
ANNUAL REPORT

2019

FACTS AND TRENDS 2018/19

**Verein der
Kohlenimporteure**

Import Coal Market at a Glance

		2016	2017	2018 ¹⁾
World				
Hard Coal Production	Mill. t	6.728	6.867	7.058
World Hard Coal Trade	Mill. t	1.226	1.284	1.344
of which hard coal seaborne trade	Mill. t	1.116	1.157	1.210
Hard Coal Domestic Trade	Mill. t	110	127	134
Hard Coal Coke Production	Mill. t	649	633	646
Hard Coal Coke World Trade	Mill. t	25	26	28
European Union (28)				
Hard Coal Production	Mill. TCE	87	81	76
Hard Coal Imports (incl. Domestic Trade)	Mill. t	167	172	166
Hard Coal Coke Imports	Mill. t	8	9	9
Germany				
Hard Coal Use	Mill. TCE	56,7	50,0	44,4
Hard Coal Volume	Mill. TCE	56,5	51,6	46,7
of which import coal use	Mill. TCE	52,6	47,9	44,0
of which domestic hard coal production	Mill. TCE	3,9	3,7	2,7
Imports of Hard Coal and Hard Coal Coke	Mill. t	57,2	51,4	46,7
of which steam coal ²⁾	Mill. t	42,9	36,2	32,1
of which coking coal	Mill. t	12,3	12,9	12,4
of which hard coal coke	Mill. t	2,0	2,3	2,3
Prices				
Steam Coal Marker Price CIF NWE	US\$/TCE	69	98	108
Border-crossing Price Steam Coal	€/TCE	67	92	95
CO ₂ emission rights (EEX EUA settlement price)	EUR/EUA	5,3	5,8	15,8
Exchange rate (US\$1 = €....)	EUR/US\$	0,9	0,9	0,9

¹⁾ Some figures provisional ²⁾ Including anthracite and briquettes

AN INTRODUCTORY WORD

2019 will be remembered in the history of German energy policy as the year in which coal was phased out. Although only a commission has made recommendations so far, there is little doubt that the German Bundestag will implement these recommendations in principle by means of a law. As a representative of coal interests, who was not involved in the work of a commission that primarily dealt with the problems of lignite mining areas, one does not necessarily have to accept their recommendations. The Commission spent very little time on the specific issues of hard coal. However, there are strong arguments in favour of an orderly exit from coal rather than a disorderly exit. Nobody knows what conclusions another federal government would reach. And the disorderly coal phase-out currently taking place, at least for hard coal, is also unacceptable. Hard coal-fired power plants have been shut down in recent years without it being clear who is to take on the role of system stabilisation within the framework of the energy turnaround. Natural gas could not assume this role.

It is true that the recommendations of the Coal Commission also contain incentives for the construction of gas-fired power plants. At least at this point, however, the Commission has adopted dubious recommendations from Commission experts. For cost reasons, the highly efficient combined cycle power plants are hardly in operation as purely electricity-operated plants, and the CHP plants are already supported within the framework of the CHP promotion. So, there is no need for further action here. This is also not the case because these power plants can only play a limited role in system stabilisation within the framework of heat provision. Only open-cycle gas turbines with significantly lower efficiency and gas engines would be suitable for this purpose. With regard to their emissions, however, such recommendations are more than questionable. In addition, this would unnecessarily increase the cost of energy system transformation. Modern hard coal-fired power plants are excellently suited for partial load and, in terms of emissions, are even more favourable than open gas turbines. Above all, however, they are available without financial support or further investment. The construction of a new gas-fired power plant only makes sense where, for grid-related reasons, power plant capacity is required that can no longer be provided by existing coal-fired power plants. The Coal Importers Association therefore appeals to the members of the German Bundestag to use the capabilities of modern and flexible coal-fired power plants to stabilize the system and thus integrate renewable energies within the framework of the energy turnaround.

Hard coal is available worldwide at low cost. World trade in hard coal increased by 4.7 % in 2018.

Berlin, July 2019



Dr Wolfgang Cieslik

- CEO -



Dr Franz-Josef Wodopia, Professor

- Managing Director -

Table of Contents

GERMANY 4

General Conditions of the Overall Economy	4
Situation for Energy Business in Germany	6
Electric Power Generation	8
Collective Energy Act	9
Status of the Expansion Pursuant to EnLAG and BBPIG .	9
Act to Expedite the Expansion of the Power Grid (NABEG).....	9
ECJ Decision Regarding the EEG	10
Climate Policy Targets of the German Government and European Effort Sharing.....	10
Development of Greenhouse Gas Emissions	11
Emission Reduction in the Energy Sector	12
Federal Climate Protection Act (KSG)	12
Recommendations from the Commission Growth, Structural Change and Employment.....	14
Hard Coal Market	16
Development of Energy Prices	19
Steel Production	20

EUROPEAN UNION..... 22

Economic Growth in Europe	22
Energy Consumption.....	23
Hard Coal Market	23
Emissions Trading	25
LCP BREF	26
Clean Energy Package	26
Climate Strategy 2050.....	26

WORLD ECONOMIC SITUATION 28

World Production and World Trade	28
World Energy Consumption	29
World Climate Policy	30
World Hard Coal Market.....	33
World Market for Steam Coal.....	35
Steam Coal Prices	35
World Crude Steel and World Pig Iron Production.....	36
Coking Coal Market.....	37

World Coke Market	38
Coking Coal and Coke Prices	38
Freight Rates.....	38

PROSPECTS..... 40

Economic Development.....	40
Development of the World Hard Coal Market.....	40

CORPORATE SOCIAL RESPONSIBILITY .. 44

COUNTRY REPORTS 47

AUSTRALIA	47
INDONESIA	51
RUSSIA	56
COLOMBIA	60
REPUBLIC OF SOUTH AFRICA	64
USA	68
CANADA	72
POLAND.....	75
PEOPLE'S REPUBLIC OF CHINA	79
VIETNAM	83

Report in Figures (Provisional for 2018) ... 86

VDKi members	116
Board of Directors VDKi	119
Disclaimer	119

Glossary/Institutions/Links:

see www.kohlenimporteure.de - Publications - Glossary to the Annual Report

GERMANY

General Conditions of the Overall Economy

The Annual Assessment 2018/19 issued by the Council of Economic Experts for the assessment of overall economic development bears the title: "On the Threshold of Setting Important Economic Policy Signposts." The German economy is facing huge challenges: "At the international level, this relates above all to the uncertain future of the multilateral global economic order; at the national level, it is demographic transformation."

In the estimation of the "Wise Men of the Economy," economic growth in Germany is weakening. After a phase of growth of 2.2% in 2017, the Council expects growth rates of the real gross domestic product in Germany of 1.6% in 2018 and 1.5% in 2019.

Investments and exports continued to be a pillar of economic development in 2018, but at a lower level than in the previous years. On the other hand, growth in private consumption expenditures will increase to 1.8% in 2019, and the consumption expenditures by the government will grow from 1.2% in 2018 to 2.0% in 2019.

The number of gainfully employed and of employees subject to social security reached a record level in 2018 and will continue to grow in 2019. One industry after another is reaching the limits of its capacities, and difficulties in recruiting employees are appearing with ever greater frequency.

Growth rates of exports and imports in 2019 will rise to 3.0% and 4.3%, respectively, over the previous year. Most German goods were exported to member states of the EU in 2018 just as in the past. The most important single market, however, was once again the USA. The international

trade conflicts did not (yet) play any role. According to the Federal Statistical Office, export business to China grew by 8.1%, although the economic growth of the world's second-largest economy slowed.

The current account balance surplus of the German economy has declined in relation to nominal GDP since 2015, contradicting all the criticism of the German surplus. In 2018, its share of the GDP declined further to 7.2%, and a decrease of 0.6 percentage point to 6.6% is expected for 2019.

On 19 March 2019, the Council of Economic Experts issued a revised forecast of the assessment of the overall economic development. Growth of the German economy has noticeably lost momentum, and a return to a strong economy cannot be expected at this time, in no small part because of global risks. The economic experts now expect no more than 0.8% growth for the current year 2019 instead of the 1.5% reported above.

"In many economies, the upswing is already very advanced, and the gross domestic product has grown beyond production potential," states the report. The export-oriented German industry has felt the full impact of the "noticeable weakening of the foreign trade environment." Emerging countries are no longer the growth engine that they once were.

Even though the "Wise Men of the Economy" emphasise that the robust domestic economy in German makes a recession very unlikely, the trade policy disputes and the cooling-off of the world economy have cast a shadow over the outlook. Internationally, the Damocles sword of the trade policy disputes between the USA and China is not the only threat hanging over the German economy. The no-deal Brexit that remains possible also dampens future prospects.

Key Economic Data — German Council of Economic Experts' Assessment of Economic Development

	Unit	2016	2017	2018 ¹⁾	2019 ¹⁾
Gross Domestic Product ²⁾	%	2,2	2,2	1,6	1,5
Expenditures for Consumption	%	2,6	1,7	1,4	1,8
Expenditures for Private Consumption ³⁾	%	2,1	1,8	1,5	1,8
Expenditures for Public Consumption	%	4,0	1,6	1,2	2,0
Gross Installation Investments	%	3,5	2,9	2,8	2,5
Equipment Investments ⁴⁾	%	2,2	3,7	3,9	2,5
Construction Investments	%	3,8	2,9	2,9	2,5
Other Investments	%	5,2	1,3	0,7	2,6
Domestic Utilisation	%	3,0	2,0	2,0	2,0
Trade Balance	% -Pts.	-0,5	0,3	-0,3	-0,3
Exports	%	2,3	4,6	2,3	3,0
Imports	%	4,1	4,8	3,4	4,3
Current Account Balance ⁵⁾	%	8,5	7,9	7,2	6,6
Workforce	Thousands	43.642	44.269	44.856	45.263
Employees Subject to Social Security Contributions	Thousands	31.508	32.234	32.936	33.486
Persons Registered as Unemployed	Thousands	2.691	2.533	2.345	2.184
Unemployment ⁶⁾	%	6,1	5,7	5,2	4,8
Consumer Prices ⁷⁾	%	0,5	1,8	1,9	2,1
Public Fiscal Balance ⁸⁾	%	0,9	1,0	1,6	1,2
Per Capita Gross Domestic Product ⁹⁾	%	1,4	1,8	1,3	1,3

¹⁾ Projection of the Council of Economic Experts ²⁾ Change over previous year. Applies to all component elements of the GDP shown here. ³⁾ Including non-profit private organisations ⁴⁾ Including military weapons systems ⁵⁾ In relation to nominal GDP. ⁶⁾ Registered unemployed persons in relation to complete civil labour force ⁷⁾ Change over previous year. ⁸⁾ Regional authorities and social security in delineation of national economic total account; in relation to nominal GDP. ⁹⁾ Own calculations; change over previous year.

Sources: Council of Economic Experts, German Federal Statistical Office

HT-D1

Prior to the Hanover Trade Fair — traditionally seen as an economic barometer — the Federation of German Industries (BDI) corrected its economic forecast as well on 30 March 2019. Instead of the previously expected growth of

1.2%, the BDI now assumes growth of no more than 0.7% for 2019. The uncertainty caused by many unresolved conflicts is having an effect on order books, warned the Foreign Trade Association.

In this sense, it would now be time to set the course for economic policies, in no small part because of the following backdrop: the new World Bank report "Ease of Doing Business 2019" issued a bad report card for German economic policies. Germany dropped four places in the ranking and landed in 24th place, just ahead of Azerbaijan. The first three places in this year were once again held by New Zealand, Singapore and Denmark. The World Bank has compiled a list of 11 criteria that it uses to examine the general economic conditions in 190 countries. Focal points include bureaucratic obstacles, the tax system, the labour market and foreign trade.

On 30 May 2019, the Federal Employment Agency reported that the weaker economy is now making itself felt on the German labour market. For the first time since 1950, unemployment rose slightly in the month of May by 7,000 to 2.2 million. One of the reasons for the increase is the cooling-off of the economy. Another, however, concerns a strong special statistical effect. Adjusted for seasonal fluctuations, the number of unemployed rose by 60,000 in May.

A seasonally adjusted increase of this type happened most recently two years ago. Unemployment remains unchanged at 4.9%.

Situation for Energy Business in Germany

The lion's share of primary energy consumption (PEC), about half, goes to energy consumption for heating and refrigeration. That is why oil, just as in the past, remains the primary energy source Number 1 with a share of 34.3% while the share of natural gas is 23.7%. Renewable energy sources at 14.0% are in third place and increased slightly by 1.1%. Lignite coal (11.3%) and hard coal (10.0%) follow. Nuclear energy takes a share of 6.4% — the exit from its utilization by the year 2022 is clearly noticeable.

The fossil energy sources oil (-5.0%) and natural gas (-1.6%) posted a decline for the first time in years, but these effects are to a large degree a consequence of extraordinary circumstances, especially the mild weather conditions. The dramatic collapse in the primary energy

Primary Energy Consumption in Germany 2016 to 2018

Energy Source	2016	2017	2018 ¹⁾	Changes 2018/2017		2017	2018
	Mill. TCE			Mill. TCE	%	Share in %	
Oil	155,3	159,5	151,6	-7,9	-5,0	34,8	34,3
Natural Gas	103,8	106,5	104,8	-1,7	-1,6	23,2	23,7
Hard Coal	56,7	50,0	44,4	-5,6	-11,2	10,9	10,0
Lignite	51,8	51,5	50,0	-1,5	-2,9	11,2	11,3
Nuclear Energy	31,5	28,4	28,3	-0,1	-0,4	6,2	6,4
Renewable Energy Sources	57,2	61,1	61,7	0,7	1,1	13,3	14,0
Electricity Exchange Balance	-6,6	-6,8	-6,3	0,5	...	-1,5	-1,4
Other	8,4	8,4	7,8	-0,6	-6,9	1,8	1,8
Total	458,1	458,6	442,3	-16,2	-3,5	100,0	100,0

¹⁾ Provisional

Source: AGEBA, "Energy Consumption in Germany in 2018 — Annual Report" for 2017 and 2018

consumption of hard coal by -11.3% in 2017 was followed in 2018 by a decline of almost identical magnitude of -11.2% over the previous year. The significant factors here were the substantial increase in power generation from renewable energy sources and the price level of the clean spreads in power generation (including CO₂ certificate prices).

For the first time in four years, the emissions of greenhouse gases in Germany fell significantly again. According to calculations of the Federal Environmental Agency (UBA), they amounted to 869 million tonnes, which represent a drop of 38 million tonnes (4.2%) over the previous year. The emissions of greenhouse gases have now declined by 30% since 1990.

In view of these figures, German Minister of the Environment Schulze acknowledged that more energy is being generated from renewable energies and less coal, oil and natural gas are being used for this purpose. After years of stagnation, the CO₂ emissions have consequently declined significantly. This was a consequence of weather and other special effects. Still, it is also becoming clear that "climate protection measures such as the expansion of green power, the exit from coal and emission trading are having an effect."

The importance of renewable energies at the general economic level is substantially lower than in the electric power sector, coming to only 14.0%. They cover no more than one-seventh of the energy consumption in Germany. Growing power generation from renewable energy sources is in contrast to the modest contributions from the transport and heating sectors.

This is also reflected in the global energy transition ranking issued by the World Economic Forum at the end of March 2019. Assessed according to the criteria of economic efficiency, sustainability and supply security, Germany takes

17th place. The fact that even Uruguay is more successful than Germany in the transformation of the energy systems is above all due to the poor cost-benefit ratio. The only criterion that Germany can be proud of is the high level of supply security (fifth place).

The global energy transition ranking of the World Economic Forum casts a shadow on Germany's image of itself as an ecological pioneer. In terms of the share of renewable energies, Germany at 55th place is no more than mediocre. And this although the feed-in remuneration for power in accordance with the German Renewable Energy Act (EEG) is at a seemingly record-breaking level. Nor does Germany take a leading position for energy intensity, reaching no more than 33rd place.

From the consumer's viewpoint, the high price of electricity is especially worrying. According to data from the World Bank, a kilowatt-hour for households costs almost 35 eurocents. While energy-intensive operations receive more favourable conditions, commercial customers still pay an above-average price of 29 eurocents, despite all the breaks; in the World Economic Forum's list, Germany is 113th out of 115 countries examined. Only Nicaragua and Venezuela are ranked lower with respect to the price for electricity.

Electric Power Generation

Gross Electric Power Generation in Germany per Energy Source					
Energy Source	2016	2017	2018 ¹⁾	2018 Shares	Change 2018/2017
	TWh			%	%
Lignite	149,5	148,4	145,5	23%	-1,9
Nuclear Energy	84,6	76,3	76,0	12%	-0,4
Hard Coal	112,2	92,9	83,2	13%	-10,4
Natural Gas	81,3	86,7	83,4	13%	-3,9
Oil	5,8	5,6	5,2	1%	-5,8
Renewable Energies	189,8	216,3	225,7	35%	4,3
Other	27,3	27,5	27,0	4%	-2,0
Total	650,5	653,7	646,1	100%	-1,2

¹⁾ Provisional
Source: AGE B

HT-D3

Gross Power Generation from Renewable Energy Sources					
Energy Source	2016	2017	2018 ¹⁾	2018 Shares	Change 2018/2017
	TWh			%	%
Hydroelectric Power	20,5	20,2	16,6	7%	-17,6
Wind Onshore	67,8	87,9	92,2	41%	4,9
Wind Offshore	12,3	17,7	19,3	9%	9,5
Biomass	45,0	45,0	45,7	20%	1,5
Municipal Wastes (50%) ²⁾	5,9	6,0	6,2	3%	3,8
Photovoltaics	38,1	39,4	46,2	20%	17,2
Geothermal Energy	0,2	0,2	0,2	0%	17,2
Total	189,8	216,4	226,4	100%	4,7
Share of Renewable Energies in Gross Electric Power Generation	29%	33%	35%		

¹⁾ Provisional ²⁾ Biogenic share of household wastes
Sources: AGE B, BDEW, ZSW

HT-D4

While the energy transition has not yet left any traces on the heating market and in the transport sector, it is having a massive impact on the energy mix for electric power generation. Renewable energy sources took over top place for gross power generation back in 2014, and their share is now 35% (+4.3% over the previous year).

Lignite with a share of 23% is in second place. Hard coal's share has fallen to 13%. Compared to 2017, power generation using hard coal declined by 10.4% in 2018 and by 25.8% in comparison with 2016 — i.e. by one-fourth in only two years! Natural gas follows with a share of 13% as well and a decline by 3.9%. As in the previous year, the share of nuclear power came to 12%.

Wind onshore provided a share of 41% of the power generation using renewable energy sources, followed by biomass and photovoltaics at 20% each. Wind onshore grew by 4.9% and did not develop as dynamically as in the previous year. The growth rate for Wind offshore at 9.0% was almost twice as high, although still significantly lower than in the previous year.

The share of renewable energy sources in gross power consumption in 2018 was again at a record level (35%), but growth has slowed. Above all the expansion of wind energy is growing at a slower rate

According to the Fraunhofer Institute for Energy Economics and Energy System Technology, installed wind output (onshore and offshore) increased in 2018 by about 2,700 MW to 59 GW, of which 53,304 MW was produced onshore and 5,737 MW offshore. Additional construction in 2018 remained below industry expectations.

Collective Energy Act

At the end of November 2018, the German Bundestag passed the Collective Energy Act. The special tenders for wind power and photovoltaics agreed in the coalition agreement were adopted. The Collective Energy Act provides for special tenders for onshore facilities in the amount of 4,000 MW for the years 2019 to 2021. Previously, the Economic Committee in the Bundestag had undertaken extensive modifications encompassing more than 100 pages in the bill introduced by the German government. The act is intended to implement agreements from the coalition agreement on renewable energies and on cogeneration of heat and power (CHP).

Status of the Grid Extension Pursuant to EnLAG and BBPIG

The projects pursuant to the Energy Transmission Line Expansion Act (EnLAG) comprise a total length of about 1,800 kilometres. About 1,200 kilometres of this length have been approved and about 800 kilometres have been realised. In other words, about 45% of the total length has been realised over 40% in the previous year. The transmission grid operators expect completion of about 70% of the EnLAG power line kilometres by the end of 2020.

The projects pursuant to the Federal Requirement Planning Act (BBPIG) comprise a total length of about 5,900 kilometres. About 600 kilometres of this length have been approved, but only about 250 kilometres (4.2%) have been realised as of this time. In the previous year, it was 150 kilometres (2.5%). The transmission grid operators nevertheless expect completion by 2030.

Act to Expedite the Expansion of the Power Grid (NABEG)

The NABEG passed the Bundesrat on 12 April 2019. The government's aim in adopting this act is to expedite the (so far sluggish) expansion of the power grid. Above all, the Act to Expedite the Expansion of the Power Grid seeks to simplify the approval process. If, for instance, an existing power line is to be replaced by a new, more powerful line in the same location, a second federal grid plan becomes superfluous. Moreover, notification procedures are simplified for less extensive measures. Planning should be anticipatory in nature and be more closely coordinated between the federal, state and municipal governments.

The act also provides the legal grounds for the federal government's issue of a federal compensation regulation. Higher compensation is expected to free the way for new transmission lines. The bill contains an increase in the compensation payments for farmers and foresters of 25% to 35%. The regulation is effective for expansion projects based on the Federal Consumption Plan Act and the Act for the Expansion of Energy Transmission Lines.

In future, the curtailment of renewable energies will be permissible if the conventional generation of energy would otherwise have to be curtailed manifold. In an effort to optimise grid management and to lower costs for the correction of grid bottlenecks, the redispatch regulations for

renewable energies and CHP plants on the one hand and for conventional power plants on the other will be merged.

The Association of Local Public Utilities (VKU) sees this as a “poor decision at an inopportune time.” Despite the ongoing talks between the Economics Ministry and operators of transmission and distribution grids regarding future re-dispatch regulations, a de facto situation to the detriment of the distribution grid operators has been created.

ECJ Decision Regarding the EEG

On 28 March 2019, the ECJ ruled that the subsidisation financed by the EEG levy in the form of feed-in rates and market premium and the favourable rates for energy-intensive companies pursuant to the EEG 2012 do not represent state aid. In the grounds for its decision, the Court stated that the funds generated through the EEG levy are not government funds. They are also not to be classified as a tax. And the German state has neither power of disposition over the generated funds nor control of the transmission grid operators entrusted with the administration of these funds. This decision will undoubtedly enhance the acceptance of the EEG because energy-intensive companies and their charges will most likely be exempted. On the other hand, however, an important corrective with the state aid law is lost.

Climate Policy Targets of the German Government and European Effort Sharing

The targets for the year 2030 are defined precisely according to sector in the Climate Protection Plan 2050 issued in 2016. On average, the goal is a reduction of greenhouse gases by 55% to 56% in comparison with 1990. The energy industry (61% to 62%) and the building sector (66% to 67%) are required to make an above-average contribution to the reduction. Industry is required to achieve a reduction of 49% to 51% while the contributions to the reduction for

the transport sector (40% to 42%) and agriculture (31% to 34%) have been set at a below-average level.

A total of three commissions are planned for the preparation of appropriate proposals for action. As of now, solely the “Coal Commission”, officially known as the “Commission Growth, Structural Transformation and Employment” (hereinafter: the WSB Commission), has presented any results. This will be discussed in greater detail below.

After several months of discussion regarding the objectives and membership of the Commission for Climate Protection in the Building Sector, it was announced in March 2019 that the German government would not appoint a building commission. The federal government’s argument was that it already had enough experts of its own. It must be noted here that the Building Energy Act originally scheduled for 2017 has still not been enacted. The German government will not be released from its obligation to present solutions that will drive forward climate protection in the building sector simply because it has postponed or cancelled the establishment of a building commission.

While a “Transport Commission” has been set up, the responsible minister denied that it had “any common sense at all” at the beginning. On 29 March 2019, the Working Group 1 called “Climate Protection in Transport” of the National Platform on the Future of Mobility presented an interim report (at least) entitled “Paths to the Achievement of the Climate Targets 2030 in the Transport Sector.” At the end of a marathon meeting lasting until the early hours of the morning, the Commission was still unable to reach an agreement. According to information from the participants, the compromises agreed as of that time still leave a gap of between 16 million tonnes and 26 million tonnes of CO₂ by 2030, noted a report from the news agency dpa.

Federal Transport Minister Scheuer is not the only one feeling the pressure of expectations. All ministries were to submit their proposals for action by the end of March 2019.

Development of Greenhouse Gas Emissions

Top producer of CO₂ emissions from the generation of energy was in 2018 still oil, followed by natural gas and lignite. Hard coal has a share of no more than 15.6% of total emissions, and its emissions declined by 11.3% in comparison with 2017.

CO₂ Emissions from Energy Generation in Germany by Energy Source

	CO ₂ Emissions		Change	Emission Shares	
	2017	2018 ¹⁾	2018/2017	2017	2018
	Mill. t		%	%	
Oil	259,3	240,0	-7,4	34,7	33,9
Hard Coal ²⁾	124,0	110,0	-11,3	16,6	15,6
Natural Gas ³⁾	173,7	170,0	-2,1	23,2	24,0
Lignite	165,3	162,0	-2,0	22,1	22,9
Other ⁴⁾	25,7	25,0	-2,7	3,4	3,5
Total	748,0	707,0	-5,5	100,0	100,0

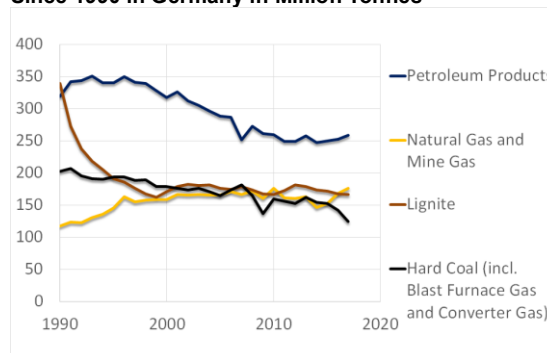
¹⁾ Provisional ²⁾ Incl. furnace and coke oven gas ³⁾ Incl. mine gas ⁴⁾ Incl. volatile emissions
 Source: Schiffer, Hans-Wilhelm, "German Energy Market 2018", et 03/2019

HT-D5

An analysis of the development of greenhouse gas emissions since 1990 reveals the need for action. While significant success in reducing emissions was posted by industry and manufacturing, in the heating sector and in the energy business and agriculture, emissions in the transport sector increased by 1.5% and in road traffic by even more (3.9%).

No decline in the emissions from the combustion of oil products has been seen in recent years (Figure HT1). The fact that there has nevertheless been a decline since 1990 is in particular a consequence of the fuel substitution with natural gas in the years prior to that date. Although the emissions from natural gas are rising, the bottom line of this effect is a reduction in emissions. Figure HT1 also shows that only the energy source hard coal has steadily reduced its emissions over the entire period since 1990.

Energy-related CO₂ Emissions by Energy Source Since 1990 in Germany in Million Tonnes



Source: BMWi, energy data, last update: 14/08/2018

Figure HT1

In the political debate, German emission reduction targets often become intermingled with European legislation on effort sharing in emission reduction (EU Effort Sharing Regulation of 2018). The "fines" for failing to meet the climate protection targets mentioned in the political debate do indeed result from the fact that binding annual targets for the reduction of greenhouse gas emissions in the periods 2013–2020 and 2021–2030 have been set for the EU member states. These targets cover most sectors that do not fall under the EU emissions trading system (EU ETS), in particular the sectors transport, buildings and agriculture. On average, the non-ETS sectors are required to achieve a 10% reduction by 2020 and a 30% reduction by

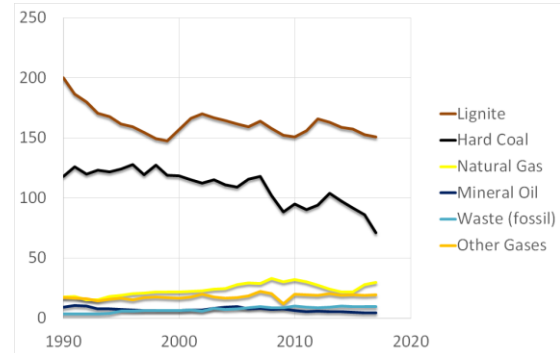
2030 (both figures in comparison with 2005). The ETS sector contributes significantly more, namely, 21% by 2020 and 43% by 2030. The EU as a whole will not be able to achieve its climate targets for 2020 and 2030 unless it achieves the significantly higher reduction of emissions found in the ETS sector.

If individual member states fail to meet their targets for the non-ETS sectors, they will have to buy excess emission allowances from more successful member states. Certificates from the ETS may not be used!

Emission Reduction in the Energy Sector

The emission reductions in the energy sector must be viewed against the backdrop of the simultaneous exit from nuclear power (Figure HT2). While emissions from lignite-fired power generation fell significantly in the period 1990–2000 after the reunification of the country, the continuous decline in emissions from the use of hard coal for energy generation began at the end of the 1990s. Taking into account the sharp reduction in emissions (not yet shown in the graph and the BMWi energy data) from hard coal-fired power generation in 2017 and 2018, these emissions have been halved since 1990.

CO₂ Emissions from Power Generation in Million Tonnes



Source: BMWi, energy data, last update: 14/08/2018

Figure HT2

The root cause was the feed-in priority for renewable energy sources and emission trading, i.e. climate policy instruments that are already available and effective. If hard coal alone were required to achieve the sector goal of a reduction in CO₂ of 61% to 62% by 2030, we would have almost reached our goal today.

Federal Climate Protection Act (KSG)

In February 2019, the BMU [Federal Ministry for the Environment] presented a bill for a climate protection law. The prime objective is to meet the climate protection targets. Moreover, responsibilities are to be clearly defined, reliability is to be ensured for all involved parties and compensation payments are to be prevented if targets are not met.

The bill provides that all sectors will be assigned a fixed reduction target and annual emission quantities that decline every year. Every ministry is to decide on its own responsibility what measures it will propose to achieve the necessary reductions. If the target is missed, immediate countermeasures must be initiated.

The BMU proposes that the payments that may be imposed would have to be funded from the budgets of the affected ministries. This contributed significantly to a negative stance of some representatives of the Union parliamentary group. Federal Environment Minister Schulze is seeking support for her climate protection law, which has been rejected by the Union, by setting “a binding timetable and clear responsibilities.” The law must be enacted this year.

Chancellor Angela Merkel called for drastic changes: “We can achieve our aims solely through a radical change to electromobility or hydrogen or completely different things,” she said in April 2019.

In a second step, the Climate Protection Act is to be supplemented by an action programme. It had already been agreed that the competent ministries will submit proposals for climate protection measures in their respective areas.

In addition, a “climate cabinet” will be set up to prepare for the legally binding implementation of the climate protection targets for 2030.

In response to the disputes within the coalition — perhaps also in response to the “Fridays for Future” demonstrations — this proposal was implemented on 10 April 2019 independently of the KSG. In addition to Chancellor Angela Merkel as chairwoman of the cabinet committee,

- Federal Minister of Finance Olaf Scholz (Deputy Chairman and Deputy Chancellor),
- Federal Minister of the Environment Svenja Schulze (Delegated Chairwoman of the Committee),
- Federal Minister of the Interior Horst Seehofer, Federal Minister of Economics Peter Altmaier,

Federal Minister of Agriculture Julia Klöckner, Federal Minister of Transport Andreas Scheuer, Federal Minister Helge Braun and government spokesman Steffen Seibert

have been appointed to the committee. The so-called climate cabinet has been tasked with the development of interdepartmental measures for the complete implementation of the Climate Protection Plan 2050. It has become clear that there is a “clear need for action” in climate protection, declared government spokesman Seibert. The federal government intends to adopt measures by the end of the year to achieve the climate protection targets set for 2030.

On 17 July 2019, the climate cabinet will examine new assessments in preparation for a discussion on CO₂ pricing. Both taxation and the extension of the scope of emission trading will be on the agenda.

Having already interfered in the authority of the German Bundestag through the appointment of numerous commissions, the governing coalition must now not be allowed to use the KSG to further restrict Parliament’s democratically legitimised ability to act. This applies in particular to the proposed “Expert Panel on Climate Issues” (Sections 12 and 13 of the bill).

In the eyes of the energy industry, double regulation in particular, which is economically inefficient, must be avoided; the KSG should apply exclusively to the non-ETS sector and be designed as a law on measures to meet the targets in the non-ETS sector.

The legal determination of greenhouse gas reduction targets (Section 3 of the bill) without a **simultaneous** proposal for actions and for a suitable course leading to the achievement of these targets would completely deprive the legislative branch of its influence. Court-ordered

enforceability of climate targets would become the rule. Environmental warning associations would in future force the fulfilment of objectives for which no suitable instruments had been presented.

On 17 April 2019, Chancellor Merkel told the FAZ that the energy revolution must not be allowed to divide society: “Combining climate policy necessity with prosperity.” She warned of the dangers of a schism arising from the change in energy supply dividing society into winners and losers of the energy transition.

Building modernisation offers tremendous opportunities for climate protection. The fact that “in ten years we have not succeeded in finding an instrument that everyone thinks is a great way to offer tax incentives for building modernisation” is disturbing evidence of the inability of the federal government and the German states to act.

The Climate Protection Act also concerns the question of whether more obligations and prohibitions should be imposed to reduce emissions or whether a price should be levied on all CO₂ emissions.

CDU chairwoman Annegret Kramp-Karrenbauer has expressed her opinion as well in the dispute over further steps in energy and climate policy. She noted her major concerns in the FAZ of 6 June 2019; “We are exiting both nuclear power and coal-fired power generation at the same time — this is a huge experiment that no other country is attempting,” she said. The experiment could work, but it could also fail, she added in a speech to the ifo Institute in Munich.

The president of this institute, Dr Clemens Fuest, is highly critical of Chancellor Angela Merkel’s climate policy. German policy is “particularly expensive” and will fall short of the climate targets. The “planned economy approach” has failed. The German way is anything but exemplary.

Recommendations from the Commission Growth, Structural Change and Employment

On 26 January 2019, the WSB Commission agreed on a final report with one dissenting vote. It makes no mention whatsoever of hard coal’s contribution to the reduction of CO₂ emissions, although hard coal has contributed the most to reducing emissions in recent decades. All other energy sources are far away from such results.

The WSB Commission did not make any yearly recommendations for capacity reductions, but only for periods of time. During the period from 2018 to 2022, lignite-fired and hard coal-fired power plants are to be phased out to such an extent that the power plant capacity available to the electricity market in 2022 will be reduced to around 15 GW from lignite and around 15 GW from hard coal. Compared to the end of 2017, this corresponds to a decline of almost 5 GW for lignite-fired power plants and 7.7 GW for hard coal-fired power plants. What is more, the WSB Commission recommends extensive conversion from coal to natural gas within the grid reserve (currently 2.3 GW). This will result in a total reduction of at least 12.5 GW. In the view of the WSB Commission, these measures will by 2022 reduce CO₂ emissions in the energy sector by at least 45% in comparison with 1990 levels.

In order to achieve a reduction by 61% to 62% in emissions compared with 1990 by 2030, the WSB Commission envisages a further reduction in installed capacity compared with 2017 of 10.9 GW for lignite-fired power plants and 14.7 GW for hard coal-fired power plants during the period from 2023 to 2030. This would reduce the output of coal-fired power plants (excluding reserves) to a maximum of 9 GW from lignite and 8 GW from hard coal in 2030. For the period from 2023 to 2030, this means a further decline in output of 6 GW from lignite and 7 GW from hard coal.

The WSB Commission recommends the end of 2038 as the final date for the discontinuation of coal-fired power generation. The date could “be brought forward to 2035 at the earliest in negotiations with the operators” if “the energy, employment and business conditions have been created.” This opportunity and determination of how realistic the possibility of ending coal-fired power generation actually is will be reviewed in 2032.

Comprehensive reviews will be carried out in 2023, 2026 and 2029. An “independent panel of experts” will examine *inter alia* the effects on electricity prices, security of supply and structural policy objectives and actions. Adjustments could be made where necessary.

The WSB Commission recommends investment incentives if “sufficient new power plant capacities” are not under construction as of 2023 as a consequence of the decision to decommission power plants. Care must be taken to ensure that there is no “time divergence between power plant capacity requirements and completion.” The Commission therefore recommends “measures to accelerate approval processes for the construction of new natural gas-fired power plants, in particular at existing coal-fired power plant sites.”

To the extent that combined cycle power plants are meant, their construction is to be expected solely at existing power plant sites with coal-fired combined cycle power plants if appropriate financial support is provided. Otherwise, additional construction of open-cycle gas turbines is all that can be expected. Such a recommendation is not economically optimal. Hard coal-fired power plants are the bridge solution for the energy transition that already exists and is economical; they compensate the fluctuations in power generation from renewable energy sources. Whether the required capacity of natural gas-fired power plants will be completed by 2023 is highly uncertain. What is certain, however, is that this will cause additional costs that no one

would be sorry to avoid. Open-cycle gas turbines have a lower degree of efficiency than hard coal-fired power plants — this measure is counterproductive in terms of climate policy. It makes the energy transition more expensive and sparks demands from the economy for relief from these costs. Yet the simplest path would have been to avoid this absurd cost burden in the first place.

The recommendations of the WSB Commission focused primarily on regional and structural policy considerations. The important role that hard coal could have played as a bridge solution in the context of the energy transition was not recognised.

On 5 February 2019, Chancellor Merkel made the following statement to the *Welt* about the exit from coal: “Unfortunately, we still have too much lignite.” It is necessary to think about one approach to penalise all CO₂ emissions rather than attempting to achieve this goal through the use of many different instruments. This astonishing conclusion, one should note, was made subsequent to the recommendations of the WSB Commission.

Speaking on 5 February 2019 as well, FDP chairman Christian Lindner lamented in the *Handelsblatt* that “the recommendations of the Coal Commission are pure ideology.” He speaks of “climate nationalism.” People in India or China would not be convinced by this approach.

RWE CEO Rolf Martin Schmitz came to a positive overall assessment in the *FOCUS* issue of 23 February 2019: “I think it is good that the Commission has found an almost unanimous result despite many different interests because in the energy industry we need security about future conditions for years to come for our planning.”

During the decisive night session of the WSB Commission from 25 to 26 January 2019, the Brandenburg state government apparently arranged an “innovation project” that

provides in 2025 an “interim step of a reduction of 10 million tonnes in emissions” for the energy industry. This is evidently a project of the German Aerospace Center (DLR).

The VDKi had also proposed storage power plants (high-temperature salt smelting) for locations of hard coal-fired power plants. However, the work of the WSB Commission was strongly oriented to lignite for more than just regional political reasons. Hard coal-fired power plant sites were largely disregarded.

In its answer to the brief parliamentary question from the parliamentary group BÜNDNIS 90/THE GREENS titled “Implementation of the Results of the Coal Commission” (*BT-Drucksache*: 19/8205) of 27 March 2019, the federal government stated that it intended to start talks with the operators of coal-fired power plants as soon as possible. Initial talks with RWE and Uniper would be conducted by the Federal Ministry of Economics and Energy. The exact subject matter and concrete goal of the talks still had to be agreed within the federal government.

Grid expansion is crucial for the realisation of the coal exit. It remains to be seen whether NABEG will change anything about the sluggish expansion of the grid.

The political prerequisite for success is ensuring a regionally and socially acceptable form of realisation. The “Key Points for the Act for Structural Enhancements Coal Regions” — a programme of aid for German states affected by the coal exit — were adopted by the cabinet on 22 May 2019. Discussions continued right up to the end about extended commitments for the southern German states, which demanded and ultimately received assurances for the construction of natural gas-fired power plants.

All in all, the federal government will fund an “Investment Act for Coal Regions” to the tune of €40 billion for the three mining regions of Lusatia, Central Germany and the

Rhenish mining area, of which €14 billion will be in the form of direct investment aid. The German states will provide 10% of the funding for the projects. The remaining €26 billion will come from federal funds earmarked above all for the expansion of infrastructure (rail, road, digital networks). The Bundestag and Bundesrat still have to approve the law, which is scheduled for enactment in autumn. On the home stretch, the regions with hard coal-fired power plants, which had previously been more than neglected, were also included. Five hard coal sites in NRW were also included in the negotiation package.

Hard Coal Market

Primary energy consumption of hard coal (HT-D6) fell by 5.6 million TCE (11.2%) from 50.0 million TCE in 2017 to 44.4 million TCE in 2018. As already mentioned above, utilisation by hard coal-fired power plants declined by 16.3% in 2018. Utilisation in the steel industry declined slightly by 1.7%. Overall, there was a significant decrease of 11.2%. Hard coal consumption (in million TCE) was covered in 2018 as shown below:

Utilisation of Hard Coal in Germany				
Utilisation	2016	2017	2018 ¹⁾	Change 2018/2017
	Mill. TCE			%
Power Plants	37,3	31,2	26,1	-16,3
Steel Industry	18,1	17,6	17,3	-1,7
Heating Market	1,3	1,2	1,0	-16,7
Total	56,7	50,0	44,4	-11,2

¹⁾ Provisional information, in part estimated
Source: AGEB
HT-D6

The use of hard coal for electricity generation is following a long-term downward trend, which has been exacerbated by the strong additional construction of wind energy (which

enjoys feed-in priority) and the rise in the CO₂ price (Figure HT3).

The share of domestic production in coal utilisation (HT-D7) fell from 3.7 million TCE to 2.7 million TCE in 2018. The scheduled adaptation and exit process in socially acceptable boundaries continued in orderly fashion until the end of 2018. At the end of the year, the mines still in operation, *Prosper-Haniel* in Bottrop and the *Anthrazitzeche* in Ibbenbüren, were closed.

This marked the final page of an important chapter in German industrial history. The contribution of import volumes to coal utilisation in 2018 fell from 47.9 million TCE to 44.0 million TCE (-8.1%) according to statistics from the *Arbeitsgemeinschaft Energiebilanzen* (AGEB). Imports thus contributed 94% to the secure and high-quality supplies for the German market in 2018.

Utilisation of Hard Coal for Power Generation in Petajoules (PJ)

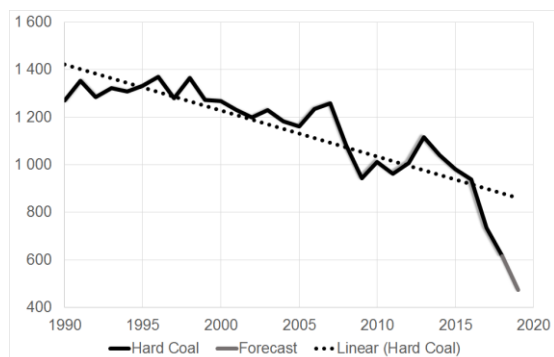


Figure HT3

Volume of Hard Coal in Germany

	2016	2017	2018	Change 2018/2017
	Mill. TCE			%
Import Coal	52,6	47,9	44,0	-8,1
Domestic Production	3,9	3,7	2,7	-27,0
Total	56,5	51,6	46,7	-9,5

Source: VDKi, own calculations

HT-D7

The quantity difference between Tables D6 and D7 is explained by the fact that in the one case volume, in the other utilisation is shown, and deviations are possible because of stockpile movements.

The quantity difference between the volume of import coal in Table D7 and the total imports in Table D8 is a consequence of the use of different measurement units. AGEB calculates volume in "TCE" while imports are calculated per quality grade in "t = t".

Imports (in t=t) break down per grade as shown here.

Imports per Grade in Mill. t (t = t)

Products	2016	2017	2018
	Mill. t		
Steam Coal ¹⁾	42,9	36,2	32,1
Coking Coal	12,3	12,9	12,4
Coke	2,0	2,3	2,3
Total	57,2	51,4	46,7

¹⁾ Including anthracite and briquettes

Sources: Statistics from Kohlenwirtschaft/own calculations

HT-D8

The share of imports of steam coal declined from 70.4% to 68.7% while the share of coking coal rose from 25.1% to 26.6%. The share of coke rose from 4.5% to 4.9%. In view of the shrinking demand from power plants and the growing share of coal used by the steel industry in total consumption, it must be pointed out that injection coal (PCI coal), which is statistically included in steam coal, has also gained in importance. Unfortunately, there is no category for injection coal in the official customs nomenclature and so there is not one in the eight-digit DESTATIS product index, either. It is recorded primarily as steam coal, but may also be classified as anthracite. The estimated share of coking coal, coke and injection coal in German hard coal consumption most likely amounts to around 40%.

The origins of the import volumes can be seen in Figure HT4. Russia leads the list, providing 19.2 million tonnes (41%). Russia's exports to Germany fell slightly from 19.8 million tonnes to 19.2 million tonnes. The USA increased from 9.1 million tonnes to 9.8 million tonnes, and Canada rose slightly from 1.5 to 1.6 million tonnes. As in the previous year, Colombia continued to lose market share. Imports declined from 6.5 million tonnes (2017) to 3.8 million tonnes so that the contribution to the market supply decreased to 8%. In contrast, the USA secured a market share of 21%. Australia's contribution decreased from 5.6 million tonnes to 5.2 million tonnes, corresponding to a share of 11% (same as in the previous year). Imports from Poland collapsed as they did in the previous year and contributed 4% of the supply to the German market. Deliveries from the Republic of South Africa fell from 1.6 million tonnes (2017) to only 1.0 million tonnes.

Russia strengthened its position as the largest steam coal supplier, increasing to 55% in 2018 from 49% in the previous year. Colombia at 12% after 18% in the previous year is now behind the USA (20%). South Africa follows with a share of only 2.8%.

Hard Coal Imports to Germany, incl. Coke, by Provenances in Million Tonnes

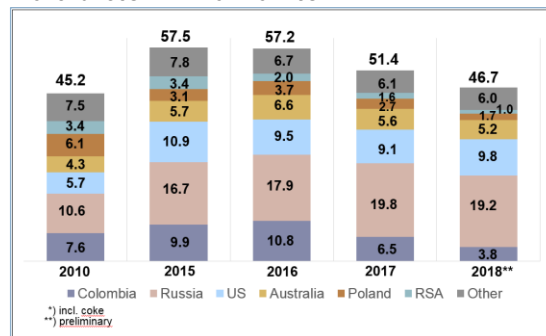


Figure HT4

The most important suppliers of coking coal were Australia (5.2 million tonnes, 42% market share; previous year 43%), the USA (3.5 million tonnes, 28% market share; previous year 26%), Russia (1.4 million tonnes, 11% market share; previous year 14%) and Canada (1.5 million tonnes, 12% market share).

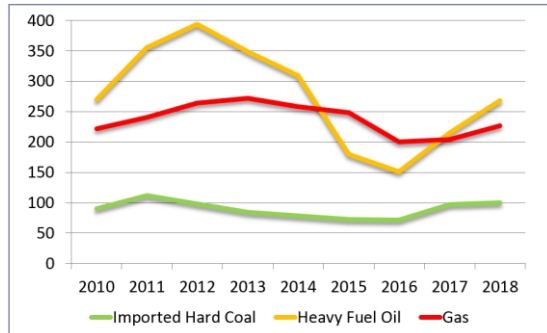
The lion's share of German coke imports comes from Poland (66%). This is followed by the Czech Republic with a share of 12%, the People's Republic of China with a share of 6% and Russia with a share of 5% of the market supply.

The coal imports to Germany by country of origin are broadly distributed across all grades. Virtually all of the countries are politically stable.

Logistics in Germany's seaports and in the ARA ports important for German imports were reliable and free of any disruptions. However, there were impairments due to low water levels. The degree to which the individual customers were affected varied and depended on the precautions taken for this case.

Development of Energy Prices

Prices of Selected Energy Sources Free Power Plant in €/TCE



Source: Statistics of Coal Business/BAFA

Figure HT5

Figure HT5 shows the development of selected energy sources free power plant for the last eight years. Following a peak in 2012, heavy fuel oil posted the sharpest downward trend. The price did not bottom out until 2016. In 2018, the price for heavy fuel oil rose by 25%, a stronger increase than that of natural gas in power plants (11%) and substantially stronger than for imported steam coal (3%). So the natural gas price followed oil prices only at times in 2018. The price for import coal is well below the level of the competing energy sources. The decisive factors for competitiveness, however, are the margins in power generation (see Figure HT6 below, Clean Spark Spread and Clean Dark Spread).

Energy Prices Free Power Plant as an Annual Average

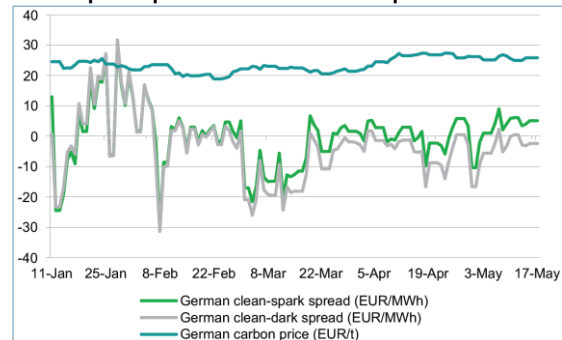
	2016	2017	2018	Change 2018/2017
	€/TCE			%
Heavy Fuel Oil (HS)	151	215	268	25%
Natural Gas	200	204	227	11%
Steam Coal	72	92	100	9%

Source: Statistics of Kohlenwirtschaft e. V.

HT-D9

The average price for the year for heavy fuel oil came to €268/TCE (HT-D9); the natural gas price for power plants was €227/TCE; and the border-crossing price for import coal was €100/TCE.

Clean Spark Spread and Clean Dark Spread



Source: IHS; Comparison new natural gas-fired power plant with old hard coal-fired power plant; price level May 2019

Figure HT6

However, the energy price alone is not decisive for the use of hard coal in power plants; a number of influencing factors combine, summarised in the clean dark spread and clean spark spread, the gross margins of hard coal-fired and gas-fired power plants that are dependent on the CO₂ price and electricity price. Irrespective of the competitive situation with natural gas, the gross profit margin for hard

coal is far too low for profitable operation of power plants. Figure HT6 shows that since the beginning of 2019 the clean spark spread and the clean dark spread have frequently been negative and that the clean spark spread has been higher than the clean dark spread since March 2019.

Cross-border prices for coking coal are shown in Table HT-D10. In 2018, the price for metallurgical coal fell from €175/tonne (2017) to €164/tonne. World crude steel production in 2018 rose significantly by 4.6%. This was in contrast to a decline of 2.1% in Germany.

Border-crossing Prices for Coking Coal in €/Tonne¹⁾		
	2014	104,67
	2015	100,28
	2016	87,68
	2017	174,84
	2018	163,87
	Change over Previous Year	-6,3%

¹⁾ Rounded-off average values for all metallurgical coal types

Source: DESTATIS/VDKi own analysis

HT-D10

The border-crossing prices for hard coke developed as shown below.

Border-crossing Prices for Hard Coal Coke in €/Tonne		
	2014	193,66
	2015	187,04
	2016	159,82
	2017	256,34
	2018	271,61
	Change over Previous Year	6,0%

Source: DESTATIS/ VDKi own calculations

HT-D11

Contrary to the price trend for coking coal, coke prices rose by an average for the year of €15/tonne (6%).

Steel Production

Crude Steel and Pig Iron Production				
	2016	2017	2018 ¹⁾	Change 2018/2017
	Mill. t			in %
Crude Steel	42,1	43,3	42,4	-2,1%
Pig Iron	27,3	27,8	27,3	-1,8%

¹⁾ Provisional

Source: Steel Federation

HT-D12

Crude steel production in Germany in 2018 fell by 2.1% to 42.4 million tonnes; pig iron production decreased by 1.8% to 27.3 million tonnes in 2018. As already mentioned, world steel production rose by 4.6%.

According to the German Steel Federation, demand for steel in Germany went into "reverse gear" in 2018. The market supply of rolled steel fell by 4% on average over the year while crude steel production fell by 2.1% as reported above. Special factors are also likely to have contributed to this development. Among them are the changeover of the test procedure in the automotive industry and the low water levels on the Rhine in the last quarter of 2018. The steel economy remained subdued in the first quarter of 2019 as well. According to the ifo indices, the business situation and market sentiment diverge. While steel companies rated their business situation as negative in March 2019 for the first time in almost one and a half years, expectations stabilized in the ifo economic test. However, companies in the steel industry are sceptical about their short-term expectations.

Since the second half of 2018, the global steel industry has experienced a slowdown in economic activity. The economic outlook is associated with considerable downside risks. According to the OECD, the structural problems in the global steel industry will persist in the form of what have

become long-lasting overcapacities, the spread of protectionist tendencies and distortions of competition as a result of state subsidies.

From the point of view of the German steel industry, the introduction of protective measures was a necessary step on the part of the EU to limit the negative consequences of the American punitive tariffs on the EU market. Goods that no longer had access to the American market had to find a "new home." Against this background and in view of the still weak economy, the German Steel Federation is critical of the fact that the first steps towards easing the tariff quotas are to be introduced as early as July and that the effectiveness of the measures would thus be noticeably reduced.

On 30 May 2019, Arcelor-Mittal announced that it would further reduce production in Europe, causing unrest in the steel sector. Additional capacity measures are needed to adapt European steel production to demand in terms of volume. At the Eisenhüttenstadt site, production is to be reduced for one year. In Bremen, the shutdown of one of the two blast furnaces scheduled for the fourth quarter is to be extended.

Since the planned joint venture between Thyssen-Krupp's steel division and Tata's division did not materialise, Thyssen-Krupp intends to set up its business "fit for the future."

EUROPEAN UNION

Economic Growth in Europe

The growth rate of real gross domestic product (GDP) in the European Union (EU 28) in 2018 came to 2.0% in contrast to 2.4% in the previous year (2017). Economic growth in the eurozone declined from 2.4% in 2017 to 1.9% (2018), almost identical to that of the whole EU 28.

In Table HT-EU1, the main countries of the European Union (before a possible Brexit) are ranked according to their share in the gross domestic product of the EU 28. Germany is in the lead with a share of a good 21% of the gross domestic product of the European Union. At 1.4%, economic growth lagged behind that of the other member states. The second-largest economic nation in the EU 28 is the United Kingdom with a share of 15% of GDP. Economic development was similar to that in Germany. For 2019, however, it must be feared that the long-running and virtually incomprehensible discussion about the nature and implementation of a Brexit has not only unsettled the British economy, but that negative influences, for example on the steel industry, are also clearly discernible.

With a share of just under 15%, France is almost on a par with Great Britain. After below-average development in 2016, the development of France has aligned itself with that of Germany. Taken together, Germany and France account for a good one-third of Europe's economic output, and after a possible withdrawal of Great Britain, this figure would rise to more than 40%.

Of the smaller to large European economies shown in Table HT-EU1, Spain and the Netherlands showed above-average development. Their growth rates were +2.6% and +2.7%, respectively. Development in Italy was below average (+0.9%).

Share in GDP of EU 28 and Economic Growth in EU 19/EU 28 in %

Member States	Share in GDP of EU 28	2016	2017	2018
EU 28		2,0	2,4	2,0
Countries of the Eurozone (EU 19) ¹⁾		2,0	2,4	1,9
Germany	21,3	2,2	2,2	1,4
Great Britain	15,1	1,8	1,8	1,4
France	14,8	1,2	2,2	1,5
Italy	11,1	1,1	1,7	0,9
Spain	7,6	3,2	3,0	2,6
The Netherlands	4,9	2,2	2,9	2,7

¹⁾ Until 31/12/2014 EU 18

Source: Eurostat, per. 23/05/2019

HT-EU1

In May 2019, the EU Commission's consumer confidence indicator increased in both the eurozone (+0.8 points) and the EU (+1.1 points). Both indicators are well above their respective long-term averages.

The sentiment indicator (ESI) rose by 1.2 points to 105.1 in the eurozone in May 2019 and remained largely stable within the EU 28 (+0.2 points to 103.8). The improvement in sentiment in the eurozone reflects higher confidence in industry and, to a lesser extent, in services and consumers, while retail confidence remained almost unchanged and cooled. Among the largest economies in the eurozone, the ESI rose strongly in France (+4.0), significantly in Italy (+1.7) and Spain (+1.3) and slightly in Germany (+0.4). Only in the Netherlands (-1.3) did sentiment fall.

In contrast, the Business Climate Indicator (BCI) for the eurozone declined in May 2019. The assessment by surveyed managers of production and export orders worsened as did their assessment of the order situation.

Concern about the trade dispute between the USA and China in particular, but with the rest of the world as well, is likely to have impacted the Business Climate Indicator. The trade disputes have not yet had a negative impact on consumer confidence and the mood in the European economy, however.

Energy Consumption

At 2.4 billion TCE, primary energy consumption in the European Union in 2017 was slightly above the previous year's figure of 2.3 billion TCE, an increase in economic growth from 2.0% (2016) to 2.4%. The distribution of the individual energy sources has shifted for all energy sources with the exception of oil (37%). Natural gas gained one percentage point, rising to 24%, while the share of coal declined from 15% in 2016 to 14% in 2017. The share of renewables (excluding hydropower) rose from 8% to 10% while the share of hydropower fell from 5% to 4%. The share of nuclear power decreased from 12% to 11%. Hydropower and renewable energies together have a share of 14% (previous year 13%). So fossil energy sources that, together with nuclear energy, are designated as conventional energy sources have a share of 86% in the energy supply to the European Union.

Despite all the commitments of the European Union to international climate protection, we see virtually static development in primary energy consumption. The share of renewable energy sources changed only slightly in comparison with the previous year. The only observed change is the shunting aside of hard coal by another fossil energy source, natural gas.

The structure of primary energy consumption in the European Union differs significantly from the structure of global primary energy consumption. The share of coal in the EU 28 is exactly half as high as on a world scale. Nevertheless, great efforts are being made in several countries of the

European Union and by the European Commission to reduce even further the share of coal. A comparison of the European and global energy consumption, however, makes it clear that this cannot have more than a slight impact on a global scale. The share of renewable energy sources in the EU at 10% (excluding hydropower) is significantly higher than on the world stage (4%). A further increase in the use of renewable energy sources in Germany would change little in the low single-digit global percentage.

Share of Coal in Primary Energy Consumption World and EU 28 2016

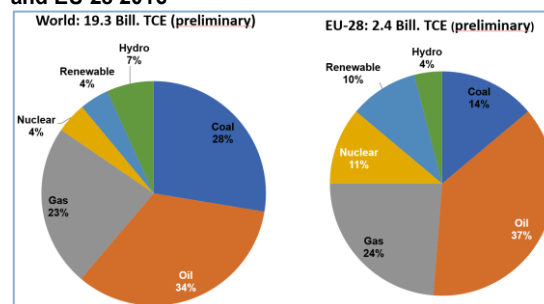


Figure HT 7

Hard Coal Market

European hard coal production continued to be in sharp decline in 2018, falling by 6% from 80.6 million tonnes to 75.8 million tonnes. It decreased in Germany to 2.8 million tonnes (2018). The two mines still in operation, *Prosper-Haniel* in Bottrop and the anthracite colliery in Ibbenbüren, were closed at the end of 2018. The Polish hard coal mining industry has completed a restructuring of mining companies and capacity adjustments in recent years. Production in 2018 fell further from 65.5 million tonnes to 63.4 million tonnes, a decrease by 3.2%. Production was reduced from 5.5 million tonnes to 4.5 million tonnes in the Czech Republic and from 2.8 million tonnes to 2.5 million tonnes in Spain. By the end of 2018, ten coal mines had been

closed down in Spain, which meant that almost all of the hard coal mines that were privately owned have been closed. A programme worth €250 million will over the next ten years support early retirement, retraining for miners and investment in mining regions.

West Cumbria Mining has been authorised to open a mine that will produce 2.5 million tonnes of metallurgical coal per year. Work will begin at the Woodhouse Colliery at the end of 2019. It will be the first mine to be opened in Great Britain in 30 years.

Hard Coal Production in the EU			
	2016	2017	2018
	Mill. t (t=t)		
Germany	4,1	3,8	2,8
Spain	1,7	2,8	2,5
Great Britain	4,2	3,0	2,6
Poland	70,4	65,5	63,4
Czech Republic	6,8	5,5	4,5
Total	87,2	80,6	75,8

Source: EURACOAL, Market Report May 2019

HT-EU2

Table HT-EU3 shows total hard coal volumes in the European Union. With declining imports and reduced coal production, EU 28 coal production has also fallen to around 242 million tonnes.

Hard Coal Volume in the EU 28			
	2016	2017	2018
	Mill. t (t=t)		
Hard Coal Production	87,2	80,6	75,8
Hard Coal Imports	166,8	171,9	165,9
Total - Hard Coal Volume	254,0	252,5	241,7

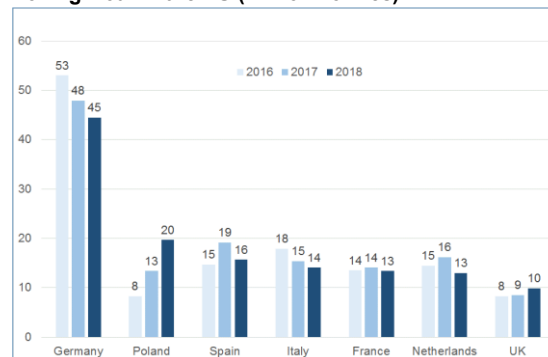
Source: EURACOAL, Market Report May 2019

HT-EU3

Despite the decline in imports since 2015, Germany is far and away the largest hard coal-importing country in Europe (Figure HT8). Great Britain had ceded second place in the ranking of coal importing nations to Italy in 2016 and with imports of around 10 million tonnes is no longer included in the graph in 2018. Spain was in second place in 2017. In this country, the quantities used fluctuate and are dependent on the availability of hydroelectric power and wind energy. Poland took over second place in 2018. Imports there are rising sharply because domestic production cannot compete in part with hard coal from the world market. In particular, imports from Russia have increased.

They are followed by imports from Spain, Italy, France and the Netherlands. Demand was on the decline in these countries. As in Germany, imports of steam coal dominate in Poland, Spain, Italy, France and the Netherlands.

The Seven Largest Import Countries of Steam and Coking Coal in the EU (Million Tonnes)



Source: EURACOAL

Figure HT8

Emissions Trading

The European Emissions Trading System (ETS) is even today the primary instrument for climate protection in the European Union. Introduced in 2005, the ETS is a “cap and trade system”; this means that upper limits (caps) have been set and that the participating parties engage in trade with one another to sell excess emission quantities or to buy quantities to make up shortfalls. The amount of CO₂ that may be emitted has been set for about 11,000 plants in the energy business and energy-intensive industry in all of Europe. Since special attention has been directed at the inclusion of all coal-fired power plants in the system, the compatibility of electric power generation using hard coal and lignite with the targets set for European climate protection is assured.

The ETS and its effects are frequently misunderstood - deliberately or unintentionally. It functions on the basis of the volume cap of the European Emission Allowances (EUA) — completely independently of whether the certificate price is high or low. It therefore makes no sense to claim that price signals are inadequate when CO₂ prices are low. Interventions in the price system are superfluous and ultimately have only the effect of favouring energy sources that are otherwise too expensive. Nevertheless, there have for years been repeated interventions in the ETS with the aim of achieving a politically desirable price level through a shortage of certificate volumes (“backloading”, introduced in 2014; “market stability reserve”, introduced in 2015).

On 19 March 2018, the Directive (EU) 2018/410 was published in the Official Gazette. Beginning in 2021, the number of available certificates will be reduced by 2.2% annually, thereby reducing the number of certificates by 28% as of 2030. In addition, the quantities that are to be allocated to the market stability reserves (MSR) are to be doubled by the end of 2023.

ICIS, a price information service for trade with petrochemical products, energy and fertilisers headquartered in London, conducted an analysis at the beginning of 2018; the results indicated that the price in emission trading would rise to €33/tonne CO₂ by the end of the year 2023. Subsequently, it would fall again to €24/tonne CO₂ (Figure HT9).

Figure HT9 shows the actual development. Prices of almost €30 per tonne of CO₂ had been reached as early as 2019, and even the mark of €24 per tonne of CO₂ was exceeded in 2018. This shows that the politically desired increase in the CO₂ price has long since become a reality and that natural gas as an energy source has thus gained a price advantage.

Price for EU Emission Allowances on the Futures Market in €/Tonne CO₂



Figure HT9

Thanks to the ETS, the European Union has already achieved its CO₂ target for 2020. As early as 2017 — i.e. before the above-mentioned interventions in the system — the Commission reported that emissions were 22% below 1990 levels thanks to the ETS. According to Eurostat, carbon dioxide emissions in 2018 fell by a further 2.5% compared with 2017. Germany reduced emissions at an above-average rate (-5.4%) and thus made a solidarity

contribution for other EU countries. Although the EU committed itself to a reduction of only one-fifth, Germany has already achieved more than 30%. The German dispute over compliance with climate protection targets revolves around an unrealistic special target set by the federal government of 40% with a simultaneous exit from nuclear energy!

LCP BREF

Another important issue at the European level remains the Best Available Technique (BAT) standards for large combustion plants (LCP BREF). During the consultation and decision-making process of the LCP BREF, the Commission violated, *inter alia*, fundamental formal requirements and superior law.

Depending on national implementation, European lignite-fired power plants in particular would be confronted with difficulties. If the LCP BREF were to be translated into German law in their present form, substantial investments would presumably be required. The consequences would be even more serious for Poland, where hard coal-fired power plants as well as lignite-fired power plants would be affected. It will surprise no one that the Polish government has filed a suit with the European Court of Justice. EURACOAL, the umbrella organisation of the lignite and hard coal industry, joined DEBRIV, the German federation of the lignite industry, and German companies in filing a suit on 7 November 2017.

However, the action was dismissed as inadmissible. EURACOAL then turned to the European Court of Justice. The Commission classified this request as inadmissible. EURACOAL is currently seeking an opportunity to respond to the Commission's position.

Clean Energy Package

Following the approval of the EU Parliament, the EU Council of Ministers adopted the four remaining parts of the "Clean Energy Package" comprising eight regulations on 15 April 2019. These are the Electricity Directive and the Electricity, ACER and Risk Prevention Regulations. Member states must transpose the directive into national law within 12 months of its publication in the Official Gazette. The regulations are binding in their entirety and apply directly in every member state as of 1 January 2020. These measures are intended to achieve the European climate target for 2030 (40% reduction in CO₂ emissions compared with 1990).

The Electricity Directive stipulates that only power plants that meet the ambitious CO₂ emission standard of 550 g CO₂ per kWh or 350 kg CO₂ per installed kW may participate in capacity mechanisms. For new power plants, this regulation will enter into force as of 2020; it will not become effective for existing power plants until mid-2025. The standards also apply to power plants in a strategic reserve.

Hard coal-fired power plants cannot comply with the limit of 550 g CO₂ per kWh. Open-cycle gas turbines will barely comply with this limit if they are operated at nominal load, but in the more realistic case of partial load operation, open-cycle gas turbines will fail to comply with this limit as well. The annual average limit of 350 kg CO₂ per kW installed means that a conventional power plant will not be able to operate for more than a few hundred hours.

Climate Strategy 2050

On 28 November 2018, the Commission, acting at the behest of the European Parliament and the European Council, presented its long-term strategic vision for a climate-neutral economy for the time horizon 2050 in Katowice. The strategy is supposed to show how Europe could move

forward on the path to climate neutrality. The transition should be carried out in a socially just manner. The vision for a climate-neutral future affects almost all policy areas and should be consistent with the objectives of the Paris Agreement.

Every economic sector in the EU should reduce its greenhouse gas emissions to zero by 2050. According to a Commission communication, this mission is to be achieved primarily through the electrification of the entire economy. Sixty percent of EU energy demand in 2050 would therefore have to be met by green electricity, 18% by nuclear power, 4.4% by Power to X and 2% by synthetic fuels. When fossil fuels are used for non-energy purposes, CO₂ must be captured and stored (CCS). According to Commissioner Cañete, a climate-neutral economy is feasible using today's technology. The Commission sees great employment opportunities in the required investments, but does not quantify the job losses and growth losses that will result from this strategy.

There must surely be grave doubts as to whether an all-electric society is at all possible. However, the strategy is not binding. The EU Commission wants to initiate a debate. The new EU Commission could take this as a starting point for the development of a more concrete strategy at the beginning of 2020, however.

WORLD ECONOMIC SITUATION

World Production and World Trade

Real Growth in Gross Domestic Product				
	2017	2018 ¹⁾	2019 ²⁾	2020 ²⁾
	Change from Previous Year in %			
World	3,68	3,51	3,18	3,36
OECD Countries	2,59	2,28	1,78	1,82
Eurozone (17 Countries)	2,52	1,84	1,20	1,36
Germany	2,46	1,45	0,74	1,20
France	2,29	1,58	1,30	1,25
Italy	1,75	0,73	0,04	0,56
Other OECD Countries				
Great Britain	1,82	1,40	1,22	0,98
Japan	1,93	0,79	0,66	0,61
Canada	2,98	1,83	1,27	2,00
South Korea	3,06	2,69	2,40	2,49
USA	2,22	2,86	2,82	2,28
Non-OECD Countries				
Brazil	1,06	1,11	1,36	2,27
PR China	6,80	6,60	6,20	6,01
India	7,17	7,04	7,16	7,43
Russia	1,63	2,26	1,38	2,07

¹⁾ Provisional ²⁾ Forecast

Source: OECD Interim Economic Outlook March 2019

HT-W1

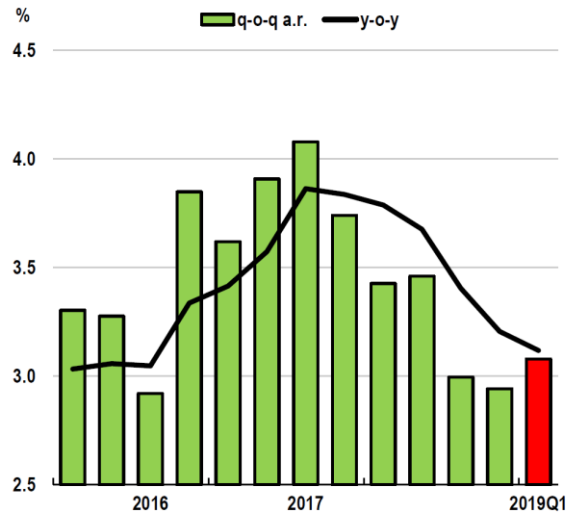
Real gross domestic product (GDP) worldwide grew by 3.5% in 2018. In the OECD countries, the real GDP growth rate is 2.3%. Real growth in 2018 was 6.6% in China and 7.0% in India. According to the OECD Interim Outlook of March 2019, India's growth will accelerate and it will remain the country with the strongest economic growth. China's growth will tend to slow down while remaining at a high level. Italy and Japan brought up the rear of economic development in 2018, followed by Brazil. The OECD expects

a significant recovery of the Brazilian economy in 2020 (+2.27%).

While economic growth in the eurozone will decline to 1.36% in 2020, Great Britain must steel itself for a continued slowdown in growth to 0.98%, caused to a substantial degree by the imminent Brexit. According to the OECD Interim Outlook of March 2019, Japan will post growth of only 0.61% in 2020 and be dead last in global economic development.

A year ago, the OECD warned that trade policy and political uncertainties could seriously damage the world economy and contribute to the widening gap between world regions. In its Interim Outlook March 2019, the OECD points out that global momentum has weakened significantly and that growth is likely to remain below average in view of the ongoing trade disputes. Trade and investment have slowed sharply, particularly in Europe and Asia. Business and consumer confidence in economic development has weakened. Financial conditions have eased as central banks have moved toward a more flexible monetary policy. Fiscal policy provided impetus in only a very few countries. At the same time, low unemployment and a slight increase in wages in the major economies continue to support incomes and consumption of private households. Overall, however, the trade disputes are having a negative impact, and global growth is expected to slow to only 3.18% this year. Although it will rise to 3.36% in 2020, this figure is well below the growth rates of the last three decades and in particular of the last two years. The outlook remains glum, and there are many risks of a downturn that cast a shadow over the global economy.

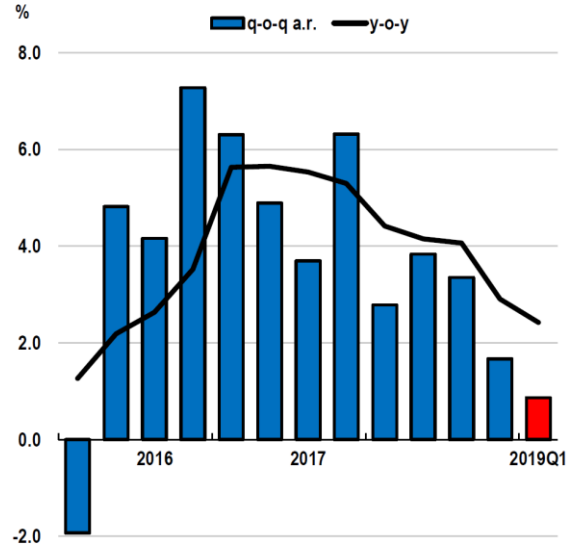
World GDP growth



Source: OECD Interim Outlook March 2019, data for Q1 2019 are preliminary
Figure HT10

World trade volume growth

Goods and services



Global trade tensions are damaging the short-term and medium-term outlook and, in the view of the OECD, require urgent government measures to revive growth. Less than two years ago, the global economy expanded largely synchronously, but the challenges posed by existing trade disputes are jeopardising global growth because they have increased uncertainty.

The post-World War II globalisation process, which was characterised by multilateral agreements and enabled ever greater trade opening, is being called into question. Only if thinking in terms of national advantages is replaced by joint action can sustainable growth that benefits all regions of the world be restored.

World Energy Consumption

According to the BP Statistical Review 2018, world energy consumption (PEC) rose by 1.9% to 19.3 billion TCE in 2017. By contrast, PEC in the Asia-Pacific region rose by 2.9%. This region's share in world energy consumption has now reached 42.5%. This is as high as in North America (20.5%), Europe (15.2%) and the CIS (6.6%) combined. In India, PEC grew by 5.1% between 1995 and 2017, and 4.2% is expected in the time between now and 2040. For China, there will be a significant decline in growth rates from 5.9% (1995–2017) to 1.1% (by 2040). Globally, a decline from 2.1% to 1.2% is expected for the periods mentioned.

Primary Energy Consumption (PEC) in Billion TCE — Major Energy Sources —						
	2014	2015	2016	2017	Change 2017/2016	Share of PEC 2017
Coal*	5,587	5,485	5,296	5,332	0,7%	27,6%
Natural Gas	4,402	4,479	4,392	4,510	2,7%	23,4%
Oil	6,074	6,188	6,512	6,605	1,4%	34,2%
Nuclear Energy	0,822	0,833	0,845	0,852	0,8%	4,4%
Hydroelectric Power	1,263	1,276	1,305	1,313	0,6%	6,8%
Renewable Energies and Others	0,452	0,521	0,596	0,696	16,8%	3,6%
Total	18,600	18,782	18,946	19,308	1,9%	100,0%
<i>*Hard coal and lignite</i>						
<i>Source: BP, Statistical Review 2018</i>						
<i>HT-W2</i>						

time high in 2018. It was the highest growth rate since 2013 and 70% higher than the average increase since 2010. The increase in emissions was caused by higher energy consumption due to a robust global economy and weather conditions in some parts of the world, which led to increased energy requirements for heating and cooling. The main cause is high growth in the fossil fuels oil (+1.4%) and natural gas (+2.7%). These two energy sources combined have with a share in energy consumption of almost 60%. Global coal consumption increased by 0.7% with a consumption share of a good one-fourth.

Development per energy source (HT-W2) shows that oil has a share of more than one-third and is the unchallenged leader among energy sources. In 2017, oil consumption rose by 1.4%, and natural gas consumption rose even more strongly, by 2.7%. Coal consumption rose slightly by 0.7%. The share of coal and the share of natural gas are now at similar levels.

Renewable energy sources (including Miscellaneous) had the strongest growth (+16.8%), but they started at a very low level. Their share in the coverage of consumption worldwide is only 3.6%. Still, the share of hydroelectric power comes to 6.8% so that the aggregate share is a good 10%.

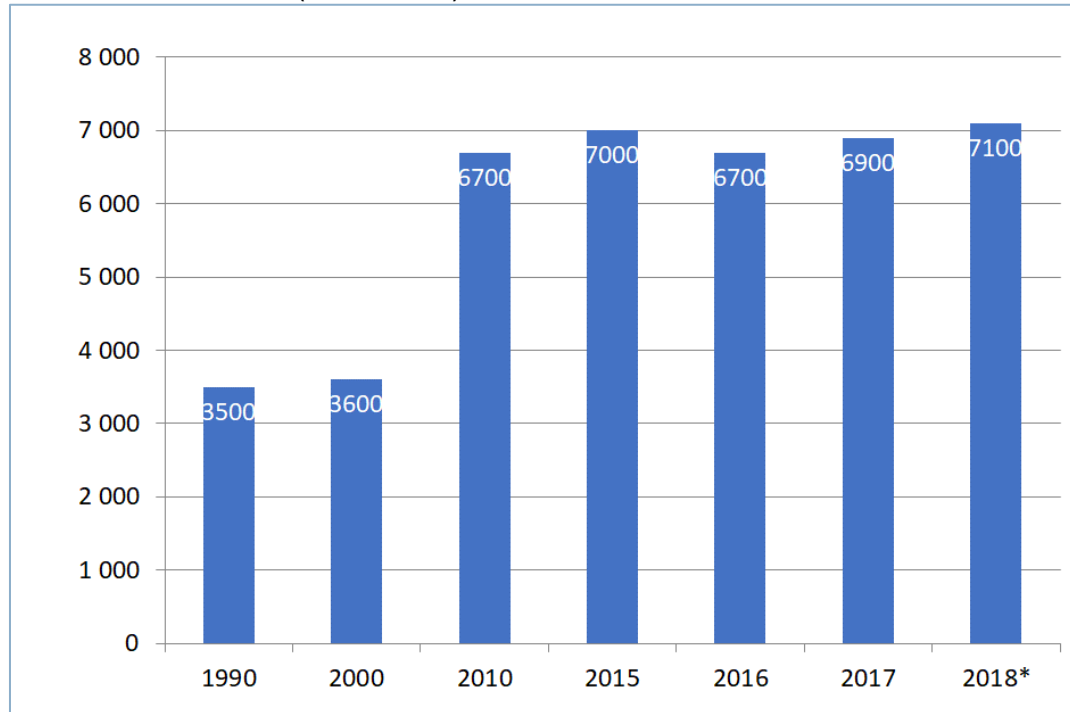
According to the International Energy Agency, global energy-related CO₂ emissions rose by 1.7% to a historical all-

World Climate Policy

Despite claims to the contrary, there was no attempt to introduce a CO₂ price during the World Climate Conference in Katowice, Poland, from 2 to 14 December 2018, which dealt with the regulations for implementing the Paris Agreement. At the conference, common standards were adopted to make climate protection measures transparent and comprehensible. The “Rulebook” is the working basis for the Climate Agreement. This is intended to preclude any doubt among the states regarding the reliability of the data.

World Hard Coal Production

World Hard Coal Production (Million Tonnes)



Source: VDKi, own calculations; *: provisional for 2018

Figure HT11

World hard coal production rose to 7.0 billion tonnes in 2015 before declining to 6.7 billion tonnes in 2016. World production recovered in 2017 and 2018 and rose by 2.8% to 7.1 billion tonnes (rounded off), again exceeding the level of 2015. So 2015 was not a turning point - "peak coal" was not reached in 2015; indeed, it would be more correct to speak of a high plateau.

The major causes of this significant increase in the reporting period were the development in China (+100 million tonnes) and India (+40 million tonnes; 5.7%). There is,

however, still a rising trend for production in countries that play a major role for hard coal seaborne transport. Hard coal production also rose in Russia (+31 million tonnes) and Indonesia (+56 million tonnes). Australia, Indonesia, Russia and the USA are major pillars of world coal trade.

Hard Coal Production of Important Countries in the Pacific Region in Million Tonnes

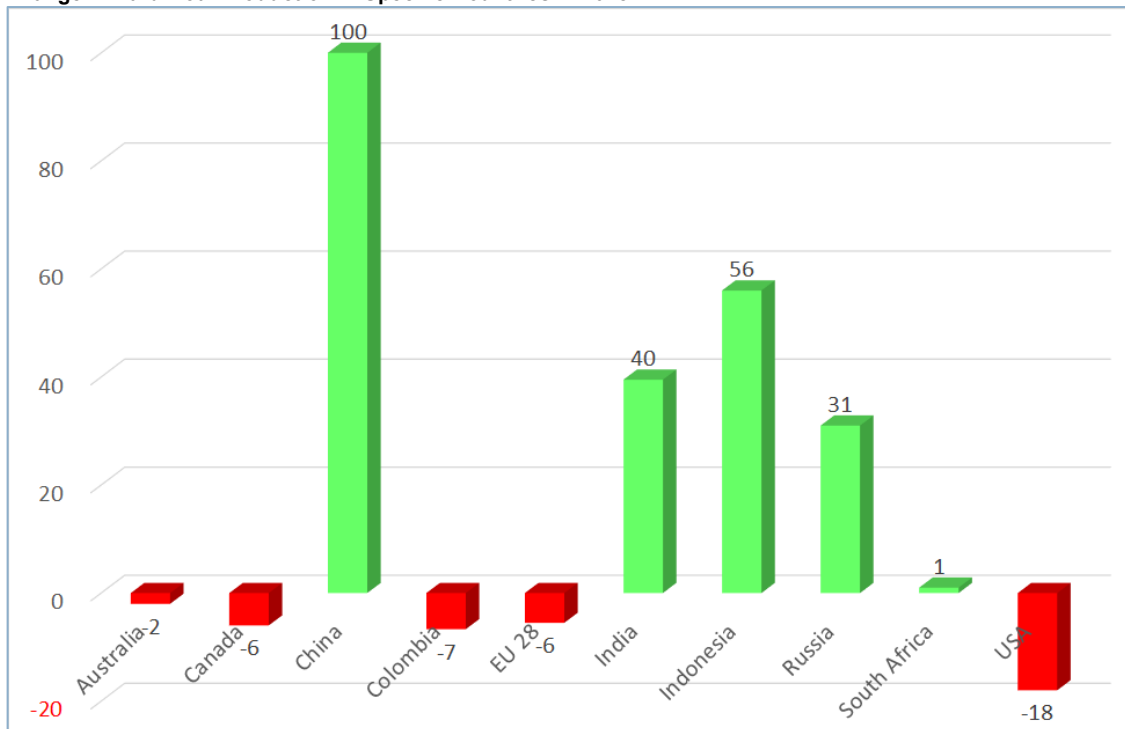
Producing Countries	2016	2017	2018	Change 2018/2017
PR China	3.364	3.446	3.546	2,9%
India	639	681	720	5,7%
Australia	433	449	447	-0,4%
Indonesia	402	415	471	13,5%

Source: VDKi own analyses

HT-W3

The increase in production in these countries shows that there are still countries with a growing need for coal. While China and India produce substantial shares themselves — nevertheless importing significant quantities from the world coal market as well — there are many ASEAN countries whose need for supplies to operate newly built hard coal-fired power plants is enhancing demand for the corresponding quantities on the world coal market. In relative terms, the rise was sharpest in Indonesia (13.5%), in Russia (7.6%) and in India (5.8%). The sharpest decline was experienced by Canada (-9.8%) and the European Union (-6.8%).

Change in Hard Coal Production in Specific Countries in 2018



Source: VDKi, own calculations; data for 2018 provisional

Figure HT12

World Hard Coal Market

The world hard coal market increased again by 60 million tonnes (4.7%) in 2018. While domestic trade increased by 5.5%, seaborne trade rose by 53 million tonnes (4.6%). World trade in coal developed as shown below in 2018.

World Hard Coal Trade					
	2016	2017	2018	Change 2018/2017	
	Mill. t			Mill. t	%
Seaborne Trade	1.116	1.157	1.210	53	4,6%
Domestic Trade	110	127	134	7	5,5%
Total	1.226	1.284	1.344	60	4,7%

Source: VDKi own analyses

HT-W4

An increase in coking coal exports of 16 million tonnes (+5.6%) was posted in seaborne trade because of the increase in worldwide steel production. The steam coal market also rose strongly by 37 million tonnes (+4.3%). So growth on the world coal market is driven to a virtually equal extent by growth in the demand for steam coal and coking coal. Seaborne trade of 1,210 million tonnes breaks down into 906 million tonnes of steam coal and 304 million tonnes of coking coal.

Seaborne Hard Coal World Trade					
	2016	2017	2018	Change 2018/2017	
	Mill. t			Mill. t	%
Steam Coal	831	869	906	37	4,3%
Coking Coal	285	288	304	16	5,6%
Total	1.116	1.157	1.210	53	4,6%

Source: VDKi own analyses

HT-W5

World production increased by 2.8% and world trade by 4.7% in 2018. As a result, the share of world trade in production rose to 19.0%.

World Production/World Trade					
Hard Coal	2016	2017	2018	Change 2018/2017	
	Mill. t			Mill. t	%
World Production	6.728	6.867	7.058	191	2,8%
World Trade	1.226	1.284	1.344	60	4,7%
Share of World Trade in Production	18,2%	18,7%	19,0%		

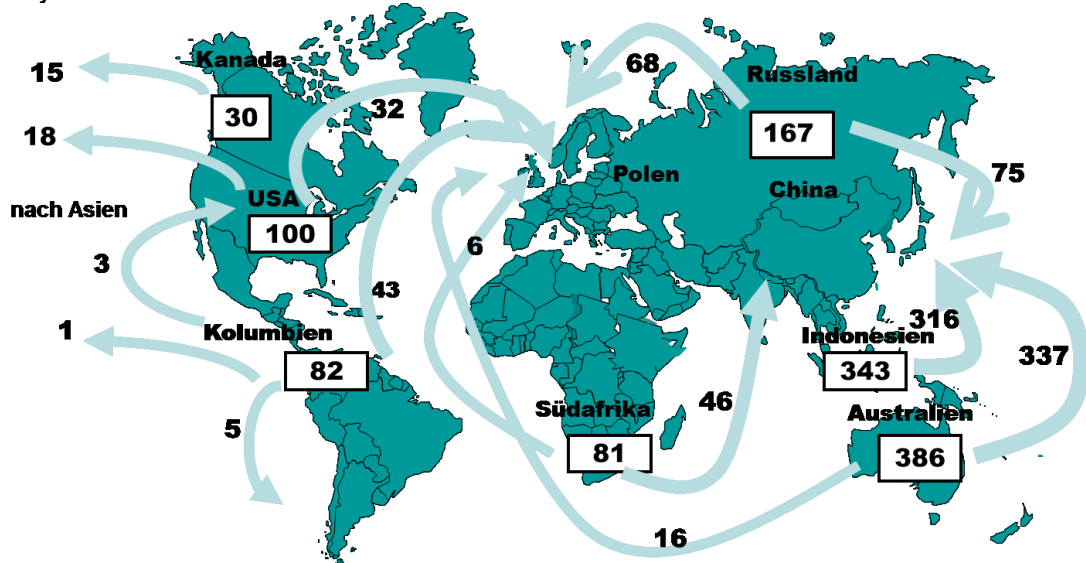
Source: VDKi own analyses

HT-W6

Figure HT13 shows the primary trade flows in seaborne trade. Indonesia shipped almost its complete production (92%; previous year 98%) to Asia. Australia's seaborne trade is also very strongly directed to Asia (87%; previous year 88%). Thanks to their geographic locations, Russia, Canada and the USA can supply coal to both markets, and trade is shifting more and more toward Asia.

In 2018, Colombia shipped 1 million tonnes to Asia, 3 million tonnes to North America and 5 million tonnes to South America. Europe (including countries bordering the Mediterranean) continues to be Colombia's primary sales market, however. South Africa supplies mainly to Asia (57%). Only 7% of its hard coal exports went to Europe.

Primary Trade Flows in Seaborne Trade with Hard Coal in 2018 in Million Tonnes



Source: VDKI, own calculations; data for 2018 provisional
Figure HT13

Major Hard Coal Importing Countries/Regions 2018 in Million Tonnes¹⁾

	Total	Steam Coal	Coking Coal
Asia, of which	912	726	186
Japan	189	146	43
PR China ²⁾	150	105	45
India	221	166	55
South Korea	148	123	25
EU 28, of which	150	113	37
Germany	44	32	12

¹⁾ Incl. anthracite ²⁾ Excl. lignite

Source: Own calculations; seaborne traffic only

HT-W7

The largest import countries are without exception found in the South-East Asia region, which accounts for 80% of seaborne transport of hard coal. India is the leader with 221 million tonnes, of which 166 million tonnes are steam coal and 55 million tonnes are coking coal. It is followed by Japan (189 million tonnes). The EU 28 (150 million tonnes) is ahead of South Korea (148 million tonnes). Within the EU, Germany, the largest member state and largest industrialised country, imports the most coal.

Australia defended its position as the largest coal exporter against Indonesia (343 million tonnes) in 2018 by posting 386 million tonnes (208 million tonnes of steam coal and 179 million tonnes of coking coal). Russia (167 million tonnes) maintained its positions in the ranking. As in the previous year, the USA (100 million tonnes) made a big leap and now lies ahead of Colombia (82 million tonnes) and South Africa (81 million tonnes).

World Market for Steam Coal

Demand for steam coal on the Pacific market was dominated above all by China, India and some of the ASEAN countries. Demand from South Korea rose significantly from 109 to 123 million tonnes and from India from 149 to 166 million tonnes. Japan also recorded an increase. Imports to the People's Republic of China decreased slightly. In total, demand for steam coal in Asia rose from 669 million tonnes to 726 million tonnes. Growth of 57 million tonnes (8.5%) is primarily attributable to the ASEAN countries that are not listed separately.

The Largest Hard Coal Exporting Countries in 2018 in Million Tonnes¹⁾

	Total	Steam Coal	Coking Coal
Australia	386	208	179
Indonesia	343	343	0
Russia	167	129	38
USA	100	48	52
Colombia	82	80	2
South Africa	81	81	0
Canada	30	1	29

¹⁾ Seaborne only

Source: VDKi own analyses

HT-W8

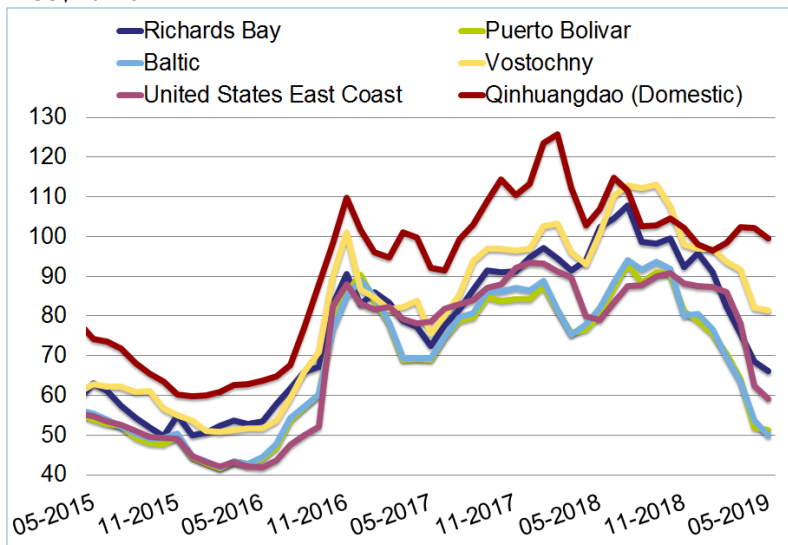
Steam Coal Prices

Since the beginning of 2018, prices for steam coal have declined slightly. At the beginning of this year, however, prices plummeted (Figure HT14). FOB prices for Colombian and Russian deliveries (Baltic) are around \$50/tonne in May 2019. The level of prices for steam coal from the USA and South Africa and for Russian deliveries to Asia (Vostochny) are slightly higher. The decline primarily reflects weaker demand from China, where domestic production picked up again and changes in import policy are taking effect. In the rest of East Asia, a mild winter reduced the demand for heat. Regulation in China continues to exercise substantial influence on the world market price level. This is discussed in greater detail in the Country Report.

The regulatory interventions range from import restrictions at a number of Chinese seaports to a limit on the duration of port transshipment. The introduction of protective measures for the domestic market has been successful in keeping the price for domestic supplies (Qinhuangdao) close to \$100/tonne.

The arbitrage window for Colombian deliveries to Asian destinations opened several times in 2018 and offered market opportunities. US suppliers benefited from temporary double-digit discounts for high-sulphur coal.

Development of FOB Steam Coal Prices to Rotterdam in US\$/Tonne



Source: IHS

Figure HT14

World Crude Steel and World Pig Iron Production

The pig iron production decisive for the consumption of coking coal, PCI coal and coke increased by 27 million tonnes from 1,212 million tonnes in 2017 to 1,239 million tonnes (+2.2%) in 2018. Crude steel production rose significantly by 3.2%.

Following a slight rise in the previous year, crude steel production in China rose by 11.3%. China's pig iron production increased by 8.5%. China's share in the world market of crude steel production rose from 48.1% to 51.8% in 2018; its share in world pig iron production remains at 62.2% and has risen by almost two-thirds.

Crude Steel and Pig Iron Production in the World

	2016	2017	2018	Change 2018/2017
	Mill. t			
Crude Steel	1.627	1.730	1.786	3,2%
Pig Iron	1.162	1.212	1.239	2,2%
Share of Pig Iron in Crude Steel	71,4%	70,1%	69,4%	-1,0%

Source: World Steel Association

HT-W9

Crude Steel and Pig Iron Production in PR China

	2016	2017	2018	Change 2018/2017
	Mill. t			in %
Crude Steel	808	832	926	11,3%
Pig Iron	701	711	771	8,5%
Share of Pig Iron in Crude Steel	86,7%	85,5%	83,3%	-1,4%
Share of Crude Steel Production in World	49,7%	48,1%	51,8%	-3,2%
Share of Pig Iron Production in World	60,3%	58,6%	62,2%	-2,8%

Source: World Steel Association

HT-W10

Production from the world's largest steel-producing countries developed as shown below in 2018.

The 10 Largest Steel-producing Countries in the World

Country	2016	2017	2018 ¹⁾	Change 2018/2017
	Mill. t			
PR China	808	832	926	11,3%
India	96	101	106	4,6%
Japan	105	105	104	-0,3%
USA	78	82	87	6,6%
Russia	71	71	72	0,9%
South Korea	69	71	72	1,3%
Germany	42	43	42	-2,9%
Turkey	33	38	37	-1,4%
Brazil	31	34	35	1,8%
Italy	23	24	25	3,9%
Total	1.356	1.401	1.506	7,5%
Total World	1.627	1.730	1.786	3,2%

¹⁾ Provisional figures

Source: World Steel Association

HT-W11

Steel production has been rising again since 2016. In 2018, steel production increased from 1,730 million tonnes to 1,786 million tonnes, an increase of 3.2%. The ten largest steel-producing countries gained at a significantly higher rate in 2018, posting growth of +7.5%. This development was driven mainly by the rise in China.

As has already been mentioned, the relative increase in 2018 was greatest in this country. The USA (+6.6%) and India (+4.6%) follow. In contrast, Germany (-2.9%), Turkey (-1.4%) and Japan (-0.3%) recorded declines.

Coking Coal Market

Market Share Seaborne World Coking Coal Market

	2016		2017		2018	
	Mill. t	Share	Mill. t	Share	Mill. t	Share
Australia	189	68%	173	61%	179	60,1%
USA ¹⁾	34	12%	46	16%	52	17,4%
Russia	30	11%	35	12%	38	12,8%
Canada ²⁾	27	10%	28	10%	29	9,7%
Total	280	100	282	100	298	100

¹⁾ Excl. trade with Canada ²⁾ Excl. trade with USA

Source: VDKi own analyses

HT-W12

While world pig iron production rose by 8.5%, trade on the seaborne world coking coal market also rose strongly at +5.6%. With the exception of Turkey, countries with growing steel production have their own coking coal deposits. There has been a slight shift in the market shares of the various countries on the seaborne world coking coal market. Australia's exports of seaborne coking coal increased by 6 million tonnes, while its market share of 60% represents a slight decline. The USA and Russia were able to increase their market shares once again, while Canada was just able to maintain its position.

World Coke Market

Coke production worldwide rose from 633 million tonnes to 646 million tonnes; world trade with coke, which is at a substantially lower level, rose from 26 million tonnes to 28 million tonnes so that the share of world trade in world coke production increased from 4.1% to 4.4%. Chinese coke exports in 2018 amounted to 9.9 million tonnes (+22%).

China is not only far and away the largest exporter of coke; it is also the largest coke producer. China produced 438 million tonnes, corresponding to 68% of world production. Europe accounted for 38.8 million tonnes, 6% of global production in 2018.

World Coke Market			
	2016	2017	2018 ¹⁾
	Mill. t		
Total World Market	25	26	28
World Coke Production	649	633	646
% of World Coke Production	3,9%	4,1%	4,4%

¹⁾ Provisional
Source: Own calculations

HT-W13

The European coke market in 2018 had a volume of 9.0 million tonnes compared with 9.1 million tonnes in the previous year. Primary exporters of coke besides China are Poland (5.80 million tonnes over 5.78 million tonnes in the previous year) and Russia (2.45 million tonnes over 2.82 million tonnes in the previous year).

Coking Coal and Coke Prices

World seaborne trade for metallurgical coal was relatively uneasy in 2018 as continued supply disruptions and

changes in Chinese import demand led to price volatility throughout the year. In January 2019, the Australian premium spot price for hard coking coal (HCC) fell to below US\$200/tonne before rising again in February, driven by solid demand — despite continuing uncertainty about China's import restrictions. The price for lower-quality grades varied between about US\$110/tonne and US\$150/tonne.

At US\$320/tonne in May 2019, coke prices FOB China were at the previous year's level. In the same period, the CIF ARA price decreased from US\$347/tonne to US\$307/tonne; initially, it was US\$27/tonne above and in the end US\$13/tonne below the Chinese price level.

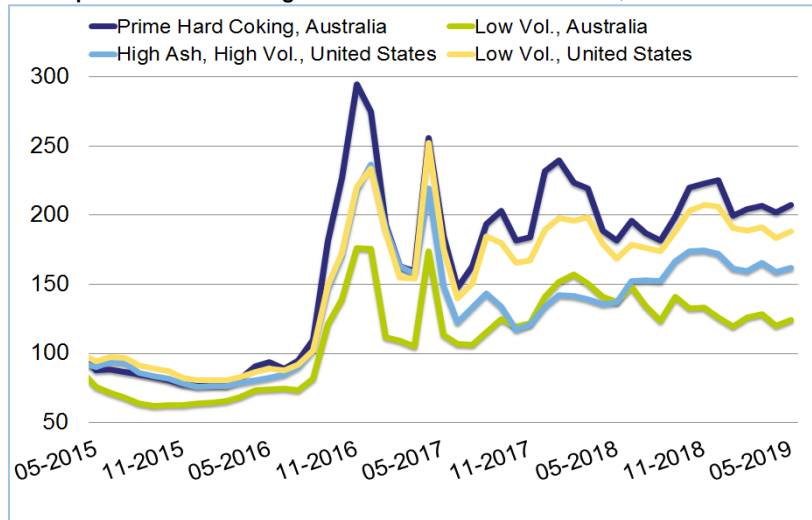
Freight Rates

The Baltic Dry Index (BDI) is calculated from the indices of the four ship groups Capesize, Panamax, Supramax and Handysize. The average value of 718 points at the beginning of 2016 represented the lowest value of the Baltic Dry Index since 1986. The BDI recovered to 1,750 points by July 2018. It then collapsed again, reaching only 650 points in February 2019 — even less than the historic low point of 2016. On 11 June 2019, the BDI stood at 1,105.00.

Freight rates fundamentally mirror the distance from the loading port to the ARA ports, but other effects such as the availability of freight capacities and the general market situation play a role as well. Figure HT16, for example, reflects the development tendencies of the BDI described above.

At low price levels, freight rates were usually very close to one other, they diverged again when price levels were higher. The freight rate for the Richards Bay-ARA route is currently the lowest.

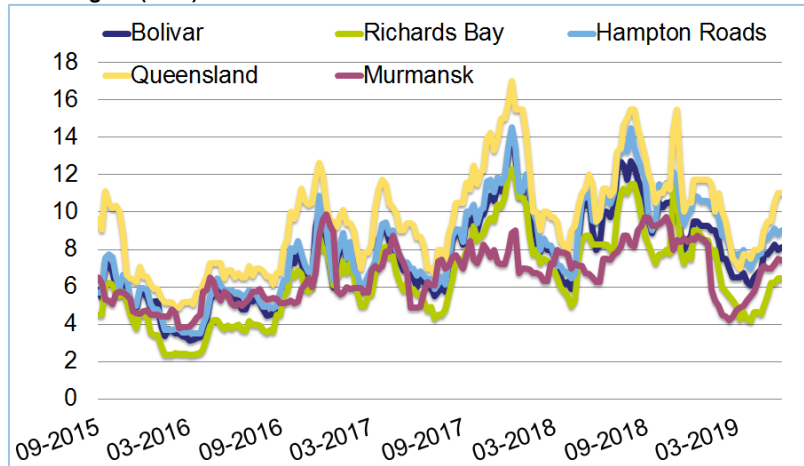
Development of FOB Coking Coal Prices to Rotterdam in US\$/Tonne



Source: HIS

Figure HT15

Sea Freights (FOB) for Hard Coal to the ARA Ports



Source: IHS

Figure HT16

PROSPECTS

Economic Development

India is the country that will achieve the highest economic growth worldwide in 2019 and will post a growth rate of 7.2%. For 2020, the OECD expects even stronger growth of 7.4%. China ranks second with 6.2%. The global average of 3.2% is about half that of China; the OECD countries will post 1.8% and Germany and Japan will generate less than half the OECD average.

Country Ranking by Growth in Gross Domestic Product				
	2017	2018 ¹⁾	2019 ²⁾	2020 ²⁾
	Change from Previous Year in %			
India	7,17	7,04	7,16	7,43
PR China	6,80	6,60	6,20	6,01
World	3,68	3,51	3,18	3,36
South Korea	3,06	2,69	2,40	2,49
USA	2,22	2,86	2,82	2,28
Brazil	1,06	1,11	1,36	2,27
Russia	1,63	2,26	1,38	2,07
OECD Countries	2,59	2,28	1,78	1,82
Germany	2,46	1,45	0,74	1,20
Great Britain	1,82	1,40	1,22	0,98
Japan	1,93	0,79	0,66	0,61

¹⁾ Provisional ²⁾ Forecast
 Source: OECD Interim Economic Outlook, March 2018

HT-P1

The development of energy demand is therefore determined by developments in China, India and the Asia-Pacific region in general.

Development of the World Hard Coal Market

Steam coal prices have been falling since 2018. In the first quarter of 2019, they really collapsed (Figure HT14 in the chapter on steam coal prices). Must this trend be expected to continue in the short and medium term?

The significant decline in Colombian exports to Germany is striking. Europe, including the Mediterranean countries, remains a very important market for Colombia. However, coal exit plans in the European Union that are currently under discussion or have already been adopted are offset by positive development opportunities in the Mediterranean countries. Again and again, arbitrage windows open up for deliveries to Asia, giving Colombian exporters the opportunity to diversify their sales flows.

For producers in the USA, the sales potential in Asia was a decisive element in countering the slump in sales on the domestic market, at least in part. Russian suppliers are taking advantage of their favourable geographical situation to export rising volumes to Asia as well. The crucial question for all producer countries is how the demand for coal in Asia might develop.

The analysis of this question cannot ignore China. This country, by far the largest coal producer, is also an important buyer on the world market for hard coal. However, it is becoming increasingly difficult to keep up with the regulatory interventions of Chinese decision-makers. The interventions of the Chinese planning authority have not always been successful from their own point of view.

In every instance, however, these decisions have had serious consequences for the international coal trade. After Chinese supply policy led to price pressures in 2015, there was a change in the way of thinking in 2016: now attempts

were made to support prices and to stabilise them within a certain range. In 2018, regulatory interventions and import restrictions were implemented at a number of Chinese sea-ports. The port transshipment period was limited in April 2018, and import restrictions followed in October 2018. At the beginning of January 2019, these measures were revoked.

China's policy to close inefficient and unsafe production capacities must have been largely completed by now. At the same time, new and efficient production capacity has been built, a situation that has enabled Chinese coal production to continue to grow. If China now manages to solve logistical problems and to improve transport links between the producing regions and the main demand centres, an expansion in the availability of domestic supply must be expected. This would put pressure not only on domestic coal prices, but on the world market as well.

India is the country that will achieve the highest economic growth worldwide in 2019 and will post a growth rate of 7.2% (Table HT-P1). The demand for energy in this country continues unchecked, and this is especially true of the coal sector. Although India is endeavouring to meet the growing demand with domestic coal production, imports increased again significantly in 2018 after three consecutive years of slight decline. Imports will play an important role in 2019 as domestic production will have to make considerable efforts if it is to keep pace with demand.

The lower house of the Indian parliament was elected during this year's parliamentary elections in India, which took place between 11 April 2019 and 19 May 2019. This was the largest democratic election decision in the world in terms of the number of voters. Almost 900 million people went to the polls. The ruling party of Prime Minister Narendra Modi and the coalition he leads won the election by a large majority.

It can be assumed that the Modi government will continue to push the development of the country, especially the complete electrification of rural areas. Indian demand for steam coal will consequently continue to grow.

In addition to China and India, Japan and South Korea are among the major hard coal importing countries (see HT-W7 in the chapter on world coal production). In 2018, India was number one, followed by Japan, China and South Korea. Japan continues to face the difficult task of dealing with the consequences of the Fukushima reactor accident for the Japanese electricity industry. Without hard coal-fired power plants, it will most likely be difficult to cope with the country's energy policy challenges.

The situation in South Korea is more difficult to assess. Korean legislation is increasingly hostile to coal. The construction of new hard coal-fired power plants led to a significant increase in the generation of electricity from hard coal in 2017 and to a stabilisation of demand for imported coal in 2018. New coal-fired power plants are expected to go online by 2022, creating additional demand. On 1 April 2019, South Korea implemented the largest increase in energy taxes to date. The tax on coal was increased by 10,000 KRW/tonne (\$8.83/tonne) for all calorific values. Coal with a calorific value of 5,500 kcal/kg or more, for instance, is now taxed at 49,000 KRW/tonne (\$43.28/tonne). In contrast, total natural gas taxation was reduced by a good 80%. In the estimation of IHS Markit, a fuel switch could be triggered between the newest natural gas-fired power plants and the oldest hard coal-fired power plants. The country already has an emissions trading system in place.

On the other hand, what are the sales prospects for metallurgical coal? There are alternatives to the use of hard coal as a reducing agent in the production of pig iron and steel, but these are still far from being used in pilot projects, much less on an industrial scale. In this respect, the prospects

for sales of coking coal would essentially be good. As reported in the chapter on world crude steel and world pig iron production, global crude steel production increased by 3.2% and pig iron production by 2.2% in 2018. In China, crude steel production increased by an incredible 11.3%, and pig iron production rose by 8.5%. The additional demand for coking coal will in future be largely determined by demand from Asia.

Australia is the market leader with a share of around 60% of the seaborne coking coal trade. However, the growing hostility to coal in this country and the situation on the financial markets are not conducive to capacity expansion. Still, the last parliamentary election has led to a somewhat surprising lack of hard policy changes in Australia.

As the number of new mine projects is very limited, the market will surely remain tight and prices high. However, bringing forward planned mining projects could yet lead to the market giving way. The further development in China and India will be decisive. Australia will remain an important supplier in this region and the Russian market share will almost certainly grow while supplies from Canada and the USA should remain stable.

It is more difficult to assess the development of steam coal capacity. This is especially true in assessing Indonesia's role. Indonesian suppliers had to bear the brunt of Chinese market regulation. This led to the collapse of prices in 2015, but they have recovered since 2017, and exports to China have done more than just recover — there has been a real boom. As Indonesian President Joko Widodo was confirmed in office in the recent parliamentary elections, the country can be expected to continue to promote its domestic use of coal reserves and to pursue policies tending to be hostile to exports. However, the target figures issued in the past were highly unrealistic, and Indonesia continues to be the Number Two coal exporting country behind Australia. Even though the country's power plant expansion

programme has been delayed, growing competition of exports versus domestic use is to be expected in the future.

There are nonetheless still growth opportunities for Russian suppliers on the steam coal market, and Colombia is also on the Asian market whenever the arbitrage window is open. In the case of the USA, the question is whether growth can be expected to continue at the same rate after a trebling of steam coal exports within only a few years. The availability of low-cost coal with a high sulphur content also played a role. As price discounts have declined again, this competitive advantage has virtually disappeared. Above all, the country's infrastructure is likely to stand in the way of a further increase in exports.

The development of freight costs is decisive for the competitive position of these countries. On the one hand, this is largely determined by economic development in countries such as China and India. Air pollution control measures in world maritime transport will also have a major impact. The International Maritime Organisation (IMO) agreed in October 2016 to reduce the sulphur content of marine bunker fuel from 3.5% to 0.5% from January 2020. The effects could be disruptive, but at the very least they are a source of uncertainty. The extent to which refinery investments and a fuel change or the installation of sulphur separation plants will take place is currently unknown. According to Aleksey Danilov, Director of Carbo One, at least one consequence of the IMO regulations is clear: freight costs will rise and longer routes to Asia will be negatively affected. The arbitrage window for swing suppliers could be restricted.

Finally, the assessment of the costs of electricity generation from renewable energy sources and from natural gas is another essential factor impacting the investment behaviour of the suppliers of steam coal. On a global scale, the expansion of renewable energy sources is proceeding at a slower pace than in Germany and other countries.

Recently, the International Energy Agency even warned that this expansion might come to a standstill. The slowing expansion of renewable energies is not restricted to Germany. Last year, for the first time in almost two decades, the worldwide expansion of power generation plants based on wind, sun or biomass did not grow more strongly than in the previous year. According to the International Energy Agency, the main reason for this was the slump in the expansion of photovoltaics in China. Slowing growth is raising serious concerns about whether the world can still meet its climate targets.

From today's perspective, natural gas is the coal industry's most prominent competitor. For a long time, the rule was that natural gas prices were low in the USA, high in Asia and somewhere in-between in Europe, but now the tide has turned. An oversupply of liquefied natural gas (LNG) has in 2019 led to LNG becoming competitive with steam coal in Asia for the first time. It is to be expected that oil companies in particular will invest in LNG capacities in view of the imminent revenue losses as a consequence of rising electromobility in the transport sector. What is more, the US government is politically supporting the use of LNG. A switch to natural gas and a middle-term decline in the price of steam coal could be the consequences. This makes it all the more important for the global coal industry to insist on a fair comparison of total emissions of hard coal and natural gas throughout the full length of the supply chain.

Overall, it can be assumed that international hard coal trading will continue to grow, but not as strongly as in the last decade. Indonesia will remain a major producer, but Australia and Russia will post the largest increases.

CORPORATE SOCIAL RESPONSIBILITY

In February 2019, the Federal Ministry for Economic Cooperation and Development (BMZ) presented a bill for the regulation of human rights and environmental due diligence in global value chains (Sustainable Value Chain Act - NaWKG). The law applies to the following companies and their business activities abroad if, according to their articles of association, their registered office (head office or main branch) is in Germany:

All large companies as defined by Section 267 no. 3 HGB; and

Other enterprises which themselves or through controlled enterprises are active *inter alia* in one of the "high risk sectors"

- Agriculture, forestry and fishing
- Mining of stones and soils
- Energy supply; or

Companies operating in conflict and high-risk areas.

The subject of due diligence with respect to human rights is the protection of internationally recognised human rights. The subject of environmental due diligence is compliance with fundamental environmental protection requirements at the place of performance or resulting from international agreements that are binding on the Federal Republic of Germany and requirements resulting from the international state of technology.

Companies will be required to meet the following obligations: risk analysis by companies, prevention, corrective measures, appointment of compliance officers, complaint

mechanism in companies and whistleblower protection. The bill also provides for sanction mechanisms: fines, criminal provisions for compliance officers and exclusion from public contracts.

The Federal Association of German Industries (BDI) came to the following initial assessment: "The bill prepared by the BMZ to regulate due diligence for human rights and environmental protection in global value chains thwarts the Federal Government's current policy on human rights due diligence, namely, the implementation process of the National Action Plan for the Economy and Human Rights (NAP), and entails immense risks for the security of investments and development cooperation of German companies. The bill is therefore neither sensible nor acceptable for the BDI."

In addition, its scope is very broad, without specifying the countries where especially high risks may exist. Companies would therefore have to decide independently which country is relevant, a delegation of responsibility. In view of possible prison sentences for compliance officers, companies might be tempted to withdraw whenever there is the least doubt rather than to invest or establish local production.

The Coal Importer Association (VDKi) is committed to the due diligence obligations relating to human rights and environmental protection in global value chains and therefore adopted a declaration of principles on social responsibility in these areas at a members' assembly in 2015.

Statement of Principles of the VDKi

As far as is possible for the Association, the VDKi assumes responsibility for social, ecological and ethical principles. The Association supports its members in their efforts to achieve a high level of corporate social responsibility (CSR) in all of their business activities. The VDKi and its

members expect all of the parties participating in the hard coal supply chain (hereinafter known as the suppliers) to observe and support the following basic principles as the fundamental ground rules for a business relationship based on trust. The VDKi therefore adopted a resolution recognising the following basic principles for responsible, social, ethical and environmentally sound actions in the hard coal supply chain during its Members' Assembly on 25 June 2015.

Basic Principles

We expect the compliance of all suppliers with any and all relevant laws and regulations of the country in which they operate. Moreover, we expect suppliers to orient their business to at least one of the following three international standards and guidelines:

- The Ten Principles of the United Nations Global Compact
- The OECD Guidelines for Multinational Enterprises
- The IFC Performance Standards on Environmental and Social Sustainability

We monitor the further development of standards specific to mining and coal and maintain an ongoing dialogue with our suppliers so that we can support them in the fulfilment of their social responsibility.

We expect our suppliers to advocate sustainable business activities within the full scope of their responsibilities and interests and not to limit their efforts to establishing sustainable business models for themselves alone. In this sense, we expect our suppliers to communicate the basic principles declared here as their expectation of their own suppliers and market partners.

We are open for dialogue with all of the relevant stakeholders who wish to contribute to responsible corporate action in the hard coal supply chain in the sense of a continuous improvement process.

We expect our suppliers to commit to the basic values of the following four areas set forth in the UN Global Compact and to strive to implement these principles in practice.

1. Human Rights

We expect all suppliers to support and respect the United Nations Universal Declaration of Human Rights and to ensure that they themselves are not party to any violations of human rights. The reference framework for responsible handling of human rights is established by the "UN Guiding Principles on Business and Human Rights" and any national action plans based on these principles for the relevant region.

2. Labour Standards

We expect the compliance of all of our suppliers with the laws and regulations of their country, including those related to occupational safety and health protection on the job.

Moreover, we expect compliance with the following basic principles and related core labour standards of the International Labour Organisation (ILO):

- Freedom of association and the right to collective bargaining
- Abolition of forced labour
- Elimination of child labour
- Prohibition of discrimination in employment and profession

3. Environmental Protection

We expect all of our suppliers to ensure their responsible treatment of the environment and to work continuously on reducing the environmental impact of their activities on water, land, in the air and on biodiversity. Moreover, we expect them to encourage the development and distribution of technologies to protect the environment and to use natural resources efficiently.

4. Ethical Business Standards

We expect all of our suppliers to comply with a high level of business ethics and to combat every form of corruption or bribery, including fraud and extortion.

The reference frame for ethical business standards is found in the UN Convention Against Corruption.

CSR has become a standard element of association policy.

The VDKi has created a work group on this subject, and CSR is a regular point on the agenda of the meetings of the Board of Directors. The VDKi is open to the sharing of experience with all groups and associations interested in CSR.

COUNTRY REPORTS¹

AUSTRALIA

General



The Australian economy has been growing continuously for 28 years. According to the International Monetary Fund (IMF), gross domestic product (GDP) grew by 2.8% in real terms in 2018 (World Economic Outlook, WEO, April 2019). An increase of

2.1% is projected for 2019. This would put per capita GDP at US\$55,420, substantially above the world average of US\$11,570. Parallel to this strong economic growth, however, is rising inflation. The IMF expects the consumer price index to increase by 2.3% by 2020. The foreign trade deficit as a percentage of GDP was -2.1% in 2018 and will remain at this level until 2020.

According to the chief economist in the Australian Department of Industry, Innovation and Science, Australia's export revenues from metallurgical coal will rise in real terms from AU\$39 billion in fiscal year 2017–18 to a record of AU\$43 billion in fiscal year 2018–19. A projected price decline is expected to lead to a decline in export earnings to AU\$30 billion in fiscal year 2023–24.

Australian export revenues from power plant coal exports — driven by price developments — are expected to reach a record level of AU\$27 billion in fiscal year 2018–19 over AU\$23 billion in the previous fiscal year 2017–18. Export revenues are expected to fall to AU\$20 billion in real terms

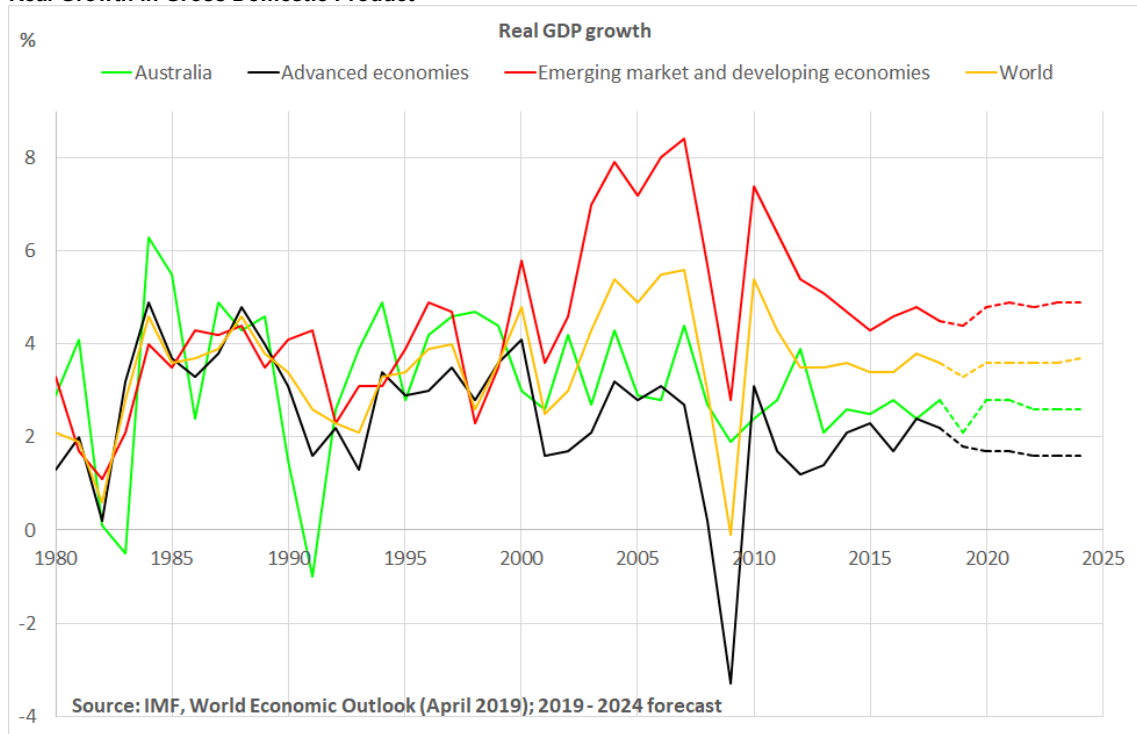
by fiscal year 2023–24 as the impact of lower prices will offset higher export volumes.

Unexpectedly, incumbent Morrison won the Australian parliamentary election on 19 May 2019. Journalists and political activists had misjudged the mood among the populace or had disseminated a false assessment. They had identified climate protection as one of the key issues in the election. A course of hostility to coal was expected from the Labor Party in this area. But in the end, even in Queensland, a federal state where debate on the climate issue was especially controversial, several constituencies fell to representatives from the conservative governing coalition of the Liberal and National Parties.

Contrary to the widespread misconceptions, Australians were more interested in issues such as taxes and jobs. They feared that, among other things, that ambitious and costly measures to protect the climate would put a damper on Australia's 28 years of uninterrupted growth

¹ The map sections in the Country Reports are taken from the country information portal (LIPortal) of GIZ GmbH.

Real Growth in Gross Domestic Product



Production

The eastern parts of the country, New South Wales (NSW) and Queensland (QLD), are the sources of virtually all of Australia's hard coal. Most of the coking coal comes from QLD while steam coal comes primarily from NSW. Smaller quantities of hard coal were produced in Western and South Australia as well as Tasmania (21 million tonnes in total) in 2018, but they remained exclusively on the domestic market.

Usable Production of the Major Production States of Australia

	2016	2017	2018
	Mill. t	Mill. t	Mill. t
New South Wales (NSW)	195	192	198
Queensland (QLD)	234	236	228
Total NSW/QLD	429	428	426
Rest of Australia	4	21	21
Total	433	449	447

Source: Queensland Department of Natural Resources, Mines and Energy/IHS Markit

LB-T1

About 80% of the total usable production comes from opencast pits, 20% from underground mines. Total coal production fell slightly from 449 million tonnes to 447 million tonnes, a decrease of 0.4%.

The Australian benchmark spot price for steam coal (Newcastle 6,000 kcal/kg) averaged around US\$96/tonne in March 2019, down 3.4% from the same quarter of the previous year. The benchmark spot price has fallen continuously from its 7-year high in July 2018 (US\$120/tonne). The decline primarily reflects weaker demand from China, where domestic production picked up again and changes in import policy are taking effect. In the rest of East Asia, a mild winter reduced the demand for heat.

World seaborne trade for metallurgical coal was relatively uneasy in 2018 as continued supply disruptions and changes in Chinese import demand led to price volatility throughout the year. In January 2019, the Australian premium spot price for hard coking coal (HCC) fell to below US\$200/tonne before rising again in February, driven by solid demand — despite continuing uncertainty about China's import restrictions.

The Australian Department of Industry, Innovation and Science regularly issues information about the status of coal mining projects in the publication Resources and Energy Major Projects and distinguishes here between announced projects, feasibility studies, projects in progress and completed projects. The following projects were listed in the publication of December 2018:

- Twelve coal projects were announced: 3 in NSW, 9 in QLD. The estimated investment volume amounts to between AU\$8.5 billion and AU\$14.5 billion.
- Most of the projects for the expansion or new development of mines are in the phase of feasibility studies. There are 48 coal projects in this stage — 10 in

NSW and 38 in QLD — with a total value of AU\$60 billion to AU\$70 billion.

- Two coal projects with a value of AU\$2.3 billion are currently under development.
- The Byerwen Coal Project in QLD, valued at AU\$1.8 billion, was completed in 2018. Both steam and coking coal are produced in this mine.

The Carmichael Mine of the Indian Adani Group, which became the symbol of resistance to mining in Australia, has been “approved by Australia,” according to a BBC report of 13 June 2019. The water permit, which had not yet been obtained, has now been issued by the Queensland government. The historical recapitulation below will help to understand the sequence of events.

In 2010, Adani purchased the project for US\$2.7 billion from the Australian company Linc Energy. After being confronted with problems of project financing, Adani announced last year that the company would now finance the project itself, although the project was reduced to annual production of ten million tonnes, one-sixth the size originally planned.

In March of this year, the Greens in Queensland launched a legislative initiative against the mine. The aim of the initiative was to prevent the granting of production licences and to withdraw licences already granted to the companies/company without compensation. Adani is currently the only company holding mining rights in the Galilee Basin.

In April 2019, Adani was granted a federal water permit, which took it significantly closer to its goal. However, Adani still needed further permits at federal and state levels. As recently as April, the Federal Environment Ministry reported that an independent review of the water permit by Geoscience Australia and by CSIRO, the highly respected scientific institution of the country, had come to the same

conclusions. The minister emphasised, however, that the company needed at least nine more permits before production could start.

Adani can be considered one of the big winners of the Australian elections. Some Australian analysts went so far as to see the anti-coal campaign, which was an anti-Adani campaign, as the key to Labor's electoral defeat. Annastacia Palaszczuk, Queensland's premier, was now under pressure. Her delay tactics for the granting of mining permits contributed in no small part to the election result. Perhaps this is how the change of opinion and the granting of the above-mentioned water permit by the Queensland government should be understood.

Lucas Dow, CEO, Mining, Adani Australia, told *Economictimes/Indiatimes* on 13 June 2019 that some preparations still had to be made in the next few days and that construction work, especially on the rail link, could then begin. A further six companies with projects in the Galilee Basin could now also begin to hope again.

Infrastructure

Aurizon did not connect the rail link of the Galilee Basin, the site of the Adani Group's Carmichael Mine that has now been largely approved as well as of other potential major projects, to the port of Abbot Point because it had not been possible to conclude any contracts with customers in 2018. Adani will now pursue its own railway project, which the Queensland government can no longer prevent.

Export

An 85.2% share of Australian hard coal production was exported. Table T2 below shows the loading ports used for export of the coal. We point out here that the transshipment figures from the coal loading ports do not always

correspond precisely to the export figures. There may be customs-related reasons for this.

Following a decline in the previous year, Australia's exports rose by 3.8% to 386 million tonnes in 2018. This figure includes 207 million tonnes of steam coal (+6 million tonnes) and 179 million tonnes of coking coal (+8 million tonnes). China, India and Japan are currently the largest importers of Australian coking coal. China alone imported 39.5 million tonnes, India 45.3 million tonnes and Japan 35.8 million tonnes. They were followed by South Korea with 17.8 million tonnes and Taiwan with 10.3 million tonnes.

Exports of the Largest Coal Loading Ports		
Coal Loading Ports	2017	2018
	Mill. t	Mill. t
Abbot Point	26,0	29,8
Dalrymple Bay	65,0	72,3
Hay Point	44,1	49,3
Gladstone	68,3	58,4
Brisbane	7,4	7,0
Total Queensland	210,8	216,8
PWCS	104,7	106,7
Port Kembla	5,6	6,7
NCIG	53,4	50,7
Total New South Wales	163,7	164,1
Total	374,5	380,9

Source: IHS (Monthly Throughput from Key Export Ports)

LB-T2

Japan is by far the largest importer of steam coal with 81.0 million tonnes. China follows with 49.8 million tonnes, South Korea with 30.1 million tonnes and Taiwan with 22.6 million tonnes.

Hard Coal Exports According to Grade

Coal Grade	2016	2017	2018
	Mill. t	Mill. t	Mill. t
Coking Coal (HCC)	122	110	119
Semi-soft Coking Coal and PCI Coal	67	61	60
Steam Coal	202	201	207
Total	391	372	386

Source: Australian Department of Industry, Innovation and Science, Office of the Chief Economist/IHS Markit

LB-T3

Development of Australia's Exports to PR China

	2017	2018
	Mill. t	Mill. t
Coking Coal (HCC)	29,5	31,1
Semi-soft Coking Coal and PCI Coal	11,9	8,4
Steam Coal	41,9	49,8
Total	83,3	89,3

Source: IHS Markit

LB-T4

A summary of Australia's key figures is shown here.

Key Figures Australia

	2016	2017	2018
	Mill. t	Mill. t	Mill. t
Hard Coal Production	433	449	447
Hard Coal Exports	391	372	386
• Steam Coal	202	201	207
• Coking Coal	189	171	179
Imports Germany	6,5	5,6	5,2
• Steam Coal (incl. Anthracite)	0,4	0,1	0,0
• Coking Coal	12,1	5,5	5,2
Export Ratio	90%	83%	86%

Source: Own calculations/DESTATIS

LB-T5

INDONESIA

General



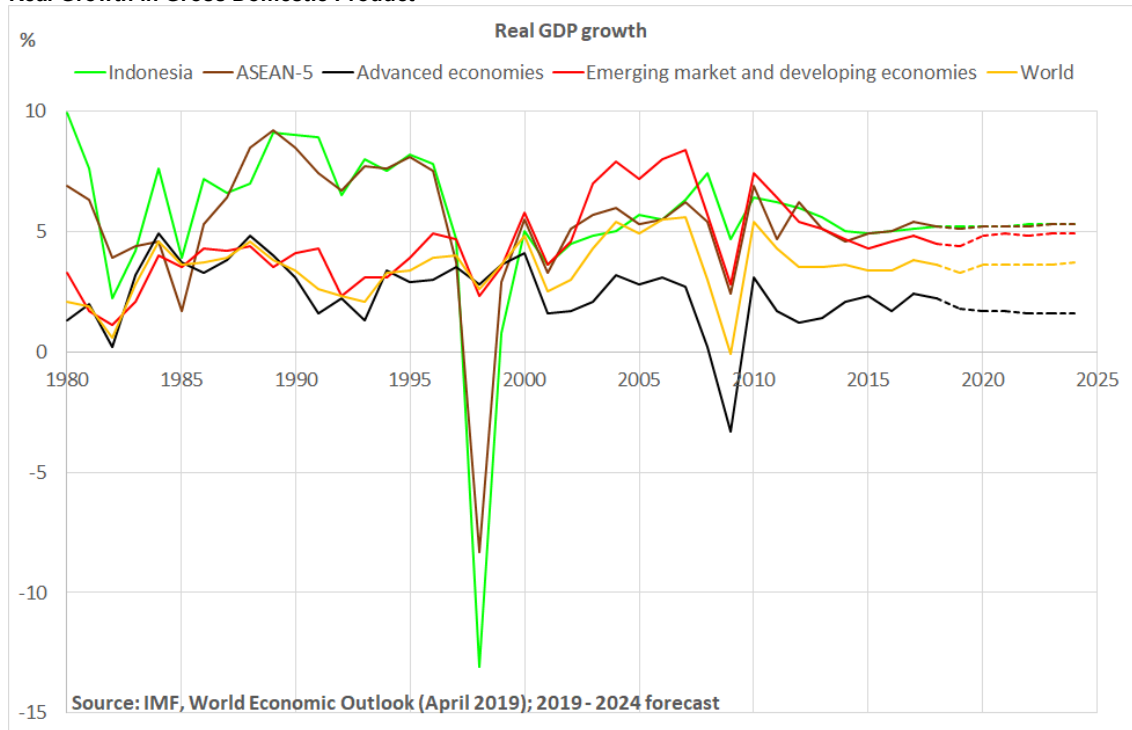
Indonesia is a member of the South-East Asian association, the Association of

Southeast Asian Nations (ASEAN), and is far and away the largest national economy within this group.

The World Bank classifies Indonesia as a so-called "Lower Middle-Income Country."

According to the IMF, gross domestic product increased by 5.2% in 2018 (WEO, April 2019). An increase of 5.2% is projected for 2019 as well. This puts growth above the level of the developing and emerging countries and almost exactly at the level of the ASEAN 5 countries (Indonesia, Malaysia, Philippines, Thailand, Vietnam). This would mean per capita GDP of US\$4,120 in 2019, still substantially below the world average of US\$11,570.

Real Growth in Gross Domestic Product



LB-B2

According to Germany Trade and Invest (GTAI), the urban regions have the economic performance of an emerging economy. In some of the rural regions, conditions are still comparable to a developing country. But in comparison with other countries rich in raw materials such as Brazil or Venezuela, Indonesia, with its high real economic growth, is in an excellent position. As already mentioned, the IMF expects an increase of 5.2% for 2018–2020. The IMF expects the consumer price index to increase from 3.2% to 3.6% by 2020. The foreign trade deficit as a percentage of GDP will decline from -3.0% in 2018 to -2.6% in 2020.

According to WEF's Global Competitiveness Index 2018–2019, the country is in 45th place (previous year 36th) out of 140 countries, putting it in the second quartile. Indonesia ranks in the middle of the World Bank's Ease of Doing Business Index 2019 and ranks 73rd out of 190 countries (33rd in "Getting Electricity"). Transparency International's Corruption Perceptions Index 2018 ranks it 89th out of 180 countries.

The Indonesian authorities are stepping up their efforts to close inefficient and non-compliant mining companies. The Indonesian Ministry of Energy and Mineral Resources (ESDM) has stated that it is increasing auditing to "sort out"

mines that have violated financial and environmental regulations.

Data from the Indonesian Geological Agency at the Ministry of Energy and Mineral Resources (ESDM) from 2019 show that Indonesian coal reserves and resources have been increased from 25 billion tonnes and 125 billion tonnes in the previous year to 37 billion tonnes and 166 billion tonnes, respectively. This means that Indonesia can cover consumption for 2019 as planned by the government for 76 years from reserves. The statistics were prepared on the basis of data from Indonesian producers that are responsible for a large part of national coal production in 19 provinces (all holders of “Coal Contract of Work” licences under old mining law, but only 54% of the holders of (new) Mining Business Licences).

Production

Indonesia’s coal production has always been driven to a major extent by exports. However, domestic consumption has grown steadily in recent years. Information from the Indonesian Ministry for Energy and Mineral Resources (ESDM) indicates that it came to 114 million tonnes in 2018, 17.5% higher than in the previous year (Table T8). The export ratio was still 84.3% in 2017 and fell significantly to 77.0% in 2018 for the aforementioned reason. Coal production (hard coal and lignite) in 2018 came to 557 million tonnes (VDKi estimates), which would represent an increase by 21% over the previous year’s value of 461 million tonnes.

According to official estimates, domestic coal consumption will increase by a good 20 million tonnes per year to around 135 million tonnes in 2019. The Indonesian electricity sector alone will consume 153 million tonnes of coal by 2028 according to the country’s ten-year electricity supply business plan (RUPTL 2019–2028). This is almost 60% more than the 95.7 million tonnes to 97.0 million tonnes that the

state-owned electricity supplier Perusahaan Listrik Negara (PLN) is expected to consume in 2019. Last year, Genco used 91 million tonnes of Indonesian coal compared with 82 million tonnes in the previous year.

The government has set a national production target of 489 million tonnes, which is below the level of production in 2018. However, it is assumed that production will actually exceed 500 million tonnes. Indonesian authorities have already announced that production quotas for 2019 will be increased in the second half of the year if justified by market demand.

There have been reports of a lack of machinery, however. Even the largest companies in the country would struggle to increase production. It is therefore unclear whether the mining companies can increase production capacity any further.

Every Indonesian producer must make 25% of its production available to domestic buyers (Domestic Market Obligation, DMO). The Indonesian government has rejected a recent demand by mining companies for a reduction of the DMO. Several mining companies consider the requirement to be unfeasible. They argue that domestic buyers generally do not demand the grade of coal they offer. Nevertheless, they have recently been penalised for non-compliance with the DMO. The government has intensified the process it launched last year. Companies that are unable to meet their DMOs by selling directly to local final consumers must purchase DMO quotas from producers who have sold more than the required 25% on the domestic market.

As far as the aforementioned protectionist interventions and inconsistencies were concerned, expectations were high before the Indonesian parliamentary elections. Mining companies hope that the next Indonesian government will focus more on exploration and business-friendly policies. Companies cannot be expected to increase or decrease

production within a few months just because the government needs to increase its revenues right away. In view of rising coal prices, the state-owned energy provider Perusahaan Listrik Negara (PLN) requested a renegotiation of coal supply contracts in 2017. In 2018, the Ministry of Energy and Mineral Resources (ESDM) ordered all coal sales to PLN to be transacted subject to a price cap of \$70.00/tonne FOB on the basis of 6,322 kcal/kg until the end of last year. The Indonesian coal industry was forced to accept substantial losses. It is obvious that the DMO is unattractive in such situations.

Joko Widodo (“Jokowi”) handily won the elections on 21 May 2019. He is regarded as the better winner of the election by observers from outside the country. He unifies the country instead of dividing it, he is not caught up in Jakarta’s elite, he listens to good advice, and he dares to enter the international stage. A smouldering Islamic radicalization could, however, call Western reform concepts into question. In his last term, Jokowi secured the Muslim flank by appointing a clergyman as vice-president. If further Islamization is to be prevented, progress in development must be made. Let us hope that this means less and not more bureaucracy.

Infrastructure

According to a report from Bloomberg News in May 2019, Planning Minister Bambang Brodjonegoro announced that President Jokowi’s government plans to spend more than US\$400 billion over the next five years on the construction of airports, power plants and other infrastructure. This is more than Jokowi had aspired to during his first term in office. It remains to be seen how these ambitious plans will be financed. Indonesia’s government has so far taken pains to ensure that the budget deficit remains below 3% of GDP. It is likely that it will continue to apply the Chinese model, i.e. state-owned enterprises will bear a large part of the burden. According to a recent OECD survey, state-

owned enterprises are more widespread in Indonesia than in any other country in the world with the exception of China. However, their indebtedness has also risen sharply. China may possibly play a greater role in the future not only as a model, but also as a financier. On 14 June 2019, Chinese and Indonesian business delegations met in Jakarta to discuss common interests in the sectors energy, transport and infrastructure development. Financial institutions were also involved.

Indonesia’s Hard Coal Exports by Market

	2016	2017	2018 ¹⁾
	Mill. t	Mill. t	Mill. t
Pacific	303,4	312,7	337,8
Europe	7,2	4,9	4,3
USA	0,6	0,7	0,8
Total	311,2	318,3	342,9

¹⁾ Estimated

Source: Prepared HIS Markit figures

LB-T6

Export

In 2014, a law that gradually prohibits the export of some non-processed ores went into effect in Indonesia; its objective is to encourage processing within the country. In the case of coal and palm oil, the Indonesian government attempted in 2018 to increase the share in domestic value creation further by making the use of Indonesian ships and insurance companies obligatory for the export of these goods. This requirement was completely unrealistic, however, in view of the availability of freight ships. This prompted inclusion in the new statute of a rule exempting the shipment of coal insofar as Indonesian companies are unable to make an appropriate offer.

Trade Regulation 82/2017 regarding the obligation to insure sea freight has been in effect, initially for a one-month test phase, since 1 February 2019. It requires all Indonesian coal exports to be insured by the national insurance companies. The Indonesian authorities extended this test until the end of May 2019.

The Largest Buyers of Indonesian Hard Coal

	2016	2017	2018 ¹⁾
	Mill. t	Mill. t	Mill. t
India	94,6	98,6	110,4
PR China	50,8	47,3	48,1
Japan	33,0	31,4	28,7
South Korea	35,0	38,1	37,2
Taiwan	20,3	17,5	17,9

¹⁾ Provisional, in part estimated

Source: IHS Markit

LB-T7

The rules were originally scheduled to enter into force at the beginning of February 2019, but lack of clarity about their implementation and fear of logistical delays forced the Ministry of Commerce to test them first.

Indonesian coal exports continued to rise significantly in 2018. Hard coal exports rose by 7.9% from 318 million tonnes in 2017 to 343 million tonnes. Exports of lignite increased even more strongly (by 23%) from 70 million tonnes to 86 million tonnes. Continued strong demand from India (140 million tonnes; +12%) and China (48 million tonnes; +2%) contributed above all to the increase in hard coal exports while exports to Japan (-9%) and South Korea (-2%) declined (Table T7).

Indonesia has thus been able to defend its position as the dominant steam coal exporter for the Asian-Pacific region. About 338 million tonnes — 99% of the exports — were supplied to this economic region (Table T6). India, China,

Japan, South Korea and Taiwan account for 242 million tonnes. The remaining demand from the Asia-Pacific region comes from high-growth ASEAN countries.

Key Figures Indonesia

	2016	2017	2018
	Mill. t	Mill. t	Mill. t
Coal Production ²⁾	456	461	557
Hard Coal Production ¹⁾	398	391	471
Exports of Lignite	58	70	86
Exports of Hard Coal	311	318	343
Coal Exports ²⁾	369	389	429
Domestic Consumption ²⁾	91	97	114
Imports Germany ²⁾	0	0	0
Export Ratio ²⁾	81,0%	84,3%	77,0%

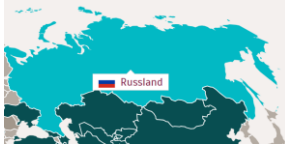
¹⁾ Production including domestic lignite consumption, but excluding lignite exports, ²⁾ Hard coal and lignite

Source: Indonesian Coal Mining Association (APBI) & ESDM/IHS Markit/DESTATIS/Own calculations

LB-T8

RUSSIA

General



According to the IMF, Russia's gross domestic product increased by 2.3% in 2018 (WEO, April 2019). A decline to 1.6% is

projected for 2019. This would put per capita GDP at US\$11,190, slightly below the world average of US\$11,570. Economic growth became detached from the global trend at the beginning of this decade because of political developments and came to -2.5% in 2015. As of 2018, the economy had recovered. Since then, however, renewed political and trade tensions have emerged. According to the GTAI, GDP grew by only 0.5 % year-on-year in the Q1 2019. The weakening is attributable to the increase of two percentage points in value-added tax at the beginning of the year, the increase in key interest rates in September and December 2018 by a total of 50 base points and the deteriorating global economy.

The sanctions imposed on Russian companies by US President Donald Trump in the autumn of 2018 did not initially cause much damage, but they have had a negative impact on the economic climate. As long as commodity prices remain stable, companies benefited from the strong US dollar and the weak ruble. The Ministry of Economics expects the ruble exchange rate to remain weak for the next five years. The export volume is expected to increase continuously and exceed US\$500 billion in 2024. The IMF sees the foreign trade surplus as a percentage of GDP declining from +7.0% in 2018 to +5.1% in 2020.

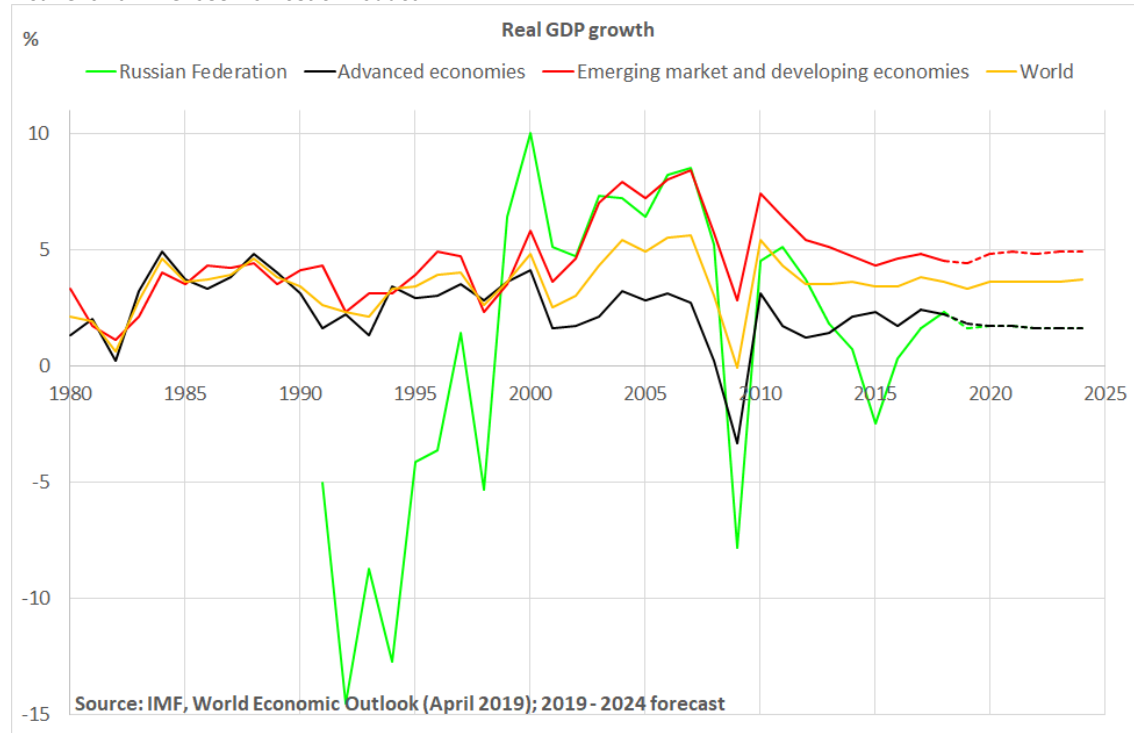
On 20 June 2019, the European Union extended by one year the economic sanctions against Russia imposed in March 2014 in response to the armed conflict in Eastern

Ukraine. Further sanctions are due for renewal before the end of July.

In the Ease of Doing Business Index, Russia placed 31st out of 190 countries in 2019, moving up from 112th place in 2012. In each of the categories "Getting Electricity" and "Registering Property", an excellent 12th place was achieved, but the country did no better than 99th place in "Trading across Borders".

In 2018-2019, Russia's ranking in the Global Competitiveness Index was at a similarly high level, placing 43rd out of 140 countries. In the Corruption Perceptions Index of 2018, however, the country posted only 138th place out of 180 countries.

Real Growth in Gross Domestic Product



LB-B3

Production

Russia is one of the world's largest hard coal producers. Only China, the USA, India, Australia and Indonesia have higher production. Hard coal mining is the only sector in the Russian energy industry that is completely in private hands. In the past year, hard coal production amounted to 439 million tonnes, 7.6% above the value of 2017. Production of the largest Russian producer of steam coal, the Siberian Energy Coal Company (SUEK), alone came to 110 million tonnes in 2018.

Hard Coal Production Russia			
	2016	2017	2018
	Mill. t	Mill. t	Mill. t
Coking Coal	98	104	94
Steam Coal ¹⁾	286	304	345
Total	384	408	439

¹⁾ Incl. anthracite and lignite
Source: Rosinformugol, from 2018 SUEK

LB-T9

Infrastructure

One of the largest coal terminals on the Baltic Sea, Ust-Luga, has successfully completed a project to expand its wagon tipper system. The tipper now handles 1,244 wagons, compared with 1,064 wagons before. The conversion work had a negative impact on coal handling at Ust-Luga in 2018. Handling fell from 25 million tonnes in 2017 to 20 million tonnes. In the future, however, handling will rise to 27 million tonnes.

The first rail deliveries of power plant coal arrived at the new Russian Taman Dry Bulk Terminal on the Black Sea in October 2018 and made possible the first export shipments for Q1 2019 for Handysize ships. The Taman terminal could be used in particular for shipments to the Turkish and North African markets. In contrast to the ports in the north, the new deep-water port with an annual capacity of 20 million tonnes will be ice-free and, unlike the terminals on the Baltic Sea, can accommodate ships larger than 100,000 DWT. At the same time, pressure on the Baltic terminals would ease.

Russia is investing heavily in its rail infrastructure to increase coal exports. In April, the state railway operator RZD signed a contract with Tuva Energy Industrial Corporation for the construction of the Elegest-Kyzyl-Kuragino line. It will connect the Elegesta coking coal field and its reserves of 855 million tonnes with the port of Vanino on the east coast. Completion is planned for 2022.

Several infrastructure projects are under development on the Russian east coast. One of the most important projects is the expansion of the port of Vostochny in the Gulf of Nakhodka in the Japanese Sea. It is scheduled to commence operation this year and increase its capacity by 18 million tonnes to 40 million tonnes/year.

Export

Russia is the world's third-largest exporter of hard coal, surpassed solely by Australia and Indonesia. Of the Russian seaborne exports, 79% is steam coal, 21% coking coal. Russian coal is exported to almost 80 countries, including South Korea, China, Japan, Poland, Turkey and, in particular, Germany. Exports to the Asia-Pacific region are increasing. The upward trend in exports through the eastern seaports of the country are of special importance for the development of sales.

Seaborne exports of Russian steam coal – driven by the Asian markets – rose by 5% in 2018 from 140 million tonnes in 2017 to 147 million tonnes in 2018 while seaborne exports of coking coal rose by 13% from 23 million tonnes in 2017 to 26 million tonnes in 2018.

South Korea remained Russia's most important customer country in Asia. Of the total seaborne Russian exports, 25.6 million tonnes went to this country. China is slightly lower at 22.5 million tonnes. Exports to Japan amounted to 18.1 million tonnes.

According to IHS Markit, coal deliveries from Russia's most important Far East terminals increased by 12% year-on-year to 20 million tonnes in January–April 2019. Of the four ports covered, Vostochny's deliveries were highest at 9.7 million tonnes, an increase of 16%.

According to the Nikkei Asian Review of 16 September 2018, Russian Energy Minister Alexander Novak presented an ambitious target at the end of August: Russia's coal exports to Asia are to double by 2025 from around 100 million tonnes in 2018. In this context, President Vladimir Putin called on Russian commodity companies to invest more in export infrastructure, citing the Trans-Siberian Railway and ports as examples.

Exports to North Africa and the Mediterranean region, on the other hand, were on the decline. Exports to Turkey fell by 13.6% to 11.8 million tonnes in 2018. Exports to Morocco fell by 2% to 3.17 million tonnes. In 2018, 13.3 million tonnes were sold to Poland. In comparison with the previous year, sales to Poland rose by 74%. Due to declining domestic production, Poland is increasingly resorting to competitive imported coal.

Key Figures Russia			
	2016	2017	2018
	Mill. t	Mill. t	Mill. t
Coal Production	384	408	439
Hard Coal Exports Seaborne	153	163	173
• Steam Coal	131	140	147
• Coking Coal	22	23	26
Imports Germany	17,9	19,8	19,2
• Steam Coal	16,6	17,9	17,7
• Coking Coal	1,3	1,8	1,4
• Coke	0,1	0,1	0,1
Export Ratio	40%	40%	39%

Source: IHS Markit/DESTATIS/Own calculations

LB-T10

Sberbank expects Russian coal exports to Europe this year to be well over 100 million tonnes despite increased availability of liquefied natural gas (LNG) and high electricity generation from renewable energies. "European imports of Russian coal are expected to be 115 million tonnes this year, the same as last year," said Maria Krasnikova, Director of Sberbank, at the Coaltrans Conference in Krakow, Poland, on 5 June 2019. Sberbank is one of the few banks actively committed to the future of coal. For example, it is involved in the financing of some infrastructure projects to increase coal supplies to the Asian markets.

German imports from Russia increased by 2.9% over the previous year to 19.2 million tonnes. Most of these imports are steam coal. Russia is now far and away Germany's most important coal supplier.

COLOMBIA

General



The Colombian peace process remains fragile. Public protests resumed in March 2019. The peace agreement concluded with the FARC guerrillas on 26 September 2016 under President Santos was a thorn in the side of his successor Alvaro Uribe of the Centro Democrático. In March 2019, his successor and political protégé, President Iván Duque, asked Congress in a national television address to change some aspects of the special jurisdiction. This special jurisdiction is regarded as the backbone of the peace process; in certain cases, it provides for a reduction in penalties in return for clarification of the truth. The maximum sentence is set at eight years of imprisonment. Dissatisfaction had already arisen among the populace because the government had not kept its promise of a land reform to support the 13,500 disarmed guerrillas. The further development remains to be seen.

According to the IMF, GDP increased as expected by 2.7% in 2018 (WEO, April 2019). An increase of 3.5% is projected for 2019. Growth in Colombia will then be above the global average of 3.3%. Per capita GDP in 2018 will presumably amount to US\$6,680, well under the world average of US\$11,570, but above the average for developing and emerging countries of US\$5,420. The IMF expects the consumer price index to increase from 3.2% in 2018 to 3.4% in 2019.

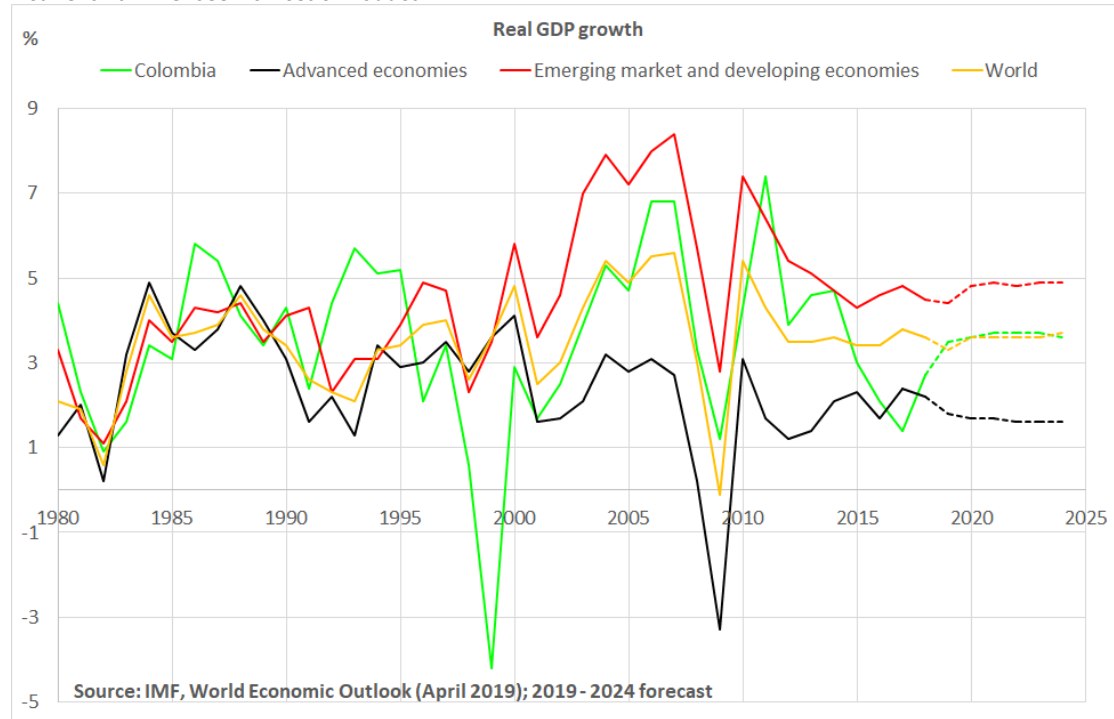
The foreign trade deficit as a percentage of GDP will increase slightly from -3.8% in 2018 to presumably -3.9% in 2019.

Colombia had concluded trade agreements with many countries during Juan Manuel Santos' presidency (2010 to 2018) and developed into a fairly open market. According to the World Bank, the tariff rate applied by Colombia to all imported goods fell on average from 9% to 4.4% during this period. President Iván Duque, who has been in office since August 2018, will not continue the previous government's strategy of market opening. He does not want to conclude any new trade agreements, but instead wants to make better use of existing agreements — from the Colombian point of view. Colombia stayed away from the last talks of the Pacific Alliance in September 2018. Negotiations were held at that time concerning the inclusion of Australia, New Zealand and Singapore in the alliance. Duque: "Any rapprochement with countries like Australia or New Zealand must be done with utmost caution."

According to the GTAI, the Colombian government of President Iván Duque plans to extend the term of mining licences to 30 years. In addition, environmental licences are to be issued more quickly. This is aimed at attracting US\$1.5 billion in foreign investment over the next four years. Privatisations are also planned. According to press reports, energy companies (Electrohuila, Emsa, Cedenar, Electrocaquetá) are potential candidates.

In the Ease of Doing Business Index 2019, Colombia ranked 65th (previous year 59th) out of 190 countries, which put it at the end of the top one-third. In the Global Competitiveness Index 2018 (60th out of 137 countries) and the Corruption Perceptions Index (99th out of 180 countries), the country was in the midrange of the rankings.

Real Growth in Gross Domestic Product



LB-B4

Figures from the National Administrative Department of Statistics show that export revenues from January to April 2019 fell by 21% year-on-year to US\$2.14 billion. The decline was a consequence of the fall in international coal prices. In terms of revenue, coal is Colombia's second-most important export product, surpassed only by oil. In 2018, coal exports accounted for 18% of the country's total export earnings. According to IHS Markit, the National Ministry of Mines and Energy has stated that the current very low coal prices could lead to the closure of mines.

Production

Colombia's hard coal production (steam and coking coal) decreased by 7.5% from 91.1 million tonnes to 84.3 million tonnes in 2018 (source: National Ministry of Mines and Energy).

Information from IHS Markit indicates that production in the department La Guajira, where the Cerrejón and Caypa mines are located, fell by 3% from 32.2 million tonnes in 2017 to 31.1 million tonnes in 2018.

Production in the department Cesar, where the mines of Drummond, Glencore and Murray Energy (Colombian Natural Resources (CNR)) are located, fell by 8% from 50.7 million tonnes in 2017 to 46.6 million tonnes in 2018. The main reasons for the year-on-year decline were higher than expected rainfall during the two rainy seasons of April–May and September–October 2018 as well as a change in mining plans at the Glencore Calenturitas Mine.

The production of mainly metallurgical coal from the interior of Colombia, including the departments of Boyacá, Cundinamarca, Santander and Norte de Santander, amounted to 6.6 million tonnes, 20% below the previous year's figure of 8.2 million tonnes in 2017.

Representatives of the National Ministry of Mines and Energy stated that total coal production in 2019 might return to the level of 91–92 million tonnes as in 2017, provided that production in the country's three largest companies, Drummond, Cerrejón and Glencore, is not affected by disputes with workers and their trade unions. On the other hand, the same ministry states that Cerrejón's production is expected to fall to 27 to 28 million tonnes in 2019 compared with 30 million tonnes in 2018. The main reason cited for the decline is a revised mining plan to address the concerns of the indigenous population in compliance with a ruling by the Colombian Constitutional Court in August 2017.

Infrastructure

Since the opening of the enlarged Panama Canal in 2016, the flow of goods on this important waterway between Atlantic and Pacific has increased significantly. The modernisation of the Panama Canal offers improved infrastructure to Colombia as well.

The freight rate for a Capesizer from Colombia to Taiwan on the usual route is currently around US\$28/tonne, and the journey takes 60 days. For competitors from Australia,

the freight rate for a ship of the same size to Taiwan is currently around \$14/tonne, and the journey takes only ten days.

The travel time could be shortened by ten days if Colombian coal could use the route through the Panama Canal to reach Taiwan. However, the Panama Canal cannot currently accommodate ships with a draught of more than 15.2 metres. It has been heard from industry circles that the Panama Canal Authority is looking for ways to increase the attractiveness of the canal for coal ships.

Export

Steam coal exports in 2018 fell by 3.8% to 80.0 million tonnes. Cerrejón exported 30.7 million tonnes, a little less than in the previous year. Drummond's exports fell by 5.2% to 30.8 million tonnes. Prodeco's exports decreased by 19.9%.

Exports to Europe fell by 11% to 43.5 million tonnes, with exports to the Mediterranean region declining less drastically (-4.8%) and exports to north-western Europe falling more sharply (-18.9%). Exports to America rose slightly by 2.5% to 28.8 million tonnes, whereby exports to North America fell by 17.5% while those to South and Central America increased by 7.6%. Exports to Asia rose by 24.2% to 7.7 million tonnes in 2018 following a decline in the previous year.

According to the National Administrative Department of Statistics, total Colombian coal exports (steam and metallurgical coals) fell by 25% in the period from January to April 2019.

The decline in demand for steam coal in Europe and increasing competition from Russian and US suppliers on the Atlantic market have forced Colombian producers to look for new sales markets for their coal.

Steam Coal Exports by Company

Exporter	2016	2017	2018
	Mill. t	Mill. t	Mill. t
Cerrejón	32,4	31,9	30,7
Drummond	32,6	32,5	30,8
Prodeco	19,2	14,6	11,7
Colombia Natural Resources (CNR)	2,9	3,6	4,1
Other (incl. central Colombia)	1,5	0,6	2,7
Total	88,6	83,2	80,0

Source: Own analysis; rounding-off differences possible

LB-T11

According to IHS Markit, the majority of the industry sees the need to expand its business with customers in the Mediterranean countries Turkey and Morocco as well as on the Pacific market (Japan, Korea and Taiwan; possibly India as well). Theoretically, opening up new markets in the Far East and South-East Asia seems to be a logical choice for Colombian producers. Ultimately, however, freight costs determine whether Colombian coal is competitive with Australian and South African coal.

Structure of the Colombian Steam Coal Exports¹⁾

	2016	2017	2018
	Mill. t	Mill. t	Mill. t
America	24,9	28,1	28,8
North America (USA+Canada)	7,1	5,7	4,7
South and Central America	17,8	22,4	24,1
Asia	7,6	6,2	7,7
Europe	56,1	48,9	43,5
Mediterranean Region ²⁾	25,4	27,2	25,9
North-West Europe	30,7	21,7	17,6
Total	88,6	83,2	80,0

¹⁾ Coking coal and coke not included in the export figures.

²⁾ Delimitation: France, Greece, Italy, Spain, Turkey

Source: IHS Markit, own calculations

LB-T12

In 2018, 54% of Colombian exports went to Europe compared with 59% in 2017, followed by 36% of total exports to America compared with 34% in 2017. The balance of 10% went to Asia in 2018 compared with 7% in 2017.

The arbitrage window for deliveries to China has opened slightly again while exports to India have declined. Exports to South Korea almost doubled to 5.4 million tonnes. The largest import country for Colombian coal is in the Mediterranean region, however. Turkey bought 18 million tonnes in 2018. It is followed by Chile with 8 million tonnes and Mexico with 6 million tonnes.

The general overview below shows that Colombian steam coal exports have declined further and could not be compensated by an increase (at a significantly lower level) for coking coal. The export ratio rose to 97%.

Key Figures Colombia

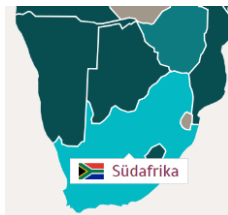
	2016	2017	2018
	Mill. t	Mill. t	Mill. t
Hard Coal Production	90,5	91,1	84,3
Hard Coal Exports	89,8	84,7	81,8
• Steam Coal	88,6	83,2	80,0
• Coking Coal	1,3	1,5	1,8
Imports Germany	10,8	6,4	3,8
Export Ratio	99%	93%	97%

Source: Various analyses

LB-T13

REPUBLIC OF SOUTH AFRICA

General



Economic growth in the major mining country South Africa has been subject to immense fluctuations since 1980. It is well below the real growth in gross domestic product (GDP) of developing and emerging countries,

but also below the global average, and tends to hover more around the level of the advanced national economies. According to the IMF, GDP increased by 0.8% in 2018 (WEO, April 2019). An increase of 1.2% is projected for 2019. The IMF expects an increase in GDP growth to 1.5% for 2020. Per capita GDP would then amount to US\$6,330, well under the world average of US\$11,570, but above the average for developing and emerging countries of US\$5,420.

The IMF expects the consumer price index to increase from 4.6% in 2018 to 5.0% in 2019 and 5.4% in 2020. The foreign trade deficit as a percentage of GDP will rise from -3.4% in 2018 to -3.7% in 2020.

South Africa's financial situation remains tense. During Zuma's term in office from 2009 to 2018, public debt doubled from 30% to 60% of GDP. Relatively weak economic growth was unable to keep pace with population growth. The country suffers from high unemployment, especially among young people and young adults. Too little investment has been made in recent years, as can be seen above all from the precarious situation of many state-owned enterprises, e.g. Eskom. There is no foreign direct investment, partly due to past corruption scandals and the relatively low development of commodity prices, but also due to the termination of investment protection agreements, e.g. with Germany.

Although the African National Congress (ANC) again won the parliamentary elections in May 2019, it recorded its worst election result (57.5%) since the end of apartheid. This means that President Cyril Ramaphosa, who has been in office since February 2018, has been confirmed in office for a further five years. Nevertheless, the ANC has lost political support among the populace. Years of mismanagement, corruption scandals and the lack of any significant progress in closing the prosperity gap between white and black, rich and poor, have not passed by without an impact. The old and new president faces major challenges in the fight against corruption, the rehabilitation of run-down state-owned enterprises and the prudent advancement of land reform, a matter that may well prove to be highly explosive politically. The radical left-wing "Economic Freedom Fighters" demand that white farmers be expropriated without compensation. Owing to the size of the agricultural sector, this would have substantial impact on the financial sector.

South Africa maintains a leading position on the African continent, especially in the region south of the Sahara. In international rankings, however, South Africa's situation is rather mixed. In the World Bank's Ease of Doing Business Index 2019, for example, the country on the Cape ranks 82nd, lower than any other hard coal exporting nation. Within the framework of the Global Competitiveness Report 2018, the World Economic Forum compares the competitiveness of 140 nations in relation to one another. South Africa, ranked 67th, is also behind most hard coal exporters, but still ahead of Vietnam (77th), Mongolia (99th) and Mozambique (133rd). In Transparency International's Corruption Perceptions Index 2018, South Africa ranks 73rd in a comparison of over 180 countries, at least.

The financial manoeuvring room for the state of South Africa is limited, even though investments for the maintenance and expansion of the infrastructure are urgently needed. Like many state-owned companies, Eskom, the

state-owned electricity supplier, also became a candidate for restructuring under Zuma's government. In terms of installed capacity, Eskom is Africa's largest power producer (around 90% based on hard coal) and the seventh-largest in the world. In the spring of 2019, Eskom again made negative headlines. The headline in the *Handelsblatt* on 18 March 2019 read, "Power Outages Bring South Africa to a Standstill". In recent years, Eskom's supply network has frequently experienced power failures ("load sheddings"), but analysts have classified those in the spring of 2019 as the most severe to date. Moreover, in some regions electricity has since been switched off for a few hours every day following an announcement. One of the aims of these measures is to prevent a total failure of the South African power grid. The reason for this drastic situation is the reluctance over many years to perform the required maintenance in the (primarily) coal-fired power plants and power transmission grids. In February 2019, President Ramaphosa announced plans to divide Eskom into three parts as a means of resolving the problems. Immediate improvements in the supply situation cannot be expected to result from this step. Experts expect the supply situation to remain tense for the next two years as a minimum. The economic damage to the South African economy cannot yet be fully foreseen.

Under Ramaphosa, the energy policy priorities have been redefined. The expansion of the nuclear power plant fleet has been cancelled and more emphasis has been placed on renewable energy sources. The new Integrated Resource Plan IRP.

2018 provides for the following expansion of electricity generation capacity by 2030: 8.1 GW wind energy, 8.1 GW natural gas, 5.7 GW photovoltaics, 2.5 GW hydroelectric and 1 GW coal.

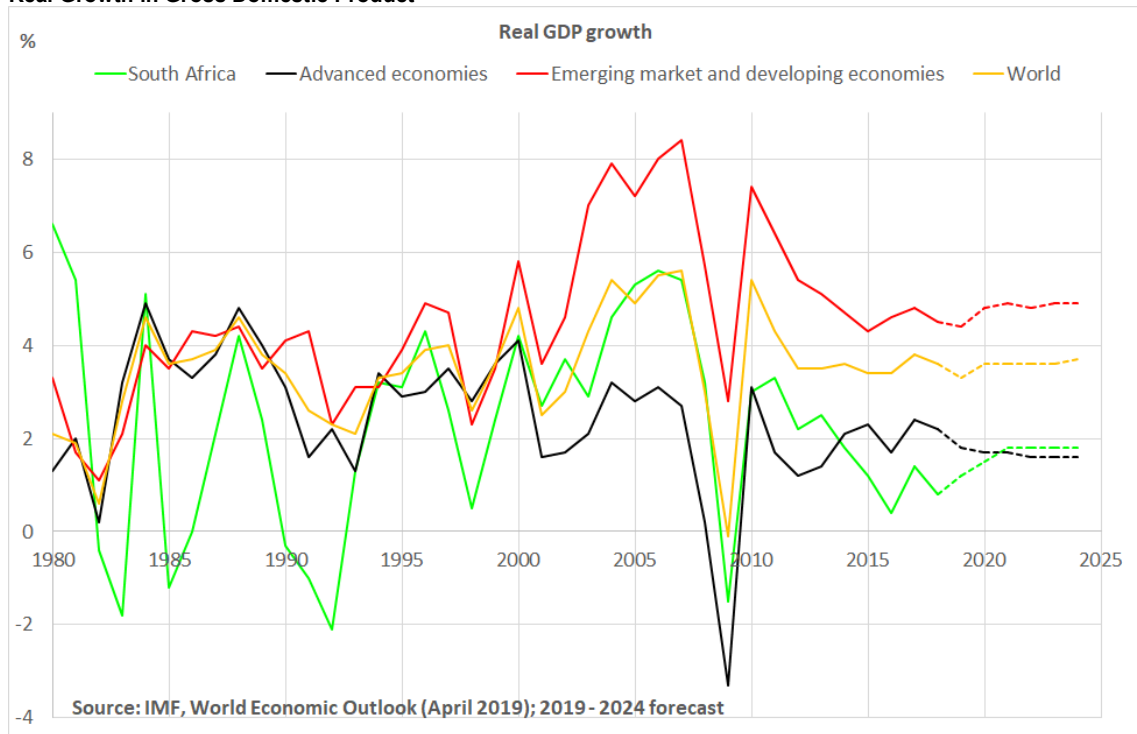
Production

A CO₂ tax was introduced in South Africa on 26 May 2019. The tax rate is ZAR 120 (US\$8.07) per tonne of CO₂. The new rate goes into effect per 1 July 2019. In the first phase, which will last until 2022, the government will grant substantial tax relief to emitters, reducing the effective tax rate to between ZAR 6/tonne and ZAR 48/tonne (US\$0.40/tonne to US\$3.23/tonne). Despite the tax breaks, the Minerals Council estimates that the first phase will cost the mining industry an additional ZAR 0.9 billion to ZAR 1.8 billion annually (US\$60 million–US\$121 million).

Despite the CO₂ tax and the declared change in the orientation of energy policy according to the Integrated Resource Plan IRP 2018, the South African coal industry hopes to benefit from the continuation of the Ramaphosa government. As one of the first measures, the re-elected president merged the Ministries of Mineral Resources and Energy under the leadership of the former Mineral Resources Minister Gwede Mantashe, thus strengthening the position of the former secretary-general of the mining union NUM.

As the new head of this super ministry, Mantashe now has the task of drafting and implementing a new IRP (2019). According to his own statement, he will proceed "step by step," especially in view of the current high level of uncertainty. Renewable energies are a future inevitability, is the conviction of leading government advisors, but their share in electricity generation will initially be small so that in the foreseeable future the country will continue to be dependent on correspondingly high coal-fired power plant capacities. In a preliminary draft of the IRP 2019, Mantashe's predecessor, Energy Minister Jeff Radebe, had planned a stronger reduction in the share of hard coal in South Africa's electricity supply by 2030, namely, from around 90% today to 46%.

Real Growth in Gross Domestic Product



LB-B5

New assessments now assume a share of 65% in 2030. The new minister has also promised the development of coal deposits in the eastern Cape Province.

At around 253 million tonnes, South African hard coal production in 2018 was almost at the previous year's level (+0.4%). Around 32% of this production was exported. Virtually all of the production (98.7%) is steam coal. The remainder is anthracite.

In autumn 2018, Gwede Mantashe succeeded in reforming the Mining Charter in such a way that it also gives due regards to business interests. The reform will most likely

resolve a long-standing point of contention. Companies were concerned above all about the regulations under Black Economic Empowerment (BEE). The minimum share of BEE beneficiaries was scheduled to increase from 26% to 30%. There are grandfathering provisions under the new regulation and the 30% applies solely to new licences. The second point of contention was that this limit was regularly undercut when BEE beneficiaries resold their holdings. A provision that the minimum share requirement will be deemed fulfilled if it was fulfilled before the sale of shares has now been incorporated.

Infrastructure

One of the restructuring candidates mentioned at the beginning is the transport service provider Transnet, whose existence is acutely endangered. In February 2019, the railway operator, together with the port operator Richards Bay Coal Terminal, pointed out that plans to expand South Africa's transport infrastructure would be delayed, especially as a consequence of the high level of required investments.

Structure of South Africa's Exports in 2018

	Total	Europe ¹⁾	Asia	Other
	Mill. t	Mill. t	Mill. t	Mill. t
Steam Coal	79,8	8,7	60,0	11,1
Anthracite	1,2	0,3	0,4	0,5
Total	81,0	9,0	60,4	11,6

¹⁾ Incl. neighbouring Mediterranean countries (Turkey, Israel)

Source: IHS Exports: Coal and coke by country and type

LB-T14

Transnet is currently planning to expand the existing Overvaal Tunnel by construction of another transport tube in the rail link between the Ermelo coal mining region and the Richards Bays Coal Terminal. This infrastructure project aims to increase transport capacity from 81 million tonnes to 132 million tonnes per year. Seen against the backdrop of the reorientation of South African energy policies, the increasing withdrawal of banks from the financing of coal projects (Standard Bank and Nedbank, which want to withdraw from all coal-related business) and the precarious financial situation of Transnet (as part of the severe national budget constraints), any realisation of the project currently appears to be a difficult undertaking.

Responding to this situation, the head of the ANC's Economic Transformation Committee said that South African banks should be forced to invest in new coal mines in the country. If this were to happen, it would certainly apply to infrastructure investments as well.

In 2018, the Richards Bay coal terminal again posted a record transshipment of around 77 million tonnes, just above the previous year's volume. More than four-fifths of the transshipments went to Asia.

Export

In 2018, South Africa exported a total of around 81 million tonnes, about 2.6% less than in the previous year. Virtually the total volume comprised steam coal. As in previous years, India remained the largest customer with 36.3 million tonnes (around 45% of total exports). Shipments to Pakistan of 10.0 million tonnes are in second place; they increased by 15.8% over 2017. Third place went to exports to South Korea in the amount of 6.8 million tonnes over 8.3 million tonnes in the previous year. Shipments to Taiwan fell by 13.4% to 2.8 million tonnes. Shipments to Spain fell by 52% to 1.3 million tonnes. Sri Lanka purchased 2.0 million tonnes in 2018 and Mozambique procured 3.0 million tonnes, an increase in each case of 52%.

South Africa will profit during the coming years above all from a boom in the demand for steam coal in India and Pakistan. India is expected to purchase around 200 million tonnes of steam coal annually by 2022, i.e. around one-third more than in 2018. Almost a quadrupling from the current 10 million tonnes to 40 million tonnes is expected for Pakistan by 2022. Ten additional power plants with an output totalling 6.7 GW are scheduled to go online in Pakistan by 2022.

South Africa could also benefit from an increase in freight rates resulting from air pollution control measures in world maritime transport.

Exports to Germany declined by 36% to 1.0 million tonnes. This means that only around 2% of coal imports to Germany come from South Africa.

Key Figures South Africa			
	2016	2017	2018
	Mill. t	Mill. t	Mill. t
Hard Coal Production	250,6	252,3	253,4
• Steam Coal	248,0	249,5	250,1
• Anthracite	2,6	2,9	3,3
Hard Coal Exports¹⁾	75,5	83,1	81,0
• Steam Coal	74,2	81,5	79,8
• Anthracite	1,3	1,6	1,2
Imports Germany	2,0	1,6	1,0
• Steam Coal	1,8	1,4	1,0
• Anthracite	0,2	0,2	0,0
Export Ratio	30,1%	32,9%	32,0%

¹⁾ Seaborne only
Source: IHS Markit/DESTATIS

LB-T15

USA

General



Gross domestic product (GDP) of the USA has developed in recent decades in step with the average of advanced national economies. According to the IMF, GDP increased by 2.9% in 2018 (WEO, April 2019). An increase of 2.3% is projected for 2019. This would put per capita GDP at US\$64,770, significantly above the world average of US\$11,570.

The IMF expects the consumer price index to increase from 2.4% to 2.7% by 2020. The foreign trade deficit as a percentage of GDP will increase from -2.3% in 2018 to -2.6% in 2020 — despite (or because of?) President Trump's protectionist activities.

For the American coal industry, 2018, like 2017, was a year of both consolidation and an increase in exports. This could change in 2019. The most recent slump in international steam coal prices had already taken its toll in May 2019. The third-largest coal mining company in the USA, Cloud Peak Energy, based in Gillette, filed for Chapter 11 bankruptcy in Delaware. Cloud Peak Energy owns and operates three mines in the Powder River Basin. Together, they produced 50 million tonnes of coal in 2018. They will remain in operation for at least as long as the company is covered under the creditor protection programme.

The slump in international steam coal prices has also taken a psychological toll. It is becoming apparent that there could be changes in ownership and perhaps some merger-and-acquisition deals for troubled companies. According to an Associated Press report dated 11 May 2019, a significant number of companies are on offer or are searching for

interested parties. "Many investors want to get out," a manager of a large company is quoted as saying. And further: "There are a lot of rumours flying around."

Following an increase in hard coal production from 660 million tonnes in 2016 to 702 million tonnes in 2017, output fell again by 2.4% to 685 million tonnes in 2018. Export opportunities remained excellent and partially compensated for the decline in domestic demand: hard coal exports increased by 19.3% in 2018 over the previous year.

Table (LB-T16) depicts a breakdown of coal production per region. The decline of 3.3% in the West and 5.3% in the Midwest is in line with the trend in the American coal industry. Bucking the trend, there was a slight increase of 1.6% in the Appalachian region.

Production in the USA by Region			
	2016	2017	2018
	Mill. t	Mill. t	Mill. t
Appalachians	163	180	183
Middle West	131	132	125
West	366	390	377
Total	660	702	685

Source: DOE-EIA

LB-T16

According to Reuters, President Trump plans to transfer responsibility for certain environmental laws to the states in June 2019, thereby facilitating project approvals for coal-fired power plants and easing compliance with emission standards. By taking this action and withdrawing from UN climate policy, he wants to keep his promises to his voters in coal-mining states like West Virginia, Montana and Wyoming.

According to a Forbes report dated 14 April 2019, however, more coal-fired power stations in the US were shut down

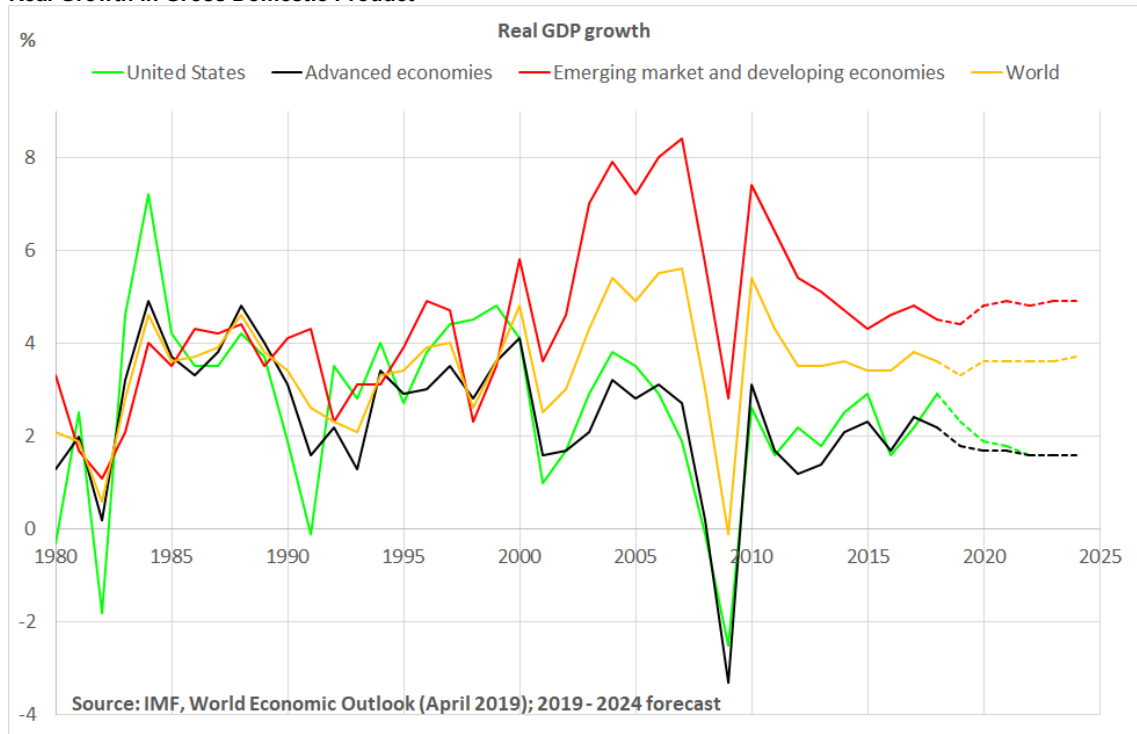
in the first two years of Trump's term than in Barack Obama's entire first term. The Forbes report is based on data from the U.S. Energy Information Administration (EIA) and Reuters. These data show that 23,400 MW of US coal-fired power plant capacity were taken off the grid in 2017 and 2018 compared to 14,900 MW in the years from 2009 to 2012.

Despite Trump's rhetoric, the industry is in a long-term decline driven by a combination of low-cost natural gas and a trend toward greater use of renewable energies. All these factors have made the coal of the Powder River Basin in particular (relatively low calorific value) less competitive (see above, bankruptcy petition Cloud Peak Energy).

According to the EIA, primary energy consumption in the USA reached a record level of 3.6 billion TCE (101.3 PBTU) in 2018, which was 4% above the level of consumption in 2017 and 0.3% above the previous record level in 2007. The increase in 2018 was the largest increase in energy consumption in both absolute and percentage terms since 2010. Coal consumption is in sharp contrast to these figures. It fell (for the fifth year in succession) to 688 million tonnes. The growing generation of electricity from natural gas and renewable sources came at the expense of coal-fired power plants.

According to the Energy Information Administration (EIA), the share of natural gas in electricity generation in 2018 came to 35% over 32% in the previous year while the share of coal in 2018 (27%) was significantly below the level of the previous year (30%). Nuclear energy with a share of 19.3% and renewables with a share of 17.1% (7.0% hydro-power and 6.6% wind power) followed.

Real Growth in Gross Domestic Product



LB-B6

Infrastructure

Major logistical problems stand in the way of an expansion of US exports. The infrastructure has reached its limits. In particular, many locks in the river systems would have to be refurbished and converted. More port capacity on the West Coast would be necessary to transport more coal from the Powder River Basin to the Asian market. The combination of increased export demand for both coking coal and power plant coal, freezing temperatures and planning changes for the railways led to limited opportunities for spot sales in 2017. Some market players are talking about a gradual improvement in USA rail and port capacity in 2018.

But as long as no fundamental revamping is in sight, “fine-tuning” will continue to be the order of the day. For example, Contura Energy and Corsa Coal reported their plans to handle more exports through New Orleans, and they have found opportunities for additional exports of metallurgical coal to the Atlantic market in the combination of rail operators and multiple terminals.

Export/Import

Coal exports from the United States increased by 19% in comparison with 2017 to 105 million tonnes in 2018. They break down into 57% coking coal and 43% steam coal. Steam coal exports rose by 29%, coking coal exports by 12% in 2018. The export quota in 2018 came to 15.3% following 12.5% in the previous year (Table T19). American coal was exported primarily by sea (100 million tonnes); a small part went overland to Canada (5 million tonnes).

Exports USA 2018			
	Coking Coal	Steam Coal ¹⁾	Total
	Mill. t	Mill. t	Mill. t
Seaborne	51,6	48,1	99,7
Overland (Canada)	4,2	1,0	5,2
Total	55,8	49,1	104,9

¹⁾ Including anthracite coal
Source: IHS Markit

LB-T17

After several years of decline, the export balance has risen since 2017 and reached 93% in 2018.

Import-Export Balance USA (Seaborne)						
	2013	2014	2015	2016	2017	2018
	Mill. t	Mill. t	Mill. t	Mill. t	Mill. t	Mill. t
Export (seaborne)	100	82	62	50	83	98
Import (seaborne)	7	9	9	9	7	5
Export Balance	93	73	53	41	76	93

Source: IHS Markit

LB-T18

Of the seaborne steam coal exports from the United States of 48.1 million tonnes, 36% in 2017 and 29% in 2018 went to the European Union, 20% of it to Germany. The remaining good two-thirds went to South and North America as well as to Asia, whereby 32.4% of the USA's steam coal exports went to India (15.6 million tonnes) and 12.1% went to South Korea (5.8 million tonnes). Mexico (4.3 million

tonnes) accounted for 9%, Japan (4.0 million tonnes) for 8%. As in the previous year, many extreme relative changes among the purchasing countries were especially striking. Japan's imports of steam coal from the USA rose by 63% (previous year +332%), India's imports increased by 53% (previous year +181%) and imports to South Korea were 10% higher (previous year +417%).

In this respect, the USA currently does not appear to be a swing supplier for the Asian, especially for the Indian market. However, it remains to be seen what the situation will be like after the major price slump at the beginning of the year. In addition, the advantages of selling low-priced coal with high sulphur content, especially to Europe, will not be permanent. The increase in US exports in 2016 was attributable in large part to this factor. Initially, the discounts were in the vicinity of US\$1.20/tonne; they later rose to around US\$15 and reached a high of around US\$20 by the end of 2017. In 2018, the number of north-west European buyers mixing high-sulphur US coal with low-sulphur Russian material increased. The discount fell again to US\$2.50/tonne in 2019. There are reports that the terms of some supply contracts are due to expire at the end of 2019.

Turkish electricity producers are continuing their efforts to have the Turkish government reform import regulations to allow the import of steam coal with a sulphur content of 3%. This would enable the USA to export additional quantities of steam coal to Turkey.

The European Union was also an important destination, accounting for 31% (15.8 million tonnes) of the seaborne coking coal exports (51.6 million tonnes). The remaining volumes were shipped to South and North America, including Brazil (7.6 million tonnes; 15%), and to Asia, including Japan (5.4 million tonnes; 10%), India (5.1 million tonnes; 10%) and South Korea (2.6 million tonnes; 5%). Ukraine received 8% (4.2 million tonnes).

Key Figures USA			
	2016	2017	2018
	Mill. t	Mill. t	Mill. t
Hard Coal Production	661	703	685
Hard Coal Exports	55	88	105
• Steam Coal	18	38	49
• Coking Coal	37	50	56
Hard Coal Imports	9	7	5
Imports Germany	9	9	10
• Steam Coal	6	6	6
• Coking Coal	3	3	3
Export Ratio	8,3%	12,5%	15,3%

Source: Various and own calculations

LB-T19

CANADA

General



Canada is a midsize mining country and an important coking coal exporter by sea. The major part of production and export mines is located in British Columbia and Al-

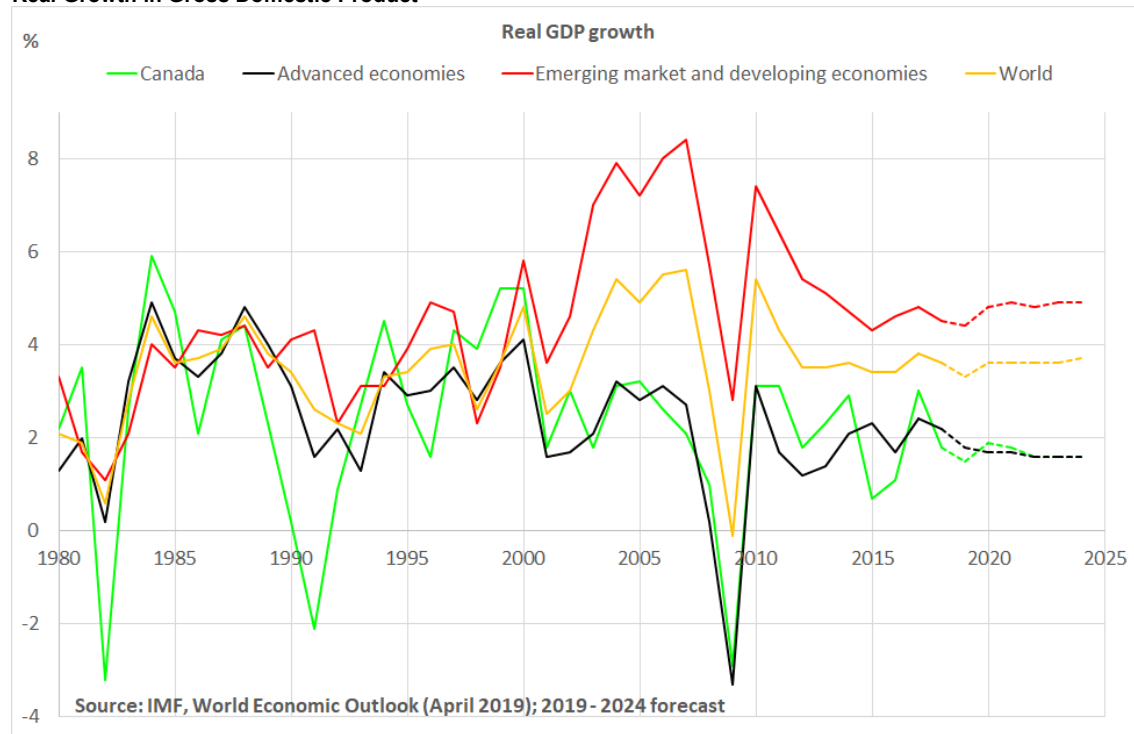
berta.

According to the IMF, Canada's gross domestic product increased by 1.8% in 2018 (WEO, April 2019). An increase of 1.9% is projected for 2020. This would put per capita GDP at US\$46,420, significantly above the world average of US\$11,570. The IMF expects the consumer price index to decline from 2.2% in 2018 to 1.9% in 2020. The foreign trade deficit as a percentage of GDP will rise from -2.6% in 2018 to -3.1% in 2019.

According to the most recent Report on Energy Supply and Demand in Canada of 2017, primary energy production in Canada rose by 5.0% to 708 million TCE in 2017. In the previous year 2016, the increase was 3.1%. In 2017, crude oil had the greatest share in primary energy production (46.4%) in Canada, followed by natural gas (34.4%), primary electric power generation (i.e. hydroelectric power and nuclear energy; 9.0%) and coal (6.4%).

Hydropower accounted for 65.9% of electricity generation in 2017 while nuclear power contributed 14.8%. Natural gas had a share of 8.6%, coal a share of 8.7%. Unlike other hard coal producers, Canada does not rely primarily on coal for electric power generation, but on the abundantly available hydroelectric power. To this extent, it is easier for the Canadian government to prepare plans for an exit from coal.

Real Growth in Gross Domestic Product



LB-B7

Canada will introduce two CO₂ taxes in 2019 to reduce greenhouse gas emissions; they will become effective as of July 2019. However, they will not be levied on CO₂ alone, but on all greenhouse gas emissions, which will be recalculated as CO₂. For one, a “fuel tax”, paid by producers and traders of fossil fuels such as petrol or coal, will be introduced. It is based on the quantities of greenhouse gases that the use of their energy will later cause. The tax for CO₂ has been set initially at C\$20/tonne (about €13/tonne). It will rise annually by C\$10/tonne until it reaches the level of C\$50/tonne in 2022. To avoid any burdens on consumers, the Canadian provinces will disburse 90% of the revenues from this tax to private households.

The second tax is the “climate gas tax.” It has been set at the same amount as the “fuel tax” and will be levied on all other companies. The benchmark for the tax is 80% to 90% of the average emissions of a specific company’s industry. The tax becomes due whenever a company’s emissions exceed this mark. If a company’s emissions remain below the benchmark, it will receive a credit note. Four of the ten Canadian provinces have implemented the regulation under protest. They fear it will have a negative impact on business. Saskatchewan and Ontario are taking legal action to stop the tax.

For some time now, the Canadian government has been pursuing the goal of either decommissioning all 17 coal-fired power plants in the country by 2030 or converting them to natural gas or reducing emissions through CCS or CCU

Production

The production of steam coal and coking coal in Canada in 2018 amounted to 54.6 million tonnes and was 11.9% lower than in 2017.

Infrastructure

In February 2019, it became known that the Port of Vancouver had revoked a project permit for a coal export terminal in the Fraser Surrey Docks. The project had been approved for the first time in 2014. The plan was for a facility with annual transshipments of more than four million tonnes of coal, most of which would come from the USA by rail. The port justified its decision by stating that the operators of the project had not fulfilled the conditions attached to the project.

The Ridley Terminal is of great importance for the transshipment of metallurgical coals in north-eastern British Columbia and still has potential for the expansion of its capacity. However, Ridley is the only state-owned terminal in the Prince Rupert port. Previous attempts to privatise the terminal during economically more difficult times were unsuccessful. So it is somewhat surprising that the government of Prime Minister Justin Trudeau has picked up this idea again just now as the terminal, following the investment of substantial funds, returned to profitability last year. Throughput was increased by 94% and revenue by 45%.

Exports

Canadian exports of 30.9 million tonnes break down into 0.7 million tonnes of steam coal and 30.2 million tonnes of coking coal. Overall, exports remain at a stable level. They rose by 0.5 million tonnes (1.6%) over 2017. While steam coal exports fell by 65% to no more than 0.7 million tonnes, the significantly higher coking coal exports rose by 6.3% to 30.2 million tonnes.

The quantities of steam coal imported in 2018 fell to 3.4 million tonnes while imports of coking coal rose to 4.2 million tonnes. A total of 7.6 million tonnes was imported, 2.7% more than in the previous year. The rise in coking coal of 10.5% was even more substantial.

The bottom line is an export balance in the amount of 23.3 million tonnes, 1.3% over the level of the previous year (LB-T20).

The largest purchasers of coking coal were Japan (7.4 million tonnes; +10.4%), South Korea (5.4 million tonnes; +5.7%), India (4.1 million tonnes; +34.2%), the People's Republic of China (3.1 million tonnes; -32.0%), Taiwan (1.5 million tonnes) and Brazil (0.9 million tonnes).

Export/Import Balance Canada

	2015	2016	2017	2018
	Mill. t	Mill. t	Mill. t	Mill. t
Exports Steam Coal	2,3	2,2	2,0	0,7
Exports Coking Coal	27,8	28,0	28,4	30,2
Total	30,1	30,2	30,4	30,9
Imports Steam Coal	3,7	2,9	3,6	3,4
Imports Coking Coal	3,9	3,4	3,8	4,2
Total	7,6	6,3	7,4	7,6
Export/Import Balance	22,5	23,9	23,0	23,3

Source: IHS Markit

LB-T20

In absolute terms, exports of steam coal are not very high, so there can easily be extreme changes in the destinations in relative terms. This was again the case in 2018. Shipments to South Korea fell by 44.5% to 0.3 million tonnes while shipments to Japan tended towards zero after 0.5 million tonnes in the previous year (-99.7%).

1.6 million tonnes, exclusively coking coal, were exported to Germany.

Key Figures Canada			
	2016	2017	2018
	Mill. t	Mill. t	Mill. t
Hard Coal Production ¹⁾	61,0	62,0	54,6
Hard Coal Exports	30,2	30,4	30,9
• Steam Coal	2,2	2,0	0,7
• Coking Coal	28,0	28,4	30,2
Imports Germany	1,5	1,5	1,6
• Coking Coal	1,5	1,5	1,6
Export Ratio	50%	49%	57%

¹⁾ Incl. hard lignite
Source: IHS Markit/DESTATIS/Own calculations

LB-T21

POLAND

General

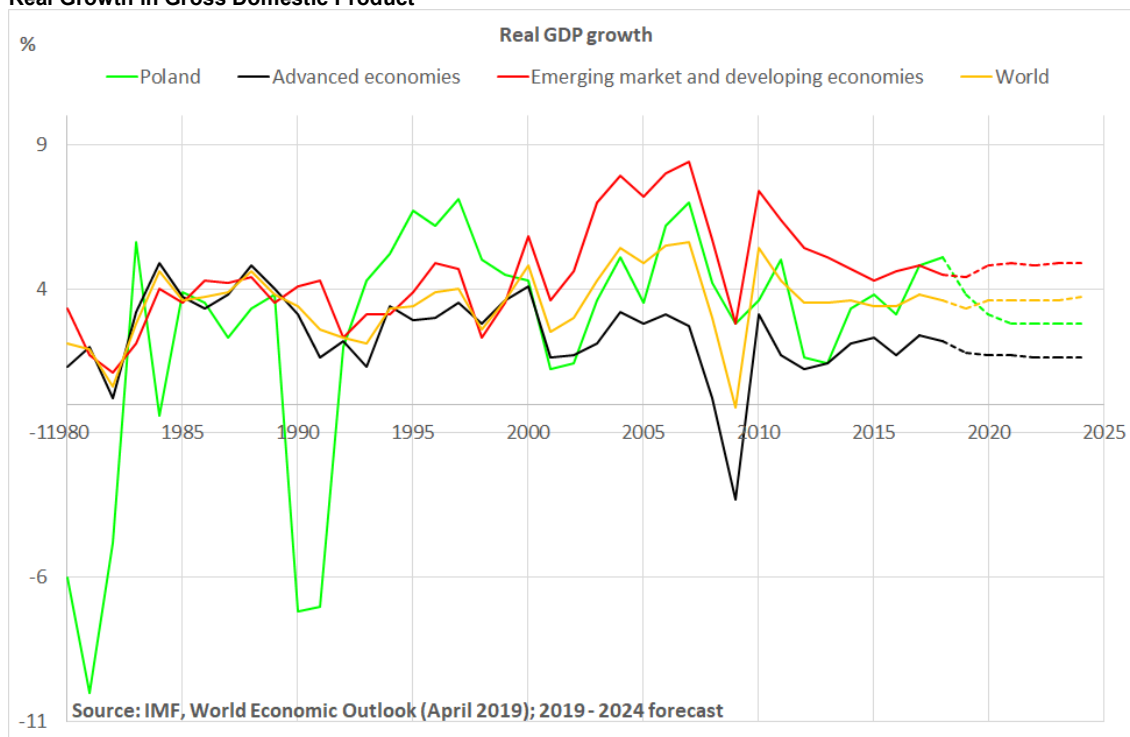


According to the IMF, Poland's real gross domestic product increased by 5.1% in 2018 (WEO, April 2018). An increase of 3.8% is projected for 2019 before growth slows to 3.1% by 2020. Per capita GDP in 2018 will presumably amount to US\$15,630, above the world average of US\$11,570, but significantly below the average for developed national economies of US\$48,610. Real economic growth, on the other hand, is well above the average of the developed economies (2018: 2.2%) and currently still above the global average of 3.6%. The IMF expects the consumer price index to increase from 1.6% to 1.9% by 2020. The foreign trade deficit as a percentage of GDP will rise from -0.7% in 2018 to -1.5% in 2020.

In 2018, hard coal accounted for 47.6% of Polish electricity generation, lignite for 29.2%, renewables for 13.9% (of which wind power 77%, biomass 4.8% and hydropower 1.2%), natural gas for 6.5% and other fossil fuels for 3.0%. Coal's share of 77% thus accounts for a good three-quarters of electricity generation.

In November 2018, the Polish Ministry of Energy introduced into the public debate a bill entitled "Energy Policy of Poland until 2040" (EPP2040). It expressed the political will to add the nuclear option to the power generation portfolio as part of the government's programme. The final version of the bill EPP2040 was made public in May 2019. According to this plan, 6 GW to 9 GW of nuclear energy capacity are to become available by 2040. The first six reactors, each with a capacity of 1 GW to 1.5 GW, are scheduled for completion at intervals of two years by 2033.

Real Growth in Gross Domestic Product



LB-B8

The Ministry of Energy estimates the costs at around €4.66 million/MW and would like to find strategic partners who will cover around 30% of the investments; ideally, these partners should be able to contribute the required technical know-how. Within this framework, a bilateral agreement on cooperation in the peaceful use of nuclear energy between Poland and the United States was signed in June 2019. The EPP2040 also provides for the creation of new coal-fired power plant capacities of 2.5 GW by 2020 and of 3.4 GW by 2035. Two hard coal-fired units of 900 MW each in Opole will presumably go online in 2019. A hard coal-fired unit in Jaworzno in southern Poland will follow in 2023. The construction of the hard coal-fired unit Ostrołęka C is

nearing financial conclusion. Although the share of coal would fall to 60% while the share of renewables would rise to 27% by 2030, the contribution of coal would remain almost constant in absolute terms.

Production

According to information from the Polish Mining Chamber of Industry and Commerce, eight companies produce hard coal in Poland. The largest are Polska Grupa Górnicza (PGG) with production of 29.7 million tonnes in 2018 corresponding to 47% of Polish coal production followed by Jastrzębska Spółka Węglowa (JSW) with production of 15

million tonnes corresponding to 24% (10 million tonnes of which are coking coal), Lublin Coal Bogdanka Inc (production of 9 million tonnes; 14%) and Węglokoks Kraj Ltd Co. (production of 2.45 million tonnes; 4). Fourteen companies or parts of them are under the umbrella of the Mines Restructuring Company Inc. In 2018, 63.4 million tonnes of hard coal were mined, of which 51.3 million tonnes were steam coal and 12.1 million tonnes were coking coal, a decline of 3.2% over 2017. In Q1 2019, 15.5 million tonnes were produced.

There is increasing awareness in Poland of the difficult, in particular geologically problematic, position of the hard coal mining industry in Upper Silesia. There are virtually no more reserves in this region that can be mined profitably. The last rescue plan for the Polish hard coal mining industry ultimately provided solely for a change of ownership (besides a few closures and the establishment of a restructuring company, see above) that imposed the obligation to invest in hard coal mining on the Polish electricity generators. The possibility or even the willingness of these companies to invest in hard coal mining, however, appears to be very limited at this time. In consequence, investments in the Polish coal industry remain inadequate.

The Polish government plans to invest in a new PGG hard coal mine in Katowice. The investment volume for the Imielin North project is estimated at around US\$400 million. The recoverable reserves are estimated at around 60 million tonnes. However, the project could still fail because of protests by local citizens and increasingly uncertain financing prospects.

In March 2019, the two Polish mining companies PGNiG (Oil) and PGG signed an agreement regarding methane separation from hard coal seams. Related work is being launched on the Ruda Ruch Bielszowice coal mine site.

Poland's Steam Coal Exports

	2017	2018	Change
	Mill. t	Mill. t	over PY
Total	4,36	2,06	-52,8%
of which:			
Czech Republic	1,50	0,76	-49,3%
Germany	1,21	0,22	-81,8%
Austria	0,50	0,33	-34,0%
Slovakia	0,43	0,33	-23,3%
Ukraine	0,25	0,06	-76,0%

Source: IHS, DESTATIS

LB-T22

The mining company JSW hopes to be able to mine its new Bzie-Debina 1-Zachód coal deposit in 2022 after receiving the required permit from the Ministry of the Environment in May 2019. The deposit with around 71 million tonnes of coal reserves is a key element in JSW's plans to export more coking coal to Asia.

Polish coke production rose by 11% from 9.1 million tonnes in 2017 to 9.2 million tonnes in 2018 and is at the same level as Germany. Poland was for many years the largest coke producer in Europe before being overtaken by Germany in 2017.

Export and Import

For many years, Poland was a net exporter of hard coal, but this situation has changed a number of times in the recent past. In 2014, Poland was a net importer, but in 2015 and 2016 a net exporter. Poland has been a net importer again since 2017. In 2018, imports increased by 49% to 19.7 million tonnes (of which 16.2 million tonnes were coking coal) while exports fell by 28% to 5.1 million tonnes.

Of the steam coal imports, 12.5 million tonnes (79.1%) come from Russia, 8.0% from Colombia and 6.1% from the USA. Poland imported steam coal from the USA for the first time again in 2015.

Coking coal imports in the reporting period, as in the previous year, totalled 3.5 million tonnes: 60.4% imported from Australia, 17.0% from Russia and almost 16% each from the USA and Mozambique. Of the imported anthracite (0.4 million tonnes), 97.7% came from Russia.

In mid-April 2019, former Deputy Prime Minister and former Economics Minister Janusz Steinhoff expressed the opinion that Poland would be dependent on higher imports from Russia in the future if no new mines were developed.

Polish hard coal exports in 2018 fell by 28.2% to 5.1 million tonnes. The largest customers for steam coal were the Czech Republic with 0.7 million tonnes and Slovakia with 0.3 million tonnes. Exports to Germany amounted to 0.2 million tonnes, a decline of 83%.

Poland's Coking Coal Exports			
	2017	2018	Change
	Mill. t	Mill. t	over PY
Total	2,75	2,94	6,9%
of which:			
Czech Republic	1,60	1,62	1,3%
Ukraine	0,40	0,26	-35,0%
Austria	0,38	0,68	78,9%
Slovakia	0,35	0,34	-2,9%
Hungary	0,02	0,04	100,0%

Source: IHS, DESTATIS

LB-T23

Poland's coking coal exports in 2017 increased by 6.9% to 2.94 million tonnes. A major part of the coking coal went to the Czech Republic (1.62 million tonnes). Exports to Austria rose by 78.9%, a very substantial increase amounting to 0.7 million tonnes. Further quantities went to Ukraine and Hungary.

As in the previous year, coke exports amounted to 5.8 million tonnes. Around 1.5 million tonnes went to Germany.

Key Figures Poland			
	2016	2017	2018 ¹⁾
	Mill. t	Mill. t	Mill. t
Hard Coal Production	70,4	65,5	63,4
Hard Coal Exports	9,3	7,1	5,1
• Steam Coal ²⁾	6,8	4,4	2,2
• Coking Coal	2,5	2,7	2,9
Coke Exports	6,0	5,8	5,8
Hard Coal Imports	8,3	13,2	19,7
Imports Germany	3,7	2,6	1,7
• Steam Coal	2,4	1,2	0,2
• Coking Coal	0,0	0,0	0,0
• Coke	1,3	1,4	1,5
Export Ratio	22%	20%	17%
(coke converted into coal)			
¹⁾ Provisional ²⁾ Including anthracite coal			
Source: Various analyses			

LB-T24

PEOPLE'S REPUBLIC OF CHINA

General

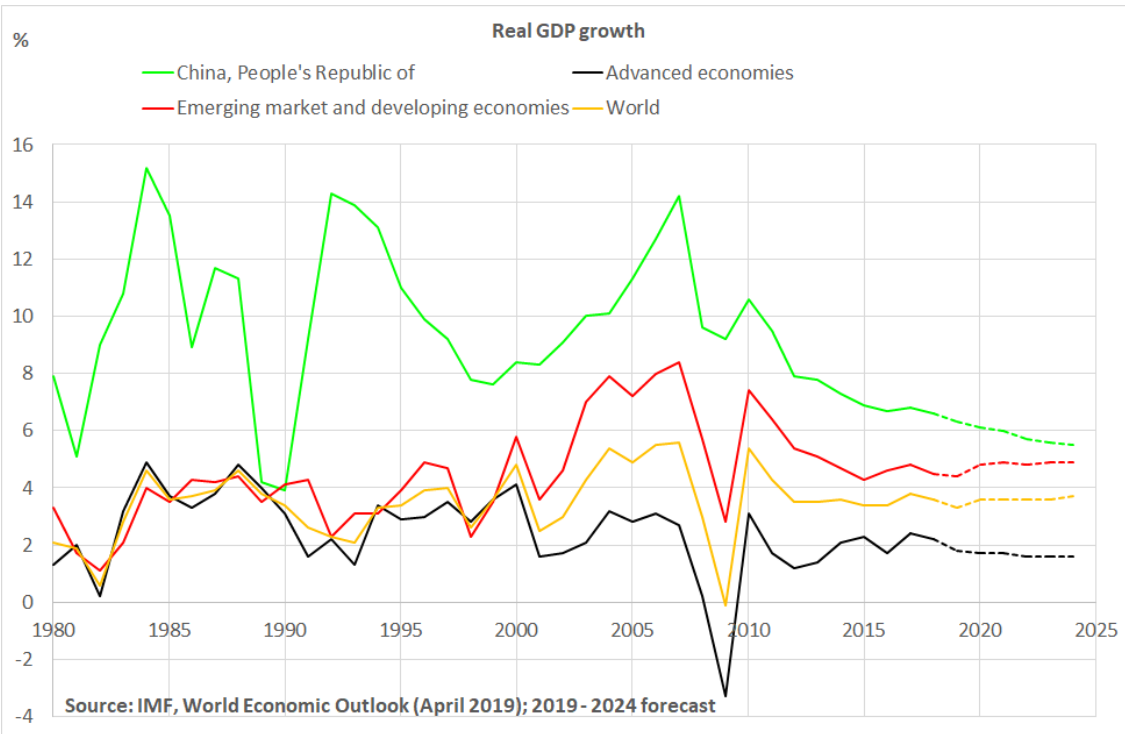


According to the World Economic Outlook of the IMF of April 2019, the gross domestic product of the People's Republic of China rose by 6.6% in 2018. An increase of 6.3% is projected for

2019. This would put per capita GDP at US\$10,150, just under the world average of US\$11,570.

The IMF expects the consumer price index to increase from 2.1% to 2.5% by 2020. The foreign trade surplus as a percentage of GDP will decline slightly from +0.4% in 2018 to +0.3% in 2020. Of all the economies analysed by the IMF, China's growth rate is second only to that of India. The dominant topic remains the weakening effect on the economy (which is also of importance for the global economy) resulting from the trade conflict between China and the US.

Real Growth in Gross Domestic Product



LB-B9

Weaker import demand is expected for China. The Chinese government's containment of the shadow economy is also dampening growth. Finally, declining credit growth and lower fiscal incentives are also having the effect of weakening growth.

In terms of the Chinese PEC, coal accounted for 59% of the total in 2018. This represents a decline of 1.4% over 2017. This means that the share of coal in the Chinese PEC has slipped below the 60% mark for the first time. China continues to move along the path set by the 13th five-year plan, which foresees a reduction of the share of coal in the PEC to below 58% by 2020. In absolute terms, however, coal consumption has risen for the second time in a row after 2017. In the period 2014 to 2016, coal consumption was on the decline.

According to the National Bureau of Statistics of China, Chinese electricity generation rose by 8.2% to 6,791 TWh in 2018. The BP Statistical Review of World Energy 2019 indicates that renewable energy sources grew most strongly (+28.8%) and accounted for 8.9% of total electricity generation (3rd place). Nevertheless, hard coal- and lignite-fired power plants continue to dominate the field with a combined share of 66.5%. Compared with the previous year, their share of electricity generation increased by 6.5%. Hydropower ranked second (share: 16.9%); its contribution increased by 3.2%. The contribution from nuclear power plants rose by 18.7%, but their share of electricity generation was only 4.1%. The use of natural gas in electricity generation grew by 10.3% and covered 3.1% of electricity generation.

Crude steel production rose by 6.6% and pig iron production increased by 8.5% in 2018. The efforts of the Chinese government to curb the massive growth of the steel industry continue to face major challenges as steel production reached a new record high after an increase by 9.5% in Q1 2019.

Electricity/Crude Steel/Pig Iron Production PR China

		2016	2017	2018
Electric Power Generation	TWh	5.911	6.276	6.791
Crude Steel Production	Mill. t	808,4	870,9	928,3
Pig Iron Production	Mill. t	698,2	710,8	771,1

Source: National Bureau of Statistics of China, world-steel, ArgusMedia

LB-T25

Since 2016, steel production capacity has been reduced by 150 million tonnes and so-called "zombie" companies have been finally closed. In May 2019, the McCloskey Coal Report reported that China was restructuring its steel industry. Media reports indicate that the government intends to tighten restrictions on the exchange of steel capacities between companies ("swaps") after it was discovered that the provincial governments had authorised illegal capacity increases disguised as capacity exchanges.

Production

The National Bureau of Statistics of China reported that hard coal production increased by 2.9% from 3.45 billion tonnes (2017) to 3.55 billion tonnes in 2018 and returned to the level of 2015 (3.54 billion tonnes).

Production is highest in Inner Mongolia (926 million tonnes) where it grew at an above-average rate of 5.3%. It is followed by Shanxi (893 million tonnes; +4.6%) and Shaanxi (623 million tonnes; 9.3%). Although production of 190 million tonnes in Xinjiang Province is significantly smaller, it is still considerable on a global scale. The largest increase in capacity (13.8%) occurred here. In the other major mining provinces of Guizhou, Shandong, Anhui and Henan, production declined in 2018 (LB-T26). The focus on large and

efficient mines and the closure of older and unsafe mines does not affect the regions in equal measure. The Chinese government is therefore endeavouring to promote structural change in the old mining regions.

Coal Production in the Largest Mining Provinces in PR China

	2016	2017	2018
	Mill. t	Mill. t	Mill. t
Inner Mongolia	838	879	926
Shanxi	816	854	893
Shaanxi	512	570	623
Xinjiang	158	167	190
Guizhou	167	166	139
Shandong	128	129	122
Anhui	122	117	115
Henan	119	117	114

Source: Statistical Offices of the coal provinces and various analyses

LB-T26

According to the National Energy Administration (NEA), Chinese coal mining capacity increased by 194 million tonnes (+5.7%) in 2018. Capacity at the end of 2018 was 3.5 billion tonnes per year. One billion tonnes of new coal capacity per year has been approved and is under construction and capacity of 370 million tonnes per year is in trial operation. In addition, the NEA has approved a further seven coal mining projects with a total annual capacity of 22.5 million tonnes since the beginning of 2019.

Nevertheless, according to the NEA, the number of coal mines in China fell by 534 from 3,907 in 2017 to 3,373 in 2018. This was due to the government-initiated closure of smaller and inefficient mines, particularly in the eastern parts of China.

China's policy to close inefficient and unsafe production capacities must have been largely completed by now. At the same time, new and efficient production capacity has been built, a situation that has enabled Chinese coal production

to continue to grow. If China now manages to solve logistical problems and to improve transport links between the producing regions and the main demand centres, an expansion in the availability of domestic supply must be expected. This would put pressure not only on domestic coal prices, but on the world market as well.

A repetition of the price pressure from 2015 still appears unlikely at present. Activities to throttle production can already be observed. Several mines in Shanxi, Shandong, Hebei and Heilongjiang, which normally operate 24 hours a day, have reduced working hours to 16 hours a day (according to industry sources) to comply with the April 2019 State Administration of Coal Mine Safety requirements. It is premature at this stage to assess whether this will lead to support for international coal prices.

Infrastructure

In the current economic environment with — by Chinese standards — rather moderate economic growth, the Chinese government is boosting the domestic economy with a gigantic infrastructure program. A better connection with consumption centres is particularly important for serving the domestic coal market. To this end, China is massively expanding its rail logistics. The following existing rail connections will be significantly expanded over the next few years:

- The Thangu Line (east-west link in north-eastern China) from currently around 75 million tonnes per year to 150 million tonnes per year by 2020;
- The Ningxi Line (east-west link in eastern China) from currently 24 million tonnes per year to 75 million tonnes per year by 2021; and

- The Wari Line (east-west link in eastern China) from currently 35 million tonnes to 40 million tonnes per year to 100 million tonnes per year by 2025.

The Menghua-Line, a north-south link, is a completely new construction project with an annual transport capacity of around 200 million tonnes and is expected to be operational by 2020.

Import/Export

China is included in the Country Reports because the country was once a major export country. In 2018, China's gross export quota amounted to only 0.42%, however. Coal exports amounted to 4.9 million tonnes. Coke exports still amounted to 9.9 million tonnes (LB-T27).

The largest shipments of steam coal in 2018 went to Japan (1.0 million tonnes) and South Korea (0.7 million tonnes). North Korea received 0.4 million tonnes of coking coal in 2018 and 0.2 million tonnes went to Japan; only 0.1 million tonnes were shipped to South Korea. Coke shipments to India amounted to 2.1 million tonnes, shipments to Japan came to 1.5 million tonnes and Malaysia received 1.1 million tonnes.

Import/Export Development PR China				
	2016	2017	2018	Difference 2018/2017
	Mill. t	Mill. t	Mill. t	Mill. t
Imports Steam Coal ¹⁾	124,1	118,7	121,7	3,0
Imports Coking Coal	59,3	69,9	64,7	-5,2
Total Imports	183,4	188,6	186,4	-2,2
Exports Steam Coal ¹⁾	7,4	5,8	3,8	-2,0
Exports Coking Coal	1,2	2,3	1,1	-1,2
Export Coke	10,2	8,1	9,9	1,8
Total Exports	18,8	16,2	14,8	-1,4

¹⁾ Incl. anthracite, excl. lignite
Source: IHS Markit

LB-T27

Chinese imports of hard coal fell by 2.2% in 2018 after increasing by 5.2% in the previous year and amounted to 186.4 million tonnes. Imports of steam coal rose by 3.0% while imports of coking coal fell by 5.2%.

The largest import quantities for steam coal in 2018 came from Australia (49.8 million tonnes). Second place was held by Indonesia (48.1 million tonnes), which also supplied 80.7 million (metric) tonnes of lignite. Coking coal was imported primarily from Australia (39.4 million tonnes) and Mongolia (27.7 million tonnes).

The Chinese planning authority NDRC has been employing various instruments to intervene in the market for several years. Their interventions have not always been successful from their own point of view. In every instance, however, these decisions have had serious consequences for the international coal trade. After Chinese supply policy led to price pressures in 2015, there was a change in the way of thinking in 2016: now attempts were made to support prices and to stabilise them within a certain range. In 2018, regulatory interventions and import restrictions were implemented at a number of Chinese seaports. The port transshipment period was limited in April 2018, and import restrictions followed in October 2018. At the beginning of January 2019, these measures were revoked. But imports of Australian coal in particular continued to be hampered. A connection with a trade conflict cannot be dismissed out of hand. Even in March 2019, China's imports of Australian steam coal were still limited. They remained stable compared to the previous month while imports from Indonesia and Russia increased. Despite continuing restrictions, imports from Australia increased by 33% in May 2019 over April. Coking coal contributed to this increase with growth of 22%, steam coal with an increase by 50%.

Key Figures PR China ¹⁾			
	2016	2017	2018
	Mill. t	Mill. t	Mill. t
Hard Coal Production	3.364	3.446	3.546
Hard Coal Exports	8,6	8,1	4,9
• Steam Coal	7,4	5,8	3,8
of which anthracite	3,7	2,3	1,7
• Coking Coal	1,2	2,3	1,1
Coke Exports	10,2	8,1	9,9
Hard Coal Imports	183,4	188,6	186,4
• Steam Coal	97,7	105,3	112,8
• Coking Coal	59,3	69,9	64,7
• Anthracite	26,4	13,4	8,9
Imports Germany	0,14	0,18	0,15
• Steam Coal (incl. Anthracite)	0,01	0,01	0,01
• Coke	0,13	0,17	0,14
Export Ratio	0,56%	0,47%	0,42%
(coke converted into coal)			
¹⁾ Excluding lignite			
Source: Various analyses, IHS Markit			

LB-T28

VIETNAM

General

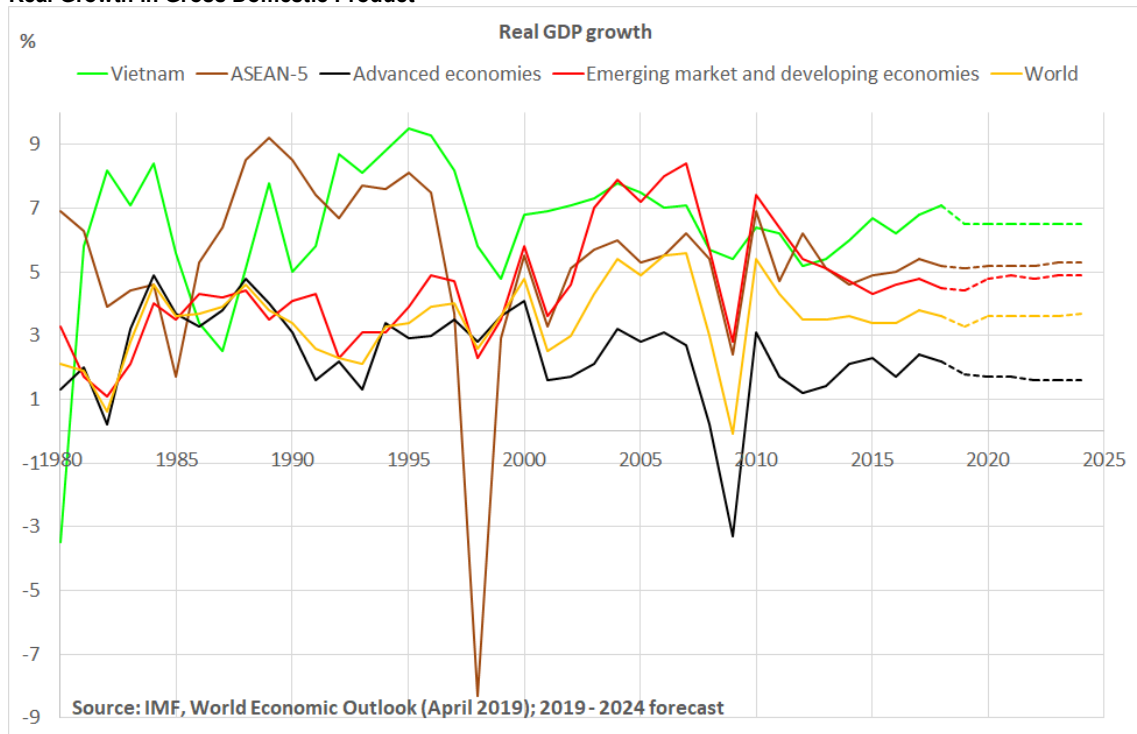


According to the country information portal of GIZ, Vietnam is comparable with Germany in terms of population and land area. After the long war, Vietnam has experienced a rapid upswing since 1986 following the introduction of the market economy reforms (“đổi mới”). The socialist economy of communist Vietnam has undergone excellent development, and the single-party state Vietnam has succeeded in transforming itself from one of the world’s poorest countries into an internationally recognised, aspiring emerging economy. According to the IMF, gross domestic product increased by 7.1% in 2018 (WEO, April 2019). An increase of 6.5% is projected for 2019. This would mean per capita GDP of US\$2,730, still substantially below the world average of US\$11,570. But per capita GDP would also be below the level of developing and emerging countries of US\$5,420 and that of the ASEAN 5 countries (Indonesia, Malaysia, Philippines, Thailand, Vietnam) of US\$4,560.

Growth in 2019, on the other hand, is significantly stronger than the level of the developing and emerging countries (4.4%) and even of the ASEAN 5 countries 5.1%. The country is one of the most dynamic in Asia.

The IMF expects the consumer price index to decline from 3.5% to 3.3% by 2020. The foreign trade surplus as a percentage of GDP will decline slightly from +3.0% in 2018 to +2.6% in 2020.

Real Growth in Gross Domestic Product



LB-B10

In 2018, Vietnam is in 69th place out of 190 countries in the Ease of Doing Business Index, ranks 77th (previous year 55th) out of 140 countries in the Global Competitiveness Index 2018 and is 117th out of 180 countries in the Corruption Perceptions Index 2018.

According to preliminary data from the country's General Statistical Office (GSO), electricity generation in Vietnam grew by 12% year-on-year in 2018. GSO does not publish a breakdown of the fuel mix. The state-owned power utility Vietnam Electricity (EVN), however, reported that coal accounted for 41% of the generation mix in 2018.

Vietnam has become a hot spot for energy investors, who will spend up to US\$150 billion over the next decade to meet rising energy demand. Coal is likely to dominate despite the government's efforts to pursue a "green" environmental policy (Reuters, 24/05/2019). The Vietnamese government predicts that with a population of 100 million and an annual GDP growth of around 7%, the power plant capacity will have to increase from the current 47,000 MW to 60,000 MW by 2020 and to 129,500 MW by 2030. If it is to achieve these targets, Vietnam must add more than its neighbour Thailand's total installed capacity by 2025, and its electricity sector is likely to be larger than that of Great Britain by the mid-2020s.

Vietnam's coal consumption grew by 75% between 2013 and 2017, faster than in any other country in the world, according to a research report on Vietnam by the Ash Center of the Harvard Kennedy School.

The country's current Power Development Plan (PDP 7) focuses on coal to meet additional energy demand. "One of Vietnam's priorities is the development of renewable energy sources to reduce progressively dependence on traditional power sources and to protect the environment," said Deputy Minister of Industry and Trade Cao Quoc Hung in a statement published on the Ministry's website in May 2019. The Ministry of Industry and Trade has begun to provide incentives for renewable energies, which have so far played only a marginal role in the Vietnamese energy sector.

Key Figures Vietnam			
	2016	2017	2018
	Mill. t	Mill. t	Mill. t
Hard Coal Production	38,4	38,0	41,9
Hard Coal Exports	1,13	1,44	1,65
of which PR China	0,49	0,25	0,17
Export Ratio	2,9%	3,8%	3,9%
Imports	13,28	14,01	23,52

Source: IHS Markit

LB-T29

A legislative bill foresees that Vietnam Electricity (EVN), the state-owned utility responsible for the country's entire electricity production, will pay feed-in tariffs of between 6.67 and 10.87 US cents/kWh for solar projects, 8.5 US cents/kWh for onshore wind farms and 9.8 US cents/kWh for offshore wind farms.

According to the GSO, steel production increased by 34% from 1.51 million tonnes in May 2018 to 2.02 million tonnes in May 2019. Cement production also increased. It

amounted to 8.8 million tonnes in May 2019 and grew by 9% compared with May 2018.

Export

Like China, Vietnam is included in the Country Reports because the country was once a major export country. Owing to its strong economic growth, however, Vietnam's exports in recent years have continued to decline while domestic consumption and imports have risen.

In 2018, imports rose sharply from 14.0 million tonnes to 23.5 million tonnes. This was offset by exports of around 1.7 million tonnes. The export ratio rose slightly to 3.9%. The primary suppliers of import coal are Australia and Indonesia, whereby the steam coal comes primarily from Indonesia (11.7 million tonnes). Australia supplied coking coal (a total of 3.9 million tonnes) and steam coal (3.1 million tonnes). Imports from Russia were primarily steam coal (1.8 million tonnes). Canada also supplied 1.2 million tonnes of coking coal.

Report in Figures (Provisional for 2018)

Table 1	World Energy Consumption According to Energy Sources and Regions	87
Table 2	World Hard Coal Production/Foreign Trade	88
Table 3	Hard Coal Seaborne Trade	90
Table 4	World Coke Production	92
Table 5	Grades of Steam Coal Traded on World Market	93
Table 6	Grades of Coking Coal Traded on World Market	94
Table 7	Hard Coal Exports from Australia	96
Table 8	Hard Coal Exports from Indonesia	97
Table 9	Hard Coal Exports from Russia	98
Table 10	Hard Coal Exports from the USA	99
Table 11	Hard Coal Exports from Colombia	100
Table 12	Hard Coal Exports from the Republic of South Africa	101
Table 13	Hard Coal Exports from Canada	102
Table 14	Hard Coal Exports from the People's Republic of China	103
Table 15	Hard Coal Exports from Poland	104
Table 16	Hard Coal Imports of the EU Countries — Imports and Domestic Trade —	105
Table 17	Primary Energy Consumption in Germany	106
Table 18a	Coal Transshipments in German Seaports	107
Table 18b	Coal Transshipments in German Inland Ports 2018	108
Table 19	Consumption, Import/Export and Generation of Power in Germany	109
Table 20	European/International Prices	110
Table 21	Germany — Energy Prices/Exchange Rates	111
Table 22	Hard Coal and Hard Coal Coke Imports to Germany	112
Table 23	The Hard Coal Market in Germany	114
	Volumes and Prices 1957-2018	

German notion for decimal separator and thousands separator was used for technical reasons:

- “,” corresponds to “.”
- “.” corresponds to “,”

World Energy Consumption by Energy Source and Region in Mill. TCE								
Energy Source	2010	2011	2012	2013	2014	2015	2016	2017
Oil	5.754	5.836	5.913	5.970	6.074	6.188	6.512	6.605
Natural Gas	4.083	4.167	4.266	4.361	4.402	4.479	4.392	4.510
Nuclear Energy	900	859	800	805	822	833	845	852
Hydroelectric Power	1.100	1.136	1.191	1.231	1.263	1.276	1.305	1.313
Hard Coal and Lignite	5.080	5.189	5.320	5.524	5.587	5.485	5.296	5.332
Miscellaneous and Renewable Energies	162	286	342	404	452	521	596	696
Total	17.079	17.473	17.832	18.295	18.600	18.782	18.946	19.308
Primary Energy Consumption								Share in %
Consumption Regions	2010	2011	2012	2013	2014	2015	2016	2017
North America	23,1	22,7	21,8	21,8	21,8	21,3	20,8	20,5
Asia/Australia	38,1	39,1	40,3	40,7	41,3	41,6	42,1	42,5
European Union	14,5	13,9	13,0	13,1	12,5	12,4	12,6	12,7
CIS	8,3	8,3	8,5	7,9	7,7	7,4	7,3	7,2
Rest of World	16,0	16,0	16,4	16,5	16,7	17,3	17,2	17,1
Total	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0
Coal Consumption (Hard Coal and Lignite)	5.080	5.189	5.320	5.524	5.587	5.485	5.296	Mill. TCE 5.332
Consumption Regions	2010	2011	2012	2013	2014	2015	2016	Share in % 2017
North America	15,6	14,5	12,6	12,6	12,6	11,2	10,0	9,7
Asia/Australia	67,1	67,9	69,7	70,6	71,5	72,6	74,0	74,5
European Union	7,9	8,3	7,9	7,5	7,0	6,9	6,9	6,8
CIS	4,8	4,7	4,9	4,6	4,2	4,2	4,2	4,2
Rest of World	4,6	4,6	4,9	4,7	4,7	5,1	4,9	4,8
Total	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0

Includes commercially traded energy sources only

Source: BP Statistical Review of World Energy 2018

Table 1

World Hard Coal Production/Foreign Trade ¹⁾									Mill. t
	2013			2014			2015		
	Production	Export	Import	Production	Export	Import	Production	Export	Import
Germany	8	0	50	8	0	54	8	0	56
France	0	0	19	0	0	14	0	0	14
Great Britain	13	0	49	12	0	38	9	0	22
Spain ²⁾	4	0	13	4	0	15	3	0	19
Poland	77	11	11	73	9	10	72	9	8
Czech Republic	9	5	2	9	4	3	8	4	3
Romania/Bulgaria	4	0	3	2	0	2	2	0	2
Rest of EU 28		0	58		0	69		0	60
EU 28	114	16	205	106	13	205	100	13	184
Russia	347	143	22	357	166	30	372	152	24
Kazakhstan	120	30	0	120	30	0	107	30	0
Ukraine	84	8	11	65	5	17	40	1	15
Designated Countries	551	181	33	542	201	47	519	183	39
Canada	69	39	9	69	34	8	62	30	8
USA	905	106	8	907	88	10	813	67	10
Colombia	86	75	0	89	77	0	86	82	0
Venezuela	2	2	0	2	2	0	2	2	0
Designated Countries	1.062	222	17	1.067	201	18	963	181	18
South Africa	256	73	0	261	77	0	252	77	0
Australia	410	358	0	441	387	0	442	388	0
India	554	0	161	612	0	215	626	0	220
PR China	3.671	7	288	3.598	5	228	3.545	5	156
Japan	0	0	191	0	0	188	0	0	191
Indonesia ³⁾	342	335	0	389	348	0	413	327	0
Designated Countries	4.567	342	640	4.599	353	631	4.584	332	567
Rest of Asia			270			287			285
Remaining countries/ Statistical difference	235	45	72	34	40	84	158	50	132
World	7.195	1.237	1.237	7.050	1.272	1.272	7.018	1.224	1.224

¹⁾ Domestic and seaborne trade ²⁾ Production incl. "Lignito Negro"
³⁾ Indonesia: Production incl. dom. lignite consumption, but excluding lignite exports
Sources: Statistics from Kohlenwirtschaft, ECE, IEA, statistics of the importing and exporting countries, own calculations

Table 2

World Hard Coal Production/Foreign Trade ¹⁾									
2016			2017			2018			
Production	Export	Import	Production	Export	Import	Production	Export	Import	
4	0	54	4	0	49	3	0	44	Germany
0	0	13	0	0	15	0	0	13	France
4	0	7	3	0	7	3	0	9	Great Britain
2	0	14	3	0	19	2	0	16	Spain ²⁾
70	9	8	66	7	13	63	5	20	Poland
7	4	3	5	3	3	4	3	2	Czech Republic
2	0	2	0	0	2	0	0	5	Romania/Bulgaria
0	0	55	0	0	54	0	0	59	Rest of EU 28
89	13	157	81	10	163	75	8	168	EU 28
384	166	22	408	193	25	439	206	25	Russia
102	26	0	106	29	0	107	29	1	Kazakhstan
41	1	16	35	1	20	33	0	19	Ukraine
527	193	38	549	223	45	579	235	45	Designated Countries
61	30	6	61	30	7	55	31	8	Canada
661	55	9	703	88	7	685	105	5	USA
91	90	0	91	85	0	84	82	0	Colombia
0	1	0	0	0	0	0	0	4	Venezuela
813	176	16	855	203	14	824	218	17	Designated Countries
250	76	0	252	83	0	253	81	0	South Africa
433	391	0	449	373	0	447	386	0	Australia
639	0	198	681	0	198	720	0	221	India
3.364	9	183	3.446	8	189	3.546	5	186	PR China
0	0	190	0	0	192	0	0	189	Japan
402	311	0	415	318	0	471	343	0	Indonesia ³⁾
4.405	320	571	4.542	326	578	4.737	348	597	Designated Countries
		298			322			351	Rest of Asia
211	57	147	139	66	161	143	68	166	Remaining countries/ Statistical difference
6.728	1.226	1.226	6.867	1.284	1.284	7.058	1.344	1.344	World

Table 2

Hard Coal Seaborne Trade ¹⁾										Mill. t
Exporting Countries	2013			2014			2015			
	Coking Coal	Steam Coal	Total	Coking Coal	Steam Coal	Total	Coking Coal	Steam Coal	Total	
Australia	171	188	359	186	201	387	186	202	388	
USA	56	44	100	53	29	82	38	24	62	
South Africa	0	73	73	0	77	77	0	77	77	
Canada	35	3	38	31	3	34	27	2	29	
PR China	1	6	7	1	5	6	1	4	5	
Colombia	1	74	75	1	75	76	1	81	82	
Indonesia	0	335	335	0	348	348	0	327	327	
Poland	0	6	6	0	3	3	0	5	5	
Russia	15	116	131	33	110	143	17	120	137	
Other (incl. Venezuela)	0	18	18	4	27	31	2	11	12	
Total	279	863	1.142	309	878	1.187	272	853	1.124	
Importing Countries/ Regions	2013			2014			2015			
	Coking Coal	Steam Coal	Total	Coking Coal	Steam Coal	Total	Coking Coal	Steam Coal	Total	
Europe ²⁾ , of which	43	190	233	70	140	210	43	179	222	
EU 28	38	156	194	64	104	168	37	133	170	
Asia, of which	194	658	852	199	694	893	172	665	837	
Japan	48	143	191	43	145	188	41	150	191	
South Korea	21	105	126	6	125	131	25	110	135	
Taiwan	0	67	67	0	67	67	11	56	67	
PR China	51	158	209	48	161	209	45	96	141	
Hong Kong	0	13	13	0	14	14	0	11	11	
India	54	107	161	37	178	215	48	172	220	
Latin America	19	12	31	17	16	33	15	25	40	
Other/ Statistical Difference	23	3	26	23	28	51	4	21	25	
PCI coal included in steam coal ³⁾							38	-38	0	
Total	279	863	1.142	309	878	1.187	272	852	1.124	

Figures excl. overland traffic

¹⁾ Rounding-off differences possible, coking coal exports from Australia and Russia, including PCI coal,
²⁾ incl. neighbouring Mediterranean countries, ³⁾ coking coal exports from Australia and Russia, including PCI coal
Assessment of various sources

Table 3

Mill. t										Hard Coal Seaborne Trade ¹⁾
2016			2017			2018				
Coking Coal	Steam Coal	Total	Coking Coal	Steam Coal	Total	Coking Coal	Steam Coal	Total	Exporting Countries	
189	201	391	173	200	373	179	208	386	Australia	
34	16	50	46	37	83	52	48	100	USA	
0	75	75	0	83	83	0	81	81	South Africa	
27	2	29	28	2	30	29	1	30	Canada	
1	7	9	2	6	8	1	4	5	PR China	
1	89	90	2	83	85	2	80	82	Colombia	
0	311	311	0	318	318	0	343	343	Indonesia	
0	4	4	0	2	2	0	0	0	Poland	
30	115	144	35	125	160	38	129	167	Russia	
2	11	13	3	13	16	3	13	16	Other (incl. Venezuela)	
285	832	1.117	288	869	1.157	304	906	1.210	Total	
2016			2017			2018			Importing Countries/ Regions	
Coking Coal	Steam Coal	Total	Coking Coal	Steam Coal	Total	Coking Coal	Steam Coal	Total		
40	154	194	43	157	200	45	160	205	Europe ²⁾ , of which	
35	108	143	37	109	146	37	113	150	EU 28	
178	665	843	184	686	869	186	726	912	Asia, of which	
43	146	190	42	150	192	43	146	189	Japan	
25	110	134	24	123	147	25	123	148	South Korea	
11	54	66	11	58	69	12	57	69	Taiwan	
46	111	157	56	100	155	45	105	150	PR China	
0	11	11	0	11	11	0	11	11	Hong Kong	
49	148	197	48	151	199	55	166	221	India	
15	27	42	15	21	36	15	20	35	Latin America	
-2	39	37	-5	57	52	5	53	58	Other/ Statistical Difference	
54	-54	0	51	-51	0	53	-53	0	PCI coal included in steam coal ³⁾	
285	831	1.116	288	869	1.157	304	906	1.210	Total	

Table 3

World Coke Production ¹⁾							1,000 t
Country/Region	2012	2013	2014	2015	2016	2017	2018
Europe	41.235	40.378	40.193	40.170	38.744	38.700	38.800
of which:							
Germany	8.050	8.379	8.740	9.250	9.387	9.300	9.200
Poland	8.637	9.104	9.357	9.450	9.400	9.100	9.200
Russia	28.086	28.040	28.826	28.375	28.628	28.000	26.900
Ukraine	17.865	16.600	13.040	11.131	12.248	11.600	10.200
North America	19.230	19.214	18.235	16.749	14.200	14.800	14.520
Africa	2.404	2.301	2.413	2.092	1.824	2.000	2.300
Middle East (including Turkey) ¹⁾	5.459	5.186	5.388	5.885	5.580	5.600	5.530
Asia	516.894	552.084	558.491	527.754	530.039	512.150	526.550
of which:							
PR China	441.620	473.050	476.910	447.780	449.110	431.400	438.200
Japan	34.700	35.200	34.200	32.400	33.159	32.700	32.600
South Korea	14.607	15.572	16.899	17.426	17.528	17.500	17.700
Taiwan							6.350
Vietnam	447	465	641	725	1.218	1.400	2.000
Indonesia	0	112	991	1.130	1.147	1.250	1.700
WORLD Total	649.746	681.186	684.894	650.363	649.127	633.000	646.000

¹⁾ 2018 in part estimated

Source: CMR

Table 4

Grades of Steam Coal Traded on World Market

Exporting Countries	Volatile %	Ash %	Tot. Moisture %	Sulphur %	Fine Coal Particles %	Grinding Hardness HGI	Calorific Value kcal/kg
Atlantic Suppliers							
USA (East Coast)	17-39	5-15	5-12	0.5-3.0	39-70	31-96	6000-7200
South Africa	16-31	8-15	6-10	0.5-1.7	51-61	43-65	5400-6200
Colombia	30-39	4-15	7-16	0.5-1.0	36-55	43-60	5000-6500
Venezuela ¹⁾	34-40	6-8	5-8	0.6	47-58	45-50	6500-7200
Poland ¹⁾	25-31	8-16	7-11	0.6-1.0	44-56	45-50	5700-6900
Czech Republic ¹⁾	25-27	6-8	7-9	0.4-0.5	58-60	60-70	6700-7100
Russia	27-34	11-15	8-12	0.3-0.6	47-58	55-67	5500-6200
Pacific Suppliers							
Australia	25-30	8-15	7-8	0.3-1.0	47-60	45-79	5900-6900
Indonesia	37-47	1-16	9-22	0.1-0.9	30-50	44-53	3700-6500
PR China ¹⁾	27-31	7-13	8-13	0.3-0.9	50-60	50-54	5900-6300
Russia (East Coast)	17-33	11-20	8-10	0.3-0.5	47-64	70-80	5500-6800
Vietnam/Anthracite ¹⁾	5-6	15-33	9-11	0.85-0.95	58-83	35	5100-6800
Germany	19-33	6-7	8-9	0.7-1.4	58-65	60-90	6600-7100

Data in rough ranges

¹⁾ Currently limited representation only on German market Sources: Cf. Table 6

Table 5

Grades of Coking Coal Traded on World Market						
Exporting Countries/ Grades	Volatile %	Ash %	Bound Moisture %	Sulphur %	Phosphorus %	Crucible Swelling Number FSI
Low Volatility						
Australia/NSW	21-24	9.3-9.5	1.0	0.38-0.40	0.03-0.07	6-8
Australia/QLD	17-25	7.0-9.8	1.0-1.5	0.52-0.70	0.007-0.06	7-9
Canada	21-24	9.5	1	0.30-0.60	0.04-0.06	6-8
USA	18-21	5.5-7.5	1	0.70-0.90	n/a	8-9
Medium Volatility						
Australia/NSW	27-28	7.9-8.3	1.5-1.8	0.38-0.39	0.04-0.06	5-7
Australia/QLD	26-29	7.0-9.0	1.2-2.0	0.38-0.90	0.03-0.055	6-9
Canada	25-28	8.0	1	0.30-0.55	0.03-0.07	6-8
USA	26-27	6.8-9.0	1.0	0.95-1.10	n/a	7-9
Poland ³⁾	23-28	7.0-8.9	0.7-1.5	0.60-0.80	n/a	6-9
PR China ³⁾	25-30	9.5-10.0	1.3-1.5	0.35-0.85	0	
High Volatility						
Australia/NSW	34-40	5.5-9.5	2.4-3.0	0.35-1.30	0.002-0.05	4-7
Australia/QLD	30-34	6.5-8.2	2.0	0.50-0.70	0.02-0.04	8-9
Canada	29-35	3.5-6.5	1.0	0.55-1.20	0.006-0.04	6-8
USA	30-34	6.8-7.3	1.9-2.5	0.80-0.85	n/a	8-9
Poland ³⁾	29-33	6.9-8.9	0.8-1.5	0.60-1.00	n/a	5-8
Germany	26.6¹⁾	7.4¹⁾	1.5¹⁾	1.1¹⁾	0.01-0.04	7-8

Data in air-dry ranges

¹⁾ Coke application mixture, ²⁾ CSR value (coke strength under reduction) characterises the hot strength of the coke after being heated to 1,100° C and subsequent gassing with CO₂. The CSR values attributed to the coal are guide values only. ³⁾ Currently limited representation only on German market

Sources: Australian Coal Report, Coal Americas, company information

Table 6

Grades of Coking Coal Traded on World Market							
Coke Strength CSR Value ²⁾	Fluidity max. ddpm	Contraction max. %	Dilatation max. %	Reflection mean %	Macerals		Minerals %
					reactive %	inert %	
50-65	500-2000	20-30	25-140	1.23-1.29	38-61	36-58	3-4
60-75	34-1400	24-34	35-140	1.12-1.65	61-75	20-34	3-5
65-72	10-150	20-26	7-27	1.22-1.35	70-75	20-35	5
60-70	30-100	25-28	30-60	1.30-1.40	65-75	20-30	3
40-60	200-2000+	25-35	0-65	1.01-1.05	50-53	43-44	4-6
50-70	150-7000	19-33	(-)5-240	1.00-1.10	58-77	20-38	3-4
50-70	150-600	21-28	50-100	1.04-1.14	70-76	20-24	5
60-70	500-7000	22-18	50-100	1.10-1.50	72-78	18-24	4
n/a	n/a	26-32	30-120	n/a	n/a	n/a	n/a
35-55	100-4000	27-45	(-)10-60	0.69-0.83	67-84	11-28	2-5
65-75	950-1000+	23-24	35-160	0.95-1.03	61-79	18-36	3-4
50-60	600-30000	22-31	50-148	1.00-0.95	76-81	17-19	2-4
60-70	18000-26847	26-33	150-217	1.00-1.10	75-78	18-21	4
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
50-65	30-3000	27-28	108-170	1.15-1.45	60-80	15-35	5

Table 6

Hard Coal Exports from Australia							1,000 t
Importing Countries	2012	2013	2014	2015	2016	2017	2018
Germany	4.451	4.739	5.673	5.737	6.608	5.634	5.163
France	2.719	3.317	3.219	3.707	3.860	2.779	2.904
Belgium/Luxembourg	992	444	39	1.610	231	914	20
The Netherlands	1.202	2.651	2.785	2.432	2.848	1.403	2.319
Italy	1.519	821	657	840	778	329	559
Great Britain	2.357	2.458	1.803	1.729	1.218	935	976
Denmark	0	0	0	0	0	0	0
Spain	1.118	1.062	1.438	1.401	1.197	870	1.372
Portugal	0	0	0	0	0	0	0
Sweden	1.057	1.056	1.079	1.311	1.363	790	1.024
Other	379	695	1.360	1.671	1.987	1.791	1.741
From 2013: EU 28	15.794	17.243	18.053	20.438	20.090	15.445	16.078
Israel	678	496	174	172	0	0	0
Turkey	1.221	311	633	1.987	1.505	570	424
Rest of Europe ¹⁾	0	0	0	0	86	122	
Europe ¹⁾	17.693	18.050	18.860	22.597	21.681	16.137	16.502
Japan	113.626	123.811	120.186	125.619	121.648	117.432	116.753
South Korea	46.201	49.819	55.052	59.586	51.122	48.831	47.894
Taiwan	24.378	27.128	29.869	30.001	36.133	31.703	32.875
Hong Kong	679	446	518	488	307	292	159
India	32.071	34.813	46.826	48.114	48.468	44.263	50.049
PR China	62.894	87.923	93.351	71.416	74.898	83.203	89.237
Brazil	2.691	3.044	4.745	6.615	6.435	5.745	5.032
Chile	717	913	901	2.151	3.640	2.201	979
Other Countries	15.376	12.110	16.992	21.185	26.254	22.233	26.937
Total Exports	316.326	358.057	387.300	387.772	390.586	372.040	386.417

¹⁾ Incl. countries bordering the Mediterranean
Source: IHS Markit/DESTATIS

Table 7

Hard Coal Exports from Indonesia							1,000 t
Importing Countries	2012	2013	2014	2015	2016	2017	2018
Germany	0	0	0	53	180	31	0
The Netherlands	71	15	0	83	0	271	459
Italy	3.692	3.365	3.516	3.106	1.686	891	718
Great Britain	0	0	0	0	0	0	0
Ireland	0	0	0	0	0	0	0
Denmark	0	0	0	0	0	0	0
Spain	5.634	3.392	4.071	4.826	4.944	3.232	2.464
Slovenia	332	n/a	n/a	240	377	398	323
Other	2.071	1.638	1.053	285	73	102	45
from 2013 EU 28	11.800	8.410	8.640	8.593	7.260	4.925	4.009
USA	469	650	1.390	732	562	664	825
Chile	160	0	0	0	0	874	0
Japan	31.800	26.010	32.050	32.406	33.038	31.421	28.654
South Korea	37.700	36.080	35.330	32.704	35.019	38.075	37.151
Hong Kong	11.673	11.100	10.970	9.267	9.424	8.450	9.028
Taiwan	19.600	22.110	21.980	24.008	20.290	17.454	17.860
Malaysia	12.600	12.140	12.250	16.505	17.272	21.130	21.983
Philippines	9.300	10.140	9.680	15.804	17.503	18.978	22.595
Thailand	11.421	8.440	16.467	17.730	16.384	16.375	19.964
India	60.520	82.720	104.740	123.365	94.609	98.553	110.378
PR China	83.300	106.940	88.180	36.684	50.843	47.294	48.136
Other Countries	13.657	77.260	40.323	9.362	9.021	14.112	22.300
Total Exports¹⁾	304.000	402.000	382.000	327.160	311.225	318.305	342.883

¹⁾ From 2013 incl. lignite, from 2015 excl. lignite
Sources: Company information, own calculations

Table 8

Hard Coal Exports Russia (Seaborne Trade Only)							1,000 t
Importing Countries	2012	2013	2014	2015	2016	2017	2018
Germany	11.227	12.841	13.494	16.528	17.947	19.810	19.243
Belgium/Luxembourg	0	2.620	2.304	1.694	1.299	833	710
Italy	2.600	4.406	4.341	4.023	1.860	2.299	2.344
Great Britain	14.600	17.748	16.200	7.374	2.292	3.882	3.534
Spain	2.300	2.196	2.157	5.012	2.463	4.072	2.716
Finland	2.700	3.586	3.784	2.063	1.926	1.976	2.377
Poland	1.700	1.300	1.303	607	5.268	7.641	13.261
Romania	450	460	460	489	464	1.169	3.466
Other	10.200	9.894	10.632	13.984	17.524	18.721	20.155
from 2013 EU 28	45.777	55.051	54.675	64.025	51.043	60.403	67.806
Turkey	9.785	8.580	8.460	11.091	11.496	13.707	11.845
Europe	55.562	63.631	63.135	75.116	62.539	74.110	79.651
Japan	15.292	8.422	14.519	16.824	18.544	17.022	18.103
South Korea	11.438	12.853	16.841	23.067	24.757	23.033	25.412
Taiwan	3.330	2.994	5.464	7.466	7.631	8.752	9.304
PR China	20.183	27.251	25.921	15.780	15.991	22.555	22.518
Other Countries ¹⁾	11.195	15.649	17.520	5.147	36.675	35.937	43.801
Total Exports	117.000	130.800	143.400	143.400	166.137	181.409	198.789

¹⁾ 2008–2016 exports via Cyprus/Lebanon; part of these quantities were exported to unknown countries.
Sources: IHS/DESTATIS/2008-2017 company information, own calculations, seaports' vessel tracking database

Table 9

Hard Coal Exports from the USA							1,000 t
Importing Countries	2012	2013	2014	2015	2016	2017	2018
Germany	9.809	12.044	11.099	10.913	9.547	9.142	9.750
France	3.720	3.728	1.990	1.208	1.215	1.974	1.547
Belgium/Luxembourg	2.360	1.745	917	1.085	1.137	1.136	992
The Netherlands	7.178	4.352	4.571	4.441	2.847	3.807	4.702
Italy	7.747	5.981	5.331	3.112	1.733	2.850	3.091
Great Britain	10.856	11.986	8.898	3.811	965	2.476	3.805
Ireland	208	0	0	0	0	83	0
Denmark	0	0	0	41	55	108	58
Spain	1.975	1.430	1.357	1.151	1.263	1.590	1.657
Portugal	1.127	356	201	126	85	740	527
Finland	266	374	670	352	395	379	469
Sweden	613	438	651	585	262	658	489
Romania	607	819	370	246	179	192	276
Other	3.786	3.565	3.472	2.711	1.774	4.163	4.902
from 2013: EU 28	50.252	46.818	39.157	29.782	21.457	29.298	32.265
Israel	17	0	0	0	0	1	0
Turkey	4.871	4.521	4.045	1.863	1.349	2.326	2.778
Rest of Europe ¹⁾	5.951	4.583	2.725	176	159	73	0
Europe	61.091	55.922	45.927	31.821	22.965	31.698	35.043
Canada	6.393	6.284	5.884	5.403	4.545	4.794	5.188
Mexico	3.126	5.102	4.267	3.412	2.807	3.387	4.911
Argentina	471	427	413	224	94	520	711
Brazil	7.206	7.742	7.233	5.750	6.294	6.859	7.796
Japan	5.169	4.783	4.475	4.224	4.133	6.957	9.426
South Korea	8.250	7.648	7.282	5.528	3.889	8.573	8.456
Taiwan	227	342	91	0	89	489	1
Other Countries	21.615	17.689	12.424	10.709	9.841	24.657	33.338
Total Exports	113.548	105.939	87.996	67.071	54.657	87.934	104.870

¹⁾ Incl. neighbouring Mediterranean countries

Source: IHS Markit

Table 10

Hard Coal Exports Colombia (Steam Coal Only)							1,000 t
Importing Countries	2012	2013	2014	2015	2016	2017	2018
Germany	8.972	9.794	7.265	9.850	10.788	6.503	3.820
France	1.239	1.765	695	756	1.077	1.832	1.010
Belgium/Luxembourg	75	0	31	0	0	0	0
The Netherlands	13.053	10.305	8.503	8.463	6.748	3.267	2.409
Italy	1.916	1.264	1.205	2.661	3.561	2.609	2.325
Great Britain	6.365	6.195	6.867	4.100	598	329	745
Ireland	1.729	1.773	1.792	2.131	1.146	1.514	563
Denmark	3.153	1.927	1.248	574	548	158	449
Greece	0	0	0	0	0	0	0
Spain	4.340	2.981	6.067	5.869	4.653	5.707	4.517
Portugal	3.212	3.246	4.196	5.357	4.960	4.793	4.236
Finland	0	0	0	0	0	0	0
Sweden	0	0	0	0	0	0	77
Slovenia	214	222	238	165	633	567	165
Croatia	490	618	210	207	278	72	0
from 2013: EU 28	44.758	40.090	38.317	40.133	34.990	27.351	20.316
Israel	5.713	4.901	5.257	5.845	4.547	3.921	4.284
Turkey	7.935	7.660	9.300	11.414	16.115	17.031	18.058
Europe¹⁾	58.406	52.651	52.874	57.392	55.652	48.303	42.658
Japan	220	278	0	20	240	1.949	948
Hong Kong	0	0	0	0	0	0	0
USA	5.029	4.511	5.565	6.341	5.649	3.944	2.544
Canada	1.125	1.593	1.516	1.711	1.445	1.733	2.138
Brazil	1.776	2.076	4.448	5.042	4.570	4.503	4.965
Other Countries	13.188	12.538	10.633	9.994	21.013	22.736	26.749
Total Exports	79.744	73.647	75.036	80.500	88.569	83.168	80.002

¹⁾ Incl. countries bordering the Mediterranean
Source: IHS Markit/DESTATIS

Table 11

Hard Coal Exports from the Republic of South Africa							1,000 t
Importing Countries	2012	2013	2014	2015	2016	2017	2018
Germany	1.972	2.533	5.082	3.400	2.003	1.630	1.044
France	1.042	1.209	838	386	650	612	571
Belgium/Luxembourg	0	0	0	92	0	0	0
The Netherlands	1.760	4.754	4.919	2.150	1.199	314	2.610
Italy	3.242	2.297	1.516	3.883	2.799	833	151
Great Britain	592	441	1.128	299	117	0	0
Ireland	92	125	127	90	80	90	50
Denmark	630	300	686	326	433	322	419
Greece	75	0	0	40	0	0	0
Spain	2.360	1.698	3.211	2.400	1.092	2.785	1.295
Portugal	0	377	155	331	160	163	167
Finland	0	0	0	0	0	0	0
Other	316	358	178	33	258	128	48
from 2013: EU 28	12.081	14.092	17.840	13.430	8.791	6.877	6.355
Israel	4.752	3.306	2.503	2.559	1.003	1.166	683
Morocco	405	300	1.338	4.325	2.243	757	353
Turkey	2.795	2.836	3.668	4.548	1.570	1.867	1.697
Rest of Europe ¹⁾	124	0	64	0	38	34	60
Europe	12.205	14.092	17.904	13.430	8.829	6.911	6.415
Japan	468	550	145	150	0	311	135
South Korea	1.542	150	305	318	2.739	8.328	6.827
Taiwan	4.732	5.803	1.344	1.289	765	3.203	2.774
Hong Kong	0	0	0	0	0	0	0
India	22.985	20.894	30.574	35.299	37.567	36.511	36.344
PR China	12.871	13.535	3.260	0	60	0	6
USA	450	511	574	504	250	405	475
Brazil	1.114	631	1.014	944	879	998	474
Other Countries	19.373	17.188	21.268	25.326	24.357	26.471	27.547
Total Exports	75.740	73.354	76.388	77.260	75.446	83.138	80.997

¹⁾ Incl. neighbouring Mediterranean countries

Source: IHS Markit/DESTATIS

Table 12

Hard Coal Exports from Canada							1,000 t
Importing Countries	2012	2013	2014	2015	2016	2017	2018
Germany	1.516	1.214	1.462	1.317	1.487	1.524	1.590
France	55	0	31	0	92	119	69
Belgium/Luxembourg	0	0	0	0	25	0	0
The Netherlands	412	227	30	165	517	793	979
Italy	767	817	403	288	283	318	234
Great Britain	99	186	423	185	167	122	159
Denmark	0	0	0	0	0	301	162
Spain	1	58	1	2	63	35	385
Portugal	0	0	0	0	0	0	108
Finland	303	428	537	526	587	412	605
Sweden	60	0	0	22	0	246	37
Other	0	291	614	449	444	750	760
from 2013: EU 28	3.213	3.221	3.501	2.954	3.665	4.620	5.088
Turkey	500	567	551	834	1.039	659	512
Europe	3.713	3.788	4.052	3.788	4.704	5.279	5.600
Japan	9.526	10.108	8.850	8.306	7.914	7.240	7.447
South Korea	6.360	7.594	0	5.680	5.702	5.681	5.720
Taiwan	1.005	1.151	1.509	1.252	1.417	1.622	1.462
Brazil	1.813	1.677	2.263	1.113	901	926	863
USA	898	911	834	980	892	735	695
Chile	253	327	274	366	638	266	199
Mexico	183	278	158	130	0	132	81
Other Countries	10.761	12.712	16.320	8.505	8.077	8.560	8.877
Total Exports	34.512	38.546	34.260	30.120	30.245	30.441	30.944

Source: IHS Markit, own calculations

Table 13

Hard Coal Exports from PR China							1,000 t
Importing Countries	2012	2013	2014	2015	2016	2017	2018
Germany	9	8	23	16	140	184	146
France	0	0	0	0	0	0	0
Belgium/Luxembourg	0	0	0	0	1	0	0
The Netherlands	0	0	0	11	1	0	0
Italy	0	0	0	0	0	0	0
Great Britain	0	0	0	0	0	77	0
Spain	0	0	0	0	0	0	0
Greece	0	0	0	0	0	0	0
EU 28	9	8	23	27	142	261	146
Japan	3.989	3.020	2.070	1.503	2.667	3.132	1.869
South Korea	3.662	3.303	2.835	2.014	3.543	3.421	1.821
Taiwan	1.270	835	467	414	976	765	193
Hong Kong	0	0	59	0	1	0	1
India	0	0	0	2	1	172	0
Malaysia	0	0	4	15	17	8	91
Thailand	1	0	0	22	36	3	1
North Korea	172	129	80	71	132	44	438
Philippines	0	0	0	22	1	0	0
Brazil	0	0	0	0	0	90	0
Other Countries	24	18	59	1.099	1.128	162	327
Total Exports	9.127	7.313	5.597	5.189	8.644	8.058	4.887

Source: IHS Markit and others

Table 14

Hard Coal Exports from Poland							1,000 t
Importing Countries	2012	2013	2014	2015	2016	2017	2018
Germany	2.406	3.007	2.931	3.098	1.909	1.267	347
France	212	534	0	228	157	0	0
Belgium	80	450	2	2	3	0	1
The Netherlands	0	147	54	51	159	0	0
Italy	0	0	1	65	7	24	22
Great Britain	89	665	230	123	51	26	22
Ireland	140	170	148	101	93	23	22
Denmark	60	553	365	150	141	5	5
Spain	20	19	26	25	25	8	0
Portugal	0	0	0	0	0	0	0
Finland	148	358	183	85	76	26	0
Austria	786	807	887	850	846	881	1.008
Sweden	105	184	117	100	85	32	6
Czech Republic	1.540	1.663	2.604	2.633	2.827	3.108	2.395
Slovakia	302	767	500	619	650	784	675
Hungary	98	93	58	163	169	186	170
Other	383	401	38	52	58	47	51
From 2013: EU 28	6.369	9.818	8.144	8.345	7.256	6.417	4.724
Other Countries	667	1.018	699	874	1.949	694	332
Total Exports	7.036	10.836	8.843	9.219	9.205	7.111	5.056

Sources: IHS Markit, German Federal Statistical Office and own calculations

Table 15

Hard Coal Imports of EU Countries — Imports Incl. Domestic Trade of Member States							1,000 t
	2012	2013	2014	2015	2016	2017	2018
Germany	44.900	50.100	53.600	55.500	55.200	49.200	44.500
Belgium	3.500	5.200	4.400	4.200	3.700	3.600	4.100
Bulgaria	2.300	1.700	1.600	1.100	700	900	800
Denmark	3.900	5.000	4.500	2.800	2.900	3.100	2.800
Finland	4.000	5.100	5.400	3.500	3.900	4.200	4.000
France	17.000	18.300	14.300	14.300	13.500	14.100	13.400
Greece	200	200	200	300	300	400	400
Great Britain	44.800	44.800	38.300	25.500	8.500	8.500	9.900
Ireland	2.200	1.200	1.800	2.400	1.800	2.000	1.600
Italy	25.000	20.800	20.000	19.600	17.900	15.400	14.100
Croatia	n/a	1.200	1.000	1.000	1.200	600	500
The Netherlands	12.400	12.400	12.400	12.400	14.500	16.200	13.000
Austria	2.900	3.500	3.200	3.200	3.600	3.600	3.500
Poland	10.100	10.800	10.300	8.200	8.300	13.400	19.700
Portugal	5.000	4.200	4.400	5.100	5.300	5.700	4.700
Romania	1.300	900	700	1.200	1.000	900	900
Sweden	2.200	2.500	2.500	2.700	3.100	2.700	2.700
Slovenia	600	500	400	400	400	400	400
Slovakia	3.400	7.100	6.700	4.100	4.000	3.800	4.200
Spain	22.300	13.500	14.700	19.000	14.700	19.200	15.700
Czech Republic	2.000	2.100	2.900	2.900	3.100	3.700	3.400
Hungary	1.500	1.300	1.300	1.300	1.500	1.700	1.500
Other	600	300	200	200	200	100	100
EU 28 from 2013	212.100	212.700	204.800	190.900	169.300	173.400	165.900
European Cross-Border Coke Trade (Excluding Ukraine)	8.000	6.000	6.000	7.600	8.000	9.100	9.000

Source: EURACOAL/DESTATIS

Table 16

Primary Energy Consumption in Germany							Mill. TCE
Energy Source	2012	2013	2014	2015	2016	2017	2018
Hard Coal	58,3	61,0	58,1	58,6	56,7	50,0	44,4
of which import coal	(46.8)	(52.4)	(52.1)	(51.3)	(53.6)	(48.2)	(43.2)
Lignite	56,1	55,6	53,6	53,5	51,8	51,5	50,0
Oil	154,9	158,3	154,1	153,2	155,3	159,5	151,6
Natural Gas	99,6	104,4	91,4	94,2	103,8	106,5	104,8
Nuclear Energy	37,0	36,2	36,2	34,2	31,5	28,4	28,3
Renewables	47,3	51,1	51,8	56,1	57,9	61,1	61,7
Foreign Trade Balance Electric Power	-2,8	-4,2	-4,4	-6,4	-6,6	-6,8	-6,3
Other Energy Sources	7,9	7,1	7,7	7,6	8,0	8,4	7,8
Total¹⁾	458,3	469,5	448,5	451,0	458,4	458,6	442,3
							Share in %
Energy Source	2012	2013	2014	2015	2016	2017	2018
Hard Coal	12,7	13,0	13,0	13,0	12,4	10,9	10,0
of which import coal	(10.2)	(11.2)	(11.6)	(11.4)	(11.7)	(10.5)	(9.8)
Lignite	12,2	11,8	12,0	11,9	11,3	11,2	11,3
Oil	33,8	33,7	34,4	34,0	33,9	34,8	34,3
Natural Gas	21,7	22,2	20,4	20,9	22,6	23,2	23,7
Nuclear Energy	8,1	7,7	8,1	7,6	6,9	6,2	6,4
Hydroelectric and Wind Power	10,3	10,9	11,5	12,4	12,6	13,3	13,9
Foreign Trade Balance Electric Power	-0,6	-0,9	-1,0	-1,4	-1,4	-1,5	-1,4
Other Energy Sources	1,7	1,5	1,7	1,7	1,7	1,8	1,7
Total¹⁾	100,0	100,0	100,0	100,0	100,0	100,0	100,0

¹⁾ Rounding-off differences possible

Sources: Arbeitsgemeinschaft Energiebilanzen, German Federal Statistical Office, own calculations

Table 17

Coal Transshipments in German Seaports							1,000 t
	2012	2013	2014	2015	2016	2017	2018
North Sea Ports							
Hamburg	5.111	5.629	5.924	7.672	7.434	7.697	8.162
Wilhelmshaven	1.597	3.301	3.112	4.093	2.480	3.536	3.556
Bremen Ports	1.783	1.270	1.636	1.710	1.175	1.175	895
Brunsbüttel	710	793	525	485	782	804	997
Nordenham	2.240	1.574	1.277	1.107	958	1.242	1.253
Total	11.441	12.567	12.474	15.067	12.829	14.454	14.864
Baltic Sea Ports							
Rostock	1.335	1.032	1.234	985	1.184	1.287	848
Flensburg	235	255	239	254	227	116	170
Kiel	503	178	325	231	158	72	-
Total	2.073	1.465	1.798	1.470	1.569	1.475	1.018
Total Transshipment	13.514	14.032	14.272	16.537	14.398	15.929	15.882

Source: German Federal Statistical Office

Table 18a

Coal Transshipments in German Inland Ports 2018				1,000 t
Destination Port	Shipping Region			Total
	Province Zuid-Holland ¹⁾	Province Noord-Holland ²⁾	Province Antwerp	
Duisburg	7 209 827	1 978 691	1 770	9 190 288
Mannheim	1 173 990	1 196 697	59 271	2 429 958
Lünen	1 102 597	53 726	1 947	1 158 270
Karlsruhe	296 569	800 661	16 277	1 113 507
Rheinberg	312 795	647 905	.	960 700
Hamm	420 181	526 890	.	947 071
Saarlouis	344 422	95 364	406 127	845 913
Bottrop	561 452	.	.	561 452
Bergkamen	273 518	139 625	.	413 143
Marl	25 886	276 168	.	302 054
Heilbronn	78 787	183 114	.	261 901
Leverkusen	200 530	24 176	.	224 706
Frankfurt am Main	121 253	81 009	.	202 262
Grosskrotzenburg	171 319	.	.	171 319
Neuss	2 674	132 163	1 729	136 566
Völklingen	93 258	20 705	.	113 963
Other	290 780	292 700	54 804	638 284
Total Transshipment	12 679 838	6 449 594	541 925	19 671 357

¹⁾ Largest city: Rotterdam; ²⁾ Largest city: Amsterdam

Source: German Federal Statistical Office

Table 18b

Consumption, Import/Export and Generation of Power in Germany

	2012	2013	2014	2015	2016	2017	2018
Gross Electricity Consumption in TWh	606,5	605,0	592,2	596,3	597,0	598,7	595,6
Foreign Trade Electricity in TWh							
Exports	67,3	72,2	74,5	85,4	80,7	83,3	82,7
Imports	44,2	38,4	38,9	33,6	27,0	28,4	31,5
Balance (Export Surplus)	-23,1	-33,8	-35,6	-51,8	-53,7	-54,9	-51,2
Gross Electric Power Generation in TWh	629,6	638,8	627,8	648,1	650,7	653,6	646,8
Use of Energy Sources for Electric Power Generation							
in TWh	2012	2013	2014	2015	2016	2017	2018
Hard Coal	116,4	127,3	118,6	117,7	112,2	92,9	83,2
of which import coal ¹⁾	(89,1)	(101,8)	(91,6)	(103,0)	(102,5)	(91,3)	(82,3)
Lignite	160,7	160,9	155,8	154,5	149,5	148,4	145,5
Natural Gas	76,4	67,5	61,1	62,0	81,3	86,7	83,4
Fuel Oil	7,6	7,2	5,7	6,2	5,8	5,6	5,2
Nuclear Energy	99,5	97,3	97,1	91,8	84,6	76,3	76,0
Hydroelectric/Wind Power	73,8	75,9	78,0	99,5	100,7	125,8	128,1
Other	95,2	102,7	111,5	116,4	116,6	117,9	125,4
Total	629,6	638,8	627,8	648,1	650,7	653,6	646,8

¹⁾ Procurements of power plants

Sources: BDEW, Statistics of Kohlenwirtschaft, BAFA, AG Energiebilanzen, DIW, own calculations

Table 19

European/International Prices							
	2012	2013	2014	2015	2016	2017	2018
Steam Coal Marker Prices 1%S, CIF NW Europa							
US\$/TCE	107,90	95,30	87,78	67,45	68,53	98,38	107,73
€/TCE	83,99	71,75	66,11	60,79	61,91	87,09	91,21
<i>Sources: IHS Markit (based on 7000 kcal/kg), translation into € based on ECB values for the year</i>							
Sea Freight Rates Capesize Units to Destination Ports ARA (Amsterdam, Rotterdam, Antwerp)							
Australia (Queensland) US\$/t	13,81	15,88	14,95	8,49	7,50	10,58	11,43
Colombia (Bolivar) US\$/t	9,48	11,24	9,93	6,12	5,45	8,34	9,52
South Africa (Richards Bay) US\$/t	8,00	9,12	9,02	5,03	4,42	7,35	8,30
USA (Hampton Roads) US\$/t	9,78	11,36	10,32	6,45	5,78	8,69	10,32
<i>Source: IHS Markit, own calculations</i>							

Table 20

Germany — Energy Prices/Exchange Rates

	2012	2013	2014	2015	2016	2017	2018
Exchange Rates							
€/US\$	0,7783	0,753	0,7527	0,9013	0,9034	0,8852	0,8467

Source: Deutsche Bundesbank

Border-crossing Prices for Coking Coal and Hard Coal Coke — €/t

Imported Coking Coal	188,42	127,19	104,67	100,28	87,68	174,84	163,87
Imported Hard Coal Coke	258,72	204,88	193,66	187,04	159,82	256,34	271,61

Sources: from 2003 Federal Statistical Office, hard coal coke Federal Statistical Office

Border-crossing Prices for Hard Coal in €/TCE: Use in Power Plants

	Q2	Q3	Q4	Value for Year
2012	93,09	92,01	86,62	93,02
2013	80,03	75,64	76,66	79,12
2014	71,18	71,21	73,41	72,94
2015	69,64	66,10	64,06	67,90
2016	56,12	65,03	88,28	67,07
2017	86,40	88,07	94,07	91,82
2018	88,25	100,79	100,91	95,49

Source: BAFA Section 422 (border-crossing prices = CIF price ARA + freight German border)

Energy Prices Free Power Plant €/TCE

Energy Source	2012	2013	2014	2015	2016	2017	2018
Natural Gas	264,00	272,00	258,00	248,00	200,00	204,00	227,00
Heavy Fuel Oil	394,00	349,00	309,00	180,00	151,00	215,00	268,00
Steam Coal	98,00	84,00	78,00	73,00	72,00	97,00	100,00

Sources: BAFA, statistics from Kohlenwirtschaft, own calculations

Table 21

Import of Hard Coal and Hard Coal Coke											1,000 t
Countries	2015 ¹⁾				2016						
	Steam Coal ²⁾	Coking Coal	Coke	Total	Steam Coal	Coking Coal	Anthracite	Coke	Briquettes	Total	
Poland	3.097	1	998	4.096	2.412	2	8	1.284	1	3.706	
Czech Republic	566	0	266	832	392		1	146	0	539	
Other	2.951	36	333	3.320	2.498	32	157	277	89	3.053	
EU 28	6.614	37	1.597	8.248	5.302	35	165	1.707	90	7.298	
Russian Federation	14.885	1.643	196	16.724	16.194	1.263	397	89	5	17.947	
Norway	561	0	0	561	621	15		0		636	
USA	7.734	3.179	0	10.913	6.647	2.896	4			9.547	
Canada	0	1.316	0	1.316		1.487				1.487	
Colombia	9.850	98	0	9.948	10.691		21	34	42	10.788	
South Africa	3.225	175	0	3.400	1.809	194				2.003	
Australia	118	5.619	0	5.737	520	6.088				6.608	
PR China	16	0	75	91			12	128		140	
Indonesia	4	49	0	53	31	149				180	
Other Third Countries	188	234	97	519	302	194	50			546	
Third Countries	36.581	12.313	368	49.262	36.815	12.285	484	251	47	49.882	
Total	43.195	12.350	1.965	57.510	42.117	12.320	648	1.958	137	57.180	

¹⁾ Excluding Briquettes; ²⁾ Including anthracite

Sources: Federal Statistical Office, own calculations

Table 22

To Germany												1,000 t
2017						2018						Countries
Steam Coal	Coking Coal	Anthra-cite	Coke	Briquettes	Total	Steam Coal	Coking Coal	Anthra-cite	Coke	Briquettes	Total	
1.211	1	41	1.425	0	2.679	229		17	1.485	0	1.731	Poland
159		1	281	0	441	17		1	271		289	Czech Republic
2.466	34	198	191	83	2.889	2.582	39	169	178	22	2.989	Other
3.837	35	240	1.897	84	6.093	2.827	39	187	1.935	22	5.009	EU 28
17.605	1.783	294	98	30	19.810	17.224	1.373	440	121	86	19.243	Russian Fed.
171			0		171	73					73	Norway
5.773	3.362	7	0		9.142	6.263	3.481	3	4		9.750	USA
	1.481		42		1.524	13	1.539		38		1.590	Canada
6.423		46	42		6.511	3.755		31	34		3.820	Colombia
1.429	201				1.630	870	173	1			1.044	South Africa
142	5.493				5.634	8	5.154				5.163	Australia
		12	172		184	0		10	135		146	PR China
0					0						0	Indonesia
124	544	39	10		716	265	611	32			908	Other
31.667	12.864	396	364	30	45.321	28.471	12.331	518	332	86	41.737	Third Countries
35.504	12.899	636	2.261	114	51.414	31.298	12.370	704	2.267	108	46.747	Total

Table 22

The Hard Coal Market in Germany

Volumes and Prices 1957–2018															
Quantities								Prices							
Imports of Hard Coal and Coke t=t ¹⁾				Domestic Production of Hard Coal Tonnes Usable Production				Steam Coal From Third Countries ¹⁾				Domestic Coal ²⁾			
Year	Mill. t	Year	Mill. t	Year	Mill. t	Year	Mill. t	Year	€/TCE	Year	€/TCE	Year	€/TCE	Year	€/TCE
1957	18,9	1988	8,1	1957	149,4	1988	72,9	1957	40	1988	42	1957	29	1988	134
1958	13,9	1989	7,3	1958	148,8	1989	71,0	1958	37	1989	49	1958	29	1989	137
1959	7,5	1990	11,7	1959	141,7	1990	69,8	1959	34	1990	49	1959	29	1990	138
1960	7,3	1991	16,8	1960	142,3	1991	66,1	1960	33	1991	46	1960	29	1991	139
1961	7,3	1992	17,3	1961	142,7	1992	65,5	1961	31	1992	42	1961	29	1992	147
1962	8,0	1993	15,2	1962	141,1	1993	57,9	1962	30	1993	37	1962	30	1993	148
1963	8,7	1994	18,1	1963	142,1	1994	52,0	1963	30	1994	36	1963	30	1994	149
1964	7,7	1995	17,7	1964	142,2	1995	53,1	1964	30	1995	39	1964	31	1995	149
1965	8,0	1996	20,3	1965	135,1	1996	47,9	1965	29	1996	38	1965	32	1996	149
1966	7,5	1997	24,3	1966	126,0	1997	45,8	1966	29	1997	42	1966	32	1997	149
1967	7,4	1998	30,2	1967	112,0	1998	40,7	1967	29	1998	37	1967	32	1998	149
1968	6,2	1999	30,3	1968	112,0	1999	39,2	1968	28	1999	34	1968	30	1999	149
1969	7,5	2000	33,9	1969	111,6	2000	33,3	1969	27	2000	42	1969	31	2000	149
1970	9,7	2001	39,5	1970	111,3	2001	27,1	1970	31	2001	53	1970	37	2001	149
1971	7,8	2002	39,2	1971	110,8	2002	26,1	1971	32	2002	45	1971	41	2002	160
1972	7,9	2003	41,3	1972	102,5	2003	25,7	1972	31	2003	40	1972	43	2003	160
1973	8,4	2004	44,3	1973	97,3	2004	25,7	1973	31	2004	55	1973	46	2004	160
1974	7,1	2005	39,9	1974	94,9	2005	24,7	1974	42	2005	65	1974	56	2005	160
1975	7,5	2006	46,5	1975	92,4	2006	20,7	1975	42	2006	62	1975	67	2006	170
1976	7,2	2007	47,5	1976	89,3	2007	21,3	1976	46	2007	68	1976	76	2007	170
1977	7,3	2008	48,0	1977	84,5	2008	17,1	1977	43	2008	112	1977	76	2008	170
1978	7,5	2009	39,5	1978	83,5	2009	13,8	1978	43	2009	79	1978	84	2009	170
1979	8,9	2010	45,2	1979	85,8	2010	12,9	1979	46	2010	85	1979	87	2010	170
1980	10,2	2011	48,4	1980	86,6	2011	12,1	1980	56	2011	107	1980	100	2011	170
1981	11,3	2012	47,9	1981	87,9	2012	10,8	1981	84	2012	93	1981	113	2012	180
1982	11,5	2013	52,9	1982	88,4	2013	7,6	1982	86	2013	79	1982	121	2013	180
1983	9,8	2014	56,2	1983	81,7	2014	7,6	1983	75	2014	73	1983	125	2014	180
1984	9,6	2015	57,5	1984	78,9	2015	6,2	1984	72	2015	68	1984	130	2015	180
1985	10,7	2016	57,2	1985	81,8	2016	3,8	1985	81	2016	67	1985	130	2016	180
1986	10,9	2017	51,4	1986	80,3	2017	3,7	1986	60	2017	92	1986	130	2017	180
1987	8,8	2018	46,7	1987	75,8	2018	2,6	1987	46	2018	95	1987	132	2018	180

Figures: From 1991, incl. new German states; euro values rounded off

*)Including anthracite and briquettes, ¹⁾ Price free German border, ²⁾ Estimated breakeven price

Sources: German Federal Statistical Office, statistics from Kohlenwirtschaft, BAFA, own calculations

Table 23

Members VDKi

Member Companies	Website
AG der Dillinger Hüttenwerke (ROGESA) , Werkstraße 1, 66763 Dillingen/Saar, Germany	www.dillinger.de
Antwerp Port Authority , Zaha Hadidplein 1, 2030 Antwerp, Belgium	www.portofantwerp.be
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Carbo One , 3 Krinou Street, The Oval 8th floor, 4103 Limassol, Cyprus	www.carboone.com
CMC Coal Marketing Company Ltd. , Fumbally Square New Street, Dublin DO8 XYA5, Ireland	www.cmc-coal.ie
Currenta GmbH & Co. OHG , CHEMPARK, Geb. G11 222, 51368 Leverkusen, Germany	www.currenta.de
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Evonik Industries AG , Paul-Baumann-Straße 1, 45772 Marl, Germany	www.evonik.de
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IMPERIAL Shipping Holding GmbH , Dr.-Hammacher-Str. 49, 47119 Duisburg, Germany	www.imperial-shipping.com
Inspectorate GmbH , Daimlerstr. 4a, 47167 Duisburg, Germany	www.inspectorate.com
JERA Global Markets Pte. Ltd. (London) , Haus Cumberland; 5th floor, Kurfürstendamm 194, 10707 Berlin, Germany	www.jeragm.com
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L.B.H. Netherlands B.V. , Rijdsdijk 13, 3161 HK Rhoon, The Netherlands	www.lbh-group.com
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Oxbow Coal GmbH , Renteilichtung 44a, 45134 Essen, Germany	www.oxbow.com
Pfeifer & Langen GmbH & Co. KG , Dürener Str. 40, 50189 Elsdorf, Germany	www.pfeifer-langen.com
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Verein der Kohlenimporteure e. V.

10117 Berlin, Unter den Linden 10

Phone: (0 30) 700 140 258

Fax: (0 30) 700 140 150

Email: info@kohlenimporteure.de

Internet: www.kohlenimporteure.de

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