5 Mt being the lowest since IEA records began in 1960, while peat production in Finland in 1998 dropped to 1.7 Mt from 10.4 Mt in 1997, before returning to 8.1 Mt in 1999.

Figure 5: World peat production (Mt)



Despite interannual oscillations, world peat production has followed a relatively steady decline from 69.5 Mt in 1971 to 30.5 Mt in 1990, 14.9 Mt in 2000, and 10.6 Mt in 2017 as non-OECD production fell from 89.0% of global production in 1971 to 33.0% in 2017.

Trade

World coal trade

Export trade of all types of coal in the world increased by 4.2% in 2018, from a level of 1 363.4 Mt in 2017; steam coal exports increased by 42.2 Mt (4.1%) and coking coal exports increased by 12.2 Mt (3.8%). The 2018 level is 33.2% above 2010 level, and total exports have more than doubled (131.0%) since 2000.

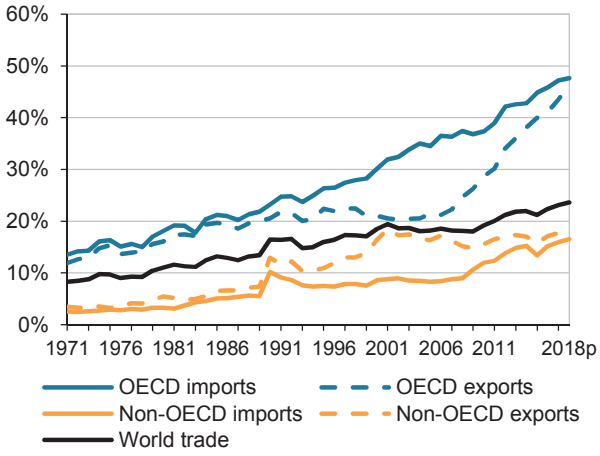
Overall, global trade for steam and coking coal reached 1 228.7 Mtce in 2018, 23.6% of coal consumption on an energy basis.

Table 4: World coal trade (Mt)

	2016	2017	2018p
Steam coal exports	969.5	1025.2	1067.4
Coking coal exports	313.2	324.5	336.8
Lignite exports	10.0	13.7	15.9
Steam coal imports	1030.9	1070.1	1118.9
Coking coal imports	277.0	299.2	299.7
Lignite imports	5.8	5.6	5.4
Total exports	1292.7	1363.4	1420.1
Total imports	1313.6	1374.8	1424.0
Balancing item	*21.0*	*11.4*	*3.9*

Note: The balancing item is the difference between total coal imports and total coal exports. This is primarily due to the different coal classification methodologies used by the importing and exporting countries, which does not hold on a global basis. It also occurs because of coal in-transit, coal that is unaccounted for, and reporting discrepancies by importing and exporting countries.

Figure 6: Steam and coking coal trade as a percentage of consumption



Global trade has been growing faster than global consumption on a relatively consistent basis, as evidenced in the chart above which shows regional trade as a portion of consumption on an energy basis. However in 2015, world trade decreased slightly at 21.2% of consumption, but increased since to 23.6%, the highest level.

Exports

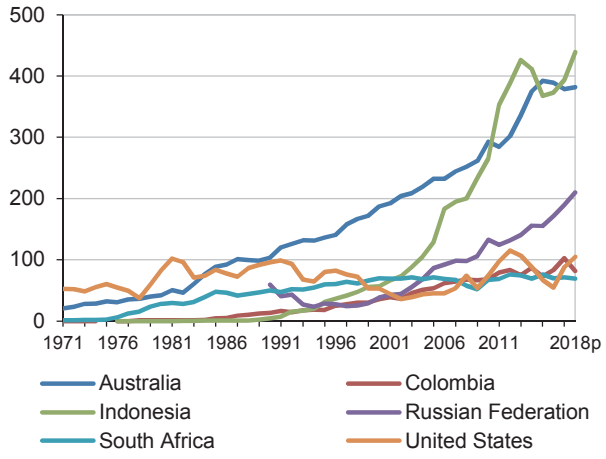
Indonesia and Australia remained the world's largest coal exporters in 2018, with 30.9% and 26.9% of exports on a tonnage basis. After reclaiming the top exporter's spot in 2017, Indonesia further increased the gap in 2018, exporting 57 Mt more than Australia. Australian coal exports increased moderately by 0.8%.

The Russian Federation hit record exports in 2018, exceeding 2017 levels by 10.6%. Despite its increase in domestic consumption, the Russian Federation, the

third largest exporter, contributed with 209.9 Mt, representing a share of 14.8%.

The combination of the ten largest exporting countries shipped 97.8% of global coal exports during 2018.

Figure 7: Total coal exports by major exporters (Mt)



After the decline in 2016 of United States exports, by 52.5% compared to 2012 levels, the United States exported 104.9 Mt of coal in 2018, a 19.3% increase from the 2017 level.

Table 5: Major coal exporters (Mt)

	2016	2017	2018p
Indonesia	372.9	393.8	439.0
Australia	389.3	378.9	381.9
Russian Federation	171.1	189.7	209.9
United States	54.7	88.0	104.9
Colombia	83.3	102.7	81.9
South Africa	69.9	71.1	69.3
Mongolia	24.1	29.0	34.0
Canada	30.3	31.1	29.9
Kazakhstan	26.0	29.2	25.8
Mozambique	9.2	11.8	11.6
Other	*61.7*	*38.2*	*31.5*
OECD Americas	*85.9*	*119.9*	*135.2*
OECD Asia Oceania	*390.5*	*380.1*	*383.2*
OECD Europe	*16.1*	*12.0*	*9.3*
OECD Total	***492.5***	***512.0***	***527.8***
Africa + Mid. East	*79.6*	*83.2*	*81.8*
Other Asia Oceania	*438.1*	*443.8*	*489.7*
Oth. Europe + Eurasia	*198.4*	*220.7*	*237.8*
Other Americas	*84.1*	*103.6*	*83.0*
Non-OECD Total	***800.1***	***851.4***	***892.3***
World	**1292.7**	**1363.4**	**1420.1**

Data for Australia, India and Japan are provided on a fiscal basis.

Imports

Total world coal imports were 1 424.0 Mt in 2018, a 3.6% increase from 2017 numbers. The main contributors to this rise were the People's Republic of China with imports increasing by 3.9% in 2017, to 295.4 Mt, and India with a 14.7% rise in imports to reach 240.2 Mt.

Traditionally an exporter, Viet Nam turned into an importer in 2005. Imports by Viet Nam have been growing since then to reach 22.4 Mt in 2018. This is 7.9 Mt up compared to 2017. Another country that experienced an increase in 2018 was Poland (+51%). In contrast to these increases, the most notably decline in 2018 occurred in Germany (-6.1 Mt).

Figure 8: Total coal imports by major importers (Mt)

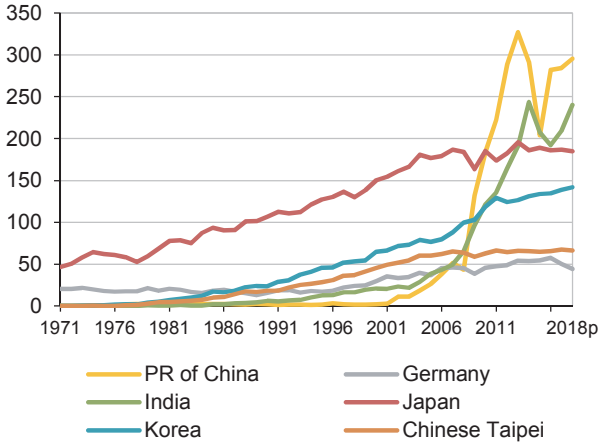


Table 6: Major coal importers (Mt)

	2016	2017	2018p
PR of China	282.0	284.3	295.4
India	192.1	209.4	240.2
Japan	185.9	187.0	185.1
Korea	134.5	138.9	142.0
Chinese Taipei	65.6	67.6	66.5
Germany	57.8	50.5	44.4
Turkey	36.2	38.3	38.3
Malaysia	27.2	30.4	33.0
Russian Federation	24.0	29.0	28.2
Thailand	22.6	23.5	24.9
Other	*277.4*	*247.6*	*209.3*
OECD Americas	*35.1*	*36.5*	*32.7*
OECD Asia Oceania	*329.6*	*334.9*	*335.5*
OECD Europe	*205.8*	*211.7*	*203.4*
OECD Total	***570.6***	***583.1***	***571.6***
Africa + Mid. East	*15.5*	*16.3*	*16.8*
Other Asia Oceania	*655.2*	*692.8*	*749.3*
Oth. Europe + Eurasia	*47.3*	*56.5*	*59.2*
Other Americas	*25.1*	*26.1*	*27.0*
Non-OECD Total	***743.1***	***791.7***	***852.4***
World	**1313.6**	**1374.8**	**1424.0**

Data for India and Japan are provided on a fiscal basis.

Looking at Asia Oceania (including China), their total imports increased to 1 084.8 Mt (76.2% of all imports) from 1 027.7 Mt, or 74.7% in 2017, with the top five individual importers being from this area, as has been the case since 2009. Although China is

responsible for the most significant proportion, Japan, Chinese Taipei and Korea imported significant quantities of steam coal for electricity generation and coking coal for steel production in 2018.

The next five largest importing countries were from Europe or Eurasia. However their combined 2018 imports of 168.9 Mt, was less than the Japan coal imports alone. An important change was the departure of the Netherlands from the major coal importers following historical revisions of trade to remove transit quantities. As a result total coal imports to the Netherlands amounted to 14.9 Mt in 2017 versus the 40.3 Mt that had been reported in the previous reporting cycle for the same year.

Steam coal trade

In 2018, steam coal imports in the Asia-Oceania market increased by 58.5 Mt to 872.1Mt, 252.2 Mt of which was to OECD countries. Asia-Oceania imports represented 77.9% of total world steam coal trade in 2018, up from 75.8% in the previous year.

The People's Republic of China's steam coal imports increased by 7.6% to 230.7 Mt in 2018, the largest steam coal importer followed by India, which increased by 19.5% to 188.4 Mt. Other major importers in the region were Japan (138.3 Mt – down 0.9%), Korea (105.5 Mt – up 2.4%) and Chinese Taipei (59.5 Mt – down 2.5%).

Steam coal imports in the Europe/Eurasian market decreased to 191.3 Mt in 2018. This market now represents 17.1% of total world steam coal trade, compared to 38.4% in 2000 and 64.9% in 1991, which included new international trade between members of the Former Soviet Union.

Within the region, the major Europe/Eurasian importers were Germany (32 Mt, down 5.6Mt) the major drop in 2018, Turkey (31.5 Mt) with a decrease of 4.5% after a sustained rise since 2013 and the Russian Federation (25.3 Mt – down 1.6%).

Coking coal trade

Total world coking coal exports increased by 3.8% to 336.8 Mt in 2018. Australia remained by far the largest exporter of coking coal at 179.2 Mt, accounting for 53.2% of coking coal exports, down from 54.6% in 2017.

The United States remained the second largest coking coal exporter with a volume of 55.8 Mt, up by 11.3% from 50.1 Mt in 2017; while third-ranked Canada remained relatively flat exporting 28.9 Mt of coking coal. Exports from Mongolia continued increasing in 2018 by 4.7%, to 25.7 Mt from 24.5 Mt in the previous year. The Russian Federation increased its exports by 16.1% reaching a volume of 26.4 Mt.

The combined total of the five largest exporters thus accounted for 93.9% of the global coking coal exports in 2018 up from 93.5% in 2017.

Table 7: Major coking coal exporters (Mt)

	2016	2017	2018p
Australia	188.0	177.2	179.2
United States	37.1	50.1	55.8
Canada	28.0	28.9	28.9
Russian Federation	21.7	22.8	26.4
Mongolia	20.4	24.5	25.7
Other	*17.9*	*21.0*	*20.8*
World	**313.2**	**324.5**	**336.8**

Data for Australia are provided on a fiscal basis.

Consumption

Total coal consumption[2]

In 2018, total global coal consumption in energy terms increased by 1.2% or 66.0 Mtce, as OECD consumption decreased by 39.6 Mtce (-3.2%) and non-OECD countries increased consumption by 105.5 Mtce (2.5%). The new OECD coal consumption level of 1 208.8 Mtce was the lowest level since 1976 and was 27.4% lower than the maximum coal consumption by OECD countries of 1 664.8 Mtce in 2007.

Consumption in the People's Republic of China rose by 1.0% in 2018, or 28.4 Mtce to 2 813.7 Mtce, continuing the trend from the previous year after consecutive drops in the 2013-2016 span.

As the second largest consumer and after having overtaken the United States in 2015, India continued increasing its consumption in 2018. The growth was mainly driven by the higher use of steam coal but coking coal consumption also increased, with a combined total of nearly 5.5%, or 30.4 Mtce. Conversely, for the fifth consecutive year, consumption in the United States decreased in 2018, reaching its minimum value, 453.4 Mtce, since 1978.

2. Total coal refers to the sum of anthracite, other bituminous coal, coking coal, sub-bituminous coal and lignite, converted to a common energy unit, million tonnes of coal equivalent (Mtce). Consumption data for the provisional year (2018p) for non-OECD countries, unless supplied, are estimated from production and trade data obtained from partner countries and other secondary sources. Stock changes are usually not accounted for.

Figure 9: World coal consumption (Mtce)

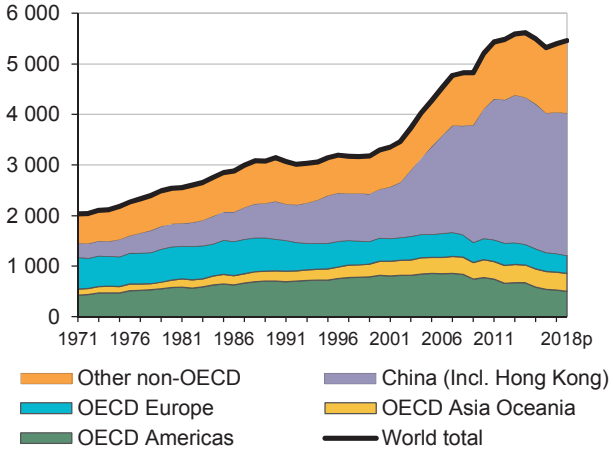
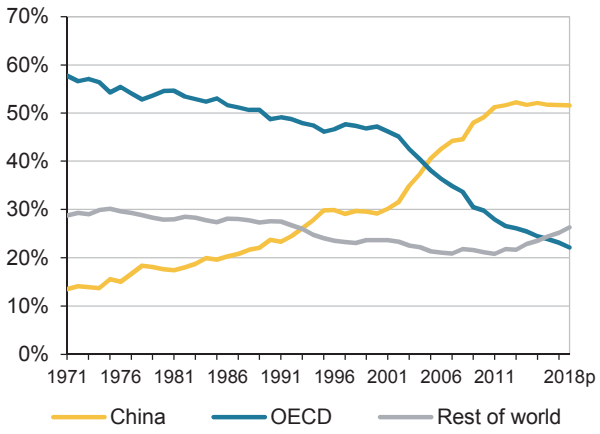


Figure 10: Shares in world coal consumption (%)



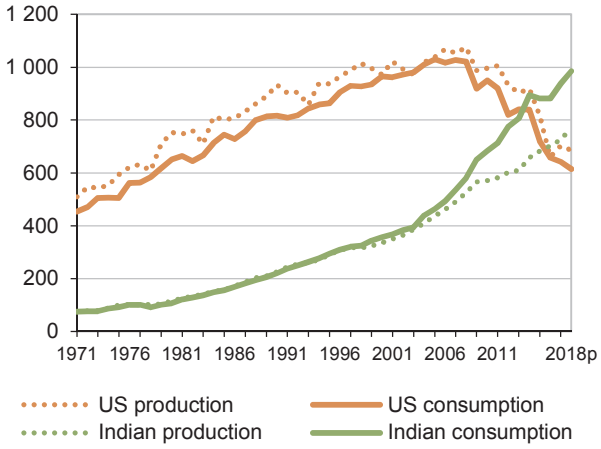
India and the United States experienced the major increase and decrease of coal consumption respectively in 2018.

Looking at the OECD, the United States, Germany, Spain, Canada and The United Kingdom together witnessed the biggest absolute decreases with a combined decline of 35.8 Mtce. Consumption changes in these countries more than compensated for the growth of coal consumption in Turkey and Korea which reached their historical highs since 1971, 120.3 Mtce (+2.2%) and 61.2 Mtce (+8.0%) respectively.

The OECD total consumption decreased by 3.2% with the other 29 countries in the OECD, together decreasing consumption by 10.9 Mtce.

Domestic coal consumption in Indonesia increased by 9.6% in 2018 to reach 75.8 Mtce. The country has kept a constant growth pace during the last seven years, resulting in almost doubling of its coal consumption since 2011 (+97.1%).

Figure 11: India vs. US coal consumption (Mt)



Steam coal consumption

World steam coal consumption was up 1.6% in 2018, increasing by 95.9 Mt. Steam coal consumption in the OECD decreased by 33.6 Mt to 1 112 Mt, including the decrease of 16.1 Mt in the United States and 5.4 Mt in Spain.

Table 8: Major steam coal[1] consumers (Mt)

	2016	2017	2018p
PR of China	3067.9	3125.4	3157.8
India	740.2	799.5	842.3
United States	576.1	561.5	545.4
South Africa	182.7	183.0	186.1
Japan	138.9	140.9	139.3
Indonesia	90.6	100.9	107.6
Korea	99.2	104.5	106.9
Russian Federation	85.4	84.5	93.4
Kazakhstan	61.2	66.8	74.6
Poland	61.5	60.7	62.6
Viet Nam	51.3	51.1	61.4
Chinese Taipei	58.8	60.0	60.7
Other	*492.8*	*500.9*	*497.5*
World	**5706.6**	**5839.7**	**5935.6**

1. Steam coal comprises anthracite, other bituminous coal and sub-bituminous for all countries.

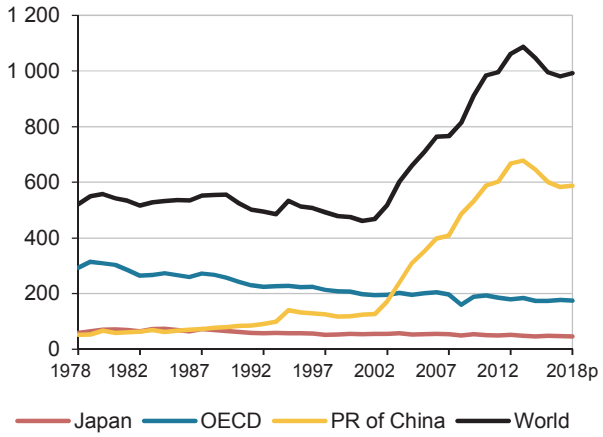
Data for Australia, India and Japan are provided on a fiscal basis.

Coking coal consumption

Global coking coal consumption increased by 10.7 Mt or 1.1% in 2018 to 992.1 Mt, an increase of 530.7 Mt or 115.1% since 2001. Consumption within the People's Republic of China accounts for 59.2% of global coking coal consumption.

Coking coal consumption in the OECD decreased by 1.2% to 174.7 Mt in 2018, remaining 11.3% below the pre-economic crisis level in 2008.

Figure 12: World coking coal consumption (Mt)



Lignite[3] consumption

2018 global lignite consumption was 793.5 Mt, decreasing by 23.4 Mt or 2.9% from 2017.

Germany remained the largest producer and consumer of lignite in 2018, using 166.3 Mt, ahead of Turkey (84.9Mt) , which became the second largest consumer of lignite in 2017, and the Russian Federation (73.8 Mt). United States consumption decreased by 18.7% to become the fifth largest consumer. Australia saw a lignite consumption fall of 10.8 Mt revealing the full effect of the closure of the coal fired Hazelwood power plant in early 2017.

Table 9: Major lignite consumers (Mt)

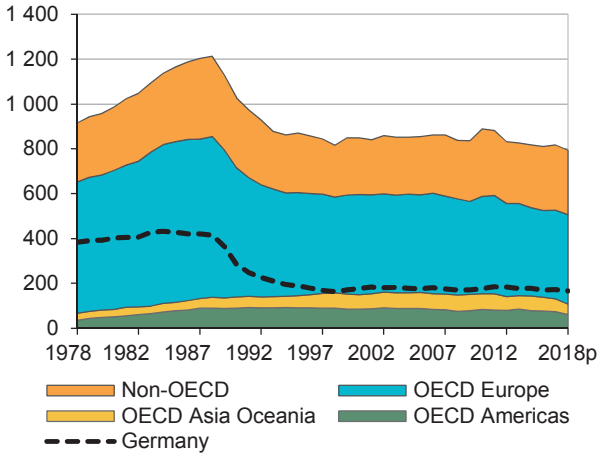
	2016	2017	2018p
Germany	171.0	171.2	166.3
Turkey	68.0	71.7	84.9
Russian Federation	69.4	70.2	73.8
Poland	60.4	61.2	58.5
United States	67.2	64.4	52.4
Australia	61.5	56.7	46.0
India	43.1	45.9	45.3
Czech Republic	38.2	38.7	39.0
Serbia	39.0	40.2	38.0
Greece	34.2	38.1	36.3
Germany	*158.7*	*158.8*	*153.4*
World	**810.8**	**816.9**	**793.5**

Data for Australia and India are provided on a fiscal basis.

3. Production and consumption of lignite are reported as sub-bituminous coal in Indonesia, and under other bituminous coal (along with sub-bituminous coal) in the People's Republic of China. Both reclassifications significantly affect lignite statistics, as Indonesia has extensive lignite resources and reserves and markets for coals of lower quality exist, while the People's Republic of China is most likely the second largest producer and consumer of lignite globally.

Lignite consumption in OECD countries fell to its lowest level since 1978 after a new decrease of 3.8% from 2017 to 506.1 Mt.

Figure 13: World lignite consumption (Mt)



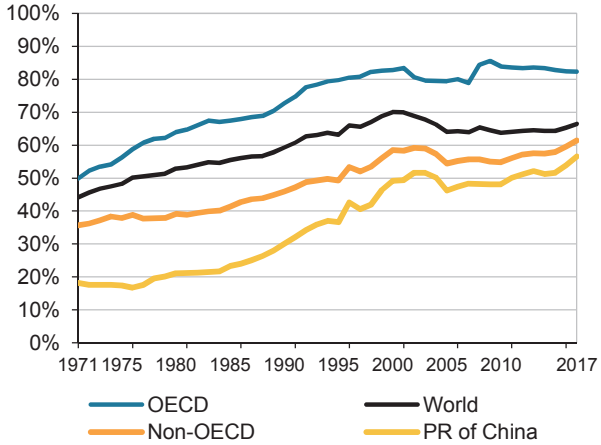
Note: Areas are cumulative. Lines are individual.

Uses of coal

Coal continues to be primarily used for the generation of electricity and commercial heat, with 66.5% of primary coal being used for this purpose globally in 2017, and 82.3% in OECD countries.

In OECD countries in 2018, the share of electricity and heat produced from primary coal as a fuel fell to a new low of 25.2%, down from 26.7% in 2017 and 44.4% in 1985.

Figure 14: Percentage of primary coal used for electricity and commercial heat production

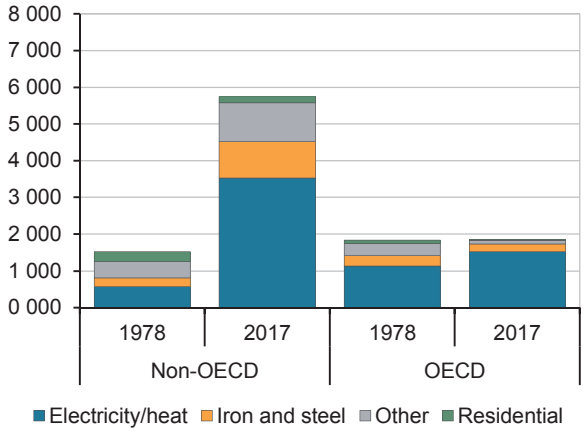


Coal comprises steam coal, coking coal and lignite. Power and commercial heat produced from derived products is not shown here, and instead counts as consumption in transformation to manufacture the secondary fuel.

Looking at the three OECD regions, we see differing pathways, with OECD Europe declining to 21.0% in 2018 from 49.1% in 1971, while OECD Americas dropped from 41.0% in 1971 to 24.4% in 2018. Meanwhile in OECD Asia Oceania, generation from coal has risen from 18.0% in 1971 to 38.0% in 2018.

To date, despite the wide variety of factors influencing positive and negative growth in this regard, the global share of heat and power generated from coal has remained around 40% over the last 40 years as generation outputs have grown from 22.3 Exajoules (EJ) in 1971 to 106.6 EJ in 2017.

Figure 15: Primary coal's OECD and Non-OECD breakdown by broad activity (Mt)



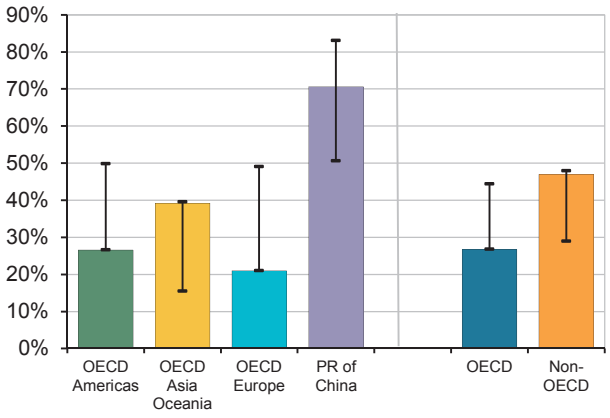
Residential also contains data for the Commercial and public services sector. Iron and steel includes coke oven coke manufacture and PCI/GCI. In addition to other conventional consumption, Other includes non-specified industry, which may contain iron and steel consumption, and also non-energy uses.

In the non-OECD countries, electricity production from all coal sources contributed 47.0% of total gross electricity production in 2017, with steam coal as the leading fuel of electricity.

Gross electricity production in 2018 in the OECD (excluding generation from pumped storage plants) reached 11 109.4 TWh, an increase of 1.15% compared to 2017, while the electricity generated from coal-fired plants in OECD countries fell by 4.65% to 2 862.7 TWh due to the efforts for the decarbonisation of the power sector.

Heat produced in combined heat and power (CHP) or heat only plants remained almost flat at 3 232 PJ during this period, up 0.3% from 2017, while the share of heat produced from coal-fired plants in OECD countries declined to 671.4 PJ from 695.6 PJ in 2017.

Figure 16: Share of electricity and heat produced from primary coal in 2017 (%)



Each vertical line illustrates the historical highest-lowest value (top-bottom). The round point corresponds to 2016 level.

Assuming that there were no changes in efficiency in 2018 relative to the previous year, coal inputs in OECD countries for electricity and heat generation fell to 994.1 Mtce – a potential decrease of 45.2 Mtce (4.6 %).

Coal is also essential for the iron and steel industry and its use has increased substantially during the last 40 years, driven primarily by increased production in China. The share of non-OECD countries is 82.6% of the total global iron and steel consumption, or 988 Mt.