
ANNUAL REPORT

2014

Facts and Trends 2013/2014



Import Coal Market at a Glance

		2011	2012	2013 ¹⁾
World				
Hard Coal Production	Mn t	6,960	7,170	7,195
Hard Coal World Trade	Mn t	1,042	1,164	1,237
thereof Hard Coal Seaborne	Mn t	978	1,082	1,142
Hard Coal Cross-Border Trade	Mn t	64	82	95
Coke Production	Mn t	638	654	685
Coke World Trade	Mn t	21	22	17
European Union (27)³⁾				
Hard Coal Production	Mn t	130	128	114
Hard Coal Imports/Cross-Border Trade	Mn t	198	212	216
Coke Imports	Mn t	8	6	6
Germany				
Hard Coal Consumption	Mn t	63.1	61.3	61.3
Hard Coal Production	Mn t	12.1	11.0	7.5
Total Imports	Mn t	48.4	47.9	52.9
thereof Hard Coal Imports	Mn t	44.2	44.9	50.1
thereof Power Plants	Mn t	34.2	35.3	35.3
Iron and Steel Industry	Mn t	10.0	9.6	15.9
Coke Imports	Mn t	4.2	3.0	2.7
Import Coal Use ²⁾	Mn t	49.5	49.2	52.9
Prices (annual averages)				
Steam Coal Marker Price CIF NWE	US\$/TCE	143	108	96
Cross-Border Price Steam Coal	€/TCE	107	93	79
CO ₂ Certificate Price (average)	€/t CO ₂	14	8	5
Exchange Rate	€/US\$	0.72	0.78	0.75
1) Some figures provisional				
2) Total import and use of import coal differ owing to inventory movements				
3) Since 01 July 2013: EU-28				

An Introductory Word – General Conditions for Conventional Power Generation Must Be Improved

According to statements recently issued by the International Energy Agency (IEA), coal consumption will grow faster than that of oil and gas – at an annual rate of 2.3% until 2018. “Like it or not, coal is here to stay for a long time to come,” said Maria van der Hoeven, Executive Director of the IEA.

In 2013, hard coal represented about 20% of the gross electric power generation in Germany, demonstrating that despite – or because of – the massive expansion of renewable energies, hard coal is what is making the energy turnaround possible. However, the mammoth project of the “energy turnaround” has substantial risks and side effects:

- The grid expansion required to handle the growth in renewable energies is not moving forward, steadily heightening the risk of grid disruption in southern Germany.
- The costs for the subsidisation of renewable energies are going up and up. The EEG levy alone rose by about 18% to 6.24 eurocents/kWh in 2014, a total of €22bn.
- Despite increased power generation from hard coal-fired power plants, they are not profitable and will not be able to survive in the long term because the wholesale prices for electricity are depressed and the market is distorted by the feed-in of power from renewable sources.
- According to the German Federal Network Agency, there are plans to shut down permanently power generation capacities totalling 12,253 MW, thereof 7,338 MW in southern Germany, by 2018. The majority of these power plants are coal-fired power plants which will be missed in the future when the sun does not shine or the wind does not blow. When this happens, the energy turnaround as a whole, not just the security of our power supply, will be in danger.

This has led the German Federal Cartel Office, the Monopoly Commission, the German Energy Agency (dena) and others to call for a radical reform of the EEG [German Renewable Energies Act]. There is more at stake here than the protection of the climate and resources; jobs may be lost in energy-intensive industries, trade and manufacturing.

The VDKi is calling for a design and integration of the volatile power generation from renewable energy sources and of the parallel need for power plant reserve capacities and grids in conformity with the market and European law.

The VDKi appeals to the German government and everyone in positions of political responsibility to lay a solid foundation securing reasonable compensation for the provision of hard coal-fired power plants which are available at any time as long as these plants make the key contribution to securing renewable energy generation and consequently to the success of the energy turnaround.

Hamburg, July 2014



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Members of VDKi

Board of Directors VDKi

Disclaimer

Glossary*

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*We have decided to save space and reduce expenses by not printing the glossary and the list of institutions. However, they are still available for viewing on the German Coal Importer Association’s website.

PROSPECTS FOR THE WORLD COAL MARKET

Outlook for world coal trade – no end to declining prices in sight?

The BDI Economy Report of 29/04/2014 concludes that the development of the world economy will be driven more strongly again by industrialised countries because of the recovering economy in most of the national economies, especially in the USA and the United Kingdom. Economic growth in the aspiring emerging countries remains stronger than in the developed economies, but its dynamics have lost some of their force. Structural obstacles, political uncertainties and volatile capital markets are restricting the growth opportunities of these countries. Calculations by the International Monetary Fund (IMF) indicate that the world economy grew overall by 3% in the past year; emerging countries increased production by 4.7%, the industrialised countries by 1.3%. The IMF forecasts growth in GDP in industrialised countries of 2.2% and of 4.9% in emerging countries for the current year. According to the most recent figures, world trade increased by 3% in 2013, and the IMF is projecting growth of 4.3% in the current year.

In the recent past, the most heavily populated countries, China and India, have developed at an above-average rate. China, the world's second-largest national economy, posted real growth of 7.7%, a little slower than in the previous year, but the BDI notes that growth dynamics continue at a high level.

The Chinese government set its growth target for 2014 at 7.5% at the beginning of March 2014 – a value which the IMF is also forecasting. Following a six-month break, Chinese industry once again began to grow in June

2014. Provisional figures for the Procurement Manager Index maintained by the HSBC bank show that the index climbed by 1.4 points to a total of 50.8 points. A value of 50 points or more, which was last exceeded in December 2013, is a sign of growth.

In contrast to China, India has consistently had high current account deficits in recent years and has been substantially more dependent on imports of capital and raw materials. Growth of 4.4% in the Indian GDP in 2013 was a little slower than before. The IMF expects growth in economic performance of 5.4% in 2014. Real GDP recovered at the end of the year in Russia and led to a rise in GDP by 1.3% for the past year. The IMF forecast for the current year – which does not take into account the current political upheavals – expects GDP growth of 1.3%.

The US economy posted healthy growth in the second half of the past year. In the last two quarters of 2013, the US GDP rose by 1% and 0.6%, respectively, over the previous quarter. The weakness of the first half of the year resulted in an increase in GDP for the year of only 1.9% in comparison with the previous year. However, 2014 began at a moderate pace. The IMF estimates that the US GDP will grow by 2.8% in 2014.

Growth in GDP in the EU 28 in 2014 is estimated at 1.5% by the European Commission, which forecasts 1.2% for the eurozone.

Gross Domestic Product ^{*)}			
	2012 %	2013 ¹⁾ %	2014 ²⁾ %
World	3.2	3.0	3.6
USA	2.8	1.9	2.8
Euroland	-0.7	-0.5	1.2
Japan	1.4	1.5	1.4
China	7.8	7.7	7.5
OECD	-0.1	1.3	2.2

^{*)} Change with respect to previous year ¹⁾ Provisional ²⁾ Forecast

HT-P1 Source: Several evaluations; IWF, BDI Economic Report, Issue 02 dt. 29/04/2014

According to the BDI Economy Report, order books and production in Germany are on the upswing. The business climate remains high. The BDI believes that growth of 2% over the entire year 2014 will be achievable for Germany, in part thanks to the mild winter.

World trade in the most important dry bulk goods (excepting iron ore, coal and grains) experienced growth of 86m tonnes in 2013, indicating that the world economy had again picked up momentum in Asia. Essentially, the increases totalling 5% resulted from the unabated rise in coal and iron ore imports of China and India.

Most Important Bulk Goods in Million Tons

Natural Resources	2012	2013 ¹⁾	2014 ²⁾	Difference 2012/2013
Steel Industry				
• Iron Ore	1,109	1,186	1,295	6.9
• Coking Coal	235	265	279	12.7
• Scrap	107	106	109	-0.9
• Coke	12	15	17	1.3
• Pig Iron	12	12	12	0
• Steel Products	281	288	296	2.5
Total	1,756	1,872	2,008	6.6
Steam Coal	823	849	885	3.1
Grain	370	377	385	1.9
Total	2,949	3,098	3,278	5.1

¹⁾ Provisional ²⁾ Forecast, own calculations

HT-P2 Source: Several evaluations

Moreover, the increase in world trade is above all dependent on the stability of demand in the Asian region as a whole. The Handelsblatt reported on 11/04/2014, however, that China's prime minister, Li Keqiang, had announced that there would not be a major economic stimulus package at the moment like the programmes during times of crisis. Instead, overcapacities will be reduced.

Capacities of the Bulk Carrier Fleet Forecast Based on Order Books and Delivery Dates

	2011 m dwt	2012 m dwt	2013 m dwt	Planned additional construction 2014 m dwt
Capesize	249	279	294	16
Panamax	155	176	186	17
Handymax	127	139	157	10
Handysize	84	85	87	0
Total	615	679	724	43

HT-P3 Source: Frachtcontor Junge & Co. GmbH, several evaluations

The capacities of bulk carriers rose by about 45 million DWT (6.6%) in 2013, but the dry bulk goods market grew by only 5%. This is a slight slowdown in the growth of the fleets, especially in the Panamax and Capesize segments. During Q1 2014, growth of 6.5m DWT was noted in the Capesize fleet, according to Frachtcontor Junge, a reduction of 23% in comparison with the previous year. In the Panamax segment, growth in comparison with the previous year slowed by 28% to 4.9m DWT. These fundamental data would seem to point to a stabilisation of freight rates. Depending on the number of decommissionings, a significant rise in freight rates might be expected for 2015.

World market for coal – quo vadis?

The figures for world coal trade in 2013 make a positive impression solely in the aggregate. Broken down into regional segments, the world coal market shows variances in its development. The steel industry, both in China and Europe, has yet not recovered fully. When it comes to the demand for steam coal in the Pacific region, the estimates are reservedly optimistic. Although it will not be possible to expect the growth rates

experienced in the past few years, there should still be a plus of between 4% and 5%. But this growth could be completely offset by further declines in the USA and Europe. The projected growth rates for China, India and non-OECD Asia (Indonesia, Malaysia, Philippines, Thailand and Vietnam) are quite high in comparison with Europe. On the other hand, coal in these countries, as is the case in China, is competing more and more with renewable energies for power generation; moreover, new power plants featuring higher degrees of efficiency and consequently lower coal consumption are replacing old, inefficient coal-fired power plants.

Steam coal market with fundamental prospects for growth in 2014?

All experts familiar with the coal business are in agreement in their appraisals that the dynamics will be determined by long-term developments in Asia – to be more precise, in China and India. China will play the more decisive role for the global coal market. China is far and away the largest producer, importer and consumer of hard coal.

The USA, India, Russia and Germany (including lignite) trail far behind when it comes to coal consumption. Observers on the world market will monitor closely further development in Asia because this region has a major impact on coal prices on the demand side. Nevertheless, decisions about coal policies or extreme weather conditions can also have far-reaching effects on volumes and price.

IEA medium-term coal market report up to 2018 presented

Since coal is used primarily for power generation and this is in turn closely tied to economic growth, the IEA assumes that any change in economic growth has a direct impact on coal consumption.

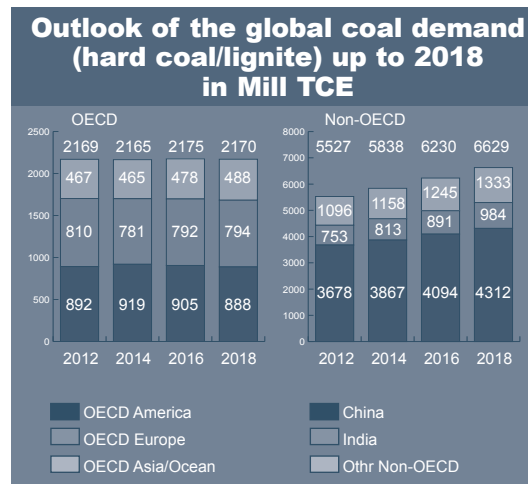


Figure 1: Source: IEA Medium-Term Coal Market Report 2013, BCS

In the opinion of the IEA as depicted in the base scenario, **worldwide demand for coal** will continue to rise steadily, but not as rapidly. Over the last five years, annual growth has averaged 3.5%. In 2012, demand rose in comparison with consumption of 2011 by only 134m TCE, an increase of 2.3%. The rate of this growth will slow down further, from an annual rate of 5.3% between 2005 and 2010 to a rate of 2.3% p.a. between 2012 and 2018. The IEA had previously projected growth of 2.6% p.a. for the period between 2011 and 2017. The lion's share of this growth (annual growth rates of 3.1%) will take place in the non-OECD countries, whereby China – in absolute numbers – alone stands for additional demand of 476m TCE, almost 60% of the total of 817m TCE. In relative terms, the second-highest growth rate (5.4%) will be in Latin America, ahead of India and its annual growth rate of 4.8%.

Coal consumption in the OECD will shrink slightly from 1,276m TCE in 2012 to 1,266m TCE in 2015 or by 0.8% p.a. until 2018. Consumption will initially continue to increase slightly until 2014. A decline in coal consumption from 371m TCE to 348m TCE in 2018 is expected in OECD Europe. Consumption of lignite and hard coal will vary in its development in the USA. Coal consumption in the USA today has a share of 43% of the total OECD coal consumption. Rising gas prices and demand for electric power drove the demand for coal used in power generation in 2013. The IEA forecasts an increase in steam coal demand of 4.6% in 2014 over 2012. But

from 2015 on, the demand will fall back to the level of 2012. The IEA estimates that about 35 GW of coal-fired power plants will be shut down in the USA by 2018. But a more serious impact will be felt from President Barack Obama's decision to reduce CO₂ emissions across the entire USA by a total of 30% by 2030. Specifically, plans are to introduce CO₂ emission limits for existing and new coal-fired power plants which are so low that power plant operation without CCS will not be possible. But this technology is neither state of the art nor economical, and this step could lead to mass shut-downs of power plants.

Demand for Coal 2011-2018						
Demand for Coal Total	2011	2012*	2014	2016	2018	Growth Rate per Year
	Mn tCE	Mn tCE	Mn tCE	Mn tCE	Mn tCE	%
OECD	1,515	1,458	1,480	1,470	1,459	0
USA	684	608	636	622	606	-0.1
Europe	431	442	431	423	417	-1.0
Pacific	350	358	361	372	380	1.0
Non-OECD	3,882	4,072	4,313	4,601	4,889	3.1
China	2,676	2,806	2,955	3,124	3,283	2.6
India	464	493	538	592	657	4.9
Africa + Middle East	156	157	166	177	187	3.0
East Europe/Eurasia	333	362	363	377	381	0.9
Other / Asia	222	222	257	293	338	7.2
Latin America	31	32	34	38	44	5.4
Total	5,396	5,530	5,793	6,071	6,347	2.3

HT-P4 Source: IEA Medium-Term Coal Market Report 2013 * Estimation

The IEA expects development of seaborne coal trade to fall in line with the development of coal consumption:

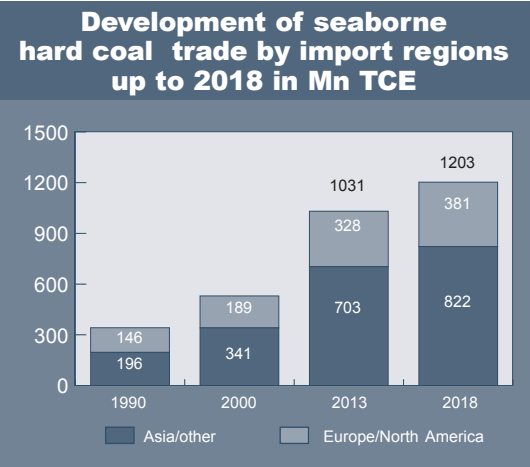


Figure 2 Source: IEA Medium-Term Coal Market Report 2013 - BCS, own evaluation

- Total world trade will initially grow by an average of 3.1% in the base scenario (incl. Indonesian lignite and sub-bituminous coal), from 978m TCE in 2012 to 1,204m TCE in 2018. China will continue to play a dominant role in world coal trade and have a share of 16% of the world trade (import) in 2018.
- At the end of the forecast period, India will have become the largest importer nation of steam coal. According to IEA projections, India's coal imports will grow by 11.7% every year up to 2018 (+85m TCE), when it will have reached 175m TCE, but contrary to previous assumptions, it will not have overtaken China. Other South-east Asian countries such as Thailand, Malaysia or the Philippines also play a significant role in seaborne hard coal imports (+50m TCE by 2030).

- The largest export countries such as Australia, Indonesia and Colombia have the largest shares in the growing trade volumes.

According to the IEA base scenario, seaborne trade with steam and coking coal will continue to develop positively until 2018. The seaborne world trade is forecast to develop from 978m TCE in 2012 to 1,204m TCE, corresponding to market growth by 23% (+226m TCE). The share of coking coal will come to almost one-fourth. The steam coal market is significantly larger and will grow by 176m TCE to 913m TCE by 2018, an annual increase of 3.6%. This is in contrast to an increase of 8.1% a year over the past five years and represents a substantial slowdown in growth. Since the IEA sees the demand for steam coal in Europe and North America declining by 23m TCE by 2018, growth will come solely from Asia. Imports to the Pacific Basin will increase by 199m TCE. In 2018 – estimates the IEA – 81% of the coal in seaborne trade will go to Asia, especially China and India, which will contribute 48% of the growth.

As of the end of Q1, the statements below can be made for 2014:

Demand

The demand for electric energy is currently stagnating on both the Atlantic and Asian markets. There have not been any significant changes in the fundamental data. According to estimates from VDKi, seaborne trade in Q1 2014 grew minimally by only 6-8m tonnes in comparison with the same period of the previous year. Extrapolated over the entire year, this would mean an increase of between 24m and 32m tonnes (about 2% to 3%). Europe currently has large surpluses. Moreover, the increases in the feed-in of power generated from renewable sources in Europe is reducing the number of full-load hours of operation for power plants. If the weather continues to be

windy and sunny, it will not be possible to maintain the level of 2013. The mild winter and the advantage of the clean dark spread over the clean spark spread (which, although still favouring coal-fired power generation, is becoming narrower) will not strengthen coal imports to Europe as much as in the previous year. As feed-in of power from renewable sources, especially solar parks, continues to rise, the demand for coal will presumably decline.

Supply

The Pacific producers – above all Indonesia – want to increase their supply in some areas partially. However, the Indonesian government has issued a lower coal production target for 2014. The Indonesian export, above all of low-calorific hard coal and lignite, could come to an abrupt stop if China were to prohibit the import of hard coal below a calorific value of 4,500 kcal/kg. This would, on the one hand, support production and prices for Chinese coal, which currently tends to be characterised by overcapacities, but would simultaneously ban Indonesian lignite from China. On the other hand, India has recently been procuring more of this low-priced coal and blending it with South African coal of higher calorific values for use in power generation.

Australia has invested in the expansion of steam coal exports. The change in government in Australia could lead on the whole to coal-friendlier policies and the revocation of financial burdens such as the CO₂ tax.

However, the low level of world market prices will prevent the commencement of expansion projects and otherwise prompt output to be taken off the market by the closure of mines or curtailments in production so that the decline in prices can be stopped. For some of the mine operators in the USA as well as in Europe or Asia, a continuation of the low price level in conjunction with high operating costs may prove to be the final blow. According to a

report from Mining.com of 19/06/2014, only 4,200 new jobs were created in the entire mining sector in Australia alone in the first five months of this year; in the same period of 2012, 61,000 new jobs were created. Moreover, 6,600 jobs were lost in the first five months.

Mining.com notes that Colombia increased production by 33.8% to 24.6m tonnes between January and March 2014. 97% of this volume was exported although Drummond was unable to export anything at the beginning of the year because construction of facilities for direct loading of the ships had not been completed. In total, exports declined in comparison with Q1 2013 by 13.1% to 15.1m tonnes.

Prices

Some market observers believe that the price for steam coal could continue to fall to as low as US\$65/tonne or US\$60/tonne. Despite these prices, which are lower than they have been for many years, the IEA forecasts that a total of US\$735bn must be invested in the coal mining sector by 2035 if the worldwide energy demand until 2035 is to be covered.

Coking coal market – outlook for volumes and prices remains uncertain

Demand

Information from the World Steel Association in June 2014 shows that the demand for crude steel worldwide rose by 2.4% in the first five months of this year in comparison with the same period last year. According to World Steel, crude steel production in the first five months of 2014 increased in 65 countries by 16m tonnes to about 684m

tonnes in comparison with the same period last year. While crude steel production in the EU 28 from January to May 2014 rose by 3.2m tonnes (4.6%) to 73.2m tonnes, it rose in China by about 9m tonnes to 342m tonnes during the same period. World pig iron production from January to May 2014, extrapolated for the entire year, would rise by a mere 1%; in the USA, it would even fall by 1.9% and in China overall it would be 2% higher than in 2013. The trend indicates that there will be a slight increase over the previous year. In Germany, the year so far (through May 2014) has seen the production of 18.9m tonnes (5%) more crude steel than in the comparable period of 2013. However, the Steel Federation points out that crude steel production in Germany is currently supported by several special factors and that the growth achieved so far in 2014 cannot be extrapolated to the entire year. The recovery of the steel industry is still fragile despite a general upward trend in the most important industries which use German steel.

Prices for coking coal have fallen virtually across the board because of the surplus supplies. In April 2014, the spot prices for HCC FOB Queensland ranged between US\$110 and US\$120/t in comparison with US\$145 to US\$155/t in the same month of 2013. Contracts for prices of about US\$115 per tonne (FOB) are expected for June 2014. Should the economy in China and India, especially steel production, pick up and be accompanied by reduced capacities or curtailments in output, prices could start to rise again in Q3 and Q4 2014.

Supply

In addition to the traditional supply sources, increased deliveries from the new projects in Mozambique and Mongolia could flood the market in 2014 and maintain the supply surpluses on the market. The low price level should at least bring an end to the expansion of coking

coal mines around the globe. Moreover, production is being curtailed and workers are being dismissed in existing mines. According to information from Mining.com on 11/06/2014, 5,700 jobs (7%) in comparison with the same period last year were lost in the coal mining industry in the USA in Q1 2014. After years of a “bullish” outlook, the tide seems to have turned to a “bearish” outlook. Only a few years ago, coking coal was viewed as a scarce resource worldwide – today it appears to be available in abundance.

GENERAL GLOBAL ECONOMIC CONDITIONS

The world's energy and coal industries were again confronted with enormous challenges in 2013. The end of the boom in raw materials, the further development of world economies and the question about the direction energy policies will take – whether in the USA, Europe or Asia – were at the focus of interest.

The growth of world production and world trade slows down

Economic growth is slowing down, especially in the OECD countries. Some countries have again gone into recession. Gross national product in the OECD countries is expected to be 0.2% lower than in 2012, a total of 1.3%. Gross domestic product worldwide grew by 3%. Growth of 3.6% is projected for 2014. Stagnation in the gross national product has been determined for Asian countries: China's growth rate languished at 7.7%, India's fell by 0.3% to 4.5% and Indonesia's declined from 6.3% to 5.8%. Economic power in Australia and South Africa fell from 3.6% to 2.4% and from 2.5% to 1.9%, respectively. The

eurozone was still in recession in 2013, but was able to reduce economic shrinkage from -0.6% to -0.4%.

Alteration Rates in % of the World Economy with Respect to the Previous Year				
	2011	2012	2013	2014 ¹⁾
OECD	2.0	1.5	1.3	2.2
Euro-zone	1.6	-0.6	-0.4	1.1
Europe	1.7	-0.3	0.2	1.6
USA	1.8	2.8	1.9	2.5
China	9.3	7.7	7.7	7.5
Japan	-0.5	1.4	1.5	1.3
India	7.8	4.9	4.5	4.9
GDP (World)	3.9	3.2	3.0	3.6

¹⁾ Estimation GDP for the total year

HT-W1 Source: Several evaluations, IMF-World Economic Outlook, April 2014 and OECD (Status: 06/05/2014)

Energy and coal consumption worldwide rises slightly, but varies from one region to the next

According to information from the World Energy Council (Energy for Germany 2013), world energy consumption in 2012 rose by about 380m TCE to 19.1bn TCE (2.2%) in comparison with 2011. A further increase by 1.6% to 19.3bn TCE has been estimated for 2013.

The Asian-Pacific region, where the increase in 2012 was about 5%, continued to be the region with the greatest growth in primary energy. Consumption of oil, the most important energy source worldwide, remained almost the same at 4,130.5m TOE. The EU 27 countries, on the other hand, reduced their primary energy consumption by 4.6%; the USA achieved a reduction of 2.3%. In contrast, energy consumption in Africa rose by 5.1%, in China by 5% and in Russia by 2.5%.

BP showed in its Statistical Review 2013 that hard coal consumption remained constant in 2012. Renewable

energies posted the greatest growth of about 18%, over 42m TCE.

Primary Energy Consumption in Billion TCE – Most Important Energy Sources –					
	2009	2010	2011	2012	2011/2012 Change in %
Coal	4.900	5.080	5.189	5.328	2.7
Natural Gas	3.700	4.083	4.167	4.272	2.5
Mineral Oil	5.400	5.754	5.836	5.907	1.2
Nuclear Energy	0.900	0.900	0.859	0.801	-6.7
Hydroelectric Power	1.000	1.100	1.136	1.188	4.6
Total	15.900	16.917	17.187	17.496	1.8

HT-W2 Source: BP, Statistical Review 2013

Coal (hard coal and lignite) reached a world market share (excluding renewable energies) of just under 30% in 2012 and has been the fastest-growing primary energy source for many years. Initial estimates for 2013 indicate an increase in coal for primary energy consumption of over 1%; it holds second place in the global energy mix with a share of 29% to 30%. The fundamental conclusions are that the growth in world energy consumption, coal consumption and world gross domestic product in 2013 was substantially below the previous year's level. There are many different reasons for this, but the main impact is attributable to weaker economic growth in China, India, Indonesia, South America and other emerging countries which could not be offset by the slight recovery of economies in the USA and Europe.

World Energy Outlook 2013 – IEA energy outlook for worldwide development until 2035

The 2013 issue of the World Energy Outlook (WEO) from the International Energy Agency (IEA) summarises the latest data and political developments of the

past year, uses the material to draw conclusions regarding the global energy markets today and extrapolates the results up to 2035. The WEO continues to use the scenarios introduced last year for the latest projections related to energy demand and supply until 2035, but they are less and less of a forecast nature and are clearly tracking political trends more closely.

The basis is the New Policies Scenario (NPS). The IEA devotes special attention to current developments in the energy sector and to political commitments to reduce greenhouse gases.

The IEA comes to the conclusion that even “taking into account all of the new developments and measures announced by politicians concerning energy efficiency, renewable energies, reduction of subsidies for fossil energies and a fixed CO₂ price in some sectors”, global CO₂ emissions from energy generation will not fall by 2035, but will increase by 20% in the NPS. For the IEA, this is the equivalent of a long-term rise in average temperature of 3.6° C, which falls far short of the target of 2° C set by politicians. Even if the so-called 450 Scenario, which would seek to reduce greenhouse gas emissions to about 450 particles per million CO₂ equivalents by means of extensive changes in the energy landscape, were realised, the IEA still believes that the chances of limiting the rise in temperature to 2° C in the long term are not better than 50%.

More and more of the large consumers in Asia

In the opinion of the IEA, the worldwide energy business will be facing major upheavals and structural changes in the next 20 years – although their scope varies tremendously depending on the scenario – which have already begun. A clear shift in the supply structures is going on in the USA in particular, and it could have worldwide

impact. As the USA makes greater use of new drilling and production technologies to exploit domestic sources such as light tight oil (LTO) for petroleum and fracking for unconventional natural gas (production from tight gas and shale deposits, so-called shale gas), it is changing from an energy importer into an energy exporting country. By 2035, the USA should be in a position to cover its energy demands exclusively from its domestic energy sources. The points of major demand for energy are shifting more and more to Asia's emerging economies, especially China and India. Until 2020, China will be the dominant factor for the growth of energy consumption, but will then be overtaken by India, above all because of population development. This will affect CO₂ emissions from energy production in the non-OECD countries will be the source of a growing share of worldwide emissions; by 2035, this share will be far greater than that of the OECD countries. While CO₂ emissions in the OECD countries will fall by 16% to 10.2 Gt by 2035, they will rise worldwide by 20% to a total of 37.2 Gt in 2035. China will be by far the largest polluter, India will be a greater source of emissions than the European Union, and even the emissions in the other South-east Asian countries and the Middle East will be approximately the same as in the European Union.

Worldwide energy trends according to the NPS until 2035

The current base scenario foresees an increase in worldwide energy demand by one-third between 2011 and 2035; in the previous base scenario “Current Policies”, the increase was 43%. The NPS presumes an increase in consumption of oil by 15%, of coal by 17%, of natural gas by 48%, of nuclear power by 66% and of renewable energies by 77%. In total, fossil energies will still provide a share of 76% (2020: 80%) of

the world's primary energy consumption and constitute 57% of gross power generation in 2035. But renewable energies will also grow strongly (+80%) during the observation period; in 2035, they will constitute a share of 18% of the world's primary energy consumption and of 31% of power generation.

Demand for coal rises further

The sharp rise in coal over the last decade has resulted in a situation in which coal is very close to the level of oil consumption in primary energy consumption. In the NPS, two-thirds of the projected average growth of 0.7% annually before 2020 will be in coal consumption. After this point, demand will level out and amount to 6.3bn TCE in 2035. Almost three-fourths of this increase will be in the electric power sector. Coal will remain the largest primary energy source for power generation. However, its share in power generation will decline from 47% in 2011 to 39% in 2035. 63% of the total coal consumption until 2035 will presumably be used for power generation. When it comes to coal, all of the superlatives belong to China: largest coal producer, largest coal consumer and, since 2012, largest coal importer as well.

The production of hard coal will increase above all in the non-OECD countries. 90% of the future growth in production will be in India, Indonesia and China alone. However, the IEA believes that China's growth in coal production and consumption will be weakened by successes in increasing efficiency, a diversified power sector and the saturation in industrial coal consumption growth because of the peaking of steel and cement production in 2020. The degree of efficiency in Chinese coal-fired power plants is also improving. In the opinion of the IEA, however, too many subcritical power plants (in terms of steam and pressure parameters) are still being constructed in the Asian region; such plants consume about 15% more

coal than the more efficient supercritical technologies, which also means that higher CO₂ emissions are locked-in for years to come. The IEA nevertheless points out that the scale of the worldwide coal demand it projects for the future is uncertain because the assumptions for environmental and climate policies for coal on which the different scenarios are based vary widely.

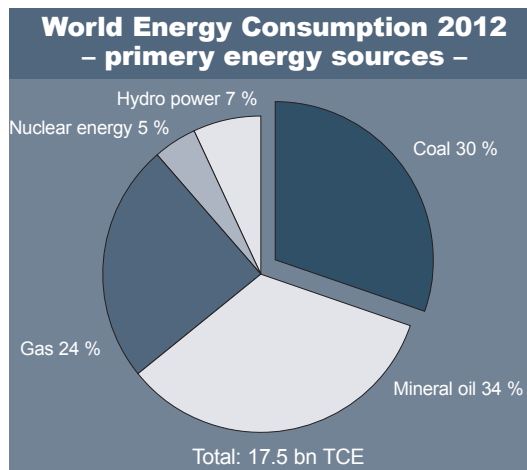


Figure 3: Source: Figures from BP Statistical Review 2013

Worldwide hard coal production remains stable

In 2013, world hard coal production stabilised at about 7.2bn tonnes. From a regional perspective, however, there were substantial differences in comparison with the previous year.

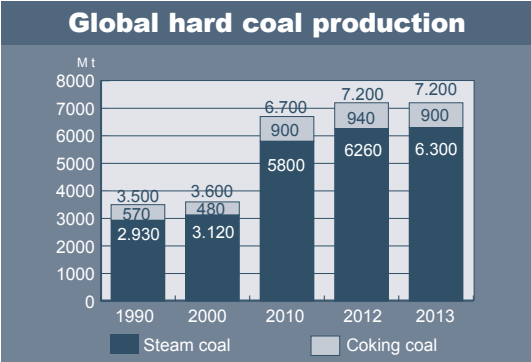


Figure 4: Source: VDKI, own calculation

The major reasons why this increase was so slight were related to demand factors and a market consolidation in international hard coal mining. The downward spiral in price development accelerated even more in 2013. At the same time, rising production costs devoured the profit margins in many cases. Extensive shutdowns, conservation measures and rationalisations were the consequence. In China, some mines were also shut down for reasons of occupational safety and environmental protection. The bulk of the worldwide growth in production comes from Asia, as the development of recent years shows:

Hard Coal Production of Important Countries in the Pacific Region in Mn t				
Producing countries	2011	2012	2013	
China ²⁾	3,460	3,660	3,700	
India ¹⁾	554	580	554	
Australia	346	366	411	
Indonesia	318	386	342	
Vietnam	49	45	43	
Total	4,727	5,037	5,050	

¹⁾ partly own estimation; in India reported years are not calendar years
²⁾ incl. Lignite

HT-W3 Source: Several evaluations

BP Energy Outlook 2035

The BP Energy Outlook 2035 draws conclusions similar to those of the IEA. The rising level of industrialisation in many countries will lead to a substantial increase in energy consumption in the coming years, even though it will no longer be quite as extreme as in the past ten years. BP projects growth in global primary energy consumption of 41% between now and 2035; in the slightly more than 20 years before, growth was 55%. 95% of this additional consumption will be in emerging economies, especially in China and India.

In contrast, energy consumption in the industrialised countries of North America, Europe and Asia will stagnate and even decline over the course of the forecast period. BP does not see any problems in meeting demand. BP believes that new forms of energy such as shale gas, oil from unconventional production and renewable energies will be the source of a substantial share in the growth of global supply. Above all, BP expects that the greater weight of renewable energies will mean that the increase in CO₂ emissions of just under 30% by 2035 will be lower than the increase in energy consumption. According to this scenario, the industrialised countries will reduce emissions by 9% despite economic growth. On the other hand, non-OECD countries will be responsible for 72% of all CO₂ emissions. BP expects the shares of oil, coal and natural gas in the primary energy mix to become equal in the future; each of them will provide approximately 27% of the primary energy. Hydroelectric power, nuclear energy and renewable energies will each contribute between 5% and 7% to meeting primary energy demand in 2035.

WEC: energy mix will be based on fossil fuels until 2050

The World Energy Council (WEC) presented scenarios for the energy landscape until 2050 at its World Energy

Conference (which is held every three years) in South Korea in October 2013. The scenario "Jazz" is based on a free market and oriented to the demand for consumption with the decisive focus on the access to and receipt of energy. The second scenario, "Symphony", is interventionist and based on state control with a focus on regulations related to environmental and supply security in combination with national and regional measures aimed at increasing the share of renewable energies in the energy mix. Binding agreements for the reduction of gases relevant for the climate are assumed. One of the most important statements is that the demand for primary energy will increase by up to 61% by 2050 and that power consumption will even rise by 150%. Even if the world should reach binding agreements on climate protection, the share of fossil energy sources in primary energy consumption will come to 59%; in the absence of climate protection treaties, it will reach 77%. At this time, the fossil energy sources oil, coal and natural gas have a share of 80%. Coal will remain the dominant fuel for power generation. The WEC sees a fundamental trilemma related to energy in the development of the scenarios: securing environmental compatibility and sustainability on the one hand while, on the other hand, simultaneously guaranteeing the security of energy supply, yet fundamentally assuring access to low-cost energy for the entire population of the world.

Coal reserves adequate for 100 to 110 years

Reserves and Output of Hard Coal According to Region				
Region	Reserves as of End 2012		Output 2012	
	Bn t	%	Mn t	%
Europe	19	2	132	2
CIS	130	17	476	7
Africa	36	5	268	4
North America	230	30	921	13
Latin America	9	1	93	1
People's Republic of China	181	24	3,505	51
India	80	10	558	8
Indonesia / Vietnam	17	2	425	7
Australia / New Zealand	62	8	379	6
Other	5	1	78	1
Total	769	100	6,835	100

HT-W4 Source: German Federal Institute for Geosciences and Natural Resources, brief study "Reserves, Resources and Availability of Natural Energy Resources", Dec. 2013

Coal reserves currently have an unchanged statistical reach of about 107 years based on an output of about 7.2bn tonnes (base 2013). Hard coal represents a share of about 48% of the total reserves of about 1,362bn TCE in fossil energy sources and nuclear fuel; in terms of the resources in fossil energy sources, its 18,204bn TCE amount to a share of just under 80%.

In its Energy Study 2013, the German Federal Institute for Geosciences and Natural Resources (BGR) comes to the following key conclusions regarding coal:

- From a geological perspective, the reserves and resources of hard coal and lignite can cover discernible demand for many decades. Coal's share of about 56% of reserves and about 89% of resources means that it has the greatest potential of all of the non-renewable energy sources.

- Coal will play a significant role in the expected increase in worldwide primary energy consumption in the future as well. In 2012, coal was in second place in global primary energy consumption and was once again the fossil energy source with the highest growth rates.
- The development of global as well as European coal prices has been decisively determined by the rising coal imports in Asia; in the meantime, they constitute 70% of the global volume in coal trade.
- The world market for hard coal is currently dominated by surplus supplies because of the operational startup and production expansions in coal export projects in many countries and the present increase in US exports resulting from slackening of sales on the domestic market.
- The worldwide supply surplus has led to mine shutdowns in the USA, Australia and China and to announcements of shutdowns in Europe as well. Parallel to the supply surplus, coal prices are declining, especially in comparison with oil and natural gas, so there will presumably not be any significant decline in the demand for coal.

Hard coal world market rises overall, seaborne trade grows

The world market for hard coal grew by a total of 60m tonnes (about 6%) in 2013. World trade in coal developed as shown below:

World Hard Coal Trade					
	2011	2012	2013	Change	
	Mn t	Mn t	Mn t	Mn t	%
Seaborne Trade	978	1,082	1,142	60	6
Cross-Border Trade	64	82	95	13	16
Total	1,042	1,164	1,237	73	6

HT-W5 Source: VDKi own estimations

Despite the declining steel market in the OECD countries, seaborne trade was able to post an increase in coking coal exports of almost 23m tonnes (+9%) thanks to over-compensation of steel production in Asia. The steam coal market grew by 37m tonnes (+7%) to 863m tonnes while internal trade increased by 13m tonnes to 95m tonnes.

The slowdown in the growth of the world economy, the increased replacement of coal for power generation with less expensive shale gas in the USA and the further expansion of renewable energies in some of the OECD countries and in China, however, led to a noticeable decline in the growth of the world hard coal market in comparison with previous years.

The following development was observed in the segments steam coal and coking coal in seaborne trade:

Seaborne World Hard Coal Trade					
	2011	2012	2013	Change	
	Mn t	Mn t	Mn t	Mn t	%
Steam Coal	739	826	863	37	4
Coking Coal	239	256	279	23	9
Total	978	1,082	1,142	60	6

HT-W6 Source: VDKi own estimations

The share of world trade in production has risen steadily since 2000 and amounted to 17.2% in 2013. However, in general most of the coal output was consumed in the country where it was produced, mostly for power generation, soon after being produced.

World Output / World Trade			
Hard Coal	2012	2013	Growth
	Mn t	Mn t	Mn t
World Output	7,166	7,195	29
World Trade	1,164	1,237	73
Share of World Trade in Production	16.2%	17.2%	

HT-W7 Source: VDKi own estimations

Seaborne trade volume breaks down into a coking coal market and a steam coal market; the latter breaks down further into the Pacific and Atlantic regional markets, which are characterised by differing supplier structures. The volume exchange between the regional markets changed by 1m tonnes in comparison with the previous year and amounted to about 10% of the steam coal market (about 86m tonnes) in 2013. About 12% of worldwide

steam coal production was transported to consumers in seaborne trade. The coking coal market, in contrast, is a uniform world market due to the low number of supplier countries and the worldwide distribution of demand. About 22% of worldwide coking coal production, a greater percentage than for steam coal, went to overseas trade in 2013.

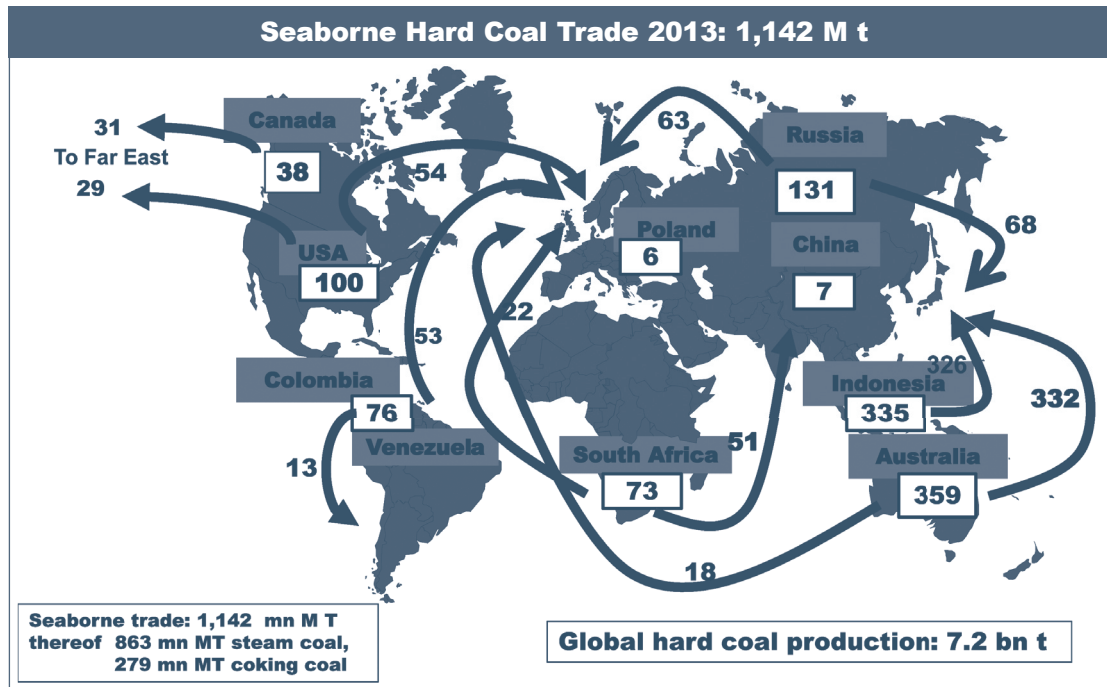


Figure 5: Source: VDKI, 2013 preliminary

The largest import countries are found above all in the South-east Asian region. China was again the largest importer in 2013 (288m tonnes), surpassing second-place Japan (191m tonnes) by a substantial margin.

These two are followed by India (161m tonnes) and South Korea (126m tonnes). In Europe, Germany and Great Britain imported the largest quantities of coal.

The Largest Hard Coal Import Countries 2013 in Mn t ¹⁾			
	Total	Steam Coal	Coking Coal
People's Republic of China ²⁾	288	213	75
Japan	191	143	48
EU-28	216	173	43
India	161	107	54
South Korea	126	105	21
Taiwan	67	67	0
Germany	50	40	10
Great Britain	49	39	10

HT-W8 Source: Own estimations, Euracoal

¹⁾Incl. anthracite ²⁾Incl. lignite

Pacific steam coal market continues to grow; Atlantic steam coal market with a slight decline

Atlantic region

The Atlantic region consists of the eastern seaboard of North, Central and South America, Europe, including the countries bordering the Mediterranean Sea, and the northern and western coasts of Africa.

The Largest Hard Coal Export Countries 2013 in Mn t			
	Total	Steam Coal	Coking Coal
Australia	359	188	171
Indonesia	335	335	n.i.p.
Russia	143	124	19
USA	106	58	48
Colombia	75	74	1
South Africa	73	73	0
Canada	39	3	36

HT-W9 Source: VDKi own estimations

Demand was noticeably more reserved in the Atlantic region. Demand in 2013 declined by almost 40m tonnes (17%) to 187m tonnes. In comparison, demand on the Pacific market rose by 76m tonnes (13%). The major drivers for increased demand were again China and India. Colombia was able to export very little to China. The Atlantic market now has a market share of only 22% of the total market (previous year 27%).

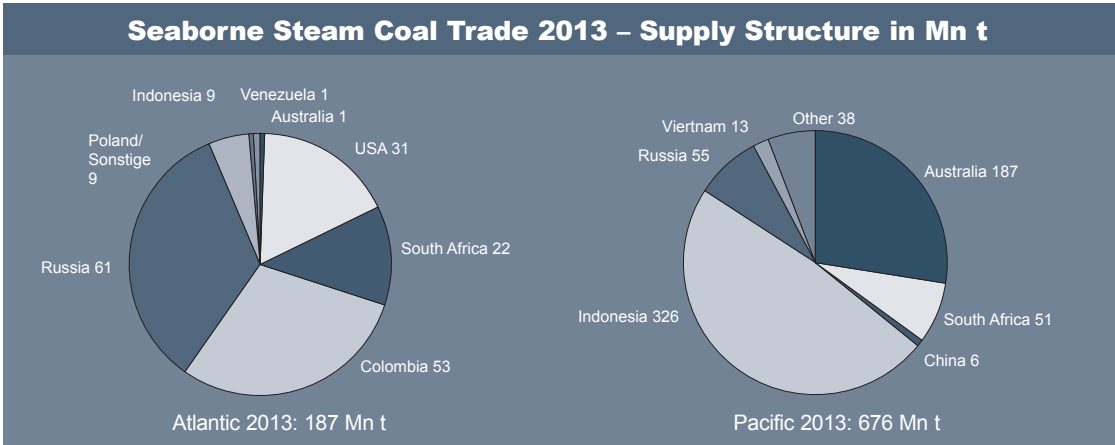


Figure 6: Sources: various evaluations

Pacific region

In the Pacific region, the demand for steam coal from the world market, above all for power generation, grew by 76m tonnes (13%) to 676m tonnes. China and India in particular increased their procurements and took advantage of a price gap between domestic and imported coal. The year 2013 in the Pacific region was marked in particular by the continuing increase in steam coal imports to China and India. Australia, for instance, was able to raise significantly (+25m tonnes) its exports to China. Indonesia was also able to increase exports to China substantially by almost 24m tonnes (28%). Russia was also able to cover China's additional demand through its Far East ports or overland and increased its exports by about 7m tonnes.

Japan increased imports slightly so that the lack of power generation from nuclear power plants could be compensated by hard coal-fired power plants. Overall, however, the Chinese economy weakened slightly and triggered enormous pressure on volumes and prices on the steam coal market. The Pacific market has a market share of 78% (previous year 73%).

South Africa in particular supplied 51m tonnes to the Pacific market in 2013, a share of about 7% of the supplies to this region. Only small quantities were provided to the Atlantic market by the Pacific suppliers (a total of 10m tonnes), corresponding to 5% of the demand. South Africa sold deliveries to India above all, but other Asian countries were also customers. Indonesian exports to the Atlantic region are minimal. Total exchange volume came to 96m tonnes (previous year 85m tonnes).

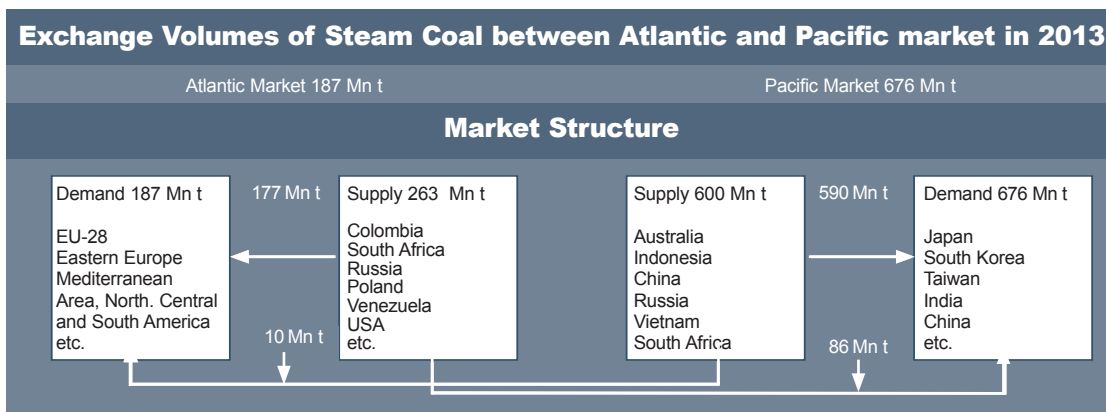


Figure 7 Source: VDKi

Steam coal prices falling – Pacific market sets the price

Prices

In 2013, a surplus supply, especially coal from the US as well as Australian and Indonesian coal, met with stagnating worldwide demand once again, creating enormous pressure on prices. The result was a high level of inventories and increased pressures to export, above all in America, where coal for power generation is currently being pushed aside because of the lower prices for shale gas. Although the Pacific steam coal market grew, the abundant (surplus) supply made it impossible to maintain the price level. This development caused prices FOB Richards Bay to fall steadily until August 2013 from about US\$87/t, ultimately reaching a level of US\$73/t. During the second half of the year, the economy stabilised in Asia, especially in China, so that coal prices FOB South Africa recovered to about US\$85/t by the end of 2013. But there were also substantial differences in the FOB prices of the Atlantic and Pacific suppliers:

Development of FOB-Prices in US\$/t of Important Supplying Countries			
	01/04/2013	31/12/2013	01/04/2014
Atlantic Suppliers:			
Richards Bay	82	85	75
Bolivar	74	71	67
US East Coast	80	76	76
Russia (Baltic)	77	79	72
Pacific Suppliers:			
Newcastle	87	84	73
Qinhuangdao	113	120	104
Kalimantan	79	76	71
Russia (Far East)	90	89	77

HT-W10 Source: Own evaluation, Basis 6,000 kcal/kg

There was a range at the beginning of April 2014 from US\$71/t FOB Kalimantan to US\$105/t FOB Qinhuangdao.

While the Atlantic suppliers Colombia, USA, Russia (Baltic) and Poland had to offer lower prices to sell their tonnages, the Far East suppliers, above all Australia and Russia (Pacific), were able to charge significantly higher prices, a consequence of the continuing high demand from China and India.

South Africa, which has customers in India and the Far East for a large part of its production, was able to maintain prices here as well at a higher level than its competitors who were dependent solely on the Atlantic market.

Over the course of 2013, the CIF ARA prices (spot) declined from US\$86/t in January to about US\$75/t in July. After prices rose to just under US\$85/t, the downward slide began again at the beginning of 2014. In April 2014, the average price was US\$77/t. The slightly greater strength of the euro was an additional price advantage for the euro countries.

The demand for steam coal in the Atlantic region remained moderate from January to May 2014. So the further course of price developments for steam coal will be largely dependent on the development of the Pacific region, specifically on the needs of China and India. China in particular is a “swing” customer with enormous impact on price developments, which have so far pointed only in the downward direction.

Development of FOB Steam Coal Prices in US\$/t (6000 kcal/kg)

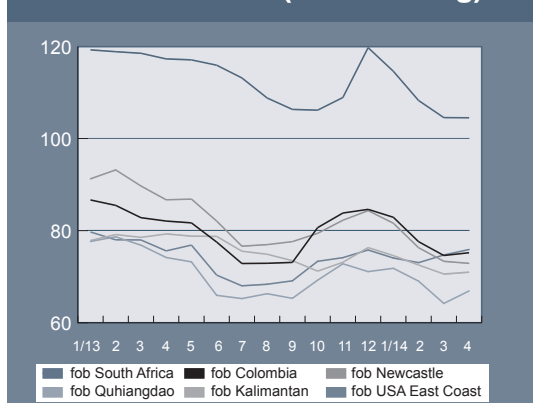


Figure 8 Several sources

Steam coal prices

For years now, prices for steam coal in the Atlantic region have been set on coal exchanges, especially in Europe. The number of participants in the exchanges is rising. The latest published exchange figures are used as benchmarks for contract conclusions.

In comparison with 2012, the volume of paper trade in the CME Group alone, the leader in trade of raw material derivatives which operates the commodity exchanges CME and NYMEX, rose by almost 300% over all non-American indices and totalled about 1.3bn tonnes in 2013. In 2013, both the API#2 and the API#4 recorded higher trading volumes. However, the new financial indices for low-calorific ("off-spec") coal also rose in 2013 following their introduction in 2012.

For 2013, the London Energy Brokers' Association reports average trade volume in contracts in 2013 on the API#2 of over 4m tonnes a day and a total of 2.1bn tonnes for the whole year and on the API#4 of 0.8m tonnes a day and a total of 455m tonnes for the whole year.

Coking coal demand varies greatly from region to region

Worldwide crude steel production in 2013 posted a new record at 1,607m tonnes; in comparison with 2012, production increased by 55m tonnes (about 3.5%). The rise came primarily from Asia (+6.0%) and the Middle East (+2.5%). Crude steel production in Europe (EU 27), North and South America, Russia and Korea, on the other hand, declined by between 1.8% and 4.4%.

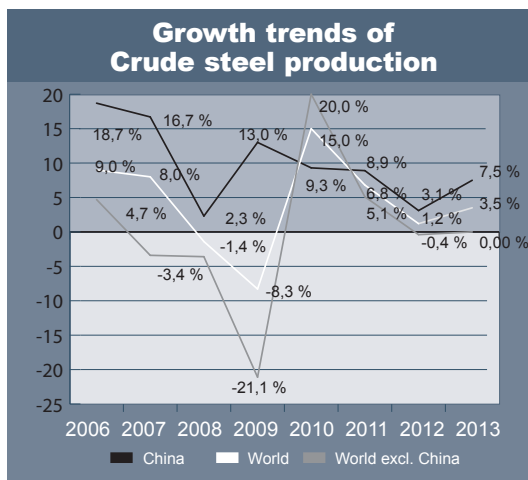


Figure 9 Source: World Steel Association

The pig iron production decisive for the consumption of coking coal, PCI coal and coke rose by 52m tonnes from 1,112m tonnes in 2012 to 1,164m tonnes in 2013 (+4.7%).

Crude Steel and Pig Iron Production of the World

	2011	2012	2013	Change 2012/2013
	Mn t	Mn t	Mn t	Mn t
Crude Steel	1,537	1,552	1,607	55
Pig Iron	1,104	1,112	1,164	52
Share of Pig Iron in Crude Steel	71.8%	71.6%	72.4%	

HT-W11 Source: World Steel Association

In 2013, China was able to increase its share in the world market for steel production from 46% in 2012 to 48.5% in 2013. As a consequence, its share in world pig iron production for total steel production also rose.

Crude Steel and Pig Iron Production in China

	2011	2012	2013	Change 2012/2013
	Mn t	Mn t	Mn t	Mn t
Crude Steel	702	716	779	63
Pig Iron	645	658	709	51
Share of Pig Iron in Crude Steel	91.9%	91.9%	91.0%	

HT-W12

The world's largest steel producers developed as shown below in 2013:

The 10 Largest Steel Producers of the World

Country	2011 Mn t	2012 Mn t	2013 Mn t
China	702.0	716.5	779.0
Japan	107.6	107.2	110.6
USA	86.4	88.7	87.0
Russia	68.9	70.4	69.4
India	73.5	77.6	81.2
South Korea	68.5	69.1	66.0
Germany	44.3	42.7	42.6
Turkey	34.1	35.9	34.7
Brazil	35.2	34.5	34.2
Ukraine	35.3	33.0	32.8
Total the 10 largest	1,255.8	1,275.6	1,337.5
Total World	1,537	1,552	1,607

HT-W13 Source: World Steel Association

Only China, Japan and India were able to increase steel production in 2013 while production in all other countries declined.

The growth in crude steel production fluctuated from one region to the next, but increased overall and absorbed corresponding large quantities of coking coal on the world market. There were no restrictions of unusual scope caused by weather conditions, so producers, above all Australia, were not only able to utilise production capacities to the full, but quantities from newly opened mines were also put on the market.

Market Share in Seaborne Coking Coal World Market

	2011		2012		2013	
	Mn t	%-Share	Mn t	%-Share	Mn t	%-Share
Australia	133	55	145	53	171	61
USA ¹⁾	60	25	59	23	56	20
Canada ²⁾	27	11	30	11	35	13
Russia	8	3	8	6	15	5
Miscellaneous	11	6	14	7	2	1
Total	239	100	256	100	279	100

HT-W14 Source: VDKi own estimations ¹⁾ Without trade of Canada ²⁾ Without trade of USA

The supplier structure has not changed significantly; however, Australia's market share has risen substantially by 27m tonnes to 61%. The USA again lost market share to Australia and now holds a share of only 20%.

Coke world market

Coke production worldwide increased by 5% from 649m tonnes to 685m tonnes. China, far and away the largest coke producer, increased its export by 3.7m tonnes to 4.7m tonnes. China's production of 476m tonnes comprised 70% of world production, and it increased coke output by 36m tonnes in 2013. Europe produced 41.4m tonnes of coke, a little less than in 2012 (41.6m tonnes). This is the lowest rate since 2009. In comparison with production, the world trade market for coke is relatively small. Only about 2% to 3% of the total production is traded seaborne and across the green border.

Coke World Market			
	2011	2012	2013¹⁾
	Mn t	Mn t	Mn t
Total World Market	21	22	17
% of World Coke Production	3.3%	3.4%	2.5%
¹⁾ provisional			

HT-W15 Source: Own calculations

Coking coal prices fall further in 2013

The slump in coking coal prices continued in 2013. Prices on the spot market fell from between US\$160 and US\$165/t at the beginning of 2013 to between US\$132 and US\$135/t in the middle of 2013. They recovered to about US\$150/t in autumn, but fell again to US\$138/t at the end of 2013.

Pressure on prices continued at the beginning of 2014, and by March 2014 they had declined to about US\$118/t. This development is driven by the conjunction of decli-

ning demand and the increase in coking coal production for export in Australia, Canada, Mongolia as well as in new export countries such as Mozambique from mine expansion and the opening of new mines; these activities were triggered by the high prices in the boom years.

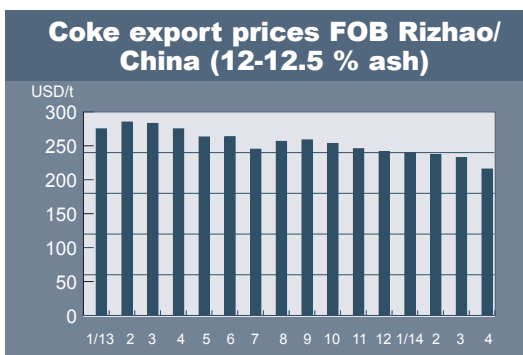


Figure 10 Sources: several evaluations

Coke prices FOB China were still very high (US\$425/t, incl. 40% export tax) at the end of 2012. When the export tax expired per 01/01/2013, they immediately fell to US\$275/t. There is also pressure on quantities because of the declining demand. Prices fluctuated between US\$275 and US\$285/t until the middle of 2013, but then fell steadily during the second half of the year to between US\$255 and US\$245/t. As a rule, the CIF ARA prices were previously always lower than the Chinese prices. Since the expiration of the export tax, this situation has generally reversed on the coke spot market. Prices in 2013 ranged between US\$15 and US\$25/t higher than the Chinese prices.

Freight rates – slight recovery in sight

The Baltic Dry Index (BDI), which is calculated from the indices of the four ship groups Capesize, Panamax, Supramax and Handysize, posted extremely low levels averaging 796 and 888 points during the first two quar-

ters of 2013. An upward trend was detected in Q3 2013 and continued in Q4 2013. The BDI once again broke the mark of 2,000 points so that the average of the BDI for all of 2013 was 1,205 points, 280 points higher than in 2012. The most important reasons are in the increasing ore and coal imports by China, the higher volumes of coal and grain in seaborne trade and long waiting times as well – especially in the loading ports as a consequence of logistic bottlenecks from slower growth in fleets and tonnage. In the Capesize segment, only 22.1m DWT instead of the expected 36.4m DWT in newly constructed ships were delivered. The situation in the Panamax segment was similar: only 19.9m DWT instead of the planned 34.1m DWT were commissioned. The slowdown in fleet growth has again led to a more positive attitude of expectation in bulk goods shipping. However, the decommissioning of old ships has also declined because of the low steel prices with the result that net growth in ship capacities has once again risen.

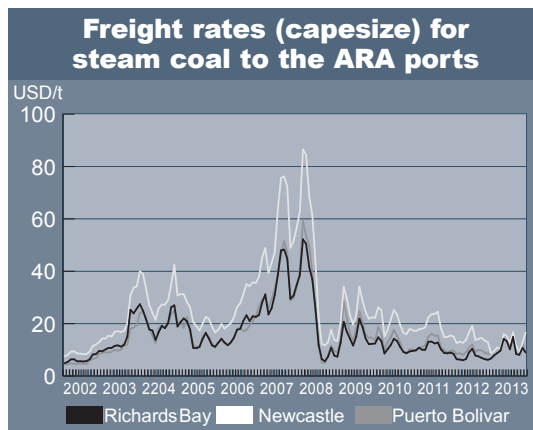


Figure 11 Source: FrachtcontorJunge

The fleet and capacity expansion of all bulk carriers rose by about 39m DWT (6%) to 721m DWT by the end of 2013. One-third (13m tonnes capacity) of the newly constructed ships are Capesize ships. The increase of 15m DWT (almost 15%) for Panamax ships is substantially greater.

According to Clarkson Research, net increase (new ships less decommissioning) as of the end of 2013 amounted to 57 Capesize ships totalling 14m tonnes and 180 Panamax ships totalling 15m tonnes in cargo volume. Deliveries of new ships are expected to increase again in 2014, notes a report from Frachtcontor Junge. Orders to build 210 new Capesize ships and 171 new Panamax ships were issued in 2013, and they will be entering the market as early as 2014/2015.

The bunker prices, which rise and fall with the oil prices, languished at a price level of about US\$600/t in 2013. Overall, freight rates will most likely remain moderate because of the continuing surplus in the availability of cargo volume.

US dollar exchange rate

The exchange rate for the US dollar, a fundamental element of international energy and raw material business, has been able to maintain its level since the end of 2012 for the most part. The average for the year was 0.7530 (EUR/USD) compared to 0.7783 in 2012.

During the first months of 2014, the euro rose again to about € 0.73 for one US dollar.

EUROPEAN UNION

The economy is battling its way out of the crisis

There is absolutely no reason to sound the “all clear” with respect to the economic situation in Europe. The national economies in the European Union are returning to a course of growth – but they are still struggling and progress is very slow. The crisis countries of the euro-zone are still posting a negative growth rate, but it is significantly lower than it was in 2012. While growth rates in the eurozone are still negative, GDP in the EU 27 and (from 01/07/2013) in the EU 28 increased from -0.4% to a slight plus of 0.1%. Still, developments differ widely from one EU country to another.

Economic Growth EU 28 in Per Cent¹⁾

Member States	2011	2012	2013
Countries Euro Zone (EU 18) ²⁾	1.6	-0.7	-0.4
EU-28	1.7	-0.4	0.1

HT-EU1 Source: Eurostat ¹⁾ Until 31/12/2012 EU-27

²⁾ Until 31/12/2012 EU-17

The EU leaders in GDP growth rate in terms of relative percentage change from 2012, just as in 2012, include Latvia (4.1%), Romania (3.5%), Lithuania (3.3%) and Malta (2.4%). Germany has a growth rate of 0.4%. In contrast, the growth rates for Cyprus of -5.4% and for Greece and Italy, each at -1.9%, are still deep in the negative range.

Generally speaking, the consequences of deindustrialisation can be observed in Europe today. Any national economy without an adequate industrial basis has a difficult time, and without strong industries, Europe could fall behind internationally. A study conducted by the

Institute for Economic Research (IW) for BusinessEurope illustrates this very clearly: since 2000, Europe's share in worldwide industrial value creation has declined from a little over 25% to about 21%. Asia's emerging economies, on the other hand, have risen from about 18% to 27.5%. Although the USA has experienced even greater deindustrialisation, it has been able to reverse the trend because of the lower prices for natural gas and electric power resulting from the shale gas boom. US industrial production in 2013 rose by 3.7% – almost twice that of the EU. Another disadvantage in international competition for the energy-intensive industries is that the EU is unilaterally setting climate protection targets and does not have a uniform energy policy. Many are putting their hopes in the European elections in May 2014 and the possibility that EU policies can return to an orientation to global competitiveness.

In its latest estimate, the EU Commission expects GDP to increase by 1.4% in the EU and by 1.1% in the eurozone in 2014. This would mean that the EU is back on a course of growth. In Q1 2014, the EU determined GDP for the EU 28 of 1.4% and of 0.9% for the eurozone in comparison with the same quarter of the previous year. There are more and more signs that the European economy has reached a turning point.

Information from Eurostat 2013 indicates that inflation in the EU averaged around 1.35%. It even fell to 0.66% in January 2014. But the rate varies among the EU member states. The Netherlands has a high inflation rate of 2.5%, while Sweden has the lowest rate of -0.04%. On the average for the year, inflation in Germany was 1.51%. Inflation in the eurozone is expected to continue to decline in 2014.

All of these predictions, however, are subject to uncertainty and risks. These factors currently include the political tensions between Ukraine and Russia, which is also

putting a strain on the relationship of the EU to Russia, and many other trouble spots in the world. The development of industrial production appeared to be an indication of the first signs of a recovery in 2014. According to Eurostat, industrial production in both the eurozone and EU 28 rose in January and February 2014 – by 1.7% in each of the months in the EU 18 and by 2.0% and 2.2%, respectively, in the EU 28. However, there was a decline again in March 2014 in comparison with February by 0.2% in the EU 28 and by 0.3% in the eurozone. The greatest declines in industrial production in this month came from Portugal (-4.8%), Lithuania (-3.7%), Sweden (-2.5%) and Greece (-1.9%).

Energy consumption declines slightly

The economic stagnation has been accompanied by a steady decline in primary energy consumption in many EU member states since 2011 – from a total of 2.5bn TCE in 2010 to 2.28bn TCE in 2011 to 2.26bn TCE in 2012. Continued decline must be expected for 2013 because of the zero growth in the EU economy as well as sustained increases in energy efficiency and the further expansion of renewable energies; there is, after all, a relationship between economic growth and primary energy consumption in business. The EU Commission estimates energy consumption of 2.12bn TCE, which would correspond to a decline of 140m TCE. Distribution among the various fossil energy sources will not display any major changes. The share of renewable energies in primary energy consumption (including hydro power) presumably rose to 13% in 2013. Despite the expansion of renewable energies, conventional energies, including nuclear energy, still dominate and provide about 87% of the energy supply in the EU 28. Coal, gas and oil contribute a share of 74%.

The share from coal has risen slightly at the expense of natural gas to a little over 19%. This development came from the decline in coal and CO₂ prices and the high gas prices. The conjunction of these two factors made coal-fired power generation more economical than gas-fired generation, and this was especially noticeable in Germany and Great Britain.

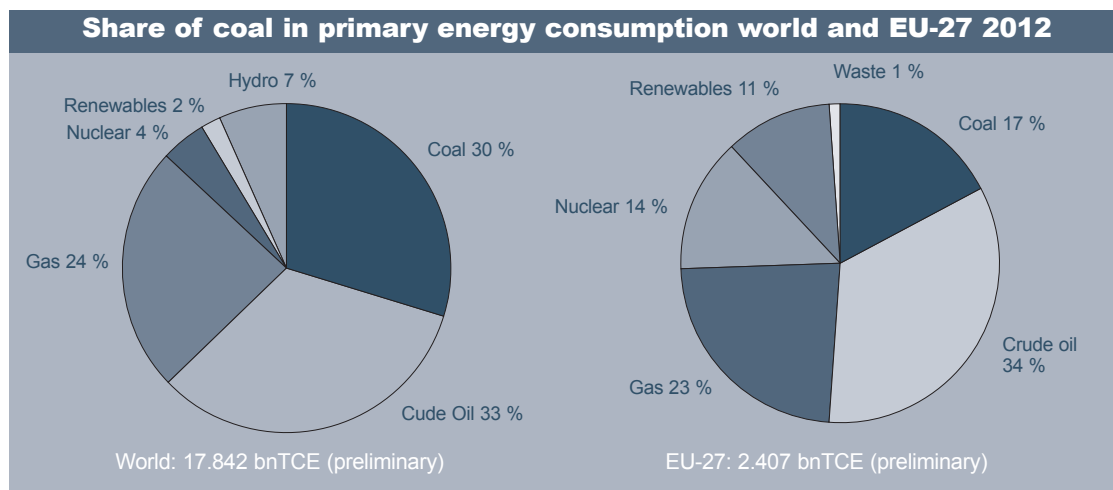


Figure 12: Source: BP Statistical Review 2013, data eurostat

Hard coal market (EU 28) overall in decline

European hard coal production everywhere experienced a decline in 2013:

Bulgaria	-0.2m tonnes to a total of 2.1m tonnes total
Germany	-3.3m tonnes to a total of 7.5m tonnes total
Great Britain	-4.1m tonnes to a total of 16.8m tonnes total
Poland	-2.7m tonnes to a total of 76.5m tonnes total
Spain	-1.8m tonnes to a total of 4.3m tonnes total
Czech Republic	-2.8m tonnes to a total of 8.6m tonnes total
Romania	-0.1m tonnes to a total of 1.8m tonnes total

The bottom line showed a decline in output in the EU 27 of 15m tonnes to 114m tonnes.

Hard Coal Output in the EU			
	2011 Mn t (t=t)	2012 Mn t (t=t)	2013 Mn t (t=t)
Germany	13	12	8
Spain	7	6	4
Great Britain	18	17	13
Poland	76	78	76
Czech Republik	11	11	9
Romania	2	2	2
Bulgaria	2	2	2
Total	129	128	114

HT-EU2

Poland's output of 76m tonnes continues to lead the list of countries producing hard coal.

Further declines in output are to be expected in Germany, Poland and Spain in the next few years pursuant to the

decision adopted by the EU Commission to approve state aid only until 2018. A fire in the Daw Mill Mine, the largest underground mine in England, and the shutdown of the Maltby Mine because of the difficult geological conditions led to a noticeable decline in production.

Hard Coal and Lignite Volume in the EU			
	2011	2012	2013
	Mn t (t=t)	Mn t (t=t)	Mn t (t=t)
EU 27 Hard Coal Output	129	128	114
EU 27 Coal Imports/ Cross-Border Trade	198	214	216
EU 27 Coke Imports/ Cross-Border Trade	8	6	6
Hard Coal Volume	335	348	336
EU 27 Lignite	426	433	407
Total Coal Volume	761	781	743

HT-EU3

The moderate steel business and the parallel stagnation in pig iron and crude steel production in the mills meant there was little change in the sale of coking coal (+1m tonnes). The greater utilisation of steam coal for power generation in Germany and the United Kingdom was able to offset the decline in utilisation in other European countries only partly. Lignite production and consumption also declined, whereby this is partly caused by gains in efficiency from the operational startup of new lignite-fired power plants in Germany with high degrees of efficiency and the shutdown at the same time of older power plants with low degrees of efficiency. Production fell by 26m tonnes.

The structure of the hard coal imports changed significantly in 2013. Poland was able to increase exports to the EU by 54% (+3.5m tonnes), Russia by 20% (+9.3m

tonnes) and Australia by 8% (+1.3m tonnes). On the other hand, exports from Indonesia declined by 40% (-3.4m tonnes), from Colombia by 10% (-4.2m tonnes) and from the USA by 8% (-3.6m tonnes). A total of 216m tonnes of imported hard coal represented an increase by 3m tonnes (1.4%) in the past year.

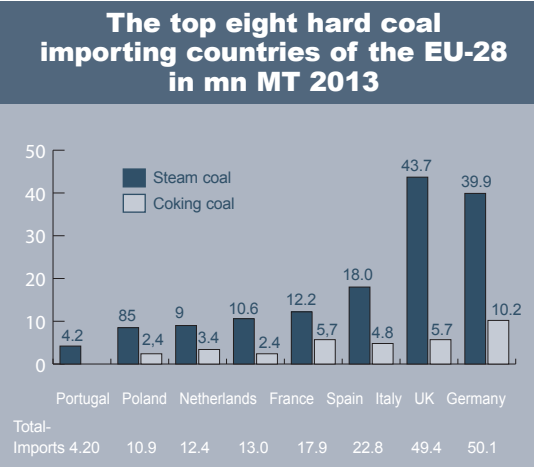


Figure 13

There have been virtually no changes in the primary energy source mix for power generation in the EU 28 according to initial assessments. Wind and photovoltaics achieved a share of a little over 2%, while nuclear energy, despite the shutdown of nuclear power plants in Germany, was able to maintain its share of 14%.

New wind turbine generators were constructed in 2013 as shown below, based on information from the EWEA (The European Wind Energy Association):

- 11,159 MW of wind power capacities were new installations (2012: 12,102 MW); this corresponds to a decline of 8% in comparison with 2012.

- Wind turbine generators made up a total of 32% of all of the newly installed power capacities in 2013, an increase of 5% over the previous year.
- All of the power generation capacities together increased by 13 GW net (35 GW new construction less 22 GW shutdowns) to about 950 GW. Wind

power now has a share of over 11% of the total installed power generation capacities.

The distribution of the newly constructed wind power capacities among the EU countries varies widely, as can be seen in the chart below:

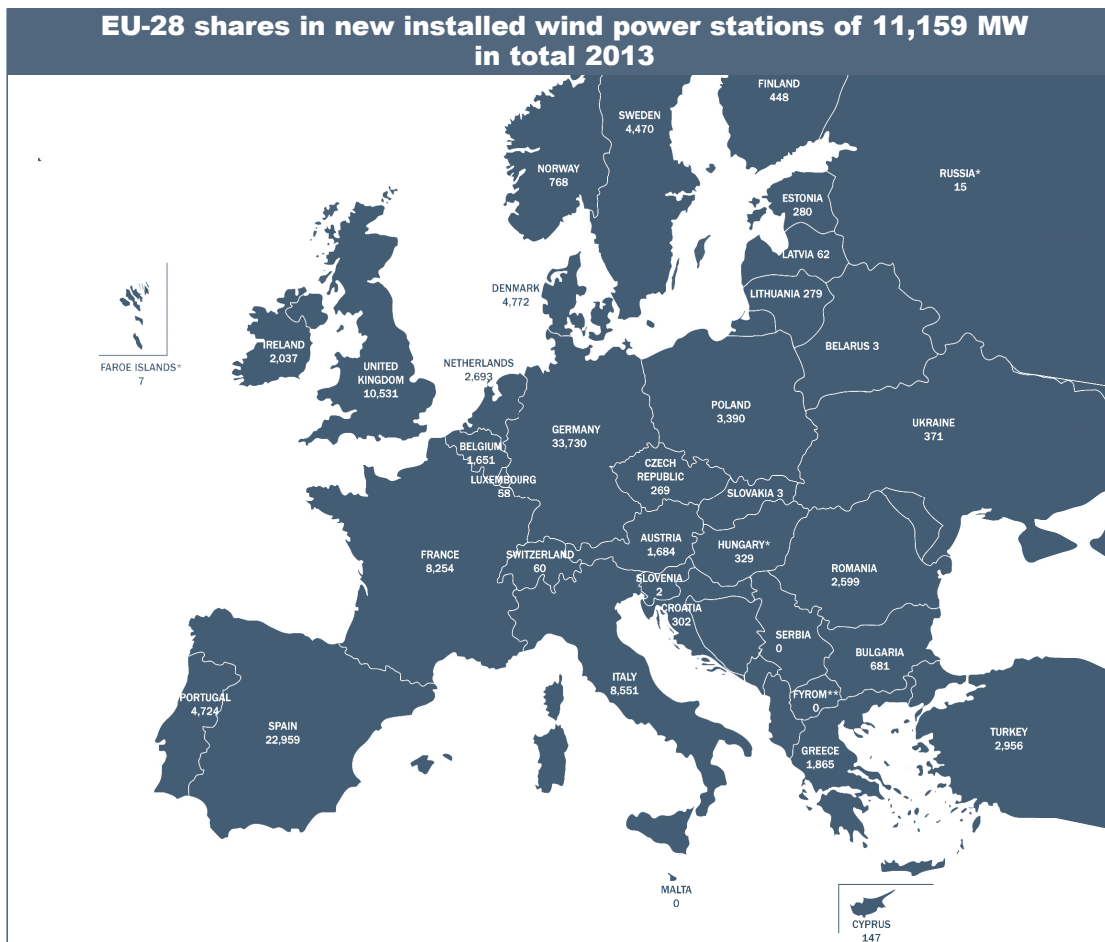


Figure14 Source: EWEA, Wind in power 2013 European statistics

Germany remains the EU 28 country with the largest installed wind power capacities, followed by Spain, the United Kingdom and Italy. Germany and the United Kingdom had the lion's share of all new construction of wind farms (46%) in 2013. In contrast, Spain, Italy and France have significantly reduced their new construction rates by 84%, 65% and 23%, respectively.

Offshore wind farms post record number of new construction

While it was questionable in the past whether the EU's target of drawing 20% of the primary energy supply in 2020 from renewable sources, including offshore wind power, would be achievable with respect to offshore wind turbines, the situation at the end of 2013 appeared in a slightly more positive light.

The total installed capacity of 4,993 MW in offshore wind power in 2012 was increased to a total of 6,560 MW by the new installation of 1,567 MW in 2013. The target installation for the end of 2012 was 5,829 MW. According to the EWEA, similar additional construction, but hardly any more, is also expected for 2014 and 2015; by the end of 2015, about 10,000 MW will be installed.

Fossil energy sources continue to dominate the power sector in Europe just as they have always done. Gross electric power generation in the EU 28 in 2013 came primarily from nuclear power and coal (27% each), gas (19%), oil (2.0%) and, for the most part, large hydropower plants (11%). So 75% of the power generation is based on fossil energy sources.

EU energy policies: challenges and actions

A number of important developments were triggered in the European energy sector in 2013; they will be conti-

nued in 2014 and undoubtedly lead to relevant changes. In advance of the Council meeting on 22 May 2013, the Commission prepared a paper analysing some of the challenges facing Europe in the energy sector, whereby the Commission (COM) focused in particular on issues of economic competitiveness.

The COM determined that the energy mix among the member states varies greatly, but all of them pursue three common political goals: reduction of energy costs for households and enterprises ("competitiveness"), securing a reliable and uninterrupted supply of energy ("supply security") and limitation of the environmental impact of energy generation, energy transport and energy consumption ("sustainability"). In the COM's opinion, these goals can in many cases be best achieved by the establishment of a common framework and joint actions at the EU level.

As far back as 2009, the COM adopted a bundle of binding political actions which gave rise to the formula "3 times 20 by 2020". This climate and energy package has set the following targets for the year 2020:

- Reduction of CO₂ emissions by 20% in comparison with 1990.
- Increase in the share of renewable energies in the EU's total energy mix to 20%.
- Increase in energy efficiency by 20%.

In 2009/2010, a legal framework in the form of the directives in the so-called third energy package (joint regulations for the single electricity and gas market, Renewable Energies Directive and the Directive Regarding Energy Performance of Buildings) was created, but it has not yet been implemented in all of the member states.

The COM defines the following to be Europe's most important challenges in the energy sector:

- Europe's increasing dependency on energy imports from third countries;

- Price increases in the EU resulting in part from national political decisions;
- The historically lowest level of investments in the energy sector.

In 2035, Europe's dependency on imports for oil and gas supplies will presumably amount to more than 80%. Simultaneously, the USA is developing away from a position as gas importer and becoming a net exporter. The COM criticises in addition the rise in energy costs; in some of the member states, lower-income segments of the population must pay up to 22% of their household expenditures for this position. To a large degree, the energy prices are the result of decisions by the member states themselves regarding rates, taxes and fees, including the levies for subsidisation programmes such as the EEG.

Moreover, the COM emphasises in its energy road map 2050 and in its road map for the transition to an economy with low CO₂ that the transition to a secure, competitive energy supply low in CO₂ will require continuously higher investments in power generation facilities, grids, transport technologies, infrastructure and energy-efficient buildings. It estimates that the additional investments which will be required for the period until 2050 amount to about 1.5% of the GDP annually; by 2020, investments on the scale of €1 trillion will be needed to guarantee supply security, diversify energy sources and ensure environmentally friendlier energy generation and competitive prices on an integrated energy market.

The COM is also concerned about maintaining adequate coal-fired power plant capacities. Almost one-fifth of the total coal-fired power plant capacities in the EU is scheduled to be shut down by 2020, corresponding approximately to the total of the installed power generation capacity in Poland. The COM also determines that, for many different reasons, plans for gas-fired power plants

with a capacity of about 40 GW and for coal-fired power plants with a capacity of 25 GW have been postponed or cancelled. These figures are rising daily in view of the increasing power generation using renewable sources and the inadequate wholesale prices for power. The heads of state and government in the European Union conducted intense discussions on the subject of energy prices in Europe and the danger to competitiveness. The result of an in-depth analysis requested from the COM is scheduled for discussion at another summit meeting in 2014.

Binding targets for climate and energy policies until 2030 proposed

On 27/03/2013, the COM (COM (2013) 169 final) published the green book entitled "A Framework for Climate and Energy Policies Until 2030". In this paper, the Commission comes to the conclusion that, even though the EU has made good progress on the road to achieving its targets for 2020, there is nevertheless a need to give thought to a new framework for climate and energy policies until 2030. The COM believes this is important for three reasons:

1. Long investment cycles mean that infrastructure which is financed in the near future will still be in use in 2030 and beyond and that the investors need legal security and a reduced regulatory risk.
2. The clarification of the targets for 2030 contributes to the establishment of an economic system characterised by competition, to a secure energy system in which higher demand for efficient and low-CO₂ technologies is created and to an atmosphere in which research, development and innovation are driven forward.
3. The negotiations for a legally binding, international climate protection convention are proving to be protracted, but the COM still expects a convention of this

type to be concluded by 2015. But it must first come to an internal agreement about its own target ideas so that it can actively enter into discussions with the other countries.

The COM has already pointed out that the framework for 2030 must give consideration to important changes which have occurred since the acceptance of the original framework in 2008/2009:

- The consequences of the ongoing economic crisis;
- The financial squeeze in the member states and companies who are having difficulties coming up with the funds for long-term investments;
- The developments on the energy markets in the EU and worldwide, including those related to renewable energies, unconventional natural gas and oil and nuclear power;
- The concerns of households related to the affordability of energy and the concerns of companies related to competitiveness;
- Varying levels of ambition regarding obligations and possible targets among the international partners with respect to the reduction of greenhouse gas emissions.

The Commission also wants to see the longer-term views which the COM 2011 described in the road map for the transition to a competitive, low-CO₂ economy by 2050 given consideration in the framework until 2030. These views include a reduction in greenhouse gas emissions by between 80% and 95% in comparison with 1990 by 2050.

There were intensive consultations about the framework until 2030 in national and European bodies over the course of the year. On 22/01/2014, the COM issued a communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions in

which it proposed “A Policy Framework for Climate and Energy in the Period from 2020 to 2030” (COM (2014) 15 final of 22/01/2014).

By establishing binding targets going beyond 2020, the COM wishes to reinforce the EU's pioneering role in climate and energy policies, i.e. regardless of whether there is a successor convention to the Kyoto Protocol at the international level. However, by doing so it may possibly endanger an objective it has always pursued: the securing and strengthening of the competitiveness of European industry.

The details of the COM's proposal for policies until 2030 are shown below:

● **Reduction of greenhouse gas emissions by 40% in comparison with 1990 by 2030:** This is the heart of the EU's energy and environmental policies until 2030. The annual reduction of the upper threshold (cap) for emissions from the economic sectors included in the EU emission trading system would be increased from its current 1.74% to 2.2% for the time after 2020. This would mean a target of -43% in comparison with 2005 and not with 1990 for the emission trading sector. Emissions from economic sectors which are not included in the EU emission trading system must be reduced by 30% in comparison with the status of 2005.

● **Increase in the share of renewable energies to 27% in the EU:** Another objective is the introduction of an EU-wide binding target for a share of renewable energies of 27% by 2030 on the basis of a concept with a stricter orientation to the market which provides the required general conditions for newly developed technologies. The COM is of the opinion that an EU-wide target for renewable energies is required to stimulate additional investments in this sector. However, there are no plans to break down the general target into national targets through the issue of EU legal provisions; the member

states should have the flexibility they need to restructure the energy system and adapt it to national preferences and circumstances. The realisation of the EU target for renewable energies would be assured by the newly regulated governance based on national energy plans.

- **Energy efficiency:** Improved energy efficiency is expected to contribute to all of the objectives of the EU energy policies; without this improvement, the transition to a secure, sustainable energy system oriented to competition will not be possible. The role of energy efficiency in the policy framework until 2030 will be considered in greater detail during the review of the directive regarding energy efficiency which is scheduled for completion over the course of the year. When the review has been completed, the Commission will deliberate on the possible need for modifications of the directive. Moreover, the national energy plans of the member states must include energy efficiency.

- **Reform of the EU emission trading system:** The Commission proposes the introduction of a market stability reserve at the beginning of the new EU emission trading system trading period in 2021. The reserve would be aligned with the surplus of emission allowances which has developed in recent years and simultaneously strengthen the resistance of the system to greater shocks by automatically adjusting the number of allowances which will be auctioned. The establishment of such reserves in addition to the postponement of the auctioning of 900 million allowances to 2019-2020 ("back-loading") which has been decided would be advocated by a large number of involved parties. In accordance with the proposed legal provisions, the reserve would function completely pursuant to previously determined rules and regulations which would not give the Commission or the member states any room for discretionary judgement.

- **Affordable and secure energy supply oriented**

to competition: The Commission proposes a new set of key indicators for assessment of the progress achieved over the course of time which will create a basis of facts for possible political initiatives. These indicators are based, for example, on the difference in energy prices between the EU and important trade partners, the diversification of the supply, the independent supply from domestic energy sources and the connection capacities of member states. Starting from these indicators, the political establishment would be able to assure a secure energy system oriented to competition which would also rest on the pillars of market integration, diversification of energy supplies, enhanced competition, the development of domestic energy sources and the encouragement of research, development and innovation.

- **Newly regulated governance:** The policy framework until 2030 will propose newly regulated governance based on national plans for a secure, sustainable energy supply oriented to competition. Based on the Commission's guidelines now being prepared, the member states should draw up their plans in accordance with a joint concept guaranteeing greater investment security and heightened transparency and improving coherence, EU-wide coordination and monitoring. An iterative process between the Commission and the member states will guarantee that the plans are adequately ambitious as well as coherent in the long term and in conformity with regulations.

Calculations by the COM show that the progress shown below has been made toward achieving the 20-20-20 targets by 2020:

- Greenhouse gas emissions declined by 18% in comparison with 1990 by 2012. Taking into account current political measures, they should decline in comparison with the 1990 level by 24% as of 2020 and by 32% as of 2030.

- The share of renewable energies in the end energy consumption rose to 13% in 2012. Further growth to 21% by 2020 and to 24% by 2030 is expected.
- As of the end of 2012, about 44% of worldwide capacities for power generation from renewable sources (excluding hydroelectric power) had been installed in the EU.
- Energy intensity in the EU economy declined by 24% between 1995 and 2011; in industry, it fell by about 30%.
- The CO₂ intensity of the EU economy fell by 28% between 1995 and 2010.

A positive development is the recognition that the previous trio of goals – CO₂ reduction, expansion of renewable energies and increase in energy efficiency – has resulted in little success. There have been contradictions in the achievement of targets. It appears that the COM is beginning to realise that the ambitious target for the increase in efficiency is not achievable.

However, the new CO₂ reduction target is very demanding if one considers that a total of 30 years were available for the first 20% by 2020 while the next reduction in emissions by 20% is supposed to be achieved in only 10 years. The reduction target is even more demanding for the emission trading sector.

The European Council and the EU Parliament will now debate the proposals. This Commission still has time for a final decision by 31/10/2014 before the new Commission is appointed in November 2014; contrary to the Lisbon Treaty entered into force in 2009, it will not yet be reduced to two-thirds of the number of member states. From November 2014, 28 commissioners will be in charge of their various departments.

10 CEO's of utility companies submit a catalogue of demands regarding EU energy policy

The CEOs of the largest energy providers are demanding drastic measures from the heads of state and government so that the security of Europe's power supply is assured for the future.

On the occasion of the EU summit meeting on 21/05/2013, the company managers published a catalogue of demands and recommendations. In the autumn of 2013, the CEOs had an opportunity to express in detail their opinion of European energy policies during a hearing in the European Parliament. The proposals aim at reinstating competitive energy prices in Europe.

That is why the EU should

- decide on only a single requirement for CO₂ reduction;
- strengthen the emission trading system;
- prepare for capacity mechanisms which will secure supply reserves;
- reduce the subsidies for renewable energies step by step and integrate them into the energy market.

In reference to the green book for the energy and climate package 2030, the EU Commission is called upon to undertake supplementary measures to ensure the competitiveness of European industry in the event that an international treaty is not concluded at the climate summit in 2015.

Proposal for new guidelines for state aid in the environmental and energy sector – large sections of the EEG must be modified

The COM's proposal for new guidelines governing state aid in the environmental and energy sector are intended to allow the further subsidisation of environmental

protection and renewable energies without giving rise to distortions in competition. They will affect the feed-in compensation payments pursuant to the EEG and the exemption of the German energy-intensive industries according to the so-called Special Compensation Regulation (more in the section “Germany”).

Energy Commissioner Oettinger has been planning a reform of the green power subsidisation, as has EU Competition Commissioner Joaquin Almunia, who may declare the feed-in compensation to be irreconcilable with competition law. In November 2013, Commissioner Oettinger presented a communication from the Commission for the completion of the single market for electricity and the ideal utilisation of state intervention (COM (2013) 7243 final of 05/11/2013) which included, among other elements, guidelines for the regulation of subsidies for renewable energies.

The COM sets forth principles in these guidelines which should ensure that the subsidisation of renewable energies by the member states is in harmony with the goals of the EU’s energy policy. In particular, such actions should be reconcilable with the EU single energy market and the principle of proportionality, i.e. the limitation of the subsidisation to what is really necessary. As the renewable energies sector continues to expand and grow along with the related technologies, resulting in a decline of costs, the decisions related to production and investments should be oriented more and more to the market and not to prices guaranteed by government authorities. In the view of the COM, any support which may still be required should supplement the market prices, but not replace them, and should be limited to a minimum. In plain language, this means the COM is turning away step by step from feed-in compensation payments which shield producers of power from renewable sources from

the price signals from the market and is favouring instead feed-in bonuses and other subsidisation instruments such as quota requirements which force producers to respond to market prices. This also means for the COM that the concepts for the subsidisation should be more strictly oriented to the emission trading system so that the subsidies are reduced when the CO₂ prices in the trading system rise. This would happen in the case of variable feed-in bonuses, for example, but does not happen for the fixed bonuses of the EEG.

Moreover, the COM demands that this support be granted with the aid of requirement mechanisms which are genuinely based on competition (such as tender procedures). This could encourage healthy competition among the various renewable energy sources as well as among the operators and locations.

The new German government will have to take these requirements into account during the reform of the EEG in the spring of 2014.

In addition, the Directorate-General Competition published a draft of the guidelines for state environmental and energy aid between 2014 and 2020 on 18/12/2013 and has requested submissions of statements of position on the draft. These guidelines represent the standard against which the compatibility of state aid in the environmental and energy sector with EU competition law will be reviewed between 2014 and 2020. The objective here is to define, for the first time, uniform criteria, based on the laws regulating state aid, applicable throughout the EU for the assessment of national regulations subsidising renewable energies. This could mean that the EEG or the compensation pursuant to the act will be classified as state aid and that the reform of the EEG as a whole will be subject to the requirements issued by Brussels pursuant to competition law.

On 18/12/2013, the COM initiated a detailed review of the subsidisation of energy-intensive industries in the form of a partial exemption from the EEG levy (more details in the section “Germany”), a legal action based on competition law against Germany.

EU emission trading: decision to amend Directive 2008/87/EC and intervention in the market in the form of back-loading

The so-called back-loading authorises the COM to postpone once the auction of as many as 900 million allowances during the third trading period. The new time schedule for the auctions is determined in an amendment to the Auction Regulations. The back-loading proposal was adopted by the European Parliament on 10/12/2013 following a number of contradictory resolutions from various committees of the European Parliament. An initially temporary reduction in the auction volume is expected in the first half of 2014.

The third phase of the emission trading began in 2013 (2013–2020). Even before it began, efforts were being made to initiate measures such as “back-loading” with the intention of driving the CO₂ prices upward (see above). The adopted amendment to the emission trading directive has now authorised the COM to create a market stabilisation reserve which will make the supply of allowances more flexible as well as to intervene in the allowances market by means of back-loading. In terms of regulatory policy, these changes are highly questionable because the COM acts much like a government to intervene in the free emission trading market, with the consequence that the prices for the allowance are not determined by the market or by supply and demand, but are instead controlled by the intervention of a European agency in the market.

Decline in CO₂ emissions by 2.5% in 2013 compared to 2012

Eurostat estimated at a very early point that CO₂ emissions from the combustion of fossil energy sources in the EU 28 would decline by 2.5% in 2013 in comparison with 2012 subsequent to the decline of 1.6% in 2012.

Nevertheless, the changes varied greatly from one country to the next and revealed a direct correlation between the industrial level of a country and the CO₂ emissions: while CO₂ emissions related to energy rose between 0.6% and 6.8% in countries with positive growth rates such as Germany, France or Denmark, they fell in the economically troubled countries such as Spain, Greece, Cyprus or Romania by between 10% and almost 15%.

Proposal for a directive regarding indices which are used as benchmarks

In September 2013, the COM proposed a directive which would contribute to restoring trust in the integrity of benchmarks. A benchmark is an index (statistical measurement) which is calculated on the basis of a representative set of data and used as a reference figure for a financial instrument, financial contract or other purposes. The proposed new regulations are intended to heighten the dependability of benchmarks, simplify the prevention and discovery of manipulation and clarify the responsibility for as well as supervision of benchmarks by government authorities.

The proposal aims to cover a broad range of benchmarks including such raw material benchmarks as the API#2 or API#4. The latter have gained enormously in importance when hedging against rising or falling prices in the coal and power trading business.

Among other matters, the content of the proposal aims to permit the preparation of these benchmarks in the future at the European level, for instance, only if the appropriate

authorisation has been granted and their preparation is subject to supervision. Material requirements are also placed on the indices (e.g. adequate data base, reliability of the data sources and dependability of the calculations). All of the indices relevant for coal or for securing freight rates would be affected. The discussion about the proposal will be conducted in the European committees in 2014.

GERMANY

Council of Economic Experts: opposition to backward-looking policies

Clear words about economic policies during the Bundestag election year 2013 came from the Council of Economic Experts in its annual assessment 2013/2014. In view of Germany's good economic position, most of the parties concentrated on questioning the reforms in many areas related to the labour market and welfare laws and countering the supposedly drastic rise in inequality in Germany by means of an intensified redistribution of wealth through more active tax policies.

The totality of the tax policies inherent in the economic policy measures now under discussion threatens to destroy the reform progress Germany has accomplished in recent years. Many of the benevolent deeds now being discussed such as the mothers' pension, the increase in low pensions or generous exceptions from the increase in retirement age to 67 put most of the burdens on future generations. Future challenges would become many times more difficult if the reforms contained in Agenda 2010 are diluted or revoked completely in some areas. The same applies to new measures hostile to growth and employment such as the minimum wage.

The Council of Economic Experts does not mince any words in stating its demands: "Instead of pursuing economic policies which look backward, politicians should turn their gaze ahead. Economic policies oriented to the future avoid measures which will generate even greater pressure for action in the future, secure progress of past reforms and improve general economic conditions." Regarding economic development, the Council of Economic Experts believes the world economy is on a path of stabilisation and estimates growth in world production of 2.2% in 2013 and of 3% in 2014. Change in GDP in the eurozone is estimated at -0.4% for 2013 and at 1.1% in 2014. Growth in GDP of 0.4% is expected in Germany in 2013, and the Council of Economic Experts forecasts an increase of 1.6% in 2014.

In summary, the Council of Economic Experts states: "The German government will be able to persuade other European governments to assume national responsibility themselves and to drive forward the necessary reforms only if it takes the right steps within its very own national area of responsibility. Economic policies oriented to the future should avoid backward-looking measures, secure the progress achieved by past reforms and improve general economic conditions."

At the beginning of 2014, the German government presented its annual economic report for 2014 entitled "Social Market Economy Today – Stimulating for Growth and Solidarity"; it describes the government's overall economic projections for 2014 and compares the actual development of the projections in 2013.

A retroactive comparison with the annual projections for 2013 made the year before with actual development shows that, a year ago, the German government was highly accurate in its forecasts for GDP growth and unemployment, but that it overestimated the foreign trade elements and underestimated domestic demand.

Selected Key Data for Overall Economic Development in Germany ¹⁾			
	2012	2013	2014 Outlook
Change from Previous Year in %			
Gross Domestic Product (price-adjusted)	0.7	0.4	1.8
Labour Force (domestically)	1.1	0.6	0.6
Unemployment in % ²⁾	6.8	6.9	6.8
Usage of GDP Price-adjusted			
Private Households and Non-profit Private Organisations	0.8	0.9	1.4
Equipment	-4.0	-2.2	4.0
Buildings	-1.4	0.3	3.2
Domestic Demand	-0.3	0.7	2.0
Exports	3.2	0.6	4.1
Imports	1.4	1.3	5.0
Trade Balance (GDP Growth Contribution) ³⁾	0.9	-0.3	-1.8
¹⁾ 2012 and 2013 results updated, 2014 provisional results			
²⁾ In relation to total labour force			
³⁾ Contribution to growth rate of GDP			

HT-D1 Source: Forecast from the Annual Assessment 2013/14 of the German Council of Economic Experts assessing the general economic conditions, Status: Nov. 2013

The German government expects a significant recovery of the German economy over the course of 2014 and growth in GDP of 1.8%. This projection for the year is inter alia based on the following assumptions:

- Growth in world economy, based on forecasts by international organisations and adjusted for prices, comes to 3.5%.
- For technical purposes, the averages of the oil price and exchange rates over the last 6 weeks before preparation of the forecast were assumed as constants, i.e. the oil price was measured at US\$108 per barrel of Brent and the exchange rate was measured at US\$1.36 to €1.00.
- All of the economic and fiscal policies measures

adopted as of the conclusion of the annual economic report were incorporated into the forecasts. The basic components of the measures set forth in the coalition agreement have also been taken into consideration in these forecasts.

Energy policy and the energy turnaround are given major attention in the annual economic report (“Securing the Energy Turnaround”). The goals of the energy turnaround and the previous measures initiated for their realisation are described. The guiding principle is defined as the “energy policy triangle” comprising the goals with equal standing of climate and environmental compatibility, security of supply and affordability. It is noteworthy that the words “economic efficiency” or “low cost” have been replaced by “affordability”, shifting focus away from the objective cost of the products and in the direction of the recipients of the services and their subjective ability to pay the price demanded for the product. Moreover, the term is open to interpretation. Something that is affordable for high-income or single individuals may well be beyond the financial reach of low-income people or a family of four. Nevertheless, the annual economic report promises that “cost efficiency and economic efficiency of the overall system, including grid expansion and the required reserve capacities for the electric power market, (must) be the subject of greater diligence during further progress toward the realisation of the energy turnaround.” This is necessary so that companies in Germany will be able to continue producing under internationally competitive conditions in the future and households will be able to obtain “low-cost” energy.

Energy demand rises sharply in 2013

According to provisional calculations of the Arbeitsgemeinschaft Energiebilanzen (AGEB), primary energy consumption in Germany rose by 2.5% in 2013,

corresponding to an increase of 11.6m TCE to 474.5m TCE. Primary energy consumption in Germany in 2013 was higher than the level in 2007 and almost as high as in 2010 (482m TCE). The increase was decisively affected above all by the weather conditions in the first half of the year, which were significantly cooler than the year before and pushed upward the demand for heating. Excluding the effects of the low temperature, energy consumption would have risen by 1.1%. But even adjusted for temperature, the value for the primary energy consumption clearly exceeded that of economic growth. On the other hand, there was virtually no impact increasing consumption from the weak economy.

Production indices in manufacturing changed in both the positive and negative direction in 2013; in less energy-intensive industries, they mostly declined:

- Metal products -1.2%
- Machine construction -2.5%
- Motor vehicle construction +0.8%
- Manufacturing in total -0.5%
- Construction industry -1.4%

The impact of the temperature effect varied among the specific energy sources. Above all, it affects the consumption of natural gas and oil, which provide a large share of the heating market (which is dependent on outside temperatures).

The most important energy source in 2013 continued to be oil (33.4% share). It is followed by natural gas, which increased its share by 6.4% to 22.3% in 2013. Hard coal increased its contribution to the energy mix to 12.8%, while lignite reduced its contribution by 0.6m TCE to 11.7%. The most striking changes were in nuclear energy (its share of consumption fell from almost 8% in 2012 to only 7.6% in 2013) and in renewable energies

(increased their contribution to the primary energy consumption from 11.3% in 2012 to 11.5% in 2013). Other energy sources (including the balance of the electricity exchange) contributed 2.4% to coverage of energy demand.

In comparison, the strictly statistical effect resulting from the differing developments in nuclear energy on the one hand and the utilisation of power generation from renewable energy sources on the other was virtually negligible in 2013. Measured against the original values, overall economic energy productivity in the German economy worsened noticeably (-2%) in 2013. Adjusted for temperature effects, energy productivity was almost 1% lower than in the previous year. The long-term trend from 1990 to 2012 (1.9%) was slightly reduced to 1.8% (from 1990 to 2013) or remained unchanged when adjusted for temperature.

On the other hand, the economy had the effect of curbing consumption. Although the GDP, adjusted for prices, rose overall by 0.4% in comparison with the previous year, it declined in manufacturing by 0.8%. Declines were also posted in a large number of branches of business. This was especially true of energy-intensive operations such as the cement industry (-2.1%) or the manufacture of paper and cardboard (-1.8%).

Energy Productivity			
	2012	2013	Difference in %
Gross Domestic Product (€ bn)	2,472	2,482	0.4
Primary Energy Consumption in Petajoules (Adjusted for Temperature and Inventories)	13,631	13,787	1.1
Energy Productivity (in €/GJ)	180	181	-0.7

HT-D2 Source: AGEb, provisional information

Unlike primary energy consumption, gross electricity consumption fell once again; in 2013, the mark of about 600bn kWh was 1.1% lower than in the previous year. This was the lowest value since 2003 (excepting only the crisis year 2009). Gross electricity generation, on the other hand, rose by 0.6% in 2013. Nuclear energy lost further ground. Its share went from 15.8% to 15.4%. Lignite, which increased its share marginally from 25.5% to 25.6%, remained the most important energy source.

Share of hard coal in primary energy consumption rises by 4.1% – third-largest supply contributor to the energy mix

According to provisional calculations, hard coal consumption in 2013 rose by 4.1% to 60.7m TCE (corresponding to 1,779 PJ), an increase of 2.4m TCE. This makes hard coal the third-largest supply contributor to the energy mix, posting a share of 12.8% in primary energy consumption in 2013, following oil and natural gas as in the past, but ahead of the contributions made by lignite and renewable energies.

While the **consumption of coking coal** in Germany's steel industry decreased slightly in 2013 by 1.7% to 17.6m TCE, the use of steam coal, which comprises more than two-thirds (68%) of the total consumption of hard coal in Germany, rose by 6.7% to 41.5m TCE. There was a slight rise from 1.5m TCE to 1.6m TCE on the heating market as a consequence of the temperatures. Growth in hard coal-fired power generation of 6.5% is a consequence of the favourable price situation in comparison with other energy sources. The increase in hard coal imports of 2.5% (+5.6m TCE) more than offset the reduced domestic hard coal output.

Lignite fell by 1.5% to 55.5m TCE. It covered just under 12% of the total domestic energy demand. The primary

reason behind this change was an increase in efficiency from the operational startup of the new power plant units in Neurath (2,200 MW) and at the Boxberg site (675 MW) and the simultaneous shutdown of a series of old plants. The result was a higher average degree of efficiency leading to higher power generation from lignite while reducing the amount of fuel consumed.

Renewable energies contributed about 54.7m TCE to the energy balance, an increase of 4.7%. Of the renewable energy sources for power generation, there were increases in comparison with 2012 in photovoltaics (+14%) and biomass (+8%). But onshore wind farms (+5%) and offshore wind farms (+34%) also increased. Less electricity was generated by hydro power plants (-5.8%). Just as in the past, biomass dominates power generation and had a share of almost 57% in 2013. Wind energy onshore is in second place and has a share of 18.8% of power generation and 12% of total domestic energy demand. The generation of solar power in the meantime significantly exceeds the magnitude of hydro power. The rate of increase is slowing down. It increased its contribution by 13.7% (previous year: 44.3%) last year and now holds a share of 10.8% (previous year: 11.1%) of power generation from renewable energy sources. The approximately 1,605 PJ or just under 55m TCE from renewable energy sources were utilised as shown below:

- About 1,003 PJ (62%) or 34.2m TCE in power generation,
- About 484 PJ (30%) or 16.5m TCE in heating market,
- About 117 PJ (8%) or 3.9m TCE in fuel production.

Primary Energy Consumption in Germany 2012 and 2013

Energy Source	2012 2013		2012 2013		Change 2012 to 2013		Share in %		
	Petajoule (PJ)		Mn tCE		PJ	Mn tCE	%	2012	2013
Mineral Oil	4,540	4,637	154.9	158.2	97	3.3	2.2	33.5	33.4
Natural Gas	2,920	3,106	99.6	106.0	186	6.4	6.4	21.5	22.3
Hard Coal	1,709	1,779	58.3	60.7	70	2.4	4.1	12.6	12.8
Lignite	1,645	1,627	56.1	55.5	-18	-0.6	-1.1	12.1	11.7
Nuclear Energy	1,085	1,061	37.0	36.2	-24	-0.8	-2.2	8.0	7.6
Renewable Energies	1,533	1,605	52.3	54.7	71	2.4	4.7	11.3	11.5
Electricity Exchange Balance	-83	-122	-2.8	-4.2	-39	-1.3	---	-0.6	-0.9
Miscellaneous	222	215	7.6	7.3	-7	-0.2	-3.3	1.6	1.5
Total	13,571	13,908	463.0	474.5	337	11.6	2.5	100.0	100.0

HT-D3 Source: AGEb, Energy Consumption in Germany for the year 2013 - Annual Report

Power generation rises by 0.6% to approximately 634bn kWh

Gross electric power generation in Germany rose by about 3.8 TWh (0.6%) from around 630 TWh in 2012 to 634 TWh in 2013. As a yearly average, power generation in Germany between 1990 and 2013 rose by 0.6%. In contrast, German gross electricity consumption, as in 2012, declined again by about 7 TWh to 599.8 TWh.

Energy Mix of Gross Power Generation

Energy Source	2011	2012	2013	Difference 2012/2013	
	TWh	TWh	TWh		%
Lignite	150.1	160.7	162.0		0.8
Nuclear Energy	108.0	99.5	97.3		-2.2
Hard Coal	112.4	116.4	124.0		6.5
Natural Gas	86.1	76.4	66.8		-12.6
Mineral Oil	7.2	7.6	6.4		-16.1
Renewable Energies	123.8	143.5	151.7		5.8
Miscellaneous	25.6	25.7	25.4		1.1
Total	613.1	629.8	633.6		0.6

HT-D4 Source: AGEb

The cross-border electric power trading volume (total of imports and exports) came to about 112 TWh (18%) of the gross power generation in 2012, a record mark. The level of 110.6 TWh in 2013 almost reached this value again. But while power imports declined by 5.8 TWh (13%), exports grew by almost 5 TWh and set a new record mark of 72.7 TWh. By far the greatest part of this increase is found in power flows in the direction of the Netherlands. The European merit order has forced more and more gas-fired power plants out of the market and has caused procurements of electric power on the German market to grow. As a consequence, the use of natural gas as a fuel for power generation declined significantly (-12.6%). Power production from nuclear power plants fell by 2.2% to about 97bn kWh, a share of 15.4% in gross power generation. Power generation from combined heat and power plants (CHP) from public utilities, industry and private facilities (e.g. fossil or biogenic fuel-fired mini or micro block heat and power plants) amounted to about 93.5bn kWh (2012: 91.2bn kWh) according to initial estimates. The share of net power generation from CHPs in Germany amounted to 15.7% in 2013.

The installed output of wind energy onshore and offshore rose by 3,238 MW to 33,730 MW in 2013, 240 MW in offshore wind farms. Production posted a total plus of 5.4% to 53.4 TWh, of which a plus of 34.4% to just under 1 TWh came from offshore wind farms.

Power Generation from Renewable Energy Sources				
Energy Source	2011	2012	2013	
	TWh	TWh	TWh	
Hydroelectric Power	17.7	21.8	20.5	
Wind Power	48.9	50.7	53.4	
Biomass*	32.8	39.7	42.6	
Waste**	4.8	5.0	5.2	
Photovoltaics	19.6	26.4	30.0	
Geothermal Energy	---	8.7	9.6	
Total	123.8	152.3	161.3	

* Without biogas
** Renewable share, incl. landfill gas

HT-D5 Source: AGEb, BDEW

Photovoltaics, the most highly subsidised energy source per kWh, grew by 13.7% and did not increase as much as in previous years. Despite the high sums in the billions which are paid for the feed-in of this power, its **share in gross power generation is only 11% and its share in primary energy consumption is only 7%.**

Hard coal market in 2013. Consumption and imports of hard coal rise clearly despite energy turnaround

Hard coal consumption overall reached the highest level of the last 5 years. According to corrected figures from 2012, primary energy consumption of hard coal increased strongly by 2.4m TCE (4.1%) from 58.3m TCE

in 2012 to 60.7m TCE in 2013. Imported coal once again gave evidence of its importance as a flexible “swing supplier”.

Hard coal consumption in million TCE was covered as shown below:

Cover of Hard Coal Consumption in Germany				
	2011	2012	2013	2012/2013
	Mn t TCE	Mn t TCE	Mn t TCE	Change Mn TCE
Import Coal	43.4	46.8	52.4	5.6
Domestic Production ¹⁾	11.9	11.5	8.3	-3.2
Total	55.3	58.3	60.7	2.4

¹⁾ Incl. inventory reductions 0.6 Mn TCE

HT-D6

Domestic production adjusted output further and again reduced production by 3.8m TCE from 11.5m TCE in 2012 to 7.7m TCE in 2013. Coal stockpiles were also reduced by 0.6m TCE.

The sale of hard coal in t=t developed as shown here:

Total Hard Coal Sales in Germany			
Utilisation	2011	2012	2013
	Mn t	Mn t	Mn t
Power Plants	44.5	45.4	48.4
Steel Industry	16.8	15.8	17.6
Heating Market	1.9	1.8	1.9
Total	63.2	63.0	67.9

HT-D7 Source: AGEb, own calculations

The difference in quantities between the “TCE” and the “t=t” figures results essentially from the steam coal sector because mainly coal with calorific values under 7,000 kcal/kg is used here. This is why the t=t figures are higher.

Imports in 2013 contributed 86% to the high-quality supplies for the German market. More coke was produced in Germany (8.3m tonnes) than in any year since 2008.

Import coal and domestic coal contributed to supplies in the various consumer sectors in 2013 as shown here:

Consumer Groups Import Coal and Domestic Coal in 2013			
	Import Coal	Domestic Coal	Total
	Mn t	Mn t	Mn t
Power Plants	40.7	7.7	48.4
Steel Mills	16.5	1.1	17.6
Heating Market ¹⁾	1.3	0.6	1.9
Total	58.5	9.4	67.9

¹⁾ For domestic coal incl. export

HT-D8

So import coal covered

- 84% of power plant demand;
- 94% of steel mill demand;
- 46% of heating market demand.

Imports break down according to quality as shown here:

Imports According to Quality in Mn t (t=t)			
Products	2011	2012	2013
	Mn t	Mn t	Mn t
Steam Coal ¹⁾	33.6	35.3	35.3
Anthracite	0.5	---	---
Coking Coal	10.0	9.6	10.2
Coke	4.2	3.0	2.7
Total	48.3	47.9	52.8

¹⁾ As of 2012 incl. Anthracite

HT-D9 Source: Own calculations

It must be pointed out here that the import figures in 2013 differ from the consumption figures due to inventory movements. This was also the case in the previous years.

Dominant sources for imports of all quality classifications of hard coal:

- Russia 13.1m tonnes (about 25%)
- USA 12.0m tonnes (about 23%)
- Colombia 10.0m tonnes (about 19%)
- Poland 4.3m tonnes (about 8%)
- South Africa 2.5m tonnes (about 5%).

Russia became the largest supplier of steam coal, followed by the USA and Colombia. South Africa and Poland supplied higher tonnage volumes. However, as a trend South Africa lost in importance for the German market even though imports from this country increased in 2013.

The most important suppliers for coking coal:

- Australia 4.6m tonnes (about 45%)
- USA 3.1m tonnes (about 30%)
- Canada 1.2m tonnes (about 11%)
- Russia 0.9m tonnes (about 9%).

Overall, the supply structure for all qualities is broadly diversified, and imports come primarily from politically stable countries. Logistics in Germany's seaports and in the ARA ports important for German imports were not disrupted by any interruptions and were able to handle the additional volumes without any problems.

Important coal handling ports of Europe for the German market	
Ports	2013 in Mn t
Rotterdam	30.7
Amsterdam	21.6
Antwerp	2.9
Zeeland Seaports	3.9
Hamburg	5.7
Bremerhaven	1.3
Wilhelmshaven	3.3
Total	69.4

HT-D10 Source: Port of Rotterdam, Port Statistics 2011-2012-2013

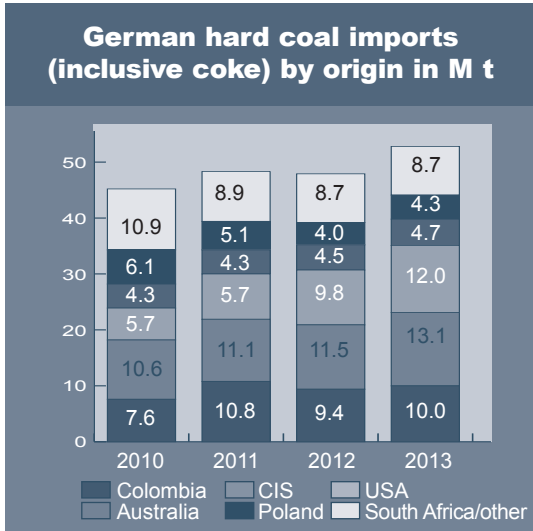


Figure15 Source: VDKi, several evaluations

Just under 53m tonnes of import coal entered Germany via the following transport routes:

Transport Routes of Import Coal in Germany			
Transport Routes	2011 Mn t	2012 Mn t	2013 Mn t
German Ports	9.7	13.8	14.0
Rail	15.0	9.7	11.1
Domestic Ships from ARA Ports	23.7	24.4	27.7
Total	48.4	47.9	52.8

HT-D11

Energy prices: steam coal pushes aside natural gas for electric power generation

The prices for major fuels in competition with steam coal fell in part in 2013, but the coal prices fell substantially as well during 2013. Price developments for HFO and natural gas moved in different directions. This is what happened during the year:

Energy Price Development 2013			
	01/01/13 €/TCE	01/07/13 €/TCE	31/12/13 €/TCE
Heavy Fuel Oil (HFO)	367	347	330
Natural Gas to Power Plants	262	259	264
Import Coal Price CIF ARA (Spot Market)	100.75	87.45	98.69

HT-D12

HFO followed the trend of crude oil prices and their substantial decline over the course of 2013. The gas price did not follow the oil price and remained at the level of 2012 of €264/TCE in 2013.

In all of the market situations, import coal enjoyed a great competitive advantage in 2013, which was amplified with respect to natural gas during 2013 because of the greater decline in coal prices and the rise (in part) of gas prices.

Energy Price Development on an Annual Average

	2011	2012	2013	2012/2013 Change
	€/TCE			%
Heavy Fuel Oil (HFO) ¹⁾	355	394	349	-11.5
Natural Gas/Power Plants ¹⁾	241	264	264	0
Cross-Border Price/ Imported Coal	112	98	84	-14.3

¹⁾ Annual mean value BAFA price

HT-D13

The price advantages of import coal over HFO and natural gas were reinforced in comparison with the previous years on the basis of the above values:

Price Advantages of Import Coal

	2011 €/TCE	2012 €/TCE	2013 €/TCE
Import Coal/HFO	243	296	265
Import Coal/Natural Gas	129	166	180

HT-D14

The German cross-border price ("BAFA" price) follows the spot market development (API#2) with a time lag of about 3 months.

Prices of selected energy sources free power plant in euro/TCE

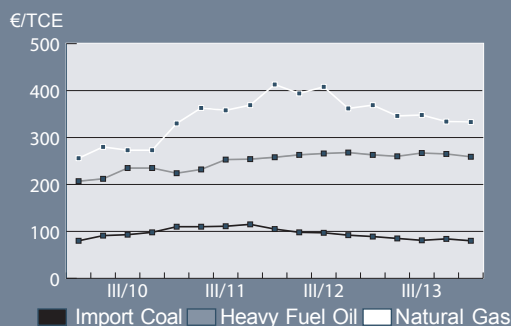


Figure 16: Statistik der Kohlewirtschaft /BAFA

The so-called contract benchmark prices for hard coking coal are today of significance in describing coking coal prices, if at all, only for some of the Asian countries, even though a certain signal effect comes from these prices. But prices are decisively impacted more and more by spot prices on a monthly basis. This is why only the cross-border prices for all types of coking coal from other countries are shown here:

Third Countries Cross-Border Price for Coking Coal in €/t¹⁾

2009	174.00
2010	175.00
2011	185.00
2012	188.00
2013	127.00

¹⁾ Average values for all metallurgical coal types

HT-D15

The German cross-border price comprises not only the hard coking coal price, but the prices for semi-soft coking coal and PCI qualities as well. There is a price range between US\$20 and US\$35/t for these qualities. Just as is the case for steam coal, the relationship of the euro to the US dollar plays a significant role.

In 2013, the average price for metallurgical coal plunged into depths, reaching €127/t. As a consequence of the weak steel economy worldwide, prices in the second half of 2013 collapsed to a level that had not been seen for a number of years. The price for HCC FOB Australia in January 2013 amounted to about US\$163/t, then fell to US\$133/t in June 2013 before recovering in Q4 to between US\$138 and US\$148/t. They began to slump again at the beginning of 2014. The price fell from US\$133/t in January 2014 to US\$114/t in April 2014.

The coke prices developed as shown below:

Coke Price Development (Cross-Border Prices)	
	Third-country Imports €/t
2011	320.00
2012	259.00
2013	205.00
Change 2012/2013	- 54.00

HT-D16

Like coking coal, coke prices fell almost as much as in 2012, an average for the year of €54/t, because of the weakness of the steel business worldwide over most of the year. Expectations for 2014 are that quantities and prices are more likely to continue to decline, especially since the first coke was pushed out of the new coke battery with an annual capacity of 2.3m tonnes at HKM in Duisburg at the end of March 2014.

Trends in coal price development in 2014: pressure on quantities and prices does not appear to be diminishing

Prices for coal CIF-ARA were more or less at rock bottom during the first three quarters of 2013 and moved in a range of US\$75 to US\$88/t, substantially below the prices of the previous year. Prices recovered slightly in Q4 2013 to between US\$84 and US\$85/t. The market is oversupplied, and activities which would stimulate demand are nowhere to be seen in the world. This tendency continued during the opening months of 2014. During Q1 2014, prices fluctuated between US\$75 and US\$83/t.

Then, too, the exchange rate for the US dollar with respect to the euro has becoming increasingly volatile, i.e. sometimes stronger, sometimes weaker, and correspondingly acts sometimes to hold down prices, but

sometimes to drive prices upward in the euro zone.

Based on the spot market prices for steam coal in Q1 2014, the BAFA price will most likely reach an estimated price level of between €70 and €85/TCE over the course of the year.

Coking coal prices will surely remain under pressure in 2014 as well because no stimulus is coming from the steel market. In March 2014, spot prices for hard coking coal were in the vicinity of US\$106 to US\$110/t FOB Australia. But they could fall even lower if the steel business, in Asia above all, does not pick up again. A slight recovery of the spot prices to US\$113 to US\$115/t was indicated for Q2 2014.

Steel production fell only slightly in 2013

Thanks to a strong final quarter, the steel industry maintained production at the same level as the previous year. Crude steel production fell by only 0.1% from 42.7m tonnes in 2012 to 42.6m tonnes. Pig iron production, on the other hand, rose slightly by 0.5% from 27.0m tonnes in 2012 to 27.2m tonnes in 2013. In the estimation of the World Steel Association, steel production in 2014 is globally back on a course of growth. Stability or even a slight upward movement is considered to be possible in Europe. The Steel Federation expects the demand for steel in Germany to grow by 3% in 2014.

Pig Iron Production				
	2011	2012	2013	Difference 2012/2013
	Mn t	Mn t	Mn t	%
Crude Steel	44.3	42.7	42.6	-0.1
Pig Iron	27.9	27.0	27.2	0.2

HT-D17 Source: Stahl-online

The average specific consumption of energy sources in the German steel industry improved and for the German steel industry came to these amounts:

Consumption of the Steel Industry

Energy Source	2011	2012	2013
Coke (dry kg per t / pig iron)	346	337.5	331.6
Blasting coal (kg per t / pig iron)	133	146.5	158.9
Sintering fuels (kg per t / pig iron)	50	48.6	47.8
Oil (kg per t / pig iron)	14	8.8	8.7

HT-D18

The worsened utilisation of blast furnace capacities reduced the specific consumption of coke, but consumption of PCI-coal rose.

EU emission trading: auction volume reduced by 400 million allowances

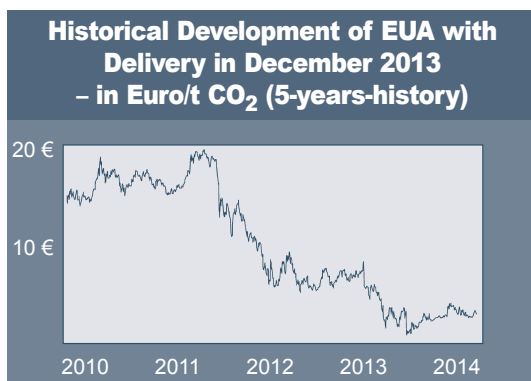


Figure17 Source: Thomson Reuters

2013 was the first year of the 3rd period of CO₂ trading which will run from 2013 to the end of 2020. The fall in prices for CO₂ allowances has been stopped for the moment by developments in the EU Parliament related to back-loading. At the beginning of 2014, prices for CO₂ forwards initially rose noticeably from €5 to €6/t

to more than €7 to €8/t because of the reduction in the number of auctioned allowances. But the plant operators in EU emission trading have long since anticipated the curtailing of availability and adapted their demand behaviour accordingly. After a short boom, prices began to deteriorate again, but in March 2014 they were still about 40% higher than the prices of December 2013. The cause of the price stabilisation for CO₂ allowances is to be found above all in the political discussions about the retroactive change in the emissions rights which will be auctioned.

The chart below illustrates price expectations per 04/2014 for the years from 2014 to 2017:

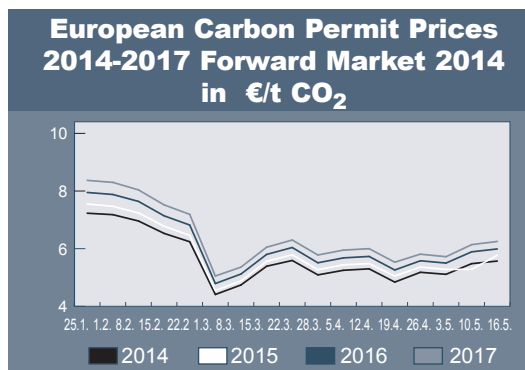


Figure18 Source: McCloskey, Spectron based

CO₂ emissions in Germany slightly higher in 2012 and 2013 than the 2011 level

According to official emission data for 2012, emissions relevant for the climate in Germany were 24.7% lower than the level of 1990, the international base year. The current figures include for the first time the entire initial obligation period of the Kyoto Protocol, the average of the years from 2008 to 2012. Germany undertook to reduce emissions by 21% during this period and

achieved an actual reduction of 23.6%. In comparison with 2011, emissions in the reporting period 2012 rose by 1.1%. The slight increase came from increased power generation from power plants firing lignite, hard coal, oil

and natural gas as well as the increase in demand for heating energy in private households because of the weather conditions.

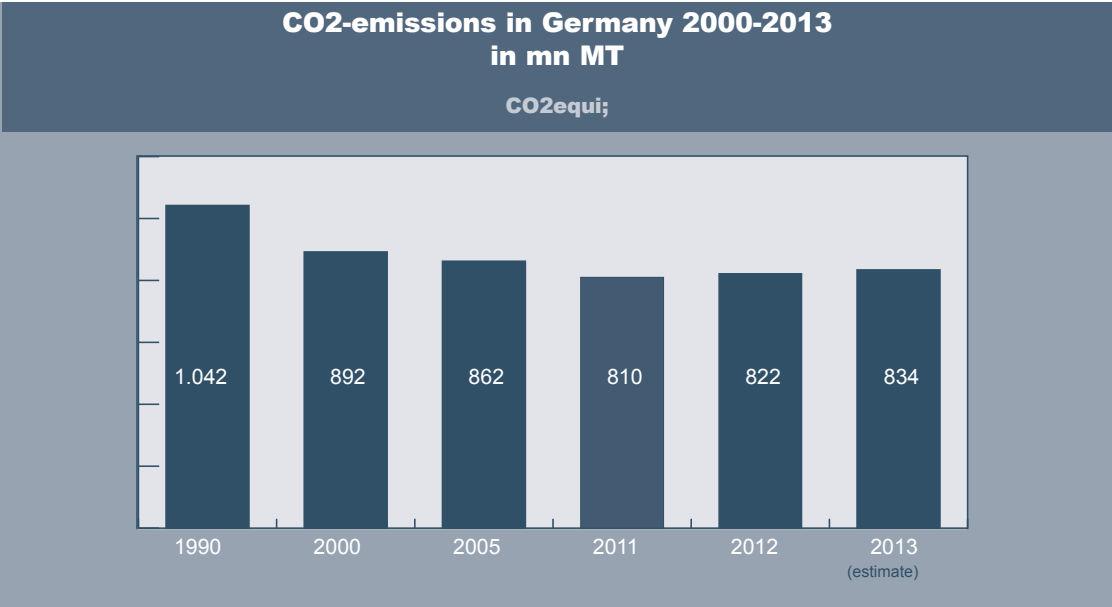


Figure 19 Source: data from Federal Environment Office (UBA)

Preliminary calculations from the Federal Environmental Agency show that all greenhouse gas emissions in Germany in 2013 rose again slightly by 1.2% (12m tonnes) in comparison with the previous year. CO₂ emissions increased by 1.5%. The Federal Environment Agency [FEA] sees the cause here as well in the addi-

tional consumption of oil and gas in households because of weather conditions as well as the increased power generation in coal-fired power plants, much of which was exported.

World climate conference in Warsaw makes no progress

Once again, a marathon of negotiations came to an end with, at best, minimum results in a few points.

1. There is a vague timetable for a convention. It provides that the countries will announce their contributions to climate protection by spring 2015 – their contributions, as it says. Earlier drafts spoke of commitments. The declarations of intent are supposed to be submitted by all countries – whether industrialised, emerging or developing.
2. As early as 2009 during the climate summit in Copenhagen, the countries resolved to establish a separate fund for climate protection and to allocate US\$100bn annually to the fund from 2020 on. But no decisions were made as to how this amount was to be collected – there is only mention of a continuous accumulation.
3. It was decided to implement a mechanism which would help developing countries in the event of damage or losses or the loss of crops because of weather conditions. But no decisions were made as to how the mechanism would function.

What is to be done next? The countries are supposed to put facts and figures on the table in Paris in 2015 when a new attempt will be launched to create a global climate convention. Participants in Warsaw were happy that there had not been any back-sliding.

Second monitoring report “Energy of the Future”

The (previous) German government established the monitoring process “Energy of the Future” to observe the development in the energy turnaround continuously and in detail. The process was supposed to utilise a fact-based overview to review regularly the implementation of the measures of the energy concept and the progress in achieving targets. The second monitoring report summarises the facts and the status of the implementation of the measures which could be considered per 31/12/2013. The monitoring process is accompanied scientifically by an independent commission. The authority for energy policies were bundled in the new Federal Ministry of Economics and Energy to secure better coordination within the German government.

1. The energy policy goals

The triangle of objectives for energy policies with the equally important goals of security of supply, affordability and environmental compatibility remains the starting point and standard for all energy policy instruments. In addition to the shutdown of all nuclear power plants by 2022, the following energy policy goals (excerpt) remain in effect for the new German government. They include the corridors set forth in the coalition agreement:

Status quo und quantitative targets of the energy turnaround						
Category	2011	2012	2020	2050		
Greenhouse gas emissions				2030	2040	2050
Greenhouse gas emissions (compared to 1990)	- 25.6%	- 24.7%	at least – 40%	at least – 55%	at least – 70%	at least – 80% to – 95%
Share in gross electricity consumption	20.4%	23.6%	at least 35%	at least 50%	at least 65%	at least 80%
Share in gross final energy consumption	11.5%	12.4%	18.0%	(2025: 40 to 45%) 30.0%	(2035: 55 to 60%) 45.0%	60.0%
Efficiency						
Primary energy consumption (compared to 2008)	-5.4%	-4.3%	-20.0%		-50.0%	
Gross electricity consumption (compared to 2008)	-1.8%	-1.9%	-10.0%		-25.0%	
Share of electricity generation from combined heat and power plants	17.0%	17.3%	25.0%			
Final energy productivity	1.7% per annum (2008- 2011)	1.1% per annum (2008-2012)	2.1% per annum (2008-2050)			
Transport						
Final energy consumption (compared to 2005)	-0.7%	-0.6%	-10.0%		-40.0%	
Number of electric vehicle	6.547	10.078	1 million	6 million		

HT-D19 Source: BMWi Second Monitoring Report „Energy of the future“, Summary, March 2014

2. Key results of the report in the eyes of the German government (excerpts):

Energy consumption and energy efficiency

- It was possible to reduce primary energy consumption by 4.3% between 2008 and 2012. Compared with the previous year, primary energy consumption rose by 1.2% because of cold weather conditions, but adjusted for inventory and temperature effects, primary energy consumption declined by 1% in comparison with 2012.
- In 2012, gross power consumption amounted to 605.6 TWh; there was no change in comparison with 2011 and a decline by 1.9% in comparison with the base year 2008.

- The end energy productivity (real GDP per end energy consumption) was increased by an average of 1.1% per year during the period from 2008 to 2012. If the target of an average annual increase of 2.1% is to be achieved by 2020, the rate of increase in energy efficiency will have to be raised.

Renewable energies

- The dynamic expansion of renewable energies continued in 2012. Their share of the gross end energy consumption rose to 12.4% in 2012. With respect to the expansion targets for renewable energies set forth in the energy concept, Germany is on course to achieve its targets.

- The share of renewable energies in gross electricity consumption rose to 23.6% in 2012. Renewable energies are now the second only to lignite as power generators in Germany.
- Above all, it is now important with respect to renewable energies to manage more effectively the continued expansion, to consolidate progress and to make them more cost-efficient. The scope and velocity of the rise in costs is supposed to be noticeably slowed down by the fundamental reform of the EEG in 2014. The German government stipulated a reliable expansion corridor (see Table HT-D19 above) in the reform act for this purpose. This expansion corridor provided for a closer link to grid expansion. In addition, cost efficiency is to be enhanced, especially by the avoidance of excessive demands, a continuous scaling back of subsidisation, concentration of the special compensation payment to energy-intensive companies in international competition and a balanced regulation for own generation of electric power.
- Moreover, the subsidisation will be more strictly oriented to a free market. In 2017 at the latest, all new power plants with an output of 100 KW or more will be obligated to direct marketing on the basis of the floating market bonus. Furthermore, a pilot project will collect and evaluate experience with tender procedure models and a tender procedure design to determine whether, and to what extent, the goals of the energy turnaround can be achieved at lower cost in this way. By 2017 at the latest, the financial subsidisation and its amount for renewable energies is to be determined on a competitive basis in the form of tenders specific to the technology.

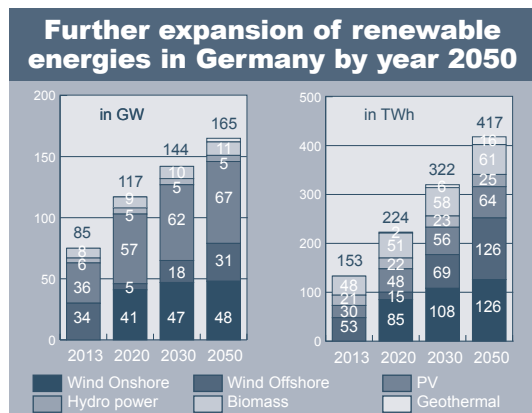


Figure 20 Sources: DLR 2011, Scenario A, 2013: AGEE

Power plants and grids

- Supply security in the power sector was assured in 2012.
- The German energy supply remains dependent on imported energies. However, the structure of the German primary energy supply is still broadly diversified, i.e. neither primary energy consumption nor power generation in Germany is dominated by a single energy source.
- The structural transformation among German power plants advanced further during the reporting period 2012. While primary energy consumption of fossil energy sources and nuclear energy declined by about 8.5% between 2008 and 2012, primary energy consumption from renewable energy sources rose by about 39% during the same period. At this time, most of the power generation in Germany is secured by fossil energy sources, especially coal (lignite and hard coal) in combination with nuclear energy. In 2012, conventional power plants contributed about 75% of the

power generation in Germany and about 25% came from renewable energies. The restructuring of energy supplies in the direction of more renewable energies will continue to change the traditional energy mix.

- The rapid expansion and conversion of power grids in Germany and Europe are of key importance for the successful integration of the growing share of renewable energies, the integration of new conventional power plants and the strengthening of the European power trading. Grid bottlenecks forced an increase in intervention measures by the transmission grid operators in the winter of 2012/2013, and the situation in southern Germany will presumably remain tense for the moment.

Greenhouse gases

- As of 2012, a reduction in greenhouse gas emissions of 24.7% in comparison with the base year 1990 had been achieved. Average emissions between 2008 and 2012 were 23.6% lower than the base year, so Germany exceeded its Kyoto targets (21% as an average between 2008 and 2012).
- The price for CO₂ certificates in the European emission trading system averaged €7.47 in 2012. The reason is a surplus of allowances owing to the effects of the financial and economic crisis and the utilisation of international project credits.

Energy price and costs

- The prices on the power exchanges declined by an average for the year between 12% and 17% in 2012. This was caused by a further increase in power supply from renewable energies.

Statement of position from the Expert Commission on the second monitoring report

- The Expert Commission presented its statement of position parallel to the publication of the German government's second monitoring report.
- The Commission regards the goals of the energy turnaround to be highly ambitious, but nevertheless achievable. However, it discerns a whole series of deficits and contradictions in the list of goals as well as in the action programme. The Commission criticises the monitoring report for not concentrating more on the analysis and assessment of the observed development and for restricting itself to the presentation of indicators and the description of their changes. It is especially important to state the issues clearly, analyse their causes in depth and draw conclusions for political action when indicators show that specific developments have fallen behind schedule for achieving targets. Otherwise, the monitoring report will not become an effective analysis instrument for energy policy.
- The Commission "recommends" that the German government and Parliament take steps to prioritise the energy turnaround goals. The Expert Commission is convinced that the energy turnaround is defined by two overriding goals: reduction of greenhouse gas emissions by at least 80% by the year 2050 and the shutdown of nuclear energy usage by the end of 2022. These overriding goals are accompanied by various subordinate goals and implemented by political actions. In the opinion of the Commission, the subordinate goals and actions should be flexibly adaptable, never losing sight of the necessity to achieve the overriding goals. Concretely speaking, this could mean not setting specific figures for a certain share of renewable energies which must be achieved, provided that this does not endanger achievement of the overriding goals.
- The Commission also proposes the use of 100 guiding indicators for five different aspects of the energy

turnaround. They include greenhouse gas emissions, shutdown of nuclear energy, share of renewable energies in gross energy consumption, national energy accounts, social impacts and acceptance.

- The Commission “recommends” that the German government participate actively in the structural reform of the European emission trading so that this “key climate protection instrument for the energy and industry sector in Europe” – as it is correctly described by the German government – can again in future fulfil its important steering function and set shortage goals.
- With regard to renewable energies, the Commission “warns” that the German government must not only observe a stricter orientation to cost efficiency and compatibility with the EU single market when reforming the EEG, but must also give sufficient consideration to the current development phase of renewable power generation in the direction of market integration.
- The members warn against “a lack of concern” particularly regarding the security of power supply. Indicators for measurements of short-term power supply security (supplement to SAIDI for supply interruptions of less than three minutes which have recently required more and more frequent redispatch interventions) and for long-term security of the power supply (evolution of the calculation of the current account balance in the sense of the remaining secured output) are needed. While no capacity bottlenecks are generally discernible in Germany, there is certainly a threat of “local capacity bottlenecks south of the Main River”, possible tense situations in cold winter months (inter alia competition situation for natural gas) and long-term uncertainties in the development of the power plant facilities.
- The Commission also criticises the substantial backlog in the expansion of the transmission grids. In 2012, for instance, only 268 km of the 712 km in new transmissi-

on grid sections required by the Energy Grid Expansion Act were completed.

Costs for renewable energies rise sharply once again

EEG levy rises by over 18% to 6.24 eurocents per kWh in 2014

According to data from grid operators, electricity consumers must brace themselves for additional increases in the prices for electricity and will feel the costs of the energy turnaround even more clearly. The EEG levy in 2013 was 5.27 eurocents/kWh. We recall a promise made by the German chancellor: the levy for green power will be held at 3.5 eurocents/kWh. Now, 2 years later, the levy has almost doubled.

The absolute amounts of the subsidies reveal the full scope of this model. The EEG levy is calculated on the basis of a forecast of the EEG feed-in quantities and the feed-in compensation for the coming year from the transmission grid operators. Overall, an increase in EEG power quantities of 11% over the value forecast for 2013 is expected. Of this generated quantity, 62% is subsidised by means of direct marketing, while less than 40% remains within the fixed price mechanism of the EEG. Direct marketing almost exclusively takes the form of direct marketing with market bonuses and encompasses 96% of the directly marketed volume. The total of the subsidisation payments and bonuses disbursed to the EEG facility operators has risen by more than 15% to almost €22bn. Taking into account avoided costs and, in particular, the marketing revenues via the EEX, the EEG levies in 2013 came to about €21bn. This figure will rise to €23.6bn in 2014, 60% for fixed compensation and 40%

on market bonuses. Revenues of €2.2bn are expected from the marketing on the exchange of the power volumes remaining in the fixed compensation system by the transmission grid operators. There remains a financial gap of about €19.5bn which must be covered by the EEG levy from all electricity customers, including industry, commerce and trades. Moreover, a retroactive cover for a financial gap of almost €2.2bn from the previous year will also be required in 2014. Finally, liquidity reserves in the amount of 10% of the financing requirements are planned. Marketing on the EEX leads to declining wholesale prices for electricity, which benefit above all industry and commerce in neighbouring countries because they import the cheap power without being subject to the EEG levy. The distortion of competitive conditions and the misdirection of the economy are self-evident.

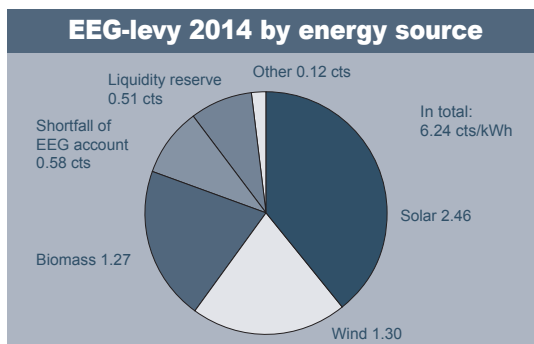


Figure 21 Source: German transmission grid operators

Criticism of the realisation of the energy turnaround continues

Criticism of the energy turnaround was unceasing in 2013 as well:

- The Monopoly Commission recommends turning away from the previous subsidisation system for green power and recommends the implementation

of a quota model based on Sweden's example.

- In the opinion of Andreas Mundt, president of the German Federal Cartel Office, the elimination of the feed-in priority for renewable energies should be at the top of the agenda for the reform of the energy market planned after the Bundestag elections and an obligation for direct marketing should be introduced.
- In its annual assessment, the Council of Economic Experts criticised economic policy for being concerned solely with the issue of cost distribution instead of the key question of how the economic costs of the energy turnaround project, which affects all of society, can be minimised. In view of the dramatic increase in costs, a moratorium in the subsidisation could provide the needed opportunity to catch our breath. In addition, the energy turnaround must be embedded in a European climate policy strategy. This is why trade with CO₂ emission certificates should be expanded to become the dominating instrument for European climate policy in the future while additional, in some cases counterproductive instruments such as the nationally oriented subsidisation of renewable energies should be largely avoided.

EU state aid proceedings against the special compensation regulation of the EEG

Just before the end of the year, the European Commission initiated a comprehensive review to determine whether the partial exemption from the EEG levy granted to energy-intensive companies was reconcilable with EU state aid laws. The Commission came to the conclusion that the public subsidisation granted to producers of renewable power pursuant to the EEG 2012 in the form of feed-in compensation and market bonuses is in fact state aid, but that it is nevertheless in harmony with the Commission's

directives regarding government environmental protection aid 2008. On the other hand, the Commission has concerns that the partial exemption from the levy granted to energy-intensive companies is not reconcilable with the state aid directives; there are similar reservations about the so-called “green power privilege” which grants a partial exemption from the EEG levy if and when a minimum of 50% of the power provided by a supplier comes from domestic power plants which use renewable energy. This could have consequences for the existence of German energy-intensive industry; in 2013, more than 2,000 companies were exempted from the EEG levy. The BAFA estimates that the exemption will total about €5 billion in 2014. This is a major source of worry for the industry.

The German government has announced that the EEG reform will be designed in conformity with European law so that the competitiveness of the energy-intensive industry will be maintained while simultaneously these companies make a reasonable contribution to the costs of the expansion of renewable energies. In other words: fewer plants will benefit from the exemption from the levy, and all industrial operations must pay higher levies. At the same time, the German government has filed a suit against the EU Commission's decision at the European Court of Justice (ECJ).

Draft for new environmental and energy aid directives of the EU Commission published

In November 2013, the EU Commission published the draft for directives regarding state environmental and energy aid for the period between 2014 and 2020. The EU Commission's purpose is to issue directives which give member states instruments for government intervention in power markets which may prove necessary in certain cases in the interest of securing power supply and climate protection.

Among other elements, the directives establish how

- national subsidisation systems for renewable energies such as the EEG can be designed or adapted. Renewable energies should gradually be subjected to market prices as the technology matures and finally the subsidisation should ultimately be stopped completely;
- reasonable generation capacities must be designed to assure uninterrupted power supply whenever there are fluctuations in generation (e.g. owing to weather conditions). This also covers the issue of capacity markets. The Commission has developed a checklist which governments can use to determine whether their intervention is effective and how it can be improved if necessary.

In their communication of 05/11/2013 on the “completion of the single market for electricity and the ideal utilisation of state intervention”, which in its content is related to the draft for the directives, the EU Commission sets forth the fundamental principles for nationally subsidised capacity markets as shown below:

The EU Commission recognises that power supply is of decisive importance for our modern economy and society are to function. The assurance of supply security is therefore a fundamental goal of government actions. While it may be legitimate that the standards for reasonable power generation differ in accordance with the variance in circumstances in the member states, reliable power grid operation in markets connected to one another is dependent on the power grid operation in other countries. In the Commission's view, any measures to prevent interruptions in supply should not go beyond the scope of what is absolutely necessary – the responsible government authorities should first and foremost allow market forces to act with regard to the required investments. If there are any doubts about the ability of the market to

secure reasonable power generation and secure supply, an objective, comprehensive review based on facts regarding the reasonableness of power generation is advisable before any government interventions are undertaken. The responsible government authorities are requested to include an appropriate presentation of the effects of EU law in the sector of the single electricity market and the assessment of the EU-wide reasonableness of the power generation by the European Network of Transmission System Operators for Electricity (ENTSO-E) in the review. The assessment must take into account the potential of investments in the transmission infrastructure, including the connection lines, and greater consideration of the demand side.

If inadequate power generation is determined to be a serious problem pursuant to a comprehensive assessment, the member states are called upon to review alternative measures which can be applied to address or alleviate the problems. Such measures include enabling and promoting load management, including such measures as accelerated implementation of intelligent electricity meters and expansion of the connection capacity, especially to neighbouring countries with surplus power or a complementary energy mix.

The causes of the inadequate power generation and the reasons why the market alone may be unable to rectify the situation must be described correctly and eliminated in harmony with the legal requirements of the European Union. This includes regulatory failings such as the regulation of wholesale and end customer prices as well as the negative impact on investment decisions from existing systems for the promotion of power generation based on fossil fuels and nuclear energy. Effective intraday markets, markets for compensation payments and markets for auxiliary services as well as government intervention are required for the effective integration of renewable energies

into the market. The lack of these elements could be an important cause of inadequate power generation resulting from the declining profitability of mid and peak load power plants.

If alternative measures do not solve the problem of reasonable power generation, a strategic reserve, a credibly one-time tender procedure or – if this also fails to have an effect – even a market-wide capacity mechanism are possible options. Regardless of what mechanism is chosen, the member states should take into account the goal – a gradual elimination of the subsidies for power generation based on fossil fuels by the year 2020.

The Commission is of the opinion that mechanisms for assuring reasonable power generation should be available to all capacities, including those in other member states, which effectively contribute to maintaining the standard required for reasonable power generation. This makes capacity markets in individual member states possible in principle, but the hurdles for their implementation are high.

Infrastructure

The Federal Republic of Germany, the State of North Rhine-Westphalia and the Deutsche Bahn signed a financing agreement for the construction of a third railway track between Emmerich and Oberhausen on 24/07/2013. This is a significant step which will eliminate the existing bottleneck for freight transports on the **Betuweroute between Rotterdam and Duisburg**. Completion is planned for 2022.

In advance of the Bundestag elections, the Schifffahrts-Magazin asked the parties represented in the Bundestag what promises they could give **inland shipping** for the new legislative period and what points were right at the top of the list of priorities. CDU and CSU want to make sustained improvements to the complete system of seaports, inland ports and waterways. Inland ports

are locations which, together with waterways, roads and railway connections, are among the core elements of future-oriented transport policies for the CDU/CSU. The reform of the federal water and navigation administration which has begun will be continued. CDU/CSU will continue to advocate a position in which the federal government is responsible for ensuring the financing and prompt realisation of measures such as the modernisation of locks or the assurance of dependable depths of shipping channels.

The Greens plan to promote inland shipping (only) if it has ecological and economical advantages over other means of transport and the ships are adapted to the rivers. But then the next promise to shift the transport of goods from the road to rail and waterways remains little more than lip service.

The FDP wants to ensure the competitiveness of the German seaports and inland ports by rapidly expanding connections to the hinterland and by dredging as necessary shipping channels such as in the Unterelbe, Unterweser, Ems and Warnow.

The SPD does not make any promises at all and wants to start by cleaning up the mess left behind by the policies of Federal Minister Ramsauer. In the view of the SPD, little or nothing constructive has been advanced over the last four years. The SPD wants to provide a minimum of an additional €2bn in the federal budget for transport infrastructure and consolidate expenditures overall.

Right at the top of the “to do list” are a solid financing foundation, a regular, detailed report on the state of the infrastructure, a federal transport network plan encompassing all means of transport and transparent investment planning.

Almost all of the opposition parties were in agreement when it came to rejecting the current reform of the water and shipping administration (WSV). It remains to be seen

what concrete steps the parties will take when they are actually in a position of power in the government.

COUNTRY REPORTS

AUSTRALIA

General

2013 was a year of good and bad news for Australia's coal industry. All in all, however, the country is in good economic condition. Economic growth of 2.7% (2012: 2.6%) and an inflation rate of 2.4% are expected for 2013. The primary reason for this positive economic development can be found in the demand for raw materials, above all coal, iron ore and industrial metals. However, the boom of recent years is over. On the other hand, new political decisions could make coal mining more attractive again in the future for new investments in the expansion of production capacities or the re-opening of coal mines. The financial burdens from political decisions in conjunction with falling world market prices and a weak Australian dollar led to cost-cutting programmes and the loss of about 10,000 jobs in the mines.

Australia was able to maintain its position as the ninth-largest producer of raw materials in 2013 thanks to its energy raw materials and produces almost 6% of the world's hard coal. The worldwide decline in the price level for steam and, above all, coking coal along with the exchange rate of the Australian to the US dollar have put a burden on the Australian coal exporting sector. At the beginning of 2013, the exchange rate was still US\$1.05 to A\$1, but fell over the course of the year to US\$0.90 to A\$1; the average for the entire year was US\$0.91. The value of the Australian dollar in 2013 was 12% lower than in the year before.

The fall in prices for steam and coking coal which began in 2012 continued in 2013 and put substantial economic pressure on the companies. According to a report

from the Bureau of Resources and Energy Economics (BREE) from March 2014, the average price for 6,000 kcal/kg steam coal FOB Newcastle fell from US\$91/t at the beginning of 2013 to US\$77/t in September 2013. As an average for the year, a tonne of steam coal cost US\$84. The contract prices for coking coal of HCC quality, especially with the Japanese steel industry (which has a benchmark function), ranged between US\$154/t and US\$160/t in Q1, between US\$169/t and US\$176/t in Q2, then declined to US\$142/t to US\$147/t in Q3 2013 before rising again in Q4 to between US\$148/t and US\$152/t. Spot prices were generally even lower than the quarterly prices. In 2012, prices were still between US\$154 and US\$200/t. This "price fall", triggered by a surplus supply of coking coal and declining demand from the steel industry in both Asia and Europe caused by economic and structural factors, has resulted in a situation for some coking coal mines in which they are no longer able to break even in their operations. The average production costs for steam coal in Australia are described in a report at US\$90/t; costs for coking coal are shown at US\$150/t. The responses of the mining companies to this challenge were varied. Common to all of them was the reduction of production costs by cutting costs, especially by staff reduction. In part, production was cut back to the point where entire mines were closed; in part, production was even expanded as a way to reduce the costs for each produced tonne of coking coal. The tax on the profits of highly profitable coal and iron ore production companies (so-called Minerals Resource Rent Tax, MRRT) introduced in the middle of 2012, which produced revenues of US\$130m during the first six months after entering into effect, placed a significant cost burden on the coal industry and weakened its competitiveness. However, substantially higher revenues had been expected; they were not realised because of the lower income resulting

from the decline in raw material prices occurring around the globe.

Additional burdens came from the CO₂ tax introduced in the middle of 2012 as well of about A\$17 per tonne and the royalties payments. Besides the financial burdens, there were greater difficulties in obtaining the many different planning, mining and environmental permits and the growing blockages of permit procedures by the anti-coal campaigns of Greenpeace and the even larger nature preservation association (Wilderness Society) which joined the Greenpeace campaign.

The “Australian Productivity Commission” (APC), an advisory body to the government, determined as early as the middle of 2013 that the productivity of the Australian raw materials exploratory industry was declining, the operating costs were increasing and the rate of new openings was falling, all of which could cause Australia to lose its appeal as an exploration location for international companies. Even though exploration represents only a small part of the economy, the raw materials production industry which follows the exploration is substantially more significant as it has a share of 9% of the gross domestic product (2012). The APC advocates above all a simplification of the complicated regulations of production licences.

The conservative government headed by Prime Minister Tony Abbot, newly elected in September 2013, as well as the legislative and regulatory changes in the coal states New South Wales (NSW) and Queensland mean new and substantial changes as well as new opportunities for the Australian coal industry.

The new Australian government has initiated a fundamental change in Australia's energy policy. The environmental programmes have been slashed and the Climate Commission has been dismissed. The CO₂ tax, currently with a minimum price of €16.90, will presumably be

revoked and replaced with an emission trading system of variable prices similar to the European system even before the end of 2014.

Even more significant in the long term is the change in the regulatory framework and permit procedures of both the Australian government and the state governments in Queensland and NSW. In the future, the environmental impacts will be concentrated and determined during one single process for exploration of the mining of coal deposits (so-called one-stop shop). Queensland has already begun to reduce bureaucratic red tape and to accelerate the permit processes. The goal is to issue exploration permits in less than 12 months if they affect the land rights of the aborigines and within six months for all other procedures. The average processing time now is 22 months. In NSW, the state government has announced changes in mining rights which will modify the assessment criteria for new permits. The “economic impacts” are supposed to be the essential criteria for the decision, and social or environmental impacts will become only secondary. The aim is to provide greater investment security for the mining industry and to create incentives for investments in new mines.

Production

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. Almost 80% of the output comes from opencast pits, 20% from underground mines. According to BREE, coal production increased to 410m tonnes, corresponding to an increase by 44m tonnes (12%).

Production in Australia's export provinces rose again in part because there were no disruptions from extraordinary weather conditions in 2013, but above all because of the fall in prices. Many of the mining operations have take-or-

pay contracts with their service providers such as the railway transport companies, and by increasing production, they can lower the specific costs per transported tonne of coal. Production rose by 43m tonnes from 358m tonnes to 401m tonnes: 161m tonnes in NSW and 240m tonnes in Queensland.

Smaller quantities of hard coal were mined in 2013 in West Australia (5.2m tonnes), South Australia (4m tonnes) and Tasmania (0.8m tonnes) in addition to the output from Queensland and New South Wales, but this production was consumed exclusively on the domestic market. Hard coal production totalled about 411m tonnes, thereof 240m tonnes steam coal (+21m tonnes) and 171m tonnes coking coal (+24m tonnes).

Between 60m and 70m tonnes of lignite are mined in Victoria in addition to the hard coal.

Usable Production of the Major Production States of Australia			
	2011 Mn t	2012 Mn t	2013 Mio.t
New South Wales (NSW)	157	176	161
Queensland (QLD)	179	182	240
Total NSW/QLD	336	358	401
Western Australia / Tasmania	10	8	10
Total	346	366	411

LB-T1

Activities related to the exploration of new coal deposits are an important indicator for possible production activities in the future. The most important elements of a decision to invest in exploratory drilling are the current market prices for coal and the prices expected in the future, the regulatory environment and the burdens from fiscal policies. Lower world market prices for coal mean that mining companies have only limited liquidity available for exploratory activities. So it is no surprise that the

greatest declines in exploratory drilling came in the coal sector. According to BREE, they fell by 36% to US\$557m. The declines in exploration, both in relative and absolute figures, for the so-called brownfield projects of 26% were greater than for the projects on the “green field” of 20%, in each case in comparison with the previous year.

Glencore Xstrata, for instance, has suspended the huge project Wandoan worth US\$5.5bn. This project was expected to produce 30m tonnes p.a. of steam coal for export and is still in the feasibility study phase. On the other hand, coking coal production rose by 6% in comparison with 2012. The production of steam coal, including semi-soft coking coal, increased by 9%. On the one hand, Anglo American has taken capacities of about 2m tonnes p.a. of cost-intensive coking coal production out of the market, but on the other hand, it has increased coking coal production in the other mines by 30%. Rio Tinto increased its production of coking coal by 2%, of semi-soft coking coal by 17% and of steam coal by 11%. The growth rates of the coking coal producers (startups) who have only recently entered the market have slowed down in comparison. Nevertheless, there has been significant progress in some of the projects which have begun, and there have been reports of new developments.

In its publication about “Resources and Energy Major Projects” from October 2013, BREE identified the following projects in the coal sector:

- 50 projects (previous year 63 projects) in the stage after the feasibility study for which further development has been publicly announced and for which the maximum investment costs will amount to A\$54bn (previous year: A\$75.5bn). While 37 of them will be in Queensland, in terms of value they make up about 90% of the planned expenditures.
- 15 projects with an investment volume of A\$11.4bn which have obtained all of the required permits and

are in the stage of construction or construction preparation. In the period from May to October 2013, 5 projects with a total value of US\$1.7bn received the final permits and can begin construction, while in the past six months 10 projects with a total value of US\$3.3bn were under construction.

Eight of the projects in the last group are located in New South Wales, 7 of them in Queensland. The following projects in NSW and QLD were completed between March and October 2013, increasing output capacities of coking coal by 11m tonnes p.a. and at planned investment expenditures totalling almost A\$6.1bn.

Resources and Energy Major Projects 2013			
Project	Company	Capacity per Year in Mn t	Costs in Mill. A\$
Austar (Underground mining) (Phase 3)	Yancoal Australia	3.6	250
Broadmeadow (Extension)	BMA (BHP Billiton Mitsubishi Alliance)	0.4	874
Daunia	BMA (BHP Billiton Mitsubishi Alliance)	4.5	1,553
Kestrel	Rio Tinto/Mitsui	1.4	2,105
Millenium	Peabody Energy	1.5	270

LB-T2 Source: BREE, Resources and Energy Major Projects, Oct. 2013

Three projects of smaller mining companies, which had planned to begin production in 2013, were ultimately not realised. The companies, which regard the Galilee Basin to be Australia's new coal province of the future, have made progress in the development of the coal mines. The two primary developers – GVK-Hancock and Adani – have presented an environmental compatibility study for the railway corridor with a capacity of up to 100m tonnes p.a. The state of Queensland wants to promote the project with total investments of A\$28bn by waiving the payment of royalties.

Infrastructure

The increase in production, and above all in export, demonstrated that the investments in the infrastructure are now bearing fruit. There are even reports that Queensland's port capacity, following the end of the investment boom in new mines, is now changing from undercapacity to overcapacity. The coal ports are using only 65% of their capacity, significantly below the industry standard of 85%. This development has led the large mining companies to rethink their plans to expand the ports.

BHP Billiton has formally waived the right to develop the T2 coal terminal in Abbot Point (T stands for terminal), but will carry out the third expansion of the Hay Point coal terminal (called HPX3). Glencore Xstrata has also cancelled plans to construct the Balaclava Island Coal Export Terminal with a capacity of 35m tonnes p.a. and an investment volume of A\$1.5bn in the vicinity of the Gladstone port in Queensland.

Following the change in government in Queensland, the new government reviewed all of the port expansion plans for 9 terminals in Abbot Point from T0 to T9. The expansion of T1 to include T0 by the Indian conglomerate Adani with the planned increase in capacity from the current 50m tonnes p.a. to 70m tonnes p.a. and the rights granted to BHP Billiton and GVK Hancock for the development of T2 and T3, each with transshipment capacity of 50m to 60m tonnes p.a., were confirmed. The expansions of T4 to T9 were mothballed until the appropriate developments in new coal mines make the expansion necessary, and the entire project was renamed AP-X.

Anglo American has also withdrawn from the state-supported AP-X expansion after being designated a preferred developer along with North Hub, a joint venture between Aurizon and Lend Lease, by the government. Aurizon is still in negotiations about the development of the port project while Lend Lease has also withdrawn. The entire pro-

ject is under heavy fire from environmentalists because of its possible impact on the Great Barrier Reef. The permits for T2 and T3 have been modified by a large number of restrictions under the new government and the dredging has been substantially limited.

Port Waratah Coal Services (PWCS) has begun the so-called Project 145; its name refers to the loading capacity of the two terminals (120m tonnes p.a. in Kooragang and 25m tonnes p.a. in Carrington).

But the mining companies are also investing as part of the openings of new mines. GVK Hancock, a company in which Indians hold the majority interest, is developing three major coal projects in the Galilee Basin:

Alpha, Alpha West and Kevin's Corner; the total coal reserves here are estimated at 8bn tonnes. The coal mines Alpha and Kevin's Corner could ultimately be counted among the world's largest mines with output in the final expansion stage of 32m tonnes p.a. and 28m tonnes p.a., respectively.

A contract has been concluded with Aurizon, Australia's largest freight transport railway company, which belonged to the state of Queensland until 2010, for the required transport of the coal to the port Abbot Point. A joint venture between Aurizon and GVK Hancock has been created for the common development of the railway and port projects. However, the original project scope for the so-called Galilee Corridor of 500 km has been reduced in the first stage to 300 km, which will be connected to the existing railway line from GVK to Abbot Point. This justifies as well the step-by-step expansion of the terminal T3 at Abbot Point, but at less total expense. The new railway line is supposed to make it possible to transport 25,000 tonnes in a block train.

The transshipment figures for the coal loading ports do not coincide precisely with the export figures. There may be customs-related reasons for this. Almost all of the

Australian ports have been expanded in recent years, and in 2012 and 2013 the coal volumes shown below were transshipped:

Exports of the Largest Coal Loading Ports		
Coal Loading Ports	2012 Mn t	2013 Mn t
Abbot Point	14.1	21.1
Dalrymple Bay	56.1	65.3
Hay Point	31.2	38.3
Gladstone	57.7	62.7
Brisbane	8.9	8.7
Total Queensland	168.0	196.1
PWCS	105.9	109.2
Port Kembla	14.5	11.8
NCIG	27.4	41.3
Total New South Wales	147.8	162.3
Total	315.8	358.4

LB-T3

About 28m tonnes more coal were loaded onto ships in Queensland in 2013, an increase of almost 17%. In New South Wales, it was above all the expansion of the NCIG Terminal which contributed to an increase in transshipment of almost 10% to 162.3m tonnes. In total, 42.6m more tonnes of coal were loaded in Australia in the past year.

Export

In total, Australia was able to increase exports enormously in 2013, posting monthly records in transshipment figures, in no small part because of the operational startup of the 3 terminals Port Waratah Coal Services (PWCS) (+3%), Newcastle Coal Infrastructure Group (NCIG) (+50%) and Dalrymple Bay Coal Terminal (DBCT) (+16%). Despite falling coal prices, export volume rose by 43m tonnes to 358m tonnes.

The development of hard coking coal exports in selected regions is shown below:

Export Development in Selected Regions "Hard Coking Coal"			
	2012	2013	Difference
	Mn t	Mn t	2012/13
			Mn t
China	14.3	26.9	12.6
Europe	14.3	15.3	1.0
India	23.0	25.2	2.2
Japan	20.8	20.5	-0.3
South Korea	7.2	7.9	0.7
Total	79.6	95.8	16.2

LB-T4 Source: BREE, Resource and Energy Quarterly, March 2014, Page 186

In total, exports of coking coal (including semi-soft coking coal and PCI coal) rose by 17% in comparison with 2012 to 170m tonnes. The largest importers of Australian coking coal are China, India, Japan, the EU and South Korea. A little less went to Japan, but China, in contrast, imported almost 13% more coking coal than in 2012.

According to McCloskey, there have been some changes in the details of Australia's exports to China in 2013 in comparison with 2012:

Development of Australia's Exports to China		
	2012	2013
	Mn t	Mn t
Hard Coking Coal	14.3	26.8
Semi-soft Coking Coal (PCI)	13.8	18.3
Steam Coal	34.8	42.5
Total	62.9	87.6

LB-T5 Source: McCloskey

Hard Coal Exports According to Grades

Coal Grade	2012	2013
	Mn t	Mn t
Coking Coal (HCC)	91	105
Semi-soft Coking Coal	54	65
Steam Coal	171	188
Total	316	358

LB-T6 Source: McCloskey

Australia was able to increase its exports of steam coal by about 17m tonnes (almost 10%). Japan increased its steam coal imports from Australia by 7.3m tonnes to 82.3m tonnes. Sales to Korea rose in total by 2.8m tonnes to 32.4m tonnes.

Australia's key figures are shown here:

Key Figures Australia			
	2011	2012	2013
	Mn t	Mn t	Mn t
Hard Coal Output	346	366	410
Hard Coal Exports	281	316	358
• Steam Coal	148	171	188
• Coking Coal	133	145	170
Imports Germany	4.3	4.5	4.7
• Steam Coal	0.2	0.3	0.1
• Coking Coal	4.1	4.2	4.6
Export Rate in %	81	86	87

LB-T7

Australia has a share of about 36% of the world market in world hard coal trade, thereof a market share of 170m tonnes in coking coal and of 188m tonnes in steam coal. In the long term, Australia has the largest sustainable expansion potential for steam and coking coal.

INDONESIA

General

The beginning of 2013 was not very promising for the Indonesian coal industry. Heavy rainfall prevented the production and export of coal in the planned amounts. But the further course of the year was also characterised by regulatory uncertainties triggered by government announcements with future impact on production costs which were in part contradictory.

Throughout almost the entire year, a kind of Damocles sword hung over the Indonesian low-calorific coal production: China's announcement that it would no longer permit the import of coal with calorific values below 4,544 kcal NAR. The impact of such a decision would have affected coal exports from Indonesia in a magnitude of up to 60m tonnes p.a. Despite a number of announcements and changes in the dates when the restriction would enter into force in China, the legal import prohibition was never realised for a number of reasons. But a postponement is by no means the same as a cancellation. The announcement initially prompted higher exports of this coal because the Chinese power producers wanted to fulfil their contractual purchase obligations and, what is more, this coal is financially attractive to the power plants in southern China.

Besides this import prohibition, the Indonesian government discussed a possible export prohibition of low-calorific coal. In this case, the export of coal with calorific values lower than 5,700 kcal/kg GAD (= air-dried) would be prohibited. Falling prices and declining revenues for the government may have been the motivation behind the Indonesian government's decision not to carry out this plan.

However, the levying of a customs duty of 3% on low-calorific coal in China put direct pressure on export

prices. Increased freight rates (e.g. to India) also put downward pressure directly on the Indonesian coal FOB prices. All of this and the continued decline in coal prices drove some Indonesian mining companies into the red. Cost-cutting measures and increases in production sought to offset these losses. It remains to be seen if this will be sufficient if the tax reforms and royalties announced by the Indonesian government at the end of the year become reality. If not, the pressure in the direction of consolidation within the coal industry will become enormous. However, the government would be more than happy to see such a result because it would no longer have to negotiate the issue of revenues from taxes and royalties with several thousand small, midsize and large mining companies. To understand what is concretely intended with these effects, it is necessary to be familiar with the differences in the way mining companies are treated with respect to taxes and royalties: There are two types of coal mining enterprises in Indonesia – the so-called IUP (Izin Usaka Pertambangan) permit holders and the CCoW (Coal Contracts of Work) permit holders. This division into two classifications was part of the passage of the Mining Act in 2009. Since this time, smaller and new mining companies have enjoyed priority when IUP permits are granted while the large mining companies have CCoW permits; some of them received their mining licences back in the 1980s.

The royalties for IUPs today amount to between 3% and 7%, depending on the coal quality, and are supposed to rise uniformly in stages to between 10% and 13.5%, depending on coal quality, in 2014. This would substantially increase production costs for these companies. In contrast, the CCoWs already have royalties of up to 13.5% today and would be less strongly affected by the increase, if at all. With regard to the planned increase in export taxes, the IUPs today are already subject to the

standard export tax levied on all minerals. In contrast, the CCoWs have never been required to pay export taxes, and they were promised in 2009 that changes in taxes would be possible solely on the basis of a voluntary agreement between CCoWs and government. Since the government is not willing to forego additional revenues from a possible increase in royalties, which provide estimated annual income of US\$389m, an increase in royalties in 2014 appears to be the more probable possibility.

The GR24 legislation, which required every coal mining company owned by foreign interests to sell shares of the company until a minority position of 49% had been achieved, has not yet led to any sales of shares of significant proportions.

Production

Discrepancies in the production figures are an annoyance in Indonesia, but apparently there is no way to put an end to it. For instance, the Indonesian Statistics Office issued an annual production figure for 2013 which was 56.3m tonnes higher than that from the Ministry of Energy. Applied to the royalties based on an average price of about US\$95/t, this means reduced revenues for the state of about US\$5bn.

For 2013, the Indonesian Coal Mining Association (ICMA) estimated a production volume of 415m tonnes p.a. in its forecast, but adjusted this figure downward to 360m tonnes in the middle of 2013. The Ministry, on the other hand, presumed a volume of 391m tonnes p.a. The figures published for the first half of 2013, 221m tonnes, indicated at this early point that the targets would be exceeded, as happened in the previous years. In its report of March 2014, the Australian Bureau of Resources and Energy Economics (BREE) estimated exports alone to be 411m tonnes. In addition, it esti-

mated that 74m tonnes p.a. are produced illegally. It is unknown in which statistics these quantities appear. McCloskey uses a volume of 422m tonnes as indicative production figures for 2013. This corresponds almost exactly to the 421m tonnes announced by the Ministry of Minerals and Energy (MEMR) for 2013. It must be considered, however, that these figures include lignite production, which is not disclosed separately. Based on export figures for lignite, especially 43m tonnes to China, and the approximate consumption of lignite in Indonesian power plants of an estimated 47m tonnes, our calculations indicate hard coal production totalling 342m tonnes in 2013.

Despite all of the confusion, the Indonesian coal mining industry continued to expand strongly in 2013. Production breaks down roughly into 1/3 high-quality hard coal and 2/3 low-calorific hard coal (sub-bituminous) and lignite.

The Largest Hard Coal Producers in Indonesia

Company	Output 2012 Mn t	Output 2013 Mn t	Exports 2012 Mn t	Exports 2013 Mn t
Bumi Resources	74.0	80.0	68.5	60.2
Adaro	47.2	52.3	37.9	43.1
Kideco	33.7	37.2	24.7	26.9
Banpu	28.2	29.4	25.7	18.2
Berau Coal PT	21.0	23. Sep	16.9	19.8
Bayan Resources	16.3	14.0	4.0	9.3
Bukit Asam	14.0	17.5	7.0	9.6
Total¹⁾	234.4	254.3	184.7	187.1
Indonesia Total	386	422	304	335

LB-T8 ¹⁾ Excluding additional purchases, provisional, partly estimated

Of the total output, 335m tonnes were exported and 87m tonnes were used for domestic consumption last year. The stockpile situation in Indonesia is unknown. The Indonesian mining industry estimates a further increase in production to between 415m and 450m tonnes p.a. for 2014. The government, on the other hand, wants to limit the level of production for 2014 to 400m tonnes p.a., of which 330m tonnes p.a. will be exported and 70m tonnes p.a. will be used in domestic consumption. The government wants to negotiate with the mining companies regarding curtailments to achieve this objective. Superficially, the production curtailments are being justified by the wish to prevent the country from becoming a coal importer in 2050 when the mines are exhausted. However, the current price level may also have prompted the government to take this step because the state would also profit from higher prices from royalty payments and export taxes. Contrary to this, both large and small mining companies are planning to increase production by double-digit percentages in 2014 to offset, at least in part, the losses they suffer from increased levies. If this is not possible, smaller mines producing coal with lower calorific values will find themselves in severe economic straits at the current price level.

The production in Sumatra, which comprises only a small part of the total Indonesian production, is above all required for domestic consumption because the deposits are located close to the power consumption centre in densely populated Java. Owing to Indonesia's good economic development, the demand for electric power is also growing, although not as rapidly as originally planned. The government-owned electric power provider PLN is still behind schedule in constructing new power plants. The demand for coal for the government-owned power provider therefore declined in 2013, which is why the obligation of the mining companies to make a certain

percentage available to the domestic market (DMO = Domestic Market Obligation) was reduced in 2013 from 24.74% to 20.3%. It is possible that this will be reduced even further. Besides hard coal production, there is lignite output of about 40m tonnes p.a. on Sumatra.

Infrastructure

Indonesia has six larger deep-water ports on Kalimantan and ten additional coal terminals (including Samarinda and Palikpapan) with a total capacity of about 350m to 370m tonnes p.a. Transshipment capacities are also available on Sumatra, but not for large ships. The continuing rise in production is approaching the limits of what the existing infrastructure can handle.

In the long term, continued growth will be possible only if there is improvement in the infrastructure farther away from the coasts (construction of railway lines) because as of today only the coal reserves which are either in the proximity of the coasts or have a good river connection for further transport to the coast have been developed. MEC Holding is planning the construction of a railway line with a length of 135 km from Central Kalimantan to East Kalimantan. PT Bukit Asam wants to expand its existing coal terminal Tarahan by adding 25m tonnes p.a. capacity. The project has been delayed, but after the last stage of expansion, it should be able to load Capesize ships with a cargo volume of 210,000 DWT.

Export

Exports in 2013 amounted to about 335m tonnes, an increase of 31m tonnes in comparison with 2012. So Indonesia expanded further its leading position as number 1 on the world market as steam coal exporter in 2013. According to McCloskey, about 130m tonnes (incl. lignite) of Indonesian coal were exported to China, almost as much as in 2012. The focus of

Indonesian exports is on the Pacific market. Volumes to the European and American countries remained almost unchanged at a low level in 2013.

But Indonesia's coal exports will undoubtedly continue to grow in the future to the extent that this is permitted by the world market price level on the one hand and the Indonesian government and production costs on the other. Indonesia's geographical location in proximity to the largest consumer centres China, Japan, South Korea and India is an advantage for export because of the lower freight costs and shorter travel times to these countries.

Coal Exports According to Markets

	2011 Mn t	2012 Mn t	2013 ¹⁾ Mn t
Pacific	259	292.9	326.2
Europe	10	11	8.4
USA	1	0.1	0.7
Total	270	304	335.3

LB-T9 ¹⁾ Estimated

The largest individual buyers are found in Asia and besides China in India, Taiwan, South Korea and Japan as well as China.

The Largest Buyers of Indonesian Coal

	2011 Mn t	2012 Mn t	2013 ¹⁾ Mn t
India	52.8	94.6	116.8
China	78.0	81.4	89.7
Japan	25.0	35.0	37.7
South Korea	36.7	37.8	36.0
Taiwan	19.1	28.6	28.0

LB-T10 Source: McCloskey, without lignite ¹⁾ Provisional, partly estimated

Exports to the Asian market will continue to increase. Kalimantan will remain the focus for exports.

Key Figures Indonesia

	2011 Mn t	2012 Mn t	2013 Mn t
Hard Coal Output	318	386	342
Steam Coal Exports	270	304	335
Imports Germany	0.1	0	0
Export Rate in %	85	79	98

LB-T11

RUSSIA / UKRAINE / KAZAKHSTAN

General

According to World Coal – referring to the written remarks from Dr Victor Samolenko, the Russian ambassador, at the “Coal Mongolia 2013 Conference” in Mongolia (http://www.mongolia.mid.ru/en/press_38.html) – Russia's coal reserves are sufficient to cover Russia's needs for the next 443 years, based on today's production level. Russia is second only to the USA in terms of verified hard coal deposits. Russia's share of worldwide coal reserves amounts to 18.2%, that of the USA to 27.6%. Domestic coal reserves in Russia amount to 157bn tonnes and comprise 107.9bn tonnes of sub-bituminous coal and lignite and 49.1bn tonnes of anthracite and bituminous coal (= hard coal). The resources which are theoretically mineable are many times greater and estimated to have a magnitude of 4 trillion to 5 trillion tonnes, 84% in Siberia and 6% in the Russia's Far East. The Kuzbass Coal Field has the largest proportion of mineable coal reserves (56%), followed by the Kansk-Achinsky Coal Field (12%), the

Zabaykalsk region (6%) and Khakassia (4%). Following conclusion of a restructuring process, the Russian coal industry has been completely privatised. Sixteen private mining companies in the legal form of limited stock corporations control 78% of the Russian coal production. Only Russia is of importance for the world market, so the discussion of Ukraine and Kazakhstan will be restricted to a few remarks.

Ukraine has already suffered economically from the political unrest which began at the end of the year. Production of 83.70m tonnes represented a decline by 2.22m tonnes p.a. (2.6%). Steam coal declined from 61m tonnes p.a. to about 60m tonnes p.a. (falling by 1.8%), and production of 23.73m tonnes p.a. of coking coal was 4.4% lower. On the other hand, Ukraine imported 11.4m tonnes p.a. of coking coal – most of it presumably from Kazakhstan. Almost 40% more coal, a total of 8.53m tonnes p.a., was exported, whereby a breakdown into steam and coking coal is not available. Seaborne exports to Turkey and other countries amounted to 1.24m tonnes. Substantially lower production of both steam and coking coal is expected in 2014 in view of the political situation.

Kazakhstan has large coal deposits, but production of 119.8m tonnes in 2013 was 0.6% less than in the year before; of the total, 114.6m tonnes were hard coal and lignite, 5.2m tonnes coking coal.

Production

Russia is one of the leading coal producing and exporting countries. Siberian Coal Energy (SUEK) alone holds a share of 30% of the total Russian supply of hard coal and a share of 25% in the Russian steam coal exports. Output of about 352m tonnes p.a. makes Russia the fifth-largest coal producer in the world. Coal is now mined in Russia in only 86 underground mines and

129 opencast pits. The coal mines are scattered over 25 different regions in Russia, over 16 coal basins and 85 cities. Coal is used primarily for power generation in Russia. About 25% of the power generating capacities are coal-fired power plants. The Russian government has agreed to a programme for the long-term development of coal to the year 2030 which will be carried out in detail by the Ministry of Energy in collaboration with federal and regional authorities. According to this programme, Russian coal production will increase to 355m tonnes p.a. by 2015, then rise to 380m tonnes p.a. by 2020 in the second stage and to 430m tonnes p.a. by 2030 in the third stage. The plan emphasises in particular the development of remote mining areas, including especially the Elga deposits in South Yakutia (Sakha Republic) in north-eastern Siberia, the Tyva Ulug-Khem Coal Basin in the Tuva Republic on the border between Siberia and the north-west of Mongolia and the Amur region in eastern Siberia. The Russian coal mining industry will be moving toward the east in the future.

Coal Production in Russia			
	2011	2012	2013 ²⁾
	Mn t	Mn t	Mn t
Coking Coal ¹⁾	65	74	
Steam Coal	271	279	
Total	336	353	352

*LB-T12 Source: McCloskey ¹⁾ incl. anthracite
²⁾ a division in coking coal and steam coal could not be found*

Coal production in Russia of about 352m tonnes remained at about the same level as the previous year. The demand for coal fell by 5% to 179m tonnes owing to declining domestic demand. Initial estimates indicate that the opencast pit output amounted to about 251m tonnes, underground production to 101m tonnes.

The most important area for Russian hard coal output is in the Kemerovo region. Production results for the mining companies in 2013 vary widely. The largest company in Russia, the Siberian Coal Energy Co. (SUEK), produced 96.5m tonnes, 1% less than in 2012, but sold a total of 1% more coal. OAO Kuzbassrazrezugol also produced about 1m tonnes less in 2013. The Siberian Business Union (SBU), on the other hand, increased production by 4.7% to 24.5m tonnes p.a.

The most important Russian producers developed as shown below:

Coal Producers in Russia		
Producers	2012 Mn t	2013* Mn t
SUEK	98.0	96.5
Kuzbassrazrezugol	45.0	43.9
Siberian Business Union (SBU)	23.0	24.5
Yuzhkuzbassugol	11.0	12.5
Vostsibugol	17.0	15.7
Raspaskaya	7.0	7.8
Yuzhny Kuzbass	14.0	15.1
Yakutugol	10.0	10.0
Total	225.0	226.0

LB-T13 * In part estimated

A total of 203m tonnes p.a. was produced in the Kuzbass Region; 55.4m tonnes p.a. of coking coal more than in 2012 represented an increase of 6.1%. The very large volume of coal stockpiled in the Kemerovo area continues to be a major problem. It amounted to more than 15m tonnes at the end of November 2013, about three times the permitted stockpile capacity at all of the Kuzbass coal mines together. This is caused by the lack of railway transport capacities and the seasonal conjunction of wheat and coal transports to the ports, preventing any significant reduction in the stockpiles.

Infrastructure

Coal Export Ports Russia			
	2011 Mn t	2012 Mn t	2013 ¹⁾ Mn t
Baltic Sea Ports and North Russia			
Murmansk	10.8	11.7	13.0
Vysotsk	3.2	3.3	4.9
Riga	13.5	14.9	13.8
Ventspils	6.8	7.0	7.4
Tallinn (Muuga)	0.3	0.0	0.0
St. Petersburg	0.3	0.0	0.0
Ust-Luga	12.3	15.3	17.7
Miscellaneous	0.8	1.7	2.5
Total	48.0	53.9	59.3
South Russia and Ukraine			
Mariupol (Ukraine)	1.7	1.3	0.9
Tuapse (Russia)	2.9	2.8	2.7
Yuzhny (Ukraine)	1.0	0.3	0.2
Miscellaneous	7.5	7.9	9.0
Total	13.1	12.3	12.8
Russia and Far East			
Vostochny	16.2	21.3	17.2
Vanino	1.5	1.1	3.8
Muchka	10.0	12.1	13.7
Miscellaneous	12.3	16.2	24.0
Total	40.0	50.7	58.7
Total	101.1	116.9	130.8

LB-T14 ¹⁾ Partly estimated

Export

In response to the rise in demand abroad on the one hand and the decline in domestic demand, Russia exported about 14m tonnes more in seaborne trade than in the previous year, a total of 130.8m tonnes. In addition, another approximately 13m tonnes were traded in domestic trade with former CIS states. Total exports came to just under 143m tonnes.

Key Figures Russia			
	2011 Mn t	2012 Mn t	2013 Mn t
Coal Output	336	353	352
Hard Coal Exports ¹⁾	101	117	130.8
• Steam Coal	93	109	116
• Coking Coal	8	8	14.8
Imports Germany	11.2	11.6	13.1
• Steam Coal	9.6	10.5	12.0
• Coking Coal	1.2	0.8	0.9
• Coke	0.4	0.3	0.2
Export Rate in %)	30	33	37
¹⁾ Seaborne only			

LB-T15

In north-western Europe, imports from Russia rose above all because of the low sulphur content and the high calorific values of the coal. Exports to the EU 28 grew by almost 15m tonnes. The UK purchased just under 17.7m tonnes of steam coal, 21% more than in 2012. In Germany, imports from Russia increased by 1.5m tonnes to 13.1m tonnes, making Russia the most important coal supplier for Germany.

USA

General

2013 was yet another year of great challenges for the American coal industry. Figures from the International Energy Agency show that natural and shale gas were traded at about one-third of the import prices of Europe. As before, this prompted a fuel switch from coal to gas for power generation in some power plants in 2013. Moreover, the US administration issued new standards for coal-fired power plants; the lower CO₂ emission

thresholds mean that the construction of new plants without CCS in the near future does not appear very likely for economic reasons. Moreover, financial incentives for energy efficiency measures and renewable energies have been adopted in the USA, and they could push coal-fired power generation even further into the background in the future.

Yet the coal industry and coal exports are a significant economic factor in the USA. American coal exports, which rose from 50m short tons (1 short ton = 0.9072 tonnes) or 45.36m tonnes in 2005 to more than 114m tonnes in 2012, represent substantial revenues for coal producers, transport companies such as railway and shipping companies and other logistics providers. According to information from the US Energy Information Administration, such revenues amounted to about US\$15bn in 2012, representing a share of about 25% of all export income.

Production

The challenges described above were exacerbated by the continuing fall of world market prices and the resulting pressure on the producers' profit margins. The closure of entire coal mines, cost-cutting programmes and the loss of jobs were the consequences in 2013, just as in the past. Production in the USA in 2013 declined by a total of about 17m tonnes (2%) from 922m tonnes to 905m tonnes.

The reasons for the decline in coal production can be found in the factors competition from shale gas and renewable energies and new environmental regulations. A large part of US power generation continues to be based on coal. But according to the Annual Energy Outlook (AEO) 2014 Early Release Overview from the US Energy Information Administration (EIA), coal-fired power generation declined from 42% in 2012

to 37% in 2013 and is expected to continue to fall to 34% by 2035. Another 31% of the power generation capacities which are to be newly constructed by 2040 are supposed to be based on renewable energies. On the other hand, the moderate increase in gas prices in 2013 revealed that there can be a very rapid return to coal, indicated by an increase in coal consumption, primarily for power generation, of about 3.5% and a decrease in coal stockpiles.

Gas has in the meantime acquired a share of power generation of about 28%, and this share is expected to rise to 34% by 2035. As more and more shale gas is offered on the market at prices which have risen from below US\$2/mm BTU in April 2012, about US\$56/tonne, to about US\$3.50/mm BTU or about US\$77/tonne free Henry Hub, in 2013, coal from the Appalachian region in particular, but from the Illinois Basin as well, is in part not competitive. When transport costs to the export ports are included, coal is almost twice as expensive as shale gas, depending on the gas price. Coal from the Powder River Basin and the Rocky Mountain region, on the other hand, can be produced at substantially lower prices and is almost certainly competitive with shale gas, especially if prices rise to above US\$3.50/mm BTU. Consequently, a slight rise in production to significantly more than 1bn short tons p.a. is expected for 2015. The average coal price ex coal mine (average nine-month price) is shown in the EIA's reference for 2012 at US\$1.98/mm BTU, which according to the reference case in the Outlook 2014 to 2040 is expected to rise by 1.4% annually to US\$2.96/mm BTU. This corresponds to US\$39.94/short ton or just under US\$44/t ex coal mine for 2012. In comparison, the average delivery price (excluding exports) came to US\$2.60/mm BTU, about US\$58/t, in 2012.

The fuel switch which has been observed in some areas has been largely possible without construction of new (gas-fired) power plants. More than half of the American gas-fired power plants are combined cycle power plants which serve no purpose other than the generation of electricity; their annual utilisation has risen especially, but is still only 50%, so there is still potential here. A secondary effect is that this fuel switch has dropped the CO₂ emissions to the lowest level in 20 years. In its most recent Outlook 2014, the EIA estimates that CO₂ emissions from energy generation will be a total of 92m tonnes lower in 2040 than was predicted just last year. The projected CO₂ emissions from energy generation will decline by 9% in comparison with 2005 by 2020. Owing to the decline in the use of coal for power generation, the share of CO₂ emissions from power generation caused by the firing of coal will decline as well by almost 8% by 2040.

The US power generation industry is facing an imminent wave of power plant shutdowns today. According to a study from Black & Veatch, as much as 60 GW from coal-fired power plants will be shut down by 2020, the lion's share in the eastern USA. The new environmental protection regulations obligate power plant operators to retrofit their facilities with purification equipment which will handle emissions of dust, SO₂, NO_x and mercury by 2015. On the other hand, the retrofitted plants will presumably have longer full load operating hours in the future, which in turn could slow down the decline in coal consumption. More power plant shutdowns were announced in 2013. This will undoubtedly be a substantial burden on coal production in the future. An even greater burden for coal- and gas-fired power plants could be the draft for the limitation of CO₂ emissions in newly constructed coal- and gas-fired power plants prepared by the

Environmental Protection Agency (EPA) at the request of President Barack Obama. The regulations provide that CO₂ emissions in coal-fired power plants may not exceed 453 kg/MWh; in effect, no coal-fired power plants can be built without CCS. The high investment costs and the lack of practical experience with the technology in large power plants mean de facto a construction moratorium for new coal-fired power plants. It is all the more important that the FutureGen 2.0 project in Illinois and the CCS retrofitting of the 176-MW block, including transport and storage of CO₂ in the Meredosia Energy Center, be continued with government aid and support. The US coal industry has responded to this development by closing mines, curtailing production or mothballing coal mines, especially in the Appalachians. But there are also developments in the other direction. Production in the Illinois basin increased by almost 6% to 134m short tons in 2013, while it fell from 148m short tons to 129m short tons in the Central Appalachian region.

Output Breakdown USA			
	2011	2012	2013
	Mn t	Mn t	Mn t
Appalachian ¹⁾	312	286	263
Interior	142	145	162
Western	540	491	480
Total	994	922	905
East of Mississippi	414	390	382
West of Mississippi	580	532	523
Total	994	922	905
¹⁾ Incl. coal from stockpile processing, incl. lignite Shown in metric tons			

LB-T16 Source: McCloskey and own calculations

Infrastructure

The decline in exports meant that the infrastructure capacities of railways and ports were not used as fully

as in 2012. However, developments differ from one port to another. In 2013, almost 50m short tons of coal were exported via the terminal Hampton Roads, for instance, an increase of almost 1.4m short tons in comparison with the same period in 2012. On the other hand, shipments from Hampton Roads and Baltimore together declined by 4.9% from 61.8m tonnes to 58.8m tonnes. New Orleans also recorded a decline in coal shipments. The decisive point for a further increase in exports is above all an improvement in the railway infrastructure and the corresponding port infrastructure on the West Coast so that the coal from the Powder River Basin can be exported to the Asian market. There have also been few investments in port capacities because of the sharp drop in world market prices. Only 2 years ago, there were projects for new export capacities of 125m tonnes p.a. in various ports in the states Oregon and Washington. But Kinder Morgan invested in capacity expansions such as in Pier IX in Newport News, Virginia, of 1.5m short tons p.a. to a total of 16m short tons p.a.; to 16m short tons p.a. in the International Marine Terminal (IMT); to 3m short tons p.a. in the Houston Bulk Terminal; and to 10m short tons p.a. in the Houston Deepwater Export Terminal. All of the expansion projects are scheduled for completion in 2014.

Export/Import

The USA continues to be strongly oriented to Europe in its exports, but not at any price. Consequently, exports of coking coal and steam coal declined by almost 4m tonnes each. The coal from the Illinois Basin in particular, which is high in sulphur content, was purchased only at adequate price reductions in comparison with the API#2 standard quality coal were made. Since these prices are below the break-even point for some mine operators and domestic demand stabilised slightly at the

same, time, it was better for them to sell their coal on the domestic market than to export it. The deliveries in 2013 were pursuant to past orders and/or the fulfilment of long-term contracts. Spot deliveries in the second half of 2013 in the direction of ARA came to an almost complete standstill. Seaborne export declined by 7.5m tonnes to a total of 99.6m tonnes in 2013. Overland exports to Canada represented more than 6m tonnes in addition.

Exports USA 2013			
	Coking Coal	Steam Coal	Total
	Mn t	Mn t	Mn t
Seaborne	56.1	43.5	99.6
Overland (Canada)	3.4	2.9	6.3
Total	59.5	46.4	105.9

LB-T17 Source: McCloskey

Seaborne exports of about 100m tonnes focused on Europe (over 50m tonnes) and Brazil and Korea (slightly more than 7m tonnes each). Germany was once again the largest customer in Europe and increased its imports by 22% to over 12m tonnes of coking coal and steam coal. Imports to the USA stagnated at the level of the previous year. The USA remained a net exporter. Substantially lower quantities of coal were exported to Japan, South Korea, India or China, for example, in 2013. The extent to which American coal remains competitive long-term in Asia will depend upon transport costs and other factors.

Import-Export Balance USA (Seaborne)						
	2008	2009	2010	2011	2012	2013
	Mn t	Mn t	Mn t	Mn t	Mn t	Mn t
Export (seaborne)	53	44	64	91	107	100
Import (seaborne)	31	19	16	11	7	7
Balance	22	25	48	80	100	93

LB-T18

Imports from Colombia increased slightly by 0.3m tonnes to 6.6m tonnes. No growth in exports is to be expected in 2014 if world market prices remain low. The EIA expects exports in a magnitude of only 105m short tons p.a. (95m tonnes p.a.) in 2014. If world market prices for both steam and coking coal become more stable and freight rates are low, steam coal for the Atlantic market as well as for the Asian market could again become interesting from the viewpoint of the US coal exporters. This could also be supported by the financial hedging opportunity presented by the newly created index API 10. This index, calculated on the basis of FOB Puerto Bolivar 6,000 kcal/kg, comprises the average of the Argus FOB Puerto Bolivar price determination calculated daily and the IHS McCloskey FOB Puerto Bolivar steam coal marker calculated weekly on Friday.

Key Figures USA			
	2011	2012	2013
	Mn t	Mn t	Mn t
Hard Coal Output	994	922	905
Hard Coal Exports	97	114	106
• Steam Coal	34	50	58
• Coking Coal	60	59	56
Hard Coal Imports	12	8	8
Imports Germany	8.1	9.8	12
• Steam Coal	5.1	7.1	9
• Coking Coal	3.0	2.7	3
Exports Rate in %	10	12	12

LB-T19

COLOMBIA

General

At the beginning of 2013, the Colombian central bank predicted economic growth of between 2.5% and 4.5%. Figures from Germany Trade & Invest from the end of 2013 estimated GDP of 3.7% and projected a rate of 4.2% for 2014. A major share of this comes from coal, which is Colombia's second-largest export product after oil. Logically, the state's revenues also rise and fall parallel to the quantity of coal produced and the level of the world market price. In this respect, 2013 was not Colombia's best year. During the first nine months, coal royalties declined by almost US\$160m (27%) to US\$423m (source: ANM, the national mining authority). A decline of 20% is calculated for the entire year.

The weekly 90-day price prediction from Platts also shows the significance of Colombian coal for the world market. This price estimate, which originally focused on steam coal with a calorific value of 6,300 kcal/kg NAR and FOB Bolivar, has been changed to a calorific value of 6,000 kcal/kg NAR and FOB Colombia, i.e. coal with a calorific value of between 5,750 kcal/kg and 6,100 kcal/kg FOB loaded in the ports Puerto Bolivar, Puerto Drummond, Puerto Nuevo, Rio Cordoba and Carbosan on Colombia's Caribbean coast is included in the price calculation.

Production

Colombia's coal sector experienced plenty of upheaval in 2013. There were a number of reasons and events for this.

When negotiations regarding pay rises conducted since the middle of May had failed to produce any results, there was a vote to strike in the Drummond mines and port on 23 July 2013. About 10,000 workers were

affected directly or indirectly by the strike. Drummond produces about 2m to 2.5m tonnes of coal a month, approximately 33% to 34% of Colombia's total output. Colombia's second-largest coal producer subsequently declared a case of "force majeure" for due deliveries. Nevertheless, this did not have any major impacts on the supply situation and prices because there was a large surplus on the market and European demand in the summer was low. The strike ended after 45 days. The loss in production is estimated to be about 3m to 4m tonnes. The 10-month cessation of production in La Francia mine has had just as little impact.

The next production disruption was triggered by an accident when a push barge fully loaded with coal capsized in the Drummond port, and the government authority ANLA suspended port operations for a time. In addition, production was hampered by the issue of a night-time operation prohibition for the Fenoco railway; no more block trains were permitted to travel from the mines to the ports during the night.

Toward the end of the year, it became evident that Drummond would not be able to comply as of 01/01/2014 with the requirement pursuant to the Colombian environmental legislation for direct loading of coal ships using enclosed conveyor belts instead of the previous practice of using floating cranes away from the ports and the transport of the coal to the ships in push barges. This requirement serves to avoid air pollution and was implemented by other mining companies by the deadline. The extension of the deadline by 3 to 6 months requested by Drummond was not granted. On the contrary, Colombia's president ordered the closure of port operations in Puerto Drummond in January 2014, making it unmistakeably clear that Colombia would vigorously act against any mining company which was in violation of applicable laws during the production and export of

coal. The president even accepted the government's loss of revenue caused by the action; in Drummond's case, the loss was estimated to be almost US\$6m per day: US\$1.27m in royalties, US\$0.87m in taxes, levies and fees, US\$0.1m in daily railway charges and about US\$3.7m for avoided payments to workers, subcontractors and suppliers.

Colombia Natural Resource (CNR) suffered a fate similar to Drummond when it had to close down its coal port and negotiate with Glencore to ship its coal through the latter's port while simultaneously building a new port on the Rio Cordoba with direct loading equipment.

Several weeks of strikes also hindered production at Cerrejón at the beginning of 2013, leading to production loss of about 3m tonnes, and at Prodeco in the middle of the year; there were also bomb attacks on the Cerrejón railway line, presumably by FARC guerrillas (Fuerzas Armadas Revolucionarias de Colombia) during the year. Hard coal production in Colombia therefore shrank by about 6% to 85.5m tonnes p.a. in 2013. In 2012, production for 2013 had been projected at 98m tonnes p.a., but this figure was corrected to 84m tonnes p.a. during the year. So production fell well short of the target of 97m tonnes p.a. set by the government.

The production in the domestic departments Boyacá, Cundinamarca and Norte de Santander reached 6.35m tonnes, about 0.6m tonnes (18%) less than in 2012. These mines produce primarily coking coal in underground operations. Worldwide decline in prices in conjunction with high production costs is presumably the primary reason for the fall. The decline in production for the fourth-largest coal exporting country also meant a corresponding decline in revenues from royalties for the government of an estimated 20%.

The Colombian Ministry of Energy and Mining expects total production of 104m tonnes for 2014, correspon-

ding to an ambitious increase of more than 20m tonnes (24%) in comparison with the actual figures of 2013. Cerrejón alone, the largest producer, produced 33m tonnes, 4.6% less than the year before (previous year 34.6m tonnes), but has set the values of 2012 as its target for 2014.

Production in the Cesar Department, where the mines of Drummond, Glencore and Goldman Sachs are located, declined by 3.9m tonnes (8%) to 42.8m tonnes. Production in Drummond's mines El Descanso and Pribbenow fell by 4m tonnes to 22m tonnes. Glencore, in contrast, increased production by 3m tonnes to 17.7m tonnes.

Metallurgical coal output also remained significantly below the level of the previous year. The coking coal industry has a cost problem, especially in central Colombia. Since the price level in 2013 continued to fall from the 2012 level, it is questionable whether output of coking coal can be expanded to between 8m and 10m tonnes p.a. by 2015.

Steam Coal Exports According to Companies

Exporter	2011 Mn t	2012 Mn t	2013 Mn t
Cerrejon	32.0	32.8	33.7
Drummond	21.8	25.6	20.0
Glencore	14.8	14.3	16.4
Goldman Sachs (CNR)	4.8	5.2	2.8
Other (incl. Central Colombia)	3.2	1.9	0.7
Total	76.6	79.8	73.6

LB-T20

Infrastructure

The capacity of the existing infrastructure for transport and export ports is utilised at a good level. Most of the coal is transported by rail to the coal terminals. A series

of project developments in ports, railway lines and rivers was carried out in 2013.

The national infrastructure authority (ANI) has agreed to a plan from Carvao de Colombia (CCX) to build a coal port with a capacity of 35m tonnes. The company has been granted a 30-year licence for the construction and operation of the port in La Guajira Department near the city Dibulla.

Colombia National Resources (CNR), a subsidiary of Goldman Sachs, has obtained the environmental permit for the expansion of the Rio Cordoba port. An investment of US\$137m will increase transshipment capacity from the current 5m tonnes p.a. to 12m tonnes p.a., and the dredging of the port will enable Capesize ships with a cargo capacity of up to 140,000 DWT to enter the port.

In the middle of 2013, Prodeco opened a railway discharging station and a storage facility with a capacity of 1.1m tonnes in addition to its new port Puerto Nuevo near Santa Marta, which has a transshipment capacity of 21m tonnes p.a. The company intends to offer part of this capacity to third parties.

The Colombian government plans to invest almost US\$1bn in a programme for the improvement of navigability on Colombia's longest waterway, the Magdalena River. The upgrading of the river is planned over a length of 900 km and will secure year-round navigability between the cities Puerto Salgar and Bocas de Ceniza in Barranquilla from 2019. The first step will be to dredge the river for a draught of 7 feet along the length of 652 km.

The British company Holtrade Atlántico wants to invest US\$147m in the existing Colombian railway network. The decision was made during a tender procedure conducted beforehand by the national infrastructure authority. The first phase, which consists of the overhaul

of the 875 km of Colombia's central railway system, has been launched. The existing railway facilities will be upgraded during this phase. Once the railway system has been upgraded, it can be connected to the 192-km-long Fenoco Line which transports coal from the mines in Cesar Department to the ports in Santa Marta and Cienaga. Afterwards, the system will be expanded. Once expansion has been completed, it will be possible to transport coal, especially coking coal, from the country's interior to the ports in the north or west, reducing the transport costs by 40% in comparison with transport by lorry.

Export

The many different disruptions prevented Colombia from increasing its exports. Despite a decline of 6.2m tonnes to 73.6m tonnes of steam coal, Colombia was able to defend its status as the fourth-largest seaborne coal exporting country.

Colombian steam coal goes primarily to the Atlantic market. Of the total exports of steam coal (73.6m tonnes), 72% went to European countries, including Turkey, 27% to North and South America and only a little more than 1% to Asia. Exports to Europe declined by almost 6m tonnes. Exports to Germany, on the other hand, rose slightly to about 9.8m tonnes. Exports to the USA suffered a further decline of about 10% following 2012. Hard coal exports in 2013 to the USA were 0.5m tonnes lower. The greatest decline was in exports to Asia, falling by 75% to only 1.02m tonnes.

Steam Coal Exports¹⁾ – Structure of Colombia

	2011 Mn t	2012 Mn t	2013 Mn t
America	18.3	17.0	20.0
North America (USA + Canada)	8.4	8.4	6.1
South and Central America	9.9	10.8	13.9
Asia	1.9	4.2	1.0
Europe	55.9	58.6	52.6
Mediterranean Region	21.0	24.8	20.7
North-west Europe	34.9	33.8	31.9
Total	76.1	79.8	73.6

LB-T21 ¹⁾Coking coal and coke are not included in the export figures

Key Figures Colombia

	2011 Mn t	2012 Mn t	2013 Mn t
Hard Coal Output	85.8	89.2	85.5
Hard Coal Exports	81.2	81.0	74.7
• Steam Coal	76.1	79.8	73.6
• Coking Coal	5.1	1.2	1.1
Imports Germany	10.8	8.9	9.8
Export Rate in %	94	91	87

LB-T22

REPUBLIC OF SOUTH AFRICA

General

Four developments had an impact on the South African coal industry in 2013:

1. How can, or should, the country cover its steadily rising demand for energy from domestic energy sources?

2. How can the coal industry be stimulated by opening up opportunities for greater exports to the so-called junior mining operations and others and the development of new mines be financed without intervening in existing rights?
3. What infrastructural prerequisites must be met for this purpose?
4. To what extent will the further development of coal mining be fostered or hindered by political or legislative decisions regarding a free development oriented to open markets?

Even though there are no final answers, certain trends can be discerned: the regulatory environment is, and will remain, uncertain. Government statements regarding future mining policies are ambiguous, but point in the direction of possible interventions in the freedom of the coal mining companies to make decisions. The background is the much-discussed amendment of the Minerals and Petroleum Resources Development Act from the year 2004. It is expected to give the competent minister the possibility of declaring, in accordance with his/her own judgement, certain raw materials to be strategically important or as serving a specific purpose. The minister could, for instance, set export quotas for strategic raw materials such as coal because they play a major role for the country's own energy supply. In addition, the government has plans for an investment promotion and investment protection act which, according to critics, could change South Africa's bilateral investment trade agreement in such a way that expropriations without payment of compensation would be possible and that the rights of foreign investors could be curtailed. The government, on the other hand, regards the amendment of the act to be harmless because it would create growth and more jobs by further industrialising South Africa's economy. The government-owned power

producer Eskom is supporting the amendment of the act because of fears that there will otherwise be no way to control electricity prices as the government power regulator has limited Eskom's freedom to raise rates, but the mining companies can (freely) raise the price of coal up to the level of exports. On the other hand, there are reports that additional capacity of 67m tonnes p.a. until 2022 will be required to secure the supply of coal to Eskom's power plants. But investments of foreign companies in new coal mines will not be encouraged if at the same time the South African government wants to exercise control over the return on the investment. We must wait and see to what extent the government accepts the criticism and proposals for changes to this bill.

In contrast, there is good news for energy-intensive industries. The document published by the national treasury in May 2013 on the CO₂ tax, which was supposed to be implemented per 01/01/2015, has been postponed by 2 years to the end of 2016.

The "South African Coal Road Map", which was issued in 2010 and concerns the current structure of the coal industry and its future developments up to 2030, has been updated. With respect to South Africa's future supplies of coal, it determines that Eskom will have to deal with a coal shortage of 60m tonnes p.a. from 2015.

Production

After many years of stagnation, more coal was finally produced again in South Africa in 2012. The situation reversed in 2013. South African production appears to have fallen by 6% to 245m tonnes, thereof 241m tonnes steam coal, 4m tonnes anthracite and almost no coking coal. Still, there are questions as to how long the demand of the state utility company Eskom can be secured using low-cost coal of lower quality. Eskom fears that it will no longer be able to procure enough coal

after 2015. At this time, Eskom consumes about 125m tonnes p.a. This demand for coal could increase by another 28% to a total of 160m tonnes p.a. by 2020. These circumstances have led to deliberations about producing future quantities to cover this demand from new mines arising from the Black Empowerment economy. The Department of Industry and Commerce has stated that new coal production for Eskom in the future will have to come from 50% plus one share from BEE companies. Costs of coal production also rose significantly last year. Production became even more expensive when wages increased by between 8% and 11% and transport costs increased, but it was possible to offset this to some extent by a devaluation of the rand with respect to the US dollar. Moreover, the production costs could be burdened in the future by a further overproportional increase in bulk goods freight charges by the state-owned shipping and logistics company Transnet, by an increase in electricity rates and by plans for export duties on certain types of coal, an attempt to prevent coal of poorer quality which would normally be sold to Eskom from going to the Asian market. The worries appear to be justified. IHS McCloskey and Argus Media have already started the new index API#3 (FOB Richards Bay) as a South African physical index for coal with a calorific value of 5,500 kcal. This is IHS McCloskey's response to the rising trend in Asia to purchase low-calorific coal.

The domestic markets in South Africa consumed the following quantities in 2013:

Consumption of the Domestic Markets			
	2011 Mn t	2012 Mn t	2013 Mn t
Power Generation	132	132	120
Synthetic Fuels (Sasol)	45	45	39
Industry / Metallurgical Industry	7	20	18
Heating Market	3	3	4
Total	187	200	181

Exxaro Resources wants to develop a number of projects for coal production in the Waterberg Region, especially for coking coal production, as a means of reducing the dependency on Eskom (3/4 of the production, about 42m tonnes, go to Eskom). A joint venture between Sasol and Exxaro expects to receive a production licence for a new mine in the Waterberg Region of Limpopo Province. The coal could be used for Eskom and export. The original intention of using the coal for a new coal liquefaction plant in Mafutha will not be pursued further for the moment. ContiCoal has received production rights for the mine De Wittekrans with a planned output volume of 3.6m tonnes per year in the Ermelo Coal Field in Mpumalanga Province. Coal of Africa has received the environmental permit for Makhado, a coking coal project in Limpopo Province with a capacity of 2.3m tonnes p.a. of coking coal and 3.2m tonnes p.a. of steam coal.

The supply of electric power to South African industry has become critical with the consequence that Eskom has asked its largest power customers to reduce power consumption by 10% during peak hours. The state-owned company Eskom is responsible for 96% of the power supply in South Africa. Electricity prices are determined by the national regulator and are not rising as fast as Eskom would like. Eskom's installed capacity amounts to 44,084 MW, of which 37,715 MW is from coal-fired power plants. Capacities of an additional 10,000 MW are under construction. Eskom fires 120m to 130m tonnes of coal p.a. for power generation, corresponding to about two-thirds of the total consumption in South Africa. The state-owned utility company Eskom has repeatedly pointed out that South Africa's long-term coal supply for coal-fired power plants is at jeopardy if the coal promotion policies are not revised.

The new construction of coal-fired power plants by

Eskom will increase domestic consumption further, although not until a later time. The construction of the power plant Medupi with 6 blocks of 794 MW each and of the power plant Kusile with 6 blocks of 800 MW each is far behind schedule.

Infrastructure South Africa

The expansion of the current rail and port infrastructure is the key to releasing additional potential in production and export. Furthermore, the so-called junior mining companies often do not have access to the existing infrastructure, a circumstance which limits their opportunities to obtain funding from the market for the development of new coal mines.

Development of the infrastructure is currently overshadowed by fundamental differences of opinion between the state-owned railway operator Transnet and Richards Bay Coal Terminal (RBCT), the largest port for coal exports, and its shareholders. In particular, Transnet is putting pressure on the shareholders during negotiations for a new transport agreement to give up additional export capacities for benefit of the small junior mining operations. The land belongs to the Transnet Port Authority, which has leased it to RBCT. Transnet has also given thought to constructing its own port for coal exports next to the current one. On the other hand, RBCT wants to expand the capacity of the port itself during a 6th expansion phase from 90m tonnes p.a. to 110m tonnes p.a. and allow Transnet, for instance, to use this capacity. This would be the more economical solution for the expansion of the current terminal. The RBCT shareholders criticise above all the poor transport service of Transnet. They argue that the railway company is not capable even today of transporting enough coal to Richards Bay to achieve a full utilisation of the port's capacities. According to information from Transnet, it

can in fact transport a maximum of only 75m tonnes p.a. RBCT posted a new record mark in 2013 by transshipping a little over 70m tonnes p.a., but this is still far away from its capacity of 91m tonnes p.a. and only slightly above the transshipment in 2005 of 69m tonnes p.a. RBCT is planning transshipment of 75m tonnes p.a. for 2014 and wants to increase this volume to 81m tonnes p.a. in 2015. According to information from Transnet, the required investments have been made to be able to transport this volume in 2015. This includes in particular the procurement of the so-called Schougolo train system comprising 200 railway carriages.

In addition, Transnet wants to build a new rail line from the Waterberg Basin to RBCT because the expectation is that activities for the opening of mines will increase there in the coming years and should in part compensate for the declining output from Mpumalanga Province.

Exports Through South African Ports

	2011 Mn t	2012 Mn t	2013 Mn t
RBCT	65.5	68.3	70.9
Durban	0.7	2.4	0.8
Maputo/Mosambik	1.1	4.0	1.2
Total	67.3	74.7	72.9

LB-T24 Source: IHS South African Coal Report No. 2170

Information from RBCT itself shows that 70.2m tonnes were exported from here in 2013, while the South African Department of Mineral Resources puts the figure at 70.9m tonnes, an increase of 2.6% over the previous year.

Export Rights to Richards Bay Coal Terminal after Expansion

Richards Bay Coal Terminal (RBCT)	Mn t/year 91.00	% 100
BHP Billiton Energy Coal SA	17.95	19.73
Anglo Coal	19.80	21.75
Xstrata	15.05	16.54
Optimum Coal Terminal	6.50	7.14
Total Coal	4.09	4.49
Sasol Mining	3.60	3.96
Kangra Coal	1.65	1.82
Koornfontein Mines	1.50	1.65
Exxaro Coal	1.00	1.10
Exxaro Coal Mpumalanga	0.86	0.95
South Dunes Coal Terminal	6.00	6.59
Other Exporters (incl. BEE)	9.00	9.89
Smaller Junior Mining Companies	4.00	4.39

LB-T25

Following expansion of the capacity, BEE companies are entitled to 28.86m tonnes of export rights, corresponding to a share of 32% in RBCT.

Export

Exports of just under 73m tonnes in 2013 were unable to match the six-year high of 2012 and declined by 3m tonnes.

Structure of the Seaborne Exports in 2013

	Total Mn t	Europe ¹⁾ Mn t	Asia Mn t	Miscellaneous Mn t
Steam Coal	71.8	20.6	45.4	6.2
Anthracite	1.1	---	0.2	0.4
Total	72.9	20.6	45.6	6.6

¹⁾ Incl. neighbouring Mediterranean countries

LB-T26 Source: IHS South African Coal Report No. 2170

The structure of exports continued to shift towards Asia. The decreased demand from Europe as a consequence of prices was compensated by corresponding demand from India and China in particular; however, they

purchased 34m tonnes p.a. in 2013 from South Africa, about 2m tonnes less than in 2012. Taiwan purchased 5.8m tonnes p.a., Pakistan 2.3m tonnes p.a. In view of India's high need for steam coal in the future, the exports to this country will presumably continue to rise.

Europe, including the Mediterranean region (Turkey, Israel and UAE), remained an important market, but took only 28% of the exports, This was less than in 2012. The largest European consumers were Italy, Spain, Germany, Turkey and Israel.

Key Figures Republic of South Africa			
	2011 Mn t	2012 Mn t	2013 Mn t
Hard Coal Output	252.0	260.0	245.0
Hard Coal Exports¹⁾	67.3	76.2	72.9
• Steam Coal	66.5	75.4	71.8
• Coking Coal	0.8	0.8	1.1
Imports Germany	2.6	2.0	2.5
• Steam Coal	2.6	2.0	2.5
• Coking Coal	0	0	0
Export Rate in %	26.7	29.3	29.7

¹⁾ Seaborne only

LB-T27

MOZAMBIQUE

General

Thanks to its coal reserves and deposits, Mozambique is in a position to become a large coal exporter in the coming years. Plan figures indicate rapidly growing production and export, especially of high quality coking coal which, until recently, also fetched high prices. But claims and reality are sometimes far apart. The confront-

tation with harsh reality has led to reconsideration today of projects which have been initiated or launched. There are currently four companies in possession of a mining licence; of this number, Rio Tinto, Vale and Beacon Hills are already mining and exporting coal. Anglo American did not acquire the majority interest of 59.4% in Minas de Revuboe after all and is looking for other opportunities to produce coking coal in Mozambique. Jindal Steel & Power has acquired a production licence and began opening the mine in 2012.

Regulatory changes, disruptions due to weather conditions, unrest and attacks on the only railway line Sena by former guerillas (now the Renamo Party) have transformed the euphoric production and export targets into sober view of the situation, which has become apparent commercially in the high level of extraordinary write-offs. The greatest problem has been and remains the lack of infrastructure, especially in the transport sector, and a dependable regulatory environment. How sensible the situation is was illustrated at the beginning of the year when heavy rainfall washed out parts of the Sena railway line and exports became impossible owing to a lack of alternatives. The government suffered a loss in revenues from exports.

Production

Production was significantly hindered by heavy rainfall causing flooding of the opencast pits. It was not possible to achieve the established target of 8.9m tonnes p.a. subsequent to 4.9m tonnes p.a. in 2012, and actual output in 2013 reached an estimated 7m tonnes p.a. only, 3.2m tonnes of it coking coal. But the government's own targets are much more ambitious: production of 11m tonnes p.a. is calculated for 2016, rising to 50m tonnes p.a. by 2020 and to 100m tonnes p.a. of coking and steam coal by 2022.

The mining company Beacon Hill started producing coal in the Minas Moatize Coal Mine in the middle of 2012. The production is supposed to grow to 4m tonnes p.a., 2.2m tonnes p.a. for export. The targets at the beginning were 500 kilotonnes for export and 500 kilotonnes for the domestic market. However, shortly after the first trial train run to the port in Beira at the end of 2013, the work in the mine was halted and the railway carriages were offered for sale on the market.

The Mozambique company Ncondezi Coal has also received a licence for coal mining. Vale corrected its production target from the original 4.9m tonnes p.a. to 3.4m tonnes p.a. and estimates exports of coking coal in 2016 of only 5m tonnes and not 11m tonnes p.a. It also intends to sell 35% of its joint venture with the CFM, which is supposed to construct and operate the transport corridor to the port in Nacala.

Infrastructure

Work on a series of infrastructure measures, especially railway projects, continues in Mozambique for the purpose of permanently improving the export of coal:

A new railway line from the coal mines in the Moatize Basin to the port in Nacala is supposed to be completed in 2015. The probability that this joint venture between Vale and the state-owned railway company Caminhos de Ferro de Mocambique (CFM) will be realised is high, and it is expected to transport 9.7m tonnes p.a. of coal in its first year. After completion of the final stage, it is planned to have a capacity of 22m tonnes p.a.

Moreover, this project includes a coal terminal with a capacity of 18m tonnes p.a. and the deep-sea port Nacala, which is supposed to be able to serve Capesize ships and to start up operations in 2014. In addition, existing railway lines will be upgraded and new tracks will be laid by the government.

Export

It can be assumed that the 7m tonnes of coal – steam and coking coal – which were produced were almost completely exported. But there are no official figures. The flooding of the Sena railway line and the production sites in Tete Province led to “force majeure declarations” by Vale, Rio Tinto and others.

BOTSWANA

Botswana, as well as South Africa and Mozambique, has coal deposits. Botswana's Morupule coal deposits are among the world's largest and could have export capacities of 100m tonnes p.a. (according to announcements). Namibia has offered to build a railway line, which would transport primarily coal, from Botswana to the port in Namibia for the export.

However, the initial exports are supposed to go from Botswana to Durban and be loaded onto ships there.

CANADA

Production

While production in the USA declined, Canada posted a rise of 3.6% in production. In 2013, almost 69m tonnes of hard coal (= 87%) and lignite (= 13%) were produced. The producing provinces are British Columbia, Alberta and Saskatchewan. Of this output, about 42m tonnes of steam coal, including 9m tonnes of lignite, from Alberta and Saskatchewan were mostly consumed in local power plants. Almost all of the hard coal production (33m tonnes) – largely from British Columbia and

Western Alberta – is exported as coking coal, PCI coal and, in smaller quantities (3.5m tonnes), as steam coal. 87% of the steam coal is used for power generation. A decline in Canada's steam coal consumption which has been noted results from the cessation of coal-fired power generation in Ontario as of the end of 2013. According to the projection for supply and demand until 2035 from the National Energy Board, this will result in a decline in the demand for coal from the original 20.5m tonnes in 2008, when the first steps to ending coal-fired power generation were taken, to 7.8m tonnes in 2015. The low price level in 2013 has kept the number of new projects low because the production costs are relatively high, but the quality of the coking coal is very good. A new coking coal mining area with estimated reserves of 7bn tonnes has been developed in West Canada by the Canadian Dehna International Mines Group. The field, with an area of 150 square kilometres, could become the world's largest coking coal mine. Colonial Coal wants to develop the so-called Huguenot Coking Coal Project in the north-east of British Columbia by investing a total of US\$387m. The coal is supposed to be transported to the Ridley Terminals by rail. On the other hand, the Canadian government has decided not to issue any new licences for coal production in the Klappan Region in British Columbia.

Infrastructure

The Ridley Terminals shipped 12.2m tonnes in 2013 and are near the limits of their capacity. Investments of US\$200 million are planned to expand capacity to 25m tonnes p.a. by 2014. Export coal is delivered to the Westshore Terminal near Vancouver by Canadian Pacific Rail (CP), while Canadian National (CN) transports coal to the Neptune Bulk Terminal.

Handling Capacities 2013

Terminal	Capacities 2013 Mn t/a	Exports 2014 ¹⁾ Mn t/a	Capacities 2015 Mn t/a
Neptune Bulk Terminal	12.5	7.5	18.5
Westshore Terminal	33.0	30.1	36.0
Ridley Terminal	12.0	12.2	25.0
Total	57.5	49.8	79.5

LB-T28

Exports

The seaborne exports of 37.6m tonnes break down into about 3.2m tonnes of steam coal and about 34.4m tonnes of coking coal. Only 0.9m tonnes of coking coal went overland to the USA.

Key Figures Canada

	2011 Mn t	2012 Mn t	2013 Mn t
Hard Coal Output¹⁾	67	67	69
Hard Coal Exports	33	35	38
• Steam Coal	6	4	3
• Coking Coal	27	31	35
Imports Germany	1.7	1.5	1.2
• Coking Coal	1.7	1.5	1.2
Export Rate in %	49	52	55

¹⁾ Incl. hard lignite

LB-T29

VIETNAM

General

Vietnam's economy is on a steady course of growth. According to the figures published by the General Statistics Office of Vietnam (GSO), GDP grew by 5.4% over 2012, an improvement of 5% in comparison with the previous year. Industry especially grew by 5.4% (previous year 4.5%). Growth comes essentially from exports and foreign investors. Vietnam is reported to have received US\$21.6bn in direct foreign investments, which would correspond to an increase of 55% over 2012. Some analysts see the strong growth as a result of the government's progress in significantly raising Vietnam's economic efficiency and stability by attracting foreign capital and direct investments. The successful fight against corruption and inflation is also viewed as the key to heightening trust in Vietnam's economy among foreign direct investors. The government is aiming for economic growth of 5.8% in 2014.

Production

The strong economic growth has led to higher power consumption and higher coal consumption. The government has attempted, with varying degrees of success, to reduce coal exports of domestic hard coal to the benefit of consumption in its own country. If it continues down this road, Vietnam will soon change from an exporter to a net importer of coal.

The production target for the state-owned company Vinacomin (Vietnam Coal and Mineral Industry Corporation) was between 43m and 46m tonnes p.a. But the fluctuations on the market resulted in coal consumption which was too low, and the target was revised downward to 39.1m tonnes p.a. In actual fact, 42.6m

tonnes were produced by the end of 2013, of which 38m tonnes were sold.

However, the production of 42.6m tonnes represents a decline of almost 2m tonnes. The targets for 2014 are production of 37.7m tonnes p.a. and sales of 35m tonnes p.a. Domestic consumption amounted to about 29m tonnes, approximately the same as in 2012. Most of the output is anthracite; small quantities of lignite and sub-bituminous coal are also mined. The latter are used exclusively for domestic consumption while the anthracite output goes largely to exports.

However, the growing demand for power also requires a rise in coal production. Vietnam's coal development plan to 2020 and its vision to 2030 provide targets for production capacity of domestic hard coal of between 50m and 55m tonnes p.a. by 2015, of between 60m and 65m tonnes p.a. by 2020 and of over 75m tonnes p.a. in 2030. Investments, especially in machine technology, and advanced mining methods are planned to achieve these targets. But this will not suffice to provide Vietnam's dynamically growing economy with adequate coal supplies. This is why the demand for imports of steam coal will rise steadily. Three large coal-fired power plants will commence operation by 2017, two of them in the Mekong Delta in the south of Vietnam and the third in the central province Quang Bing. All three coal-fired power plants will need a total of about 10m tonnes p.a. of coal. Petrovietnam, the state-owned oil and gas group, has, acting through its subsidiary PVCoal, concluded long-term contracts with Australian and Indonesian coal suppliers for the delivery of 12m tonnes p.a. of steam coal to secure supplies for these power plants. The full performance of these contracts will turn Vietnam into a net importer.

Export

Seaborne exports again declined, this time by 2.4m tonnes, to 12.8m tonnes p.a. in 2013, a drop of almost 16%.

Besides China, Japan and South Korea buy only smaller volumes. The Vietnamese anthracite coal is also used in part as PCI coal.

The Vietnamese export of anthracite steam coal is in part low calorific and is profitable only because of the short sea routes to China. However, the government wants to reduce exports in favour of consumption in Vietnam. For this purpose, the coal export tax was increased from 10% to 13% in July 2013, causing a significant decline in exports. The national government revoked the tax increase again in September and reduced the coal export tax (back) to 10%. Even more important was the government's decision to sell coal for power generation at coal production cost plus profit in 2014 so that it can be sold at world market prices in 2015, which has not previously been the case.

Key Figures Vietnam			
	2011 Mn t	2012 Mn t	2013 Mn t
Output	49.0	44.5	42.6
Export	17.2	15.2	12.8
thereof China	14.0	12.1	13.1 ¹⁾
Export Rate in %	35	34	30

¹⁾ Incl. lignite

LB-T30

PEOPLE'S REPUBLIC OF CHINA

General

The Bureau of Resources and Energy Economics (BREE) has the general impression that China's economy is experiencing a moderate downward trend. GDP fell from 10.2% in 2010 to 8.1% in 2011 and further to 7.7% in 2012. The national government declared a target of 7.5% for 2013. In November 2013, the Chinese government published new benchmarks for what it considered to be acceptable economic growth. The government calculates that the GDP must rise by a minimum of 7.2% every year to maintain the stability of employment levels. After a cooling-down period of two and a half years, China's economy is now entering a new phase of growth at a medium rate of around 7.5%. The government does not wish to carry out any stimulus programmes in the future, but has simultaneously set the acceptable lower threshold for growth at 7% over the next few years. Fenwei Energy assumes that the "Golden Age" for coal in China from rapid economic growth, flourishing trade and rising (coal) prices which had lasted since 2003 is past. Its reasoning is that the combination of falling world market prices, overproduction of coal in conjunction with a strongly rising share of renewable energies plus a significant expansion of production capacities as well as new environmental regulations for the protection of the population, especially from dust emissions, will confront the coal industry with major challenges. Crude steel production rose by almost 8% to 779m tonnes, while pig iron production increased by 6% from 669m tonnes to 711m tonnes.

Power/Crude Steel/ Pig Iron Production

		2011	2012	2013
Power Generation	TWh	4,690	4,875	5,245
Crude Steel Production	Mn t	694.8	724.0	779.0
Pig Iron Production	Mn t	683.3	669.0	711.0

LB-T31

At the end of 2013, installed power generation in China amounted to 1,247 GW, an increase of 94 GW (+13%), according to statistics from the National Administration of Energy. The installed coal-fired power plant output in 2013 came to about 862 GW, increasing by about 4% (36.5 GW) in comparison with 2012. Compared with 2012, however, the increase in comparison with the previous year declined by 30% from 52 GW to 36.5 GW. The share of coal-fired power plants in the total installed power generation capacity fell from 71.59% to 69.14%. Installed hydropower capacity rose by almost 30 GW to almost 280 GW, a result of the operational startup of the hydro power plants Xiluodu and Jinping. New wind farms with a capacity of just under 15 GW were installed, and the total installed wind power capacity at the end of 2013 amounted to 75.48 GW. Nuclear power plants with new capacity of 2 GW entered the market. Total capacity of Chinese nuclear power plants amounts to 14.6 GW. The Chinese power generation capacities will continue to rise, but no longer as rapidly as in the past. The high levels of air pollution in the metropolises has prompted the government to steer more closely the construction of new power plants. Nevertheless, the China Electricity Council assumes growth of 96 GW (13%) to a total of over 1,300 GW for 2014, but expects an increase of only 4% to about 1,400 GW in 2015. However, the new capacities should consist of generation from hydro power, wind, solar or nuclear power

plants, and the share of coal in power generation should fall from 65% in 2014 to 64% in 2015.

Power generation and consumption grew strongly again. Power generation in total rose by 8% to 5,245 TWh; power generation from coal rose by 7% to 4,215 TWh, a consequence above all of the low coal prices. Power consumption in 2013 rose by 7.5% to 5,322 TWh and is expected to rise further to 5,720 TWh in 2014. According to estimate from the Ministry of Natural Resources, energy consumption will peak between 2030 and 2035, but will rise by an average of 4.5% annually until then. Changes are also becoming apparent on the electricity market. Power producers operated very profitably in 2013. This was above all owing to falling coal prices in conjunction with electricity prices remaining at the same level. The five largest power producers alone – Huaneng, Guodian, Datang, Huadian and China Power Investment – posted over US\$12bn in earnings according to announcements from the Bureau of Statistics. These companies stand for power generation capacity of 584 GW, 47% of the total capacities installed in China. These high earnings were strongly supported by coal prices; between January and September 2013, the price of coal fell by US\$15.23/t (from US\$99.72/t to US\$84.49/t). In contrast, profits in the coal industry declined by 36.6% during the same period. However, before 2012, the power producers earned very little money or even incurred high deficits. This could be a different story in the future on a deregulated power market. The government wants to drive deregulation in the electric power sector forward. Electricity prices for industry and manufacturing are supposed to develop in line with supply and demand and should be free of any government intervention. Only electricity to private households will not be turned over to the free market so that inflation rates can be kept under control.

Production

Coal production was expanded further and, according to estimates from the China National Coal Association, rose by 1.4% to 3,700m tonnes in 2013.

The consolidation of the domestic coal industry in all of China was continued in 2013. Impetus comes from the unchanged need to improve environmental and occupational safety standards in the smaller mines by merging or closing them. China's large mining companies have made investments in occupational safety, machinery, equipment and training, making tremendous progress in the reduction of fatal accidents in the mines, but this figure is still very high in comparison with Western coal mines.

According to information from the State Council, about 1,200 shutdowns in 2013 will be followed by another 1,725 small coal mines with a total production volume of about 117m tonnes in 2014. This step is part of the programme to shut down coal mines producing coal of low quality. Mining companies are to be encouraged to merge and to introduce technological improvements. Mines with a capacity of less than 90,000 tonnes a year as well as those which are producing without a permit or which are in violation of occupational safety regulations are to be compelled to shut down. In contrast, there are expansion plans for new production capacities of 860m tonnes p.a. by 2015. This is in contrast to the government's intention to cap coal production by 2015 to 4.1bn tonnes from the current 3.7bn tonnes. But it is unclear whether this applies to coal for all purposes or only for power generation. The limitation to power generation is indicated by the fact that coal liquefaction and coal-to-chemicals facilities are being built in China, and estimates show that they will trigger a demand for as much as 1bn tonnes of coal by 2020. This would also alleviate pressure on the mines, which seem to be

suffering from overcapacities at the moment. The large coal producers, on the other hand, foresee strong growth in production capacities. The Shenhua Group wants to develop new production capacities of 32m tonnes in Inner Mongolia in 2014 and to increase total capacity from 470m tonnes to 600m tonnes by 2015. The Shanxi region, on the other hand, has stopped the work on all of the mines under construction until occupational safety inspections have been carried out. This measure affects about 400 projects with a capacity of 500m tonnes. The complete China Coal Group wants to increase production to a total of 300m tonnes p.a. Additional mines which have been under construction since 2012 and are scattered across the country are supposed to have a total capacity of 1.1bn tonnes p.a., according to the China National Coal Association, while unofficial statistics speak of additional capacities of 220m tonnes p.a. which are supposed to enter the market in 2014.

Much speaks in support of the appraisal of Wood Mackenzie in its study entitled "China: The Illusion of Peak Coal". The study disputes the prediction that coal consumption will pass its zenith before 2030. Despite all of Beijing's efforts and appeals to limit coal consumption in the country and to make greater use instead of alternative conventional and renewable energy sources, Wood Mackenzie believes that the country's great hunger for steam coal will cause the demand for coal in China to double and grow to almost 7bn tonnes by 2030. However, no new permits for coal-fired power plants are to be granted in the key areas for industry, including Beijing-Tianjin-Hebei, the North China region, the Yangtze Delta of eastern China and the Pearl River Delta in southern China. The focus is on the reduction of PM10 and PM2.5 particulate matter emissions which have the greatest effects on human health.

Coal Production of the largest mining companies in China

	2012 Mn t	2013 Mn t
Inner Mongolia	1,058	994
Shanxi	580	960
Shaanxi	463	493
Shenhua Energy	318	303
China Coal	114	119

LB-T32 Source: Various analyses

In October 2013, about 86m tonnes of coal were in producers' stockpiles, but 260m tonnes in non-producers' stockpiles. This is approximately enough coal to cover one month's consumption in China.

Decisive influence on production will also come from the further development in the previously announced prohibition of the import of low-calorific coal. This plan was initially set aside because of strong protests, especially from power-generating companies and traders, but could very quickly be implemented after definition of the new coal standard. In December, the national development and reform commission published the draft of a standardisation regulation which would prohibit in future any further production or consumption of domestic lignite with an ash content greater than 30% and sulphur content greater than 1.5%. The ban on mining for other types of coal, especially hard coal, would apply from an ash content greater than 40% or sulphur content greater than 3%. The calorific value of imported and domestic lignite which is transported more than 600 km must in future be greater than 16.50 MJ/kg (3,941 kcal NAR), the ash content must not exceed 20% and sulphur content should be below 1%. The calorific value threshold for all other imported coal with long-haul transport is 18 MJ/kg (4,300 kcal/NAR), ash content is limited to 30% and sulphur content to 2%. A limit of 16%

ash and 1% sulphur will apply in areas with especially high smog levels.

This could mean substantial losses for domestic lignite, especially since production has been substantially expanded in recent years. In 2005, production of lignite came to 98m tonnes p.a., which grew to 319m tonnes p.a. by 2010, to 420m tonnes p.a. in 2011 and to 510m tonnes p.a. in 2012. Estimates for 2013 indicate that production exceeded the mark of 600m tonnes p.a. An increase in lignite production to 890m tonnes has been projected by 2015. As a rule, Chinese lignite has an ash content of between 15% and 35%, 46% volatile matter and calorific values between 2,700 and 3,500 kcal NAR. Most of the lignite is mixed with higher-quality hard coal and used as a blend for power generation in power plants.

China's efforts in CO₂ capture technology are also remarkable. China is one of the world's leaders in CCS technologies in terms of basic research, planning and construction of pilot projects.

Reports show that China currently has the largest number (12) of pilot projects in the construction and operational phases. This is twice as many projects as in 2011.

Infrastructure

China's infrastructure is being steadily expanded. The construction of railway transport capacities to the central region and Western China in particular is supposed to be driven forward. In 2013, the China Railway Corporation (CRC) invested US\$108bn. US\$103bn has been budgeted for 2014. CRC wants to expand the railway network to 120,000 km from the previous (estimated) 102,000 km by 2015. This will mean laying 17,700 km of new track by 2015. Between 2011 and 2013, only 11,300 km of new track was laid, 5,586 km of this total in 2013 alone. Overall, construction of 44 new

railway lines is supposed to start in 2014. Just how significant this is for coal logistics is clearly illustrated by the example of the Daqin line, which had a transport volume of 446m tonnes in 2013 – more than 1.2m tonnes each and every day.

Investments have also been made in the expansion of port facilities. The total ship-loading capacity of the five largest ports (Qinhuangdao, Huanghua, Caofeidian, Jingtang and Tianjin) will be increased to 690m tonnes p.a. Three more projects in the ports of Caofeidian, Jingtang and Qinhuangdao with a total capacity expansion of 100m tonnes p.a. are planned for 2014.

Import/Export

China's import development stabilised quantities and prices on the world's hard coal market in 2013. China's changing role from that of a net exporter to that of a net importer of hard coal which has been observed for a number of years has become more solid. China increased its imports of hard coal by 20% in comparison with 2012.

Import/Export Development			
	2012 Mn t	2013 Mn t	Difference 2012/13 Mn t
Imports Steam Coal	136 *	153 *	17
Imports Coking Coal	54	75	21
Total Imports	190	228	38
Exports Steam Coal	8.0 *	6.0 *	-2.0
Exports Coking Coal	1.3	1.1	-0.2
Exports Coke	1.0	4.7	3.7
Total Exports	10.3	11.8	1.5

* incl. anthracite, without lignite

LB-T33 Source: McCloskey CCR

Because of 17m tonnes in additional imports and 2m tonnes in lower exports, China's impact on the world

market totalled 19m tonnes. This enabled the coal exporting countries to compensate to some extent for the weak demand for steam coal on the Atlantic market. Australia was the beneficiary of these increased imports and rose to become China's largest coal trading partner for steam coal (51m tonnes compared to 39m tonnes in the previous year), followed by Indonesia (39m tonnes compared to 33m tonnes in the previous year, excluding lignite and sub-bituminous coal). Vietnam supplied 13m tonnes of anthracite (25%), largely to south-west China. But coal was also imported from the Atlantic region. Canada was able to increase its exports to China by more than 50% (almost 11m tonnes of coking coal), and South Africa exported 12m tonnes of steam coal to China, about the same volume as in 2012.

Total Chinese exports increased in total by 2m tonnes to about 12m tonnes in 2013. The export of steam coal fell further by about 2m tonnes to 6m tonnes (including anthracite); the export of coking coal declined further to only 1.1m tonnes.

Exports of coke increased by 3.7m tonnes to 4.7m tonnes in comparison with 2012. The largest customers for steam and coking coal for these sharply reduced exports were Japan (2.8m tonnes), South Korea (3.3m tonnes) and Taiwan (0.8m tonnes).

Coal Exports According to Grades			
	2011 Mn t	2012 Mn t	2013 Mn t
Steam Coal	6.8	4.5	3.4
Coking Coal	3.6	1.3	1.1
Anthracite	4.2	3.2	2.6
Coke	3.3	1.0	4.7
Total	17.9	10.0	11.8

LB-T34

The balance between exports and imports (excluding coke) developed as shown below:

Balance Exports / Imports			
	2011 Mn t	2012 Mn t	2013 Mn t
Exports	15	9	7
Imports*	183	243	288
Balance	-168	-234	-281

* incl. lignite

LB-T35

So China was once again the world's largest net importer in 2013. There are many and various reasons for the increase in imports. The main reason in the case of steam coal is driven by the market and prices. The primary importers are above all the power generation companies located on the eastern seaboard. Initially, continued high imports were projected for 2014 because of the low world market prices. But the extent to which China imports will also depend on the economic development of the country and the possible prohibition of the import of low-calorific coal. If the Chinese domestic price level is higher than prices on the world market, this will continue to be the main motivation for the power plants and steel mills to procure their supplies from the world market.

Key Figures People's Republic of China			
	2011 Mn t	2012 Mn t	2013 ¹⁾ Mn t
Hard Coal Output	3,459	3,660	3,700
Hard Coal Exports	14.6	9.0	7.1
• Steam Coal	11.0	7.7	6.0
thereof Anthracite	4.2	3.2	2.6
• Coking Coal	3.6	1.3	1.1
Coke Exports	3.3	1.0	4.7
Hard Coal Imports	183.1	243.3	288.0
• Steam Coal	102.3	155.2	173.0
• Coking Coal	44.7	53.6	75.4
• Anthracite	36.1	34.5	39.6
Imports Germany	0.2	0.01	0.01
• Steam Coal	-	0.009	0.008
• Coke	0.2	0.002	0.002

¹⁾ Provisional

LB-T36

MONGOLIA

General

The country has a wealth of natural resources such as coal, gold or copper and has the potential, along with Mozambique, to become another important coal region in future. Bureaucratic obstacles together with political and legislative intervention in mining with a tendency in the direction of renationalisation pursuant to the Strategic Entities Foreign Investment Law (SEFIL) in 2012 have led not only to great insecurity about investments, but have above all confused companies which have already invested substantial sums and forced them to increase write-offs from impairment tests. One of the principal consequences of the SEFIL was that foreign direct investors required

a permit from parliament if they wanted to acquire more than 49% of the holdings in a mining company in Mongolia or to invest more than US\$64m. As a result, the direct investments by foreign investors in 2012 fell by 17% and by another 47% in the period between January and August 2013 – a clear indication of a loss of trust among foreign investors. Although the country has been able to increase its economic growth significantly in recent years, the contribution of mining to the growth in GDP in 2013 declined. This prompted the government, led by the re-elected president, to take a clearly different track and move in the direction of policies inviting to investors and featuring reliable legal structures for foreign investments. In October 2013, both government and opposition voted to revoke the SEFIL. In future, there will be no restrictions or limits on the amounts of investments for companies in which foreign countries hold less than 50%. This is presumably motivated by concerns about excessive investment activities by state-owned operations in China and the resulting dependency on the neighbouring country. The new investment act no longer distinguishes foreign from national Mongolian investors, with the consequence that foreign investors do not require the consent of the government or parliament for their investments, a step aimed above all at heading off any possible corruption. The act also authorises the government to make commitments for the stability of value-added tax, corporate taxes, royalties and customs duties for periods between 5 and 22 years, significantly enhancing the security of planning and calculability of investments, as a means of regaining the trust of investors. The country has a population of 3 million and is the least densely populated country in Asia; in area, it is twice the size of Texas. One-third of the inhabitants are nomads who

wander around the country with their herds of sheep, cattle or horses. The government claims coal reserves of 170bn tonnes while verifiable resources are shown at 24bn tonnes.

Production

Because of Mongolia's location – surrounded by Russia and China – Chinese companies have been especially interested in securing the developing coking coal deposits for themselves.

The confusion triggered by political actions caused production to fall by 7.7% to 28.6m tonnes already in 2012. The mines subsequently had problems with respect to maintaining a constant level of quality of coking coal, assuring reliable supplies and stabilising relationships with the customers for their coal, which caused a loss in Mongolia's share of the worldwide coking coal market.

Reports (no official statistical data are available) indicate that 33m tonnes were produced in 2013, corresponding to an increase of 4.4m tonnes. But the figures would have been significantly higher if there had not been any disruptions in the expansion of coal mining. Of these 33m tonnes, 9m tonnes were consumed for power generation in Mongolia. The largest coking coal project in Mongolia – the Erdenes Tavan Tolgoi Mine – with reserves of 1.6bn tonnes produced 5.3m tonnes, an increase in comparison with 2012 by more than 50%. The company has reaffirmed its goal of increasing production to 35m tonnes p.a. by 2016. Despite the risks, other companies have continued to develop and mine coal fields. The Mongolian Mining Corporation produced 5.3m tonnes of coking coal and 2.3m tonnes of steam coal from its coal fields Ukhua Khudag and Baruun Naran.

The companies Aspire Mining, Mongolian Mining Corp., Modun Resources, Prophecy Coal and South Gobi Resources have acquired various permits and appro-

vals, including important mining licences and land utilisation contracts. Initial production is expected for 2016/2017.

The Australian company Guildford Coal is developing mines in Central and South Gobi. Preparations for coal mining in South Gobi, which was scheduled to start in the last quarter of 2013, began.

Infrastructure

The infrastructure is not only underdeveloped; lorry transports on unpaved roads on the way to China also cause environmental pollution and harm to the health of the people living alongside the roads. The Mongolian government has acquired two asphalted roads, built by Energy Resources and running from the Tavan Tolgoi mine to the southern border with China. In future, every lorry will be required to use this road for coal transports to China. But even more important is the construction of railway lines so that coal deliveries can be made by rail to Russia and China in future. Special attention must be given to selecting the same railway gauge so that the trains can travel all of the lines without hindrance. The Mongolian government has also taken over the construction of the railway line from Tavan Tolgoi to the Chinese border from Energy Resources. In total, 18.3m tonnes were exported in 2013, the lion's share of it coking coal.

Export

In 2013, Mongolia exported 18.3m tonnes of coking coal, 2.6% less than in 2012. 17.3m tonnes went to China, a decline of about 20%. Now that China has solved some of the customs problems and wants to invest itself in road and railway infrastructure in Mongolia, an increase in exports in 2014 can be expected.

POLAND

Production

The coal industry in Poland, which is one of the country's key industries, appears headed for hard times and found itself in a serious crisis in 2013; in part, it was itself to blame, but market conditions also played a role. Poland consumes about 77m tonnes of hard coal. More than 90% of the power and heating production is based on lignite and hard coal. But production is declining steadily. About 60m tonnes of lignite and about 76.5m tonnes of hard coal were produced in 2013. While lignite is produced in opencast pits, all of the hard coal comes from underground mines of great depth, a feature which causes high production costs. When world market prices fall at the same time, some coal mines quickly find themselves in a precarious situation. Another fundamental problem for Polish coal companies is that the required modernisation has largely been neglected and labour costs are comparatively high. Moreover, demand for Polish coal from industry declined. The state-owned company Kompania Weglowa, which has 15 production sites employing more than 60,000 workers, produced 35.2m tonnes in 2013, almost 12% less than in the year before, and closed out the first half of 2013 with a deficit. The largest private mining company, Lubelski Wegiel BOGDANKA S.A., is proof that this is not an inevitable fate. The company, which is listed on the Warsaw Stock Exchange, produces hard coal from underground mines. It has invested above all in equipment and mining technology, trebling the efficiency of the producing mines in comparison with the national average. Production was increased from 5.8m tonnes p.a. in 2011 to 8.4m tonnes p.a. in 2013. This enabled the company to acquire a market share of 14% of the steam coal market, and it plans to increase production to 12m tonnes p.a. in 2018.

Polish production decreased by 2.8m tonnes in comparison with 2012 to 76.5m tonnes. In particular, sales on the domestic market declined so that substantial quantities were stockpiled at the end of 2013.

The Largest Hard Coal Producers in Poland				
Company	Output		Exports ¹⁾	
	2012	2013	2012	2013
	Mn t	Mn t	Mn t	Mn t
Kompania Weglowa	39.3	35.2	4.9	8.1
Katowicka Group Kapitalowa	12.0	12.3	0.5	0.5
Jastrzebska Spółka Weglowa	13.5	13.6	0.5	0.5
Independent Mines	14.5	15.4	1.1	1.0
Total	79.3	76.5	7.0	10.1

LB-T37 ¹⁾ Exports partly estimated

Polish production of coking coal of 12.1m tonnes p.a. and coke production of 9.2m tonnes represented a slight increase. The capacity for coking coal production of a little over 10m tonnes p.a. was not fully utilised. Coke production in 2013 increased by 0.5m tonnes in comparison with the same period of the previous year. Stockpiles were reduced, and there were only 6.6m tonnes of hard coal in stockpiles at the end of 2013, a decline of 2.2m tonnes.

Although Poland has a 60% share of European hard coal production, it also imports. In 2013, Poland finally returned to a balanced export-import relationship. Imports of 10.9m tonnes were balanced by exports of 10.6m tonnes. The imports consist essentially of 8.2m tonnes of steam coal, but there are also smaller quantities of coking coal (2.4m tonnes) and anthracite (0.3m tonnes). The steam coal came primarily from Russia (6.6m tonnes) and the Czech Republic (1m tonnes) and is used mostly in northern Poland. The coking coal comes from Australia (1m tonnes) and the Czech Republic (0.6m tonnes).

Infrastructure

There were no changes in the transport infrastructure, which is now too large for the current export volume, in 2013. The export logistics in Poland are well developed. Loading ports include Gdansk, Swinoujście, Szczecin and Gdynia. Gdansk is one of the leading ports in the Baltic region, although it does not compare with the large coal ports in Australia, the USA, South Africa or Western Europe. However, it is free of ice and operates all 12 months of the year. 4.6m tonnes of coal were transhipped here in 2013.

Export

Exports of hard coal in 2013 increased considerably by 3.8m tonnes to 10.8m tonnes, but imports of 10.9m tonnes mean that Poland remains a net importer. Of the exported 10.8m tonnes, 8.1m tonnes were marketed by Weglokoks; 2.7m tonnes were marketed directly by the mining companies. The quantities marketed by Weglokoks were exported by sea (71%) and land (29%) transport. Coke exports also increased, and 9% more was exported in 2013 (5.9m tonnes). Exports in 2013 break down as shown below (Weglokoks only):

Export 2013			
	Coking Coal	Steam Coal	Total
	Mn t	Mn t	Mn t
Seaborne	---	5.8	5.8
Overland	0.4	1.9	2.3
Total	0.4	7.7	8.1

LB-T38

The largest customers for steam coal were Germany (about 2.9m tonnes) and the Czech Republic (about 0.8m tonnes).

Key Figures Poland			
	2011	2012	2013 ¹⁾
	Mn t	Mn t	Mn t
Hard Coal Output	76.2	79.3	76.5
Hard Coal Exports	6.8	7.0	10.8
• Steam Coal	5.1	5.4	8.5
• Coking Coal	1.7	1.6	2.3
Coke Exports	5.9	5.4	5.9
Hard Coal Imports	15.1	10.1	10.9
Imports Germany	5.1	4.0	4.3
• Steam Coal	2.6	2.4	2.9
• Coking Coal	---	---	0.1
• Coke	2.5	1.6	1.3
Export Rate in % (Coke converted into coal)	18	18	24
<i>1) Provisional</i>			

LB-T39

CZECH REPUBLIC

Production

In 2013, production of hard coal in the Czech Republic fell by 2.8m tonnes from 11.4m tonnes in 2012 to 8.6m tonnes. This was a reduction in hard coal output of almost 25%. The low world market prices and relatively high production costs are a heavy burden on the Czech coal industry. Cost-cutting measures have been initiated. Coke production in 2013 came to 2.35m tonnes and was only slightly lower than the previous year (2.5m tonnes). Lignite production came to 40.5m tonnes, a decrease of 3.0m tonnes from 2012.

Czech hard coal production of 8.6m tonnes breaks down into 4.6m tonnes of coking coal and 4.0m tonnes of steam coal.

Infrastructure

Czech coal and coke exports were transported overland by rail and on the Danube (Bratislava).

Export / Import

Exports of hard coal and coke amounted to about 5.2m tonnes, thereof 4.8m tonnes of coal and 0.4m tonnes of coke. Austria (1.7m tonnes), Slovakia (1.0m tonnes) and Poland (1.6m tonnes) were the largest customers. A large part of the exports consists of coking coal (3.0m tonnes). The Czech Republic imported small quantities of coal and coke – about 2.2m tonnes – from Poland.

Key Figures Czech Republic			
	2011	2012	2013
	Mn t	Mn t	Mn t
Hard Coal Output	11.3	11.4	8.6
Hard Coal Exports	6.3	5.4	4.8
Coke Exports	0.5	0.4	0.4
Imports Germany	0.4	0.3	0.7
• Steam Coal	0.1	---	0.4
• Coke	0.3	0.3	0.3
Export Rate in % (Coke converted into coal)	61	52	62

LB-T40

VENEZUELA

Production

The problems for the Venezuelan coal industry have not become any less severe under the new president. The issues, which have almost become the norm, starting with bad weather, continuing with strikes by mine workers and lorry drivers who transport the coal to the ports and including the ongoing lack of investments in spare

parts and production equipment, restricted production in 2013. Hard coal output in 2013 amounted to 2.04m tonnes and represented a further decline of 25% in comparison with the previous year. The situation might improve because of the merger of the mining companies Carbones del Guasare and Carbones de la Guajira into a new company, PDV Carbon, which has been decided. The majority owner is the Venezuelan oil company Petroleos de Venezuela (PDVSA). The merger under new management gives hope for an improvement in the financing of urgently required equipment and spare parts as well as synergies in overhead costs.

The production of the largest mine Paso Diablo of the former Carbones del Guasare, fell by another 0.6m tonnes to 0.93m tonnes. The situation was made more difficult by the fact that the mine licence expired in October and no more exports were possible after that point. Exports to Europe amounted only to 0.65m tonnes in comparison with 1.08m tonnes in 2012.

Production / Exports by Company			
	2011 Mn t	2012 Mn t	2013 Mn t
Carbones Del Guasare	2.1	1.5	0.93
Interamerican Coal	0.2	0.6	0.54
Carbones De La Guajira	0.7	0.2	0.17
Miscellaneous	0.8	0.4	0.4
Total	3.8	2.7	2.04

LB-T41

Infrastructure

While the current infrastructure is adequate to export the small quantities, it is completely obsolete. Owing to the expropriations of international corporations in the past, especially in the oil sector, as well as the general economic chaos in Venezuela, no investors who are

willing to put money into new infrastructure projects can be found. There is good reason to doubt that there will be any significant change under the new president.

Export

Export in 2013 amounted to 2.04m tonnes, more than 25% less than in the previous year. The purchase of 1.38m tonnes made the USA the largest customer; Europe bought 0.65m tonnes, almost 40% less than in 2012. 0.39m tonnes of Colombian coal were exported through Venezuelan ports.

Key Figures Venezuela			
	2011 Mn t	2012 Mn t	2013 Mn t
Hard Coal Output	3.8	2.7	2.04
Hard Coal Exports	3.8	2.7	2.04
Imports Germany	0.16	0.11	0.06
• Steam Coal	0.16	0.11	0.06
Export Rate in %	100	100	100

LB-T42

Report in Figures (2013 preliminary)

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World-Energy Consumption by Source of Energy and Regions						M TCE
Source of Energy	2007	2008	2009	2010	2011	2012
Mineral Oil	5645	5617	5400	5754	5836	5907
Natural Gas	3767	3898	3700	4083	4167	4272
Nuclear Energy	888	886	900	900	859	801
Hydro Power	1013	1000	1000	1100	1136	1188
Hard Coal	4207	4394	4570	4750	4859	4998
Lignite	330	330	330	330	330	330
Total	15850	16125	15900	16917	17187	17496
Region of Consumption	2007	2008	2009	2010	2011	Shares in % 2012
North America	25.6	24.8	23.8	23.1	22.7	21.8
Asia/Australia	34.3	35.3	37.1	38.1	39.1	40.3
since 2007 EU-27	16.4	15.8	14.4	14.5	13.9	13.4
CIS	8.7	7.8	7.4	8.3	8.3	8.1
Other regions	15.0	16.3	17.3	16.0	16.0	16.4
Total	100.0	100.0	100.0	100.0	100.0	100.0 Mill. TCE
Coal Consumption (Hard Coal and Lignite)	4537	4724	4900	5080	5189	5328
Region of Consumption	2007	2008	2009	2010	2011	Shares in % 2012
North America	19.3	18.9	16.2	15.6	14.5	12.6
Asia/Australia	59.7	61.0	65.7	67.1	67.9	69.9
since 2007 EU-27	10.6	9.5	7.9	7.9	8.3	8.3
CIS	3.6	5.2	4.6	4.8	4.7	4.7
Other regions	6.8	5.4	5.6	4.6	4.6	4.5
Total	100.0	100.0	100.0	100.0	100.0	100.0

Considered were only commercial traded sources of energy.

Source: BP Statistical Review of World Energy until 2013

Table 1

World Hard Coal Production / Foreign Trade ¹⁾									M t (t=t)
	2008			2009			2010		
	Production	Import	Export	Production	Import	Export	Production	Import	Export
Germany	19	0	46	15	0	36	14	0	41
France	0	0	19	0	0	10	0	0	19
Great Britain	18	0	48	18	0	38	18	1	27
Spain ²⁾	10	0	33	9	0	18	9	0	13
Poland	83	8	9	78	9	10	77	14	10
Czech Republic	13	7	3	11	6	2	12	7	2
Romania	3	0	0	4	0	5	4	0	4
since 2013 EU-28	149	15	217	135	15	189	134	22	182
Russia	330	95	28	300	100	25	321	97	10
Kazakhstan	90	25	0	80	25	0	106	29	1
Ukraine	78	5	0	72	4	0	76	6	10
Countries Total	498	125	28	452	129	25	503	132	21
Canada	38	33	23	28	28	2	33	33	9
USA	1068	74	31	983	53	19	984	74	15
Colombia	73	69	0	70	66	0	75	72	0
Venezuela	6	6	0	4	4	0	4	4	0
Countries Total	1185	182	54	1085	151	21	1096	183	24
South Africa	235	63	0	250	63	0	250	68	0
Australia	334	261	0	344	273	0	355	300	0
India	465	0	54	532	0	59	537	0	86
China ³⁾	2716	45	41	2910	23	127	3410	19	166
Japan	0	0	190	0	0	162	0	0	184
Indonesia	255	202	0	280	230	0	295	240	0
Countries Total	3436	247	285	3722	253	348	4242	259	436
Other Countries	13	37	346	112	32	333	141	89	390
World	5850	930	930	6100	916	916	6720	1053	1053
¹⁾ internal trade and seaborne trade ²⁾ Production incl."Lignito Negro"									
³⁾ Production incl. lignite (about 50 M mt estimated)									

Sources: statistics of import and export countries, own calculations

Table 2

World Hard Coal Production / Foreign Trade ¹⁾										M t (t=t)
2011			2012			2013				
Production	Import	Export	Production	Import	Export	Production	Import	Export		
13	0	44	11	0	45	8	0	50	Germany	
0	0	15	0	0	18	0	0	19	France	
18	0	32	17	0	45	13	0	49	Great Britain	
7	0	15	6	0	21	4	0	13	Spain ²⁾	
76	7	16	79	7	10	77	11	11	Poland	
11	6	2	11	5	2	9	5	2	Czech Republic	
4	0	5	4	0	4	4	0	3	Romania/Bulgaria	
129	13	199	128	12	212	114	16	216	EU-28 since 2013	
336	107	2	353	127	30	352	143	22	Russia	
108	30	0	121	30	0	120	30	0	Kazakhstan	
82	0	10	85	0	10	84	8	11	Ukraine	
526	137	12	559	157	40	556	181	33	Countries Total	
33	33	9	67	35	10	69	39	9	Canada	
994	97	11	922	114	9	905	106	8	USA	
86	81	0	89	81	0	86	75	0	Colombia	
4	4	0	3	3	0	2	2	0	Venezuela	
1117	215	20	1081	233	19	1062	222	17	Countries Total	
252	67	0	260	76	0	245	73	0	South Africa	
346	281	0	366	316	0	411	359	0	Australia	
554	0	114	580	0	129	554	0	161	India	
3650	15	183	3660	9	235	3700	7	288	China ³⁾	
0	0	175	0	0	185	0	0	191	Japan	
318	270	0	386	304	0	342	335	0	Indonesia	
4522	285	472	4626	313	549	4596	342	640	Countries Total	
66	44	339	145	57	344	211	44	331	Other Countries	
6958	1042	1042	7166	1164	1164	7195	1237	1237	World	

Table 2

Seaborne Hard Coal Trade									M t
Exporting Countries	2008			2009			2010		
	Coking Coal	Steam Coal	Total	Coking Coal	Steam Coal	Total	Coking Coal	Steam Coal	Total
Australia	135	126	261	134	139	273	159	141	300
USA	36	17	53	31	12	43	48	16	64
South Africa	0	63	63	1	61	62	1	67	68
Canada	25	6	31	22	6	28	27	6	33
China	4	42	46	1	22	23	2	17	19
Colombia	0	69	69	3	63	66	4	69	73
Indonesia	0	202	202	0	230	230	0	277	277
Poland	0	2	2	1	3	4	0	6	6
Russia	3	75	78	5	85	90	7	80	87
Venezuela	0	6	6	0	4	4	0	4	4
Other	4	24	28	3	33	36	2	30	32
Total	207	632	839	201	658	859	250	713	963
Importing Countries/ Regions	2008			2009			2010		
	Coking Coal	Steam Coal	Total	Coking Coal	Steam Coal	Total	Coking Coal	Steam Coal	Total
Europe ¹⁾	50	159	209	36	153	189	51	125	176
since 2013 EU-28	45	143	188	36	137	173	51	125	176
Asia	139	368	507	115	432	547	149	511	660
Japan	56	131	187	45	113	158	52	132	184
South Korea	23	73	96	16	81	97	19	92	111
Taiwan	11	60	71	11	59	70	5	59	64
Hongkong	3	17	20	31	85	116	32	117	149
China	0	11	11	0	12	12	0	10	10
India	29	25	54	12	47	59	26	60	86
Latin America	18	5	23	6	4	10	3	19	22
Other (incl. USA)	0	100	100	44	69	113	47	58	105
Total	207	632	839	201	658	859	250	713	963
excl. land transport			¹⁾ incl. Mediterranean countries						

Evaluation of several sources

Table 3

Seaborne Hard Coal Trade

M t

2011			2012			2013			Exporting Countries
Coking Coal	Steam Coal	Total	Coking Coal	Steam Coal	Total	Coking Coal	Steam Coal	Total	
133	148	281	145	171	316	171	188	359	Australia
60	31	91	59	48	107	56	44	100	USA
1	66	67	1	75	76	0	73	73	South Africa
26	6	32	30	4	34	35	3	38	Canada
5	10	15	1	8	9	1	6	7	China
3	78	81	1	80	81	1	74	75	Colombia
0	270	270	0	304	304	0	335	335	Indonesia
0	3	3	0	3	3	0	6	6	Poland
8	93	101	8	109	117	15	116	131	Russia
0	4	4	0	3	3	0	2	2	Venezuela
3	30	33	11	21	32	0	16	16	Other
239	739	978	256	826	1082	279	863	1142	Total
2011			2012			2013			Importing Countries/ Regions
Coking Coal	Steam Coal	Total	Coking Coal	Steam Coal	Total	Coking Coal	Steam Coal	Total	
48	148	196	42	193	235	43	190	233	Europe ¹⁾
39	116	155	37	149	186	38	156	194	since 2013 EU-28
140	531	671	139	601	740	194	658	852	Asia
55	120	175	52	133	185	48	143	191	Japan
22	107	129	21	105	126	21	105	126	South Korea
0	66	66	0	66	66	0	67	67	Taiwan
21	109	130	34	145	179	51	158	209	China
0	13	13	0	12	12	0	13	13	Hongkong
33	81	114	31	98	129	54	107	161	India
4	31	35	20	17	37	19	12	31	Latin America
47	29	76	55	15	70	23	3	26	Other (incl. USA)
239	739	978	256	826	1082	279	863	1142	Total

Table 3

World Coke Production								1,000 t
Country/Region	2007	2008	2009	2010	2011	2012	2013	
Europe								
Austria	1428	1360	1290	1400	1350	1310	1350	
Belgium	2667	1983	1570	1880	1867	1788	1654	
Bosnia-Herzegovina	596	816	714	920	891	694	703	
Bulgaria	500	300	0	0	0	0	0	
Czech	3063	3206	2172	2396	2436	2317	2348	
Finland	865	860	740	828	852	881	878	
France	4374	4422	3170	3110	2841	3186	3331	
Germany	8520	8260	6770	8150	7990	8050	8273	
Hungary	1014	999	746	1018	1049	1026	924	
Italy	4632	4455	2724	3708	4154	3907	2880	
Netherlands	2180	2166	1700	1882	1998	1860	1850	
Poland	10264	9832	6947	9546	9134	8637	9160	
Romania	1669	1017	237	0	0	0	0	
Slovakia	1750	1735	1575	1550	1555	1608	1700	
Spain	2753	2400	1691	2021	2045	1761	1610	
Sweden	1193	1174	980	1118	1151	1048	1009	
Great Britain	4280	4152	3600	3774	3717	3487	3720	
Europe in total	51748	49137	36626	43301	43030	41560	41390	
CIS	54054	50783	45379	48220	49673	48135	46657	
North America	20184	19029	14550	19624	19632	19230	19239	
Latin America	12026	12275	9754	12350	13018	13593	13202	
Africa	3232	2975	1970	2691	2618	2463	2204	
Middle East	6035	5611	5125	5320	5135	5459	5150	
Asia								
China	321714	312148	355140	383400	427790	440536	476355	
India	17838	17936	18803	19334	19755	20460	21200	
Indonesia	0	0	0	0	0	0	300	
Japan	38354	38300	37500	37500	35400	34700	35500	
South Korea	9949	10614	9577	12835	14784	14607	14500	
Other	4585	4580	4580	5459	5639	5418	6628	
Total	392440	383578	425600	458528	503368	515721	554483	
Australia	3323	3161	2498	3149	2982	2858	2619	
WORLD in total	543042	526549	541502	593183	639456	649019	684944	

Sources: Several sources, data from associations and industry

Table 4

Qualities of Steam Coal Traded on the World Market							
Exporting Countries	Volatile %	Ash %	Moisture %	Sulphur %	F. Carbon %	Grinding Index HGI	Calorific Value kcal/kg
Atlantic Supplier							
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 - 6700
Colombia	30 - 39	4 - 15	7 - 16	0.5 - 1.0	36 - 55	43 - 60	5000 - 6500
Venezuela	34 - 40	6 - 8	5 - 8	0.6	47 - 58	45 - 50	6500 - 7200
Poland	25 - 31	8 - 16	7 - 11	0.6 - 1.0	44 - 56	45 - 50	5700 - 6900
Czech Republic	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	6000 - 6200
Pacific Supplier							
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
China	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	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
Indication in gross bandwidths							

Sources: see Table 6

Table 5

Qualities of Coking Coal Traded on the World Market						
Exporting Countries/ Qualities	Volatile %	Ash %	L. Moisture %	Sulphur %	Phosphorus %	Swelling Index FSI
Low Volatile						
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	0.6	0.30-0.60	0.04-0.06	6-8
USA	18-21	5.5-7.5	1.0	0.70-0.90	n/a	8-9
Middle Volatile						
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	0.9	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	23-28	7.0-8.9	0.7-1.5	0.60-0.80	n/a	6-9
China	25-30	9.5-10.0	1.3-1.5	0.35-0.85	0.015	
High Volatile						
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	29-33	6.9-8.9	0.8-1.5	0.60-1.00	n/a	5-8
Germany	26.6 ¹⁾	7.4 ¹⁾	1.5 ¹⁾	1.1 ¹⁾	0.01-0.04	7-8
Figures in bandwidths						
1) Utilization mixture for coking plant						
2) CSR-value (Coke Strength under Reduction) describing the heating strength of coke after heating up to 1,100° C and following CO ₂ -fumigation.						
The CSR-values classified to the coal are only standard values.						

Sources: Australian Coal Report, Coal Americas, companies' information

Table 6

Qualities of Coking Coal Traded on the World Market

Coke strength CSR-value ²⁾	Fluidity max. ddpm	Con- traction max. %	Dilatation max. %	Reflecion middl. %	Macerale reactiv % inert %		Minerals %
50-65 60-75 65-72 60-70	500-2000 34-1400 10-150 30-100	20-30 24-34 20-26 25-28	25-140 35-140 7-27 30-60	1.23-1.29 1.12-1.65 1.22-1.35 1.30-1.40	38-61 61-75 70-75 65-75	36-58 20-34 20-35 20-30	3-4 3-5 5 3
40-60 50-70 50-70 60-70 n/a	200-2000+ 150-7000 150-600 500-7000 n/a	25-35 19-33 21-28 22-18 26-32	0-65 (-)5-240 50-100 50-100 30-120	1.01-1.05 1.00-1.10 1.04-1.14 1.10-1.50 n/a	50-53 58-77 70-76 72-78 n/a	43-44 20-38 20-24 18-24 n/a	4-6 3-4 5 4 n/a
35-55 65-75 50-60 60-70 n/a	100-4000 950-1000+ 600-30000 18000-26847 n/a	27-45 23-24 22-31 26-33 n/a	(-)10-60 35-160 50-148 150-217 n/a	0.69-0.83 0.95-1.03 1.00-0.95 1.00-1.10 n/a	67-84 61-79 76-81 75-78 n/a	11-28 18-36 17-19 18-21 n/a	2-5 3-4 2-4 4 n/a
50-65	30-3000	27-28	108-170	1,15-1,45	60-80	15-35	5

Table 6

Hard Coal Export of Australia								1,000 t
Importing Countries	2007	2008	2009	2010	2011	2012	2013	
Germany	6744	5156	3759	4303	4280	4451	4739	
France	3733	3446	2077	2946	2363	2719	3319	
Belgium/Luxembourg	2580	2927	680	1298	1179	992	405	
The Netherlands	3240	2523	500	1217	1470	1202	2651	
Italy	2466	2041	1122	1741	1557	1519	821	
Great Britain	3478	3943	2746	3612	3585	2357	2459	
Denmark	0	0	151	0	0	0	0	
Spain	3043	2105	776	1715	1337	1118	1062	
Portugal	0	0	0	0	0	0	0	
Sweden	1273	1379	716	1825	1092	1057	1056	
Other					364	379	599	
since 2013: EU-28	27709	24730	12904	18657	17227	15794	17111	
Israel	348	824	672	592	498	678	496	
Turkey	838	2242	759	1304	787	1221	311	
Romania	0	0	0	0	0	0	0	
Other Europe ¹⁾	315	383	350	288	0	0	0	
Europe	29210	28179	14685	20841	18512	17693	17918	
Japan	115466	117962	101618	117768	106171	113626	123566	
South Korea	22096	36797	41662	43629	46037	46201	49801	
Taiwan	25463	24385	22517	28706	26878	24378	27123	
Hongkong	0	303	1175	440	895	679	446	
India	22511	25694	27092	32862	30224	32071	34612	
China	3957	3295	46546	37069	34000	62894	87766	
Brazil	3360	5036	3713	3457	2198	2691	3043	
Chile	462	592	481	944	1135	717	914	
Other Countries	27899	17576	13902	15042	15025	15376	12532	
Export in Total	250454	259819	273391	300758	281075	316326	357721	
¹⁾ incl. Mediterranean countries								

Source: McCloskey

Table 7

Hard Coal Export of Indonesia								1,000 t
Importing Countries	2007	2008	2009	2010	2011	2012	2013	
Germany	1168	513	86	69	34	0	0	
The Netherlands	1822	1669	239	0	927	71	15	
Italy	6290	6252	5427	7094	4882	3692	3365	
Great Britain	1141	2126	786	162	390	0	0	
Ireland	152	318	0	0	0	0	0	
Denmark	0	0	0	0	0	0	0	
Spain	4226	3826	4361	2115	1877	5634	3392	
Slovenia	1242	2032	840	840	559	332	n/a	
Other	2000	1014	376	2220	851	2071	1638	
since 2013: EU-28	18041	17750	12115	12500	9520	11800	8410	
USA	2962	2956	2025	1240	1180	469	650	
Chile	1600	498	437	980	483	160	0	
Japan	34135	39719	32109	26040	24950	31800	26010	
South Korea	26521	26620	33698	34650	36720	37700	36080	
Hongkong	11550	10382	11131	9540	8650	11673	11100	
Taiwan	25753	25754	25206	21770	19090	19600	22110	
Malaysia	7814	9415	11184	8600	11880	12600	12140	
Philippines	4290	6160	7066	5160	6050	9300	10140	
Thailand	9413	11371	10334	8770	6780	11421	8440	
India	24840	29283	37735	36500	52800	60520	82720	
China	14894	16093	39402	68060	77950	83300	106940	
Other countries	7492	6259	7844	6164	13836	13657	10550	
Export in total	189305	202260	230286	239974	269889	304000	335290	

Sources: Own calculations, companies' information

Table 8

Hard Coal Export of Russia								1,000 t
Importing Countries	2007	2008	2009	2010	2011	2012	2013	
Germany	8367	7800	9449	10308	10731	11227	12841	
Belgium/Luxembourg	1327	1867	0	0	0	0	2620	
Italy	818	1723	1017	862	2346	2600	4406	
Great Britain	19828	21434	15501	7332	11592	14600	17748	
Spain	905	2623	1439	768	1917	2300	2196	
Finland	5080	3745	4770	2900	5111	2700	3586	
Poland	5000	5267	1766	1402	1389	1700	1300	
Romania	982	1009	222	308	438	450	460	
other	8029	5533	11325	13532	12802	10200	9894	
since 2013: EU-28	50336	51001	45489	37412	46326	45777	55051	
Turkey	4013	2229	8672	9139	8180	9785	8580	
Europe	54349	53230	54161	46551	54506	55562	63631	
Japan	11491	9960	8718	10575	11608	15292	8422	
South Korea	6358	7495	4541	8574	13100	11438	12853	
Taiwan	1329	1203	1652	1116	3498	3330	2994	
China	269	760	12122	11660	10836	20183	27251	
Other countries ¹⁾	5104	4952	8409	9056	7434	11195	15649	
Export in total²⁾	78900	77600	89603	87532	100982	117000	130800	
¹⁾ 2007-2013 exports via Cyprus/Libanon; the quantities were partially exported in unknown countries ²⁾ only hard coal exports (seaborne trade)								

Sources: 2007-2013: information from companies, own calculations

Table 9

Hard Coal Export of the United States								1,000 t
Importing Countries	2007	2008	2009	2010	2011	2012	2013	
Germany	2065	5662	5104	5727	8140	9809	12044	
France	2162	3213	3052	2788	3615	3720	3728	
Belgium/Luxembourg	1907	2746	2503	2080	2783	2360	1745	
The Netherlands	4117	2976	2458	3314	5908	7178	4352	
Italy	3212	2891	2125	3000	5070	7747	5981	
Great Britain	3032	5342	4052	3980	6283	10856	11986	
Ireland	74	142	0	0	219	208	0	
Denmark	72	283	291	73	146	0	0	
Spain	1337	2161	1581	1837	1551	1975	1430	
Portugal	258	391	1020	531	891	1127	356	
Finland	265	425	202	428	452	266	374	
Sweden	483	667	434	676	633	613	438	
Other	2300	6315	1920	4076	1717	3786	3565	
since 2013: EU-28	21284	33214	24742	28510	37408	49645	45999	
Israel	0	0	0	0	0	17	0	
Turkey	1306	1736	1295	2296	2670	4871	4521	
Romania	0	0	0	0	937	607	819	
Other Europe ¹⁾	4087	5414	2033	3069	6330	5951	4583	
Europe	26677	40364	28070	33875	47345	61091	55922	
Canada	16625	20589	9509	10528	6022	6393	6284	
Mexico	422	1092	1161	1682	2526	3126	5102	
Argentina	273	331	417	281	233	471	427	
Brazil	5908	5785	6720	7177	7867	7206	7742	
Japan	5	1572	822	2869	6209	5169	4783	
South Korea	201	1225	1562	5237	9479	8250	7648	
Taiwan	2	71	77	227	0	227	342	
Other countries	3091	2468	4891	11787	17033	21615	17689	
Export in total	53204	73497	53229	73663	96714	113548	105939	

¹⁾ incl. Mediterranean countries

Source: McCloskey

Table 10

Hard Coal Export (only Steam Coal) of Colombia								1,000 t
Importing Countries	2007	2008	2009	2010	2011	2012	2013	
Germany	6931	5906	5173	7397	10550	8972	9794	
France	2720	2589	2232	2329	1100	1239	1765	
Belgium/Luxembourg	0	149	168	125	68	75	0	
The Netherlands	5554	5986	10726	9061	7412	13053	10305	
Italy	1887	2026	2080	1715	1593	1916	1264	
Great Britain	3003	4041	4471	4417	4198	6365	6195	
Ireland	475	661	980	1048	1942	1729	1773	
Denmark	2259	1869	1973	1092	4998	3153	1927	
Greece	149	0	0	76	480	0	0	
Spain	2219	2301	2441	2272	2125	4340	2981	
Portugal	2590	1903	1929	1553	2069	3212	3246	
Finland	0	130	72	277	459	0	0	
Sweden	0	0	0	0	1169	0	0	
Slovenia	238	356	341	0	1031	214	222	
Other					858	0	619	
since 2013: EU-28	28163	28359	32587	31362	40052	44268	40091	
Israel	3527	2092	2549	3770	5595	5713	4901	
Other Europe ¹⁾	3437	3901	3718	3006	10222	8424	7660	
Europe	35127	34352	38854	38138	55869	58405	52652	
Japan	28	31	30	119	145	220	278	
Hongkong	0	0	0	0	0	0	0	
USA	21830	21919	14191	11301	6928	5029	4511	
Canada	1450	2214	1794	1843	1488	1125	1593	
Brazil	208	1038	750	1123	1631	1776	2076	
Other Countries	6034	9123	7814	16683	10033	13189	12537	
Export in total	64677	68677	63433	69207	76094	79744	73647	
¹⁾ incl. Mediterranean countries, Turkey								

Sources: McCloskey, companies' information

Hard Coal Export of South Africa								1,000 t
Importing Countries	2007	2008	2009	2010	2011	2012	2013	
Germany	6505	8190	5231	3363	2644	1972	2533	
France	4799	5450	2050	1030	1190	1060	1150	
Belgium/Luxembourg	1088	1140	300	500	430	320	0	
Netherlands	10580	8234	4049	1087	1056	2838	5047	
Italy	4776	4170	4230	3400	3630	3120	2040	
Great Britain	4580	3110	1000	470	670	810	620	
Ireland	478	0	460	220	50	90	140	
Denmark	2130	1140	1080	780	1380	630	300	
Greece	0	0	0	50	0	80	0	
Spain	6724	5981	5062	3670	2470	2360	1720	
Portugal	1970	1660	1240	320	0	0	360	
Finland	0	150	0	0	0	0	0	
Other	535	185	680	170	180	400	390	
since 2013: EU-28	44165	39410	25382	15060	13700	13680	14300	
Israel	4520	3720	3250	2490	3180	4770	3490	
Morocco	1267	1333	300	810	70	140	250	
Turkey	1349	1350	1106	3182	2760	2890	2850	
Other Europe ¹⁾	7136	6403	4656	6482	6010	7800	6590	
Europe	51301	45813	30038	21542	19710	21480	20890	
Japan	440	50	390	300	620	470	560	
South Korea	290	1150	525	2260	3520	1550	150	
Taiwan	410	160	2220	2990	3490	4500	5815	
Hongkong	0	0	340	160	0	0	0	
India	8492	7766	18690	22397	17071	23170	21030	
China	30	0	790	6960	10460	12950	13703	
USA	100	0	0	170	40	490	0	
Brazil	759	1223	296	1099	1030	1130	320	
Other countries	6068	6493	8927	10534	11380	10450	10291	
Export in total	67890	62655	62216	68412	67321	76190	72759	
¹⁾ incl. Mediterranean countries								

Sources: South African Coal Report, own calculations

Table 12

Hard Coal Export of Canada								1,000 t
Importing Countries	2007	2008	2009	2010	2011	2012	2013	
Germany	1733	1708	1070	1203	1736	1516	1214	
France	598	569	117	166	104	55	0	
Belgium/Luxembourg	0	0	0	48	55	0	0	
The Netherlands	1047	272	300	696	267	412	227	
Italy	1013	1084	465	1016	1000	767	817	
Great Britain	1492	1123	317	284	505	99	186	
Denmark	0	0	0	0	0	0	0	
Spain	227	235	1	64	120	1	58	
Portugal	0	0	0	0	0	0	0	
Finland	345	426	258	416	422	303	428	
Sweden	0	0	0	0	0	60	0	
sonstige				59	221	0	291	
since 2013: EU-28	7086	5587	2528	3952	4430	3213	3221	
Other Europe ¹⁾	1203	1426	952	840	182	500	567	
Europe	8289	7783	3480	4792	4612	3713	3788	
Japan	10548	11482	8765	10615	9265	9526	10108	
South Korea	6078	6736	7381	6553	8611	6360	7594	
Taiwan	1130	1154	795	638	1070	1005	1151	
Brazil	1545	2020	936	1693	2281	1813	1677	
USA	1758	1725	1045	1470	1330	898	911	
Chile	702	411	214	259	216	253	327	
Mexico	230	695	283	697	400	183	278	
Other countries	369	468	4931	5944	5602	10761	12712	
Export in total	30649	32474	27830	32661	33387	34512	38546	
¹⁾ incl. Mediterranean countries								

Sources: McCloskey, own estimations

Table 13

Hard Coal Export of China								1,000 t
Importing Countries	2007	2008	2009	2010	2011	2012	2013	
Germany	43	14	5	7	11	9	8	
France	166	216	0	0	0	0	0	
Belgium/Luxembourg	170	143	0	14	0	0	0	
The Netherlands	51	57	5	0	0	0	0	
Italy	0	0	0	0	0	0	0	
Great Britain	0	0	0	0	0	0	0	
Spain	0	104	0	0	0	0	0	
Greece	0	0	0	0	0	0	0	
EU-15	430	534	10	21	11	9	8	
Japan	15548	13337	6391	6436	6222	3914	2805	
South Korea	19225	16457	9919	7207	5559	3662	3303	
Taiwan	12690	10597	4870	4418	2197	1270	835	
Hongkong	674	475	122	395	1	0	0	
India	539	1006	0	0	173	0	0	
Malaysia	37	52	12	12	6	0	0	
Thailand	1	1	0	0	0	1	0	
North Korea	237	228	52	224	205	172	129	
Philippines	1019	1119	839	2	0	0	0	
Brazil	283	156	0	0	0	0	0	
Other countries	2435	1309	133	225	127	24	17	
Export in total	53118	45271	22348	18940	14501	9052	7097	

Source: several, i.a. MCR, CCR

Table 14

Hard Coal Export of Poland								1,000 t
Importing Countries	2007	2008	2009	2010	2011	2012	2013	
Germany	4651	3834	2649	3659	2659	2406	3007	
France	340		358	597	10	212	534	
Belgium	1	1	79	232	1	80	450	
The Netherlands	70	1	165	81	0	0	147	
Italy	111	0	0	0	0	0	0	
Great Britain	277	197	565	598	634	89	665	
Ireland	255	266	240	257	206	140	170	
Denmark	350	151	82	455	60	60	553	
Spain	64	0	0	23	20	20	19	
Portugal	0	0	0	0	0	0	0	
Finland	273	88	224	220	37	148	358	
Austria	1807	906	853	883	435	786	807	
Sweden	288	60	59	134	84	105	184	
Czech Republic	2365	1017	746	1444	1820	1540	1663	
Slovakia	617	64	71	638	568	302	767	
Hungary	259	127	58	118	133	98	93	
Other	8	1029	1970	557	10	383	401	
since 2013: EU-28	11736	7741	8119	9896	6677	6369	9818	
Other countries	364	559	581	480	101	667	1018	
Export in total	12100	8300	8700	10376	6778	7036	10836	

Sources: McCloskey, Federal Statistical Office and own calculation

Hard Coal Imports of EU-Countries: Imports inclusive internal trade of Member States 1,000 t							
	2007	2008	2009	2010	2011	2012	2013
Germany	47480	44000	36800	41000	44200	44900	50100
France	19200	19400	16200	18900	15300	17000	18900
Italy	24600	26200	22000	22700	24000	25000	22800
Netherlands	13000	12100	10800	11800	11700	12400	12400
Belgium	8000	6000	4100	3500	4000	3500	3300
Luxembourg	150	150	200	200	200	n.a.	n.a.
Great Britain	45300	43200	38100	26500	31700	44800	49400
Ireland	3000	2300	2300	2200	1900	2200	1200
Denmark	8000	7700	4400	4100	6100	3900	5600
Greece	800	800	400	600	600	200	200
Spain	20800	16500	17100	12800	15300	22300	13100
Portugal	5500	3800	3100	2700	3600	5000	4200
Finland	7000	4600	6000	5900	7000	4000	5100
Austria	4000	4200	4000	4000	3800	2900	2700
Sweden	3200	2500	2400	3000	2700	2200	3000
Poland	5800	9900	10000	10000	15500	10100	10800
Czech Republic	2500	2200	1700	1900	2400	2000	2100
Hungary	2000	1900	1400	1800	1500	1500	1600
Slovakia	5300	4900	3200	3500	3400	3400	4700
Slovenia	500	600	600	600	500	600	800
Croatia						1200	1200
Latvia	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Lithuania	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Estonia	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Cyprus							
Malta							
Bulgaria	1400	1300	3500	2900	3300	2300	1700
Romania	3300	3200	1200	1400	1200	1300	900
Other EU28 since 2013	230830	217450	189500	182000	199900	800 213500	700 216500
Coke	thereof coke: 12000	thereof coke: 11000	coke: 11000	coke: 8000	coke: 8000	coke: 6000	coke: 6000

Sources: McCloskey, Euracoal, own calculations

Table 16

Primary Energy Consumption in Germany MTCE							
Energy Sources	2007	2008	2009	2010	2011	2012	2013
Hard Coal	67.4	61.4	50.1	57.9	55.3	58.3	60.7
thereof Import Coal	(44.8)	(43.2)	(36.2)	(44.4)	(43.4)	(46.8)	(52.4)
Lignite	55.0	53.0	51.4	51.6	53.3	56.1	55.5
Mineral Oil	157.9	166.4	159.3	160.0	154.8	154.9	158.2
Natural Gas	106.6	104.4	100.3	107.1	99.3	99.6	106.0
Nuclear Energy	52.3	55.4	50.2	52.3	40.2	37.0	36.2
Hydro and Wind Power	7.4	7.5	7.1	7.2	8.1	8.9	9.2
Foreign Trade Balance Electricity	0.2	0.0	-1.8	-2.2	-0.8	-2.8	-4.2
Other Energy Sources	25.6	36.0	41.8	47.9	51.0	51.0	52.9
Total	472.4	484.1	458.4	481.8	461.2	463.0	474.5
							shares in %
Energy Sources	2007	2008	2009	2010	2011	2012	2013
Hard Coal	14.3	12.7	10.9	12.0	12.0	12.6	12.8
thereof Import Coal	(9.5)	(8.9)	(7.9)	(9.2)	(9.4)	(10.1)	(11.0)
Lignite	11.6	11.0	11.2	10.7	11.6	12.1	11.7
Mineral Oil	33.4	34.3	34.8	33.2	33.6	33.5	33.4
Natural Gas	22.6	21.6	21.9	22.2	21.5	21.5	22.3
Nuclear Energy	11.1	11.4	11.0	10.9	8.7	8.0	7.6
Hydro and Wind Power	1.5	1.6	1.6	1.5	1.8	1.9	1.9
Foreign Trade Balance Electricity	0.0	0.0	-0.4	-0.5	-0.2	-0.6	-0.9
Other Energy Sources	5.5	7.4	9.0	10.0	11.0	11.0	11.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Sources: The Working Group on Energy Balances, The Federal Statistical Office of Germany, own calculations

Table 17

Coal Handling in German Ports										1,000 t
	2005	2006	2007	2008	2009	2010	2011	2012	2013	
North Sea Ports										
Hamburg	4636	4963	5781	5195	5189	5276	5805	5111	5629	
Wedel - Schulau	600	871	0	0	0	0	530	239	42	
Bützfleth	19	13	6	4	9	5	8	6	0	
Wilhelmshaven	1520	1332	1360	2229	2404	1843	1924	1597	3301	
Bremen ports	1216	1715	1965	1668	1410	1796	1599	1783	1270	
Brunsbüttel	273	622	749	874	500	434	424	710	793	
Emden			5	5	1	2	-	-	-	
Nordenham	1915	2129	2162	1889	2284	2235	2792	2240	1574	
Papenburg	214	170	143	149	121	141	0	-	-	
Other North Sea Ports S.H.	37	70	632	574	502	610	0	-	3	
Other North Sea Ports N.S.		-	-	-	-	7	3	-	-	
Total	10430	11885	12803	12587	12420	12349	13085	11686	12612	
Baltic Sea Ports										
Rostock	1145	1251	993	1443	823	1200	1345	1335	1032	
Wismar	33	30	22	35	26	34	0	-	-	
Stralsund	3	0	0	1	-	-	-	1	-	
Lübeck	-	-	-	-	-	-	-	-	2	
Flensburg	325	275	246	301	230	209	237	235	255	
Kiel	402	193	123	291	453	479	271	503	178	
Saßnitz			7	3	1	5	1	1	1	
Wolgast			2	-	-	-	-	-	-	
Other Baltic Sea Ports	2	3	-	1	-	-	-	-	-	
Total	1910	1752	1393	2075	1533	1927	1854	2075	1468	
Tonnage Total	12340	13637	14196	14662	13953	14276	14939	13761	14080	

Source: Federal Statistical Office

Table 18

Consumption, Import/Export and Power Generation in Germany								
	2007	2008	2009	2010	2011	2012	2013	
Gross Electricity Consumption in TWh	621.5	618.2	581.3	615.3	606.8	606.7	597.6	
Electricity Foreign Trade in TWh								
Exports	63.4	62.7	54.9	59.9	56.0	67.3	72.2	
Imports	44.3	40.2	40.6	42.2	49.7	44.2	38.4	
Balance	-19.1	-22.5	-14.3	-17.7	-6.3	-23.1	-33.8	
Gross Electricity Generation in TWh	640.6	640.7	595.6	633.0	613.1	629.8	631.4	
Utilization of Energy Sources for Power Generation in TWh								
Hard Coal	142.0	124.6	107.9	117.0	112.4	116.4	122.2	
thereof Import Coal ¹⁾	(86.2)	(86.4)	(76.3)	(86.8)	(84.9)	(89.1)	(101.8)	
Lignite	155.1	150.6	146.5	145.9	150.1	160.7	161.0	
Natural Gas	78.1	89.1	80.9	89.3	86.1	76.4	66.7	
Fuel Oil	10.0	9.7	10.1	8.7	7.2	7.6	6.3	
Nuclear Energy	140.5	148.8	134.9	140.6	108.0	99.5	97.3	
Hydro / Wind Power	60.9	61.0	57.6	58.8	66.6	72.5	74.0	
Other	54.0	56.9	57.7	72.7	82.7	96.7	103.9	
Total	640.6	640.7	595.6	633.0	613.1	629.8	631.4	
¹⁾ Purchases to power stations								

Sources: BDEW, Statistik der Kohlenwirtschaft, BAFA, AG Energiebilanzen, DIW, own calculations

Table 19

European / International Price Quotations								
	2007	2008	2009	2010	2011	2012	2013	
Crude Oil Prices								
USD/Barrel Brent	72.52	96.99	61.51	79.47	111.26	111.63	108.56	
USD/TCE	373.26	499.21	316.60	409.04	572.66	574.57	557.24	
<i>Source: MWV</i>								
Natural Gas Prices: Free German Border								
€/TCE	180.00	237.00	198.00	185.00	230.00	263.00	250.00	
<i>Source: Statistik der Kohlewirtschaft</i>								
Steam Coal Marker Prices 1 %S. CIF NW Europe								
USD/TCE	103.59	172.28	82.12	107.74	141.73	107.92	95.29	
€/TCE	75.59	117.13	58.87	81.27	101.82	83.99	71.75	
<i>Source: McCloskey (from 6000 kcal/kg converted into 7000 kcal/kg)</i>								
Sea Freight Rates Capesize Units - Port of Destination ARA (Amsterdam, Rotterdam, Antwerp)								
South Africa USD/t	32.33	30.36	13.66	12.41	10.74	8.13	9.38	
USA/East Coast USD/t	34.47	32.65	16.68	15.06	12.01	9.62	11.44	
Australia/NSW USD/t	51.77	50.91	22.46	22.15	19.43	15.05	18.03	
Colombia USD/t	33.55	31.71	16.25	14.75	11.89	9.63	11.33	
<i>Sources: Frachtcontor Junge, own calculations</i>								

Table 20

Imports of Hard Coal and Coke into Germany										
Countries	2010					2011				
	Steam C.	Coking C.	Anthr.	Coke	Total	Steam C.	Coking C.	Anthr.	Coke	Total
Poland	3650	8	1	2399	6058	2646	11	1	2481	5139
Czech Republic	63	0	0	379	442	27	0	3	330	360
Spain	0	0	0	86	86				33	33
France	0	0	0	179	179				62	62
Other	1007	74	170	490	1741	620	20	196	595	1431
since 2013 EU-28	4720	82	171	3533	8506	3293	31	200	3501	7025
CIS	9295	730	317	248	10590	9574	863	294	361	11092
Norway	856	0	0	0	856	857	0	0	0	857
USA	2742	2956	29	0	5727	5079	3036	24	0	8139
Canada	0	1203	0	0	1203	43	1693	0	0	1736
Colombia	7397	191	0	39	7627	10550	214	0	62	10826
South Africa	3330	0	1	0	3331	2644	0	0	0	2644
Australia	289	4014	0	0	4303	206	4074	0	0	4280
China	7	0	0	199	206	6	0	5	184	195
Indonesia	70	0	0	0	70	0	34	0	0	34
Venezuela	410	20	0	2	432	132	29	0	0	161
Other Third Countries	2236	3	0	93	2332	1261	1	7	120	1389
Third Countries	26632	9117	347	581	36677	30352	9944	330	727	41353
Total	31352	9199	518	4114	45183	33645	9975	530	4228	48378

Sources: Federal Statistical Office, BAFA, own calculations

Imports of Hard Coal and Coke into Germany

1,000 t

2012				2013				Countries
Steam C.*	Coking C.	Coke	Total	Steam C.*	Coking C.	Coke	Total	
2397	9	1565	3971	2938	70	1317	4325	Poland
7	0	316	323	365	0	325	690	Czech Republic
		7	7	0	0	3	3	Spain
		48	48	0	0	19	19	France
1638	38	679	2355	2485	33	809	3327	Other
4042	47	2615	6704	5788	103	2473	8364	since 2013 EU-28
10474	753	319	11546	11975	867	249	13091	CIS
395	0	0	395	680	0	0	680	Norway
7072	2737	0	9809	8933	3111	0	12044	USA
0	1516	0	1516	0	1214	0	1214	Canada
8972	347	33	9352	9794	180	25	9999	Colombia
1972	0	0	1972	2533	0	0	2533	South Africa
308	4143	0	4451	128	4611	0	4739	Australia
9	0	2	11	8	0	0	8	China
0	0	0	0	0	0	0	0	Indonesia
111	0	1	112	59	0	0	59	Venezuela
1985	64	5	2054	0	135		135	Other Third Countries
31298	9560	360	41218	34110	10118	274	44502	Third Countries
35340	9607	2975	47922	39898	10221	2747	52866	Total
*Steam Coal inclusive Anthracite								

Table 21

Germany – Energy Prices / Exchange Rates							
	2007	2008	2009	2010	2011	2012	2013
Exchange Rates							
EUR/USD	0.7296	0.6799	0.7169	0.7543	0.7184	0.7783	0.7530
Source: Deutsche Bundesbank							
Cross Border Prices for Coking Coal and Coke - €/t							
Imported Coking Coal	96.22	132.62	173.75	174.78	185.30	188.42	127.19
Imported Coke	175.55	281.20	196.91	259.37	319.78	258.72	204.88
Sources: Federal Statistical Office							
Cross Border Prices for Steam Coal in €/TCE: Utilization in Power Plants							
	1. Q	2. Q	3. Q	4. Q	Annual value		
2007	63.10	63.51	67.14	78.54	68.24		
2008	93.73	106.01	131.80	120.13	112.48		
2009	91.24	76.35	69.36	73.31	78.81		
2010	75.06	86.34	87.97	92.89	85.33		
2011	105.30	105.22	106.22	110.44	106.97		
2012	100.21	93.09	92.01	86.62	93.02		
2013	84.03	80.03	75.64	76.66	79.12		
Source: BAFA Division 431 (cross border price=cif price ARA + freight German border)							
Energy Prices free power station €/TCE							
Energy Sources	2007	2008	2009	2010	2011	2012	2013
Natural Gas	209.00	252.00	239.00	222.00	241.00	264.00	264.00
Heavy Fuel Oil	198.00	275.00	208.00	270.00	355.00	394.00	349.00
Steam Coal	73.00	117.00	84.00	90.00	112.00	98.00	84.00
Sources: BAFA, Statistik der Kohlenwirtschaft, own calculations							

Table 22

Hard Coal Market in Germany

Quantities and Prices 1957-2013

Quantities								Prices							
Imports of Hard Coal and Coke t=t				Domestic Mining of Hard Coal Mill. t usable output				Steam Coal from non-EEC Countries ¹⁾				Domestic Industrial Coal ²⁾			
Year	M t	Year	M t	Year	M t	Year	M t	Year	€/TCE	Year	€/TCE	Year	€/TCE	Year	€/TCE
1957	18.9	1987	8.8	1957	149.4	1987	75.8	1957	40	1987	46	1957	29	1987	132
1958	13.9	1988	8.1	1958	148.8	1988	72.9	1958	37	1988	42	1958	29	1988	134
1959	7.5	1989	7.3	1959	141.7	1989	71.0	1959	34	1989	49	1959	29	1989	137
1960	7.3	1990	11.7	1960	142.3	1990	69.8	1960	33	1990	49	1960	29	1990	138
1961	7.3	1991	16.8	1961	142.7	1991	66.1	1961	31	1991	46	1961	29	1991	139
1962	8.0	1992	17.3	1962	141.1	1992	65.5	1962	30	1992	42	1962	30	1992	147
1963	8.7	1993	15.2	1963	142.1	1993	57.9	1963	30	1993	37	1963	30	1993	148
1964	7.7	1994	18.1	1964	142.2	1994	52.0	1964	30	1994	36	1964	31	1994	149
1965	8.0	1995	17.7	1965	135.1	1995	53.1	1965	29	1995	39	1965	32	1995	149
1966	7.5	1996	20.3	1966	126.0	1996	47.9	1966	29	1996	38	1966	32	1996	149
1967	7.4	1997	24.3	1967	112.0	1997	45.8	1967	29	1997	42	1967	32	1997	149
1968	6.2	1998	30.2	1968	112.0	1998	40.7	1968	28	1998	37	1968	30	1998	149
1969	7.5	1999	30.3	1969	111.6	1999	39.2	1969	27	1999	34	1969	31	1999	149
1970	9.7	2000	33.9	1970	111.3	2000	33.3	1970	31	2000	42	1970	37	2000	149
1971	7.8	2001	39.5	1971	110.8	2001	27.1	1971	32	2001	53	1971	41	2001	149
1972	7.9	2002	39.2	1972	102.5	2002	26.1	1972	31	2002	45	1972	43	2002	160
1973	8.4	2003	41.3	1973	97.3	2003	25.7	1973	31	2003	40	1973	46	2003	160
1974	7.1	2004	44.3	1974	94.9	2004	25.7	1974	42	2004	55	1974	56	2004	160
1975	7.5	2005	39.9	1975	92.4	2005	24.7	1975	42	2005	65	1975	67	2005	160
1976	7.2	2006	46.5	1976	89.3	2006	20.7	1976	46	2006	62	1976	76	2006	170
1977	7.3	2007	47.5	1977	84.5	2007	21.3	1977	43	2007	68	1977	76	2007	170
1978	7.5	2008	48.0	1978	83.5	2008	17.1	1978	43	2008	112	1978	84	2008	170
1979	8.9	2009	39.5	1979	85.8	2009	13.8	1979	46	2009	79	1979	87	2009	170
1980	10.2	2010	45.2	1980	86.6	2010	12.9	1980	56	2010	85	1980	100	2010	170
1981	11.3	2011	48.4	1981	87.9	2011	12.1	1981	84	2011	107	1981	113	2011	170
1982	11.5	2012	47.9	1982	88.4	2012	10.8	1982	86	2012	93	1982	121	2012	180
1983	9.8	2013	52.9	1983	81.7	2013	7.6	1983	75	2013	79	1983	125	2013	180
1984	9.6			1984	78.9			1984	72			1984	130		
1985	10.7			1985	81.8			1985	81			1985	130		
1986	10.9			1986	80.3			1986	60			1986	130		

since 1991 Eastern Germany included, euro values are rounded

¹⁾ Price free German border (BAFA Div. 432), since 1996: BAFA Div. 432, since 2010: BAFA Div. 422

²⁾ Estimated cost-covering price

Sources: Federal Statistical Office, Statistik der Kohlenwirtschaft, BAFA, RAG, own calculations

Table 23

Organisations/Links

AGEB (Arbeitsgemeinschaft Energiebilanzen)

www.ag-energiebilanzen.de

American Coal Council

www.americancoalcouncil.org

APFCR (Association of Coal Producers and Suppliers of Romania)

www.apfcr.ro

Australian Coal Association

www.australiancoal.com

Australian Institute of Energy

www.aie.org.au

BREE (Bureau of Resources and Energy Economics)

www.bree.gov.au

BRGM (Bureau de Recherches Géologiques et Minières)

www.brgm.fr

CARBUNION (Federation of Spanish Coal Producers)

www.carbunion.com

CERTH/ISFTA (Centre for Research and technology Hellas/ Institute for Solid Fuels Technology & Applications)

www.certh.gr/isfta.en.aspx

Chamber of Mines of South Africa

www.bullion.org.za

Coallmp (Association of UK Coal Importers)

www.coallmp.org.uk

Coal International

www.coalinternational.co.uk

COALPRO (Confederation of the UK Coal Producers)

www.coalpro.co.uk

Coaltrans Conferences Ltd.

www.coaltrans.com

DEBRIV (Bundesverband Lignite)

www.Lignite.de

DTEK (Ukrainian Coal Producer)

www.dtek.com

EIA (Energy Information Administration)

www.eia.doe.gov

EMAG (Institute of Innovative Technologies)

www.emag.pl

Enel (Enel Group)

www.enel.com

EPS (Electric Power Industry of Serbia)

www.eps.co.yu

Euracoal

www.euracoal.org

FDBR - Fachverband Dampfkessel, Behälter- u. Rohrleitungsbau e.V.

www.fdbbr.de

Finnish Coal Info

www.helen.fi

Geocontrol

www.geocontrol.es

GIG (Central Mining Institute)

www.gig.eu

Golder (Golder Associates Ltd.)

www.rmtltd.com

GVSt (Association Hard Coal, e.V.)

www.gvst.de

HBP (Hornonitrianske Bane Prievidza)

www.hbp.sk

IEA (International Energy Agency)

www.iea.org

ISSeP (Institut Scientifique de Service Public)

www.issep.be

IZ Klima - Informationszentrum klimafreundliches

Kohlekraftwerk e.V.

www.iz-klima.de

KOMAG (Institute of Mining Technology)

www.komag.eu

MATRA (Mátra Erömű Rt)

www.mert.hu

Mini Maritsa Iztok EAD (Bulgarian Lignite Producer)

www.marica-iztoc.com

National Mining Association

www.infomine.com

PATROMIN (Federation of the Romanian Mining Industry)

www.patromin.ro

PPC (Public Power Corporation)

www.dei.gr

PPWB (Confederation of the Polish Lignite Industry)

www.ppwib.org.pl

RMU Banovici D.D. (Bosnian Coal Producer)

www.rmub.ba

Premogovnik Velenje (Slovenian Lignite Producer)

www.rlv.si

Svenska Kolinstitutet

www.kolinstitutet.se

TKI (Turkish Coal Enterprises)

www.tki.gov.tr

University of Nottingham

www.nottingham.ac.uk

US Department of Energy - Fossil.Energy.gov

www.fe.doe.gov

World Coal Association

www.worldcoal.org

ZSDNP (Employer's Association of Mining and Oil Producers)

www.zsdnp.cz

Members of VDKI

Member Company	Area Code	Telephone	Fax	Website
AG der Dillinger Hüttenwerke Werkstraße 1, 66763 Dillingen/Saar, Germany	+ 49 6831	47-2220	47-3227	www.dillinger.de
Antwerp Port Authority Entrepotkaai 1, 2000 Antwerp, Belgium	+ 32 3	205 22 46	205 22 69	www.portofantwerp.be
BS/ENERGY Braunschweiger Versorgungs-Aktiengesellschaft & Co. KG Taubenstraße 7, 38106 Braunschweig, Germany	+ 49 531	383-0	383-2644	www.bvag.de
Bulk Trading S.A. Piazza Molino Nuovo 17, 6900 Lugano, Schweiz	+ 41	9161 15-130	9161 15-137	www.bulktrading.ch
Cargill International S.A. 14, Chemin de Normandie, 1206 Geneve, Schweiz	+41	22 703 2451	22 703 2740	www.cargill.com
CDF Energie SA (Groupe TOTAL) Tour Lafayette, 2 Place Des Vosges - La Défense 5, 92400 Courbevoie, France	+33	141 35 72 95	141 35 22 05	www.total.com
CMC Coal Marketing Company Ltd. Fumbally Square, New Street, Dublin 8, Irland	+ 353 1	708 2600	708 2699	www.cmc-coal.ie
Currenta GmbH & Co. KG OHG BIS-EN-BM, Geb. G11, 51068 Leverkusen, Germany	+ 49 214	3057885	30657885	www.currenta.de
DAKO Coal Kohlen Ex- und Import GmbH Kämpenstrasse 151, 58456 Witten, Germany	+49 2302	970 30 17	970 30 70	www.dako-coal.com
DB Schenker Rail Germany AG, MB Montan Rheinstraße 2, 55116 Mainz, Germany	+ 49 6131	15-61100	15-61199	www.dbschenker.com
Deutsche Bank AG, London Branch Winchester House, 1 Great Winchester Street, London EC2N 2DB, UK	+ 44 20	754 509 96	754 737 13	www.db.com
Douglas Services GmbH Rohrbergstr. 23 b, 65343 Eltville, Germany	+ 49 6123	70390	703920	
DTG Deutsche Transport-Genossenschaft Binnenschifffahrt eG Fürst-Bismarck-Str. 21, 47119 Duisburg, Germany	+ 49 203	800 04-0	800 04-43	www.dtg-eg.de
EDF Trading (Switzerland) AG Kurfürstendamm 194, Haus Cumberland, 10707 Berlin, Germany	+ 49 30	700 140 460	700 159 510	www.edftrading.com
EnBW Trading GmbH Durlacher Allee 93, 76131 Karlsruhe, Germany	+ 49 721	63-23314	914-20071	www.enbw.com
Enerco bv Keerweg 2, 6122 CL Buchten, The Netherlands	+ 31 46	48 19 900	48 59 211	www.enerco.nl
E.ON Global Commodities SE Holzstraße 6, 40221 Düsseldorf, Germany	+ 49 211	732 75-0	732 75-1552	www.eon.com
E.ON Kraftwerke GmbH Tresckowstraße 5, 30457 Hannover, Germany	+ 49 511	439-02	439-4052	www.eon-Power Stations.com
EUROKOR Barging B.V. Ridderpoort 40, 2984 BG Ridderkerk, The Netherlands	+ 31 180	481 960	481 969	www.eurokorbarging.nl
European Bulk Services (E.B.S.) B.V. Elbeweg 117, 3198 LC Europoort Rotterdam, The Netherlands	+ 31 181	258 121	258 125	www.ebsbulk.nl
Europees Massagoed-Overslagbedrijf (EMO) bv Missouriweg 25, 3199 LB Maasvlakte RT, The Netherlands	+ 31 181	37 1111	37 1222	www.emo.nl
EVN AG EVN Platz, 2344 Maria Enzersdorf, Austria	+ 43 2236	200 12352	200 82352	www.evn.at
Evonik Industries AG Paul-Baumann-Straße 1, 45722 Marl, Germany	+ 49 2365	49-6084	49-806084	www.evonik.de
Exxaro International Coal Trading B.V., Rotterdam, Zug Bahnhofstrasse 29, 6300 Zug, Schweiz	+ 41 41	727 0570	727 0579	www.exxaro.com
Frachtcontor Junge & Co. GmbH Ballindamm 17, 20095 Hamburg, Germany	+ 49 40	3000-0	3000-343	www.frachtcontor.com
Freepoint Commodities Europe LLP 157-197 Buckingham Palace Road, London SW1W 9SP, UK	+ 44	203 262 6264	203 262 6900	www.freepoint.com
GDF SUEZ Energy Management Trading Boulevard Simon Bolivar/Simon Bolivarlaan 34, 1000 Brussels, Belgium	+ 32	2519 36 88		www.gdfsuez.com

Members of VDKI

Member Company	Area Code	Telephone	Fax	Website
GLENCORE International AG Baarermttstrasse 3, 6341 Baar, Schweiz	+ 41 41	709 2000	709 3000	www.glencore.com
Goldman Sachs International Rivercourt, 120 Fleet Street, London EC4A 2BB, UK	+ 44 20	7051 2937	7051 6704	www.gs.com
Grosskraftwerk Mannheim AG Marguerrestr. 1, 68199 Mannheim, Germany	+ 49 621	8684310	8684319	www.gkm.de
GUNVOR SA Rue du Rhone 82-84, 1204 Genève, Schweiz	+ 41 22	718 79 00	718 79 29	www.gunvorgroup.com
Häfen und Güterverkehr Köln AG Harry-Blum-Platz 2, 50678 Köln, Germany	+ 49 221	390 10 20	390 10 22	www.hgk.de
HANSAPORT Hafenbetriebsgesellschaft mbH Am Sandauhafen 20, 21129 Hamburg, Germany	+ 49 40	740 03-200	74 00 32 22	www.hansaport.de
HCC Hanseatic Coal & Coke Trading GmbH Sachsenfeld 3-5, 20097 Hamburg, Germany	+ 49 40	23 72 03-0	23 26 31	www.hcc-trading.de
HMS Bergbau AG An der Wuhlheide 232, 12459 Berlin, Germany	+ 49 30	656681-0	656681-15	www.hms-ag.com
Holcim (Germany) AG Willy-Brandt-Str. 69, 20457 Hamburg, Germany	+ 49 40	360 02-0	36 24 50	www.holcim.com
HTAG Häfen und Transport AG Neumarkt 7-11, 47119 Duisburg, Germany	+ 49 203	47989-0	47989-193	www.htag-duisburg.de
ICT Coal GmbH Katemberger Str. 107, 45327 Essen, Germany	+ 49 201	860 44 61	860 44 65	www.ict-coal.de
IMPERIAL Shipping Holding GmbH Dr.-Hammacher-Str. 49, 47119 Duisburg, Germany	+ 49 203	5794-0	5794-229	www.imperial-shipping.com
Incolab Services B.V. Röntgenstraat 3, 3261 LK Oud Beijerland, The Netherlands	+ 31 186	610 355	610 552	www.incolab.com
Inspectorate Germany GmbH Daimlerstr. 4a, 47167 Duisburg, Germany	+ 49 203	860 967-13	860 967-20	www.inspectorate.com
J.P. Morgan Energy Europe Ltd. 25 Bank Street, Canary Wharf, London E14 5JP, UK	+ 44	207 777 2295	207 777 4744	www.jpmorgan.com
Knight Energy Services Ltd. Unit 1, Palmermount Ind. Estate, Bypass Road, Dundonald, Kilmarnock, Ayrshire, KA2 9 BL, UK	+ 44	1563 850 375		www.ahkgroup.com
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