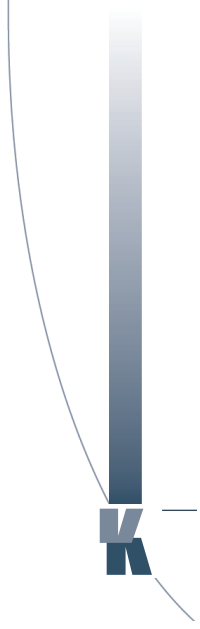
VEREIN DER KOHLENIMPORTEURE

ANNUAL REPORT

2010

Facts and Trends 2009/2010



Hard Coal Output

		2007	2008	2009[1)]
World				
Hard Coal Output	Mill. t	5,600	5,850	6,100
Hard Coal World Trade	Mill. t	907	930	916
thereof hard coal seaborne	Mill. t	821	839	859
hard coal inland trade	Mill. t	86	91	57
Hard Coal Coke Production	Mill. t	543	527	521
Hard Coal Coke World Trade	Mill. t	31	28	14
European Union (27)				
Hard Coal Output	Mill. t	158	149	135
Hard Coal Imports/Inland Trade	Mill. t	231	217	182
Hard Coal Coke Imports	Mill. t	11	11	8
Germany				
Hard Coal Consumption	Mill. t	75.8	71.7	56.8
Hard Coal Output (UP)	Mill. t v.	21.3	17.1	13.8
Total Imports	Mill. t	47.5	48.0	39.5
thereof hard coal imports	Mill. t	43.4	44.0	36.6
Hard Coal Coke Imports	Mill. t	4.1	4.0	2.9
Use of Import Coal [2)]	Mill. t	50.3	50.5	40.7
thereof power plants	Mill. t	34.4	35.7	30.7
Iron and Steel Industry	Mill. t	14.7	13.5	9.1
Heating Market	Mill. t	1.2	1.3	0.9
Prices				
Steam Coal Marker Price CIF NEW	US$/t TCE	101	175	82
Border-crossing Price Steam Coal	€/t TCE	68	112	79
CO_2 Certificate Price (Mean Value)	€/t CO_2	1	23	13
Exchange Rate	€/US$	0.73	0.68	0.72

[1)] Some figures provisional
[2)] Difference between total imports and use of imported coal due to stockpile movements

A Word Before We Begin – Coal Stabilises the World Economy

In 2009, the world economy was stabilised above all by the large threshold countries and their fast-growing economies.

Economic development in China, India and many other Asian countries is based essentially on the generation of electric power using coal, and this will not change in the foreseeable future.

Without coal-fired generation of electricity, this development – which, in view of their export dependency, greatly benefits the EU and Germany as well – would simply not be possible. If the dynamic of this growth is to be maintained, there is only one possible path to be taken: we must develop and operate modern coal technologies so that we can offer clear and proven solutions for climate-friendly power generation based on coal, operating in our own backyards, to threshold countries.

Hard coal once again remained the fastest-growing fossil primary energy source in the world in 2009. Consumption and output increased by 250 million tonnes to 6.1 billion tonnes in 2009. Seaborne hard coal world trade rose by 20 million tonnes (2.4 %) to 859 million tonnes.

In the long term – until 2030 – the EIA sees an increase in the share of hard coal in the primary energy supply for the world from today's 25 % to 29 %, while the share of coal used in rapidly growing electric power generation will increase from 40 % today to 43 %. The world will not be able to do without coal for the next 50 years.

In 2009, the use of coal in Germany – where it is first and foremost energy source and raw material for industry – declined sharply by 15 million tonnes due to the prevailing economic conditions. Imports also fell by 8 million tonnes to about 40 million tonnes. The weak steel industry and the declining industrial demand for electric power reduced the import volume.

The border-crossing price for steam coal fell by 30 % from € 112/TCE to € 79/TCE in 2009. But coal continued to enjoy substantial price advantages as an annual mean in comparison with the fossil energy competitors oil and natural gas.

The advantages of imported coal:

- *Well-structured geo-political supply*
- *Constant expansion of supply sources*
- *Prices which continue to be low*
- *Flexible adaptation to the market (swing suppliers)*
- *Low risk during transport and storage.*

Favouring hard coal in general:

- *No final storage headaches*
- *Highly developed residual material processing*
- *Large potential for the prevention of CO_2*
  - *by upgrading coal-fired power plants by 2020*
  - *by using CCS technology from 2020*
- *Great opportunities for the export of coal-fired power plant technology*

The modernisation drive in the German hard coal-fired generation of electric power can reduce CO_2 emissions more than 80 % by the year 2050.

The following demands must be made of the German government's Energy Concept 2010:

- *Fair share of low-cost imported coal included in the energy mix*
- *Support the modernisation of the coal-fired power plants and secure the required acceptance and backing for implementation*
- *Turning climate-friendly coal technology from Germany into a world standard*
- *Fast passage of the CCS Act as obligated by the EU*
- *Limiting the scope of the electricity market sector exempted from competition for renewable energies*
- *Revision of the 40 % target for CO_2 emissions after the failure of the climate change conference and against the backdrop of the difficult economic situation.*

Imported coal demonstrated its capability as a "swing supplier" in 2009. This role will become even more significant as the fluctuations in the provision of electricity from renewable energies become more extreme in the future.

Contents:

GLOBAL ECONOMIC CONDITIONS

The key events for the world's energy economy in 2009 were the deep recession of the global economy and the climate summit in Copenhagen.

Greatest Decline in World Production and World Trade Since the Second World War

The economic crisis which began in the 4th quarter of 2008 continued to worsen in 2009. The world economy suffered the most severe breakdown in the post-war era. A moderate phase of recovery began in the middle of 2009, but it will most likely continue to be restrained for the middle term. This deep recession was above all a consequence of an abrupt collapse in world trade at the start of 2009.

An even greater catastrophe was avoided only because the following factors came into play:

- *Expansive monetary policies of the central banks*
- *Significant rise in demand caused by implementation of government economic recovery programmes*
- *Relative strength of the threshold countries (including China/India)*
- *Comparatively low price of oil.*

The OECD countries in particular suffered above-average rates of economic contraction. Industrial production decreased by 16.6 %, gross domestic product by 4.7 %. OECD countries with a strong reliance on exports lost about 30 % in world trade. Global production declined by 1.1 %, trade by 12 %.

Although positive development is expected for 2010, it will presumably be constrained. The problems in the financial and real estate sectors have not yet been remedied, while unemployment and national debt are on the rise, above all in the OECD zone. The economic recovery programmes and the robust development of the threshold countries in Asia and in parts of South America could have a positive effect.

The low global stockpile levels could also provide a stimulus; stocks were greatly reduced in the 4th quarter of 2008 and must now be replenished.

Growth Rates in % of the World Economy

	2006	2007	2008	2009	2010
World Production	+ 3.9	+ 3.7	+ 3.0	- 1.1	+ 3.0
World Trade	+ 9.0	+ 7.0	+ 3.0	- 12	+ 4.5

Global Climate Policy Recedes into the Distant Future: UN Climate Change Conference in Copenhagen a Failure – a New Approach to Climate Protection Required

The goal of the conference was to draw up a legally binding successor treaty to the so-called Kyoto Protocol, which expires in 2012. When the Copenhagen Climate Change Conference ended, the "Copenhagen Accord" had been negotiated without the participation of the EU or Germany – a devastating humiliation for the self-proclaimed pioneer role of the EU and especially Germany. The EU failed to achieve its previously announced conference goals.

Government representatives from the USA, China, India, Brazil and South Africa negotiated the following non-binding paper, the so-called "Copenhagen Accord". The most important elements of the "Copenhagen Accord" are as follows:

- *Agreement to limit the global rise in temperature to 2° C in comparison with the pre-industrial value and to undertake efforts – unspecified – to achieve this goal.*
- *The industrialised countries undertake to pledge emissions reductions in their individual economies by January 31st 2010, whereby these obligations are supposed to be related to the year 2020. The countries which ratified the Kyoto Protocol are supposed to increase their minimum obligations under the Kyoto Protocol (many of the parties have submitted the required pledges).*
- *The industrialised countries undertake to provide up to US$30 billion to developing countries for adjustments to climate change and climate protection measures during the period from 2010 to 2012. In addition, the industrialised countries undertake to provide a total of US$100 billion annually to developing countries, beginning in the year 2020, also for the purpose of climate change or to counteract climate change by implementing suitable measures to reduce or limit emissions. A large part of the funds made available under this agreement are supposed to be distributed by a newly established "Copenhagen Green Climate Fund".*
- *Moreover, emissions are to be reduced by limitating deforestation (slash and burn) and to strengthen the role of forests as carbon sinks by conducting reforesting measures.*
- *Climate protection measures are to be carried out and in line with market considerations and economics.*

The final UN plenary session merely took note of this paper, and it is not legally binding. In the meantime, the most important of the so-called Annex 1 states have pledged their reduction targets, which are also not legally binding.

Emission Target Pledges Submitted to the UN Environment Programme

(not comprehensive)

Country	Reduction Targets for 2020	Base Year
Australia	-5 % possible raise to -15 %or -25 %	2000
Belarus	-5 % to -10 %	1990
Canada	-17 %	2005
Croatia	-5 %	1990
EU	-20 % or -30 %	1990
Japan	-25 %	1990
Kazakhstan	-15 %	1992
New Zealand	-10 % to -20 %	1990
Norway	-30 % to -40 %	1990
Russia	-15 % to -25 %	1990
USA	-17 %	2005

In keeping with the "Copenhagen Accord", the EU has designated a reduction target of 20 % by 2020 because not one single state has pledged any legally binding reduction targets. This means that the EU target of 30% by 2020 has, for the moment at least, been dropped, and in view of the economic crisis it is highly unlikely that it would have been accepted within the EU. Only the German government has ignored the results of the conference and the economic crisis and is refusing to budge from its extreme trailblazing target of a 40 % reduction by 2020, which burdens the German population with an even heavier load for the improvement of the planet's climate.

The following conclusions can be drawn from the conference results and the subsequent developments:

- *The large threshold countries, whose populations want to be liberated from poverty, do not have the slightest intention of curbing their energy consumption. They do not want to do without increased consumption, jobs and growth as they seek to raise their living standards to close the wide gap with the industrialised countries.*
- *In the USA, support for climate protection is dwindling because of the economic crisis, the wars in Iraq and Afghanistan and health care reform have top priority in politics.*
- *Moreover, the revelations about the repression by the IPCC of research results which contradict theories about the extent to which global warming is caused by human activity (dubbed "Climategate" in the USA) have generated widespread uncertainty and scepticism in public opinion.*
- *The formidable industrial-political conflicts of interests related to the conversion into an economic system in the world low in CO_2 which are likely to prevent a global treaty for many years to come are becoming increasingly obvious. The large threshold countries China and India do not want to enter into binding obligations of any international climate treaties.*
- *In view of these circumstances, the strategies for dealing with climate change must be rethought. Pursuing a two-track strategy comprising*
  – adaptation
  – avoidance
  would make better sense.

The strategy of avoiding CO_2 means higher costs for the country implementing the measures, but benefits affect the entire world and take a long time to appear. The climate benefits for the specific country are virtually negligible (e.g. Renewable Energy Act (EEG) in Germany), but the expense incurred is immediate.
The costs for adaptation measures (e.g. dyke construction) benefit the acting country immediately.
The limit of 2° C global warming specified in the "Copenhagen Accord" is an arbitrary figure which is controversial and has no scientific basis. This limit serves politicians merely as a tangible benchmark in the climate discussions because of the complexity of the subject matter.
As geoscientists have determined, focusing on a single parameter of the planetary system – in this case, the climate – does not lead to the desired results. The climate is only a sub-system of the complete system of the Earth.
The next climate summit has been scheduled to take place in Cancún, Mexico, in December 2010. Repetition of the list of prominent participants at the last summit is hardly to be expected. The German chancellor expressed scepticism as to whether any results can be achieved at all. Comments by the UN climate envoy were similar. The initial preparatory discussion in Bonn in April 2010 ended without any material progress. The "UN climate process" is embroiled in a major crisis.

Politicised Climate Science Leads to "Melting" Trust in Its Analyses

The suppression of dissenting opinions from researchers and errors in the IPCC report have led to a serious crisis of trust with respect to the UN IPCC and its chairperson, Rajendra Pachauri.
Although the greatest part of the most recent report from 2007 undoubtedly has a solid foundation, it is striking that the errors occurred in the section aimed at emphasising the horror scenarios and creating panic. One example is the so-called "Himalayan Debacle": the report projects that the glacier will melt in 35 years, a prediction lacking any scientific basis.

India Opposes "Propaganda Science" of Industrialised Countries

India has drawn its own conclusions about the work of the UN IPCC, which is chaired by its own countryman, Mr Pachauri.
India's environmental minister called the environmental analyses "propaganda science" and does not intend to use their findings as the basis for any further decisions. India has created its own network of research institutes and scientists (Ganges) so that it has its own scientific basis for climate change research.

Scientific Impartiality and Neutrality Must Return to Climate Change Research

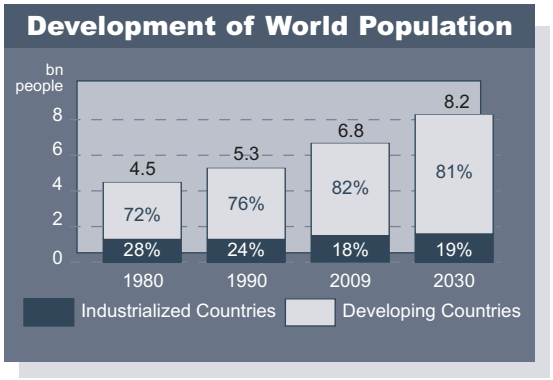
Politics and science have two different tasks. In many countries, scientists allow themselves to be hitched to political bandwagons – through the awarding of research grants by governments and industry – and issue statements which serve the interests of their employers. Science has a social obligation to carry on its research independently and without regard for preconceived results, keeping its distance from the world of politics.

Independent Body Reviewing Work of the UN IPCC

The working methods of the IPCC are now being reviewed by an independent institute, the Inter Academy Council (IAC). The aim is to ensure that future climate change researchers are not forced into the role of ersatz politicians. The resignation of the IPCC chairperson would also be an appropriate step. It is a cause of great distress that a UN body must be subjected to a review of this nature. The question also arises as to whether the UN path is the right approach for the formulation of a global climate policy.

World Population Will Grow to 8.2 Billion in 2030

The keydriving force for the expanding world economy and the global consumption of energy leading to the rise in CO_2 emissions continues to be the increasing size of the world's population. It is growing in the developing countries more than anywhere else. On average, the world population is increasing by 1 %–1.2 % or 70–80 million people annually. Population growth is not being slowed by the economic crisis, because it is taking place predominantly in the poorest countries.



Source: IEA

Extrapolation of the figures indicates that world population will increase by almost 3.7 billion to 8.2 billion people in the period from 1980 to 2030, i.e. over the span of only 50 years. Over the next 20 years, another 1.4–1.6 billion people will be added to the population. But energy consumption is increasing even faster than world population – 1.5 % annually according to the latest reference scenario from the IEA (World Energy Outlook 2009) – because the specific per capital consumption is rising in addition to the population figures themselves. In addition to the increased use of electrical devices, the steady shift from rural to urban populations around the world is causing an additional rise in energy consumption as the specific energy consumption of people living in cities is higher.

Proportion of Urban World Population (in Billion)

	1950 Billions	2005 Billions	2030 Billions
World Population	2.52	6.40	8.20
Urban Population	0.73	3.15	4.91
Proportion of World Population	29%	49%	60%

Source: IEA Environment Report

The threshold and developing countries have an enormous backlog demand in energy consumption as they strive to raise their living standards to narrow the gap to the level of industrialised countries.
By 2030, the 20 % of the world population living in the industrialised countries will continue to consume more than 40 % of the world energy supplies or 5.8 TCE per capita; about 60 % of the world energy supply will go to the inhabitants of threshold and developing countries making up 80 % of world population, but this will amount to only 2.2 TCE per capita. This is just under 38 % of the energy consumption per capita in the industrialised countries. So there will be a significant baklog demand for improvement in the living standards of most of the world's population even after 2030.
These figures make it clear why threshold and developing countries are currently unable to join the European industrialised countries in realising the latter's priorities for saving energy and reducing greenhouse gas emissions. Satisfying the basic needs of their citizens for food, water, mobility and access to electric power for the improvement of living standards even to a modest level remains their top priority.

Overall Energy Consumption Stagnating

Initial estimates indicate a stagnation of energy consumption worldwide in 2009. The reason behind this development is the global economic crisis which has impacted the OECD zone significantly.
The Pacific region continues to be an area of economic growth. Besides the increase in its own energy production, the area, China and India above all, is making increasing use of the supplies available in the world market.
Oil consumption fell by 3.9 %, natural gas consumption by 5.1 %. Hard coal and lignite consumption, in contrast, grew by 3.7 % globally in 2009.

Primary Energy Consumption – Most Important Energy Sources –

	2000	2007	2008	2009	2008/2009 Change in %
Coal	3.120	4.537	4.724	4.900	+ 3.7
Natural Gas	3.180	3.767	3.898	3.700	- 5.1
Petroleum	5.110	5.645	5.617	5.400	- 3.9
Nuclear Energy	0.840	0.888	0.886	0.900	+ 1.5
Hydroelectric Power	0.882	1.013	1.026	1.000	- 2.5
Total	**13.132**	**15.850**	**16.151**	**15.900**	**- 1.6**

Source: BP, own estimate for 2009

Coal (hard coal and lignite) reached a world market share of 31 % in 2009 and continues to be the fastest-growing primary energy source following the trend of the past several years.
The IEA, which also takes biomass and renewable energy sources into account in its statistics, predicts an average increase in the consumption of primary energy of 1.5 %

annually for the long term in its reference scenario. Yet the fossil energy sources – despite the accelerated expansion of renewable energy sources – will have to cover 84 % of the growth through 2030. According to data from the IEA, the demand for coal will rise by 54 % in the period from 2007 to 2030 and will maintain its share of 28 %–29 % of the world's primary energy demand. As a result coal consumption will accordingly rise by 2.45 billion TCE from 4.54 billion TCE in 2007 to 7.0 billion TCE in 2030.

World Energy Consumption Reference Scenario IEA

	1980 Billion TCE	2000 Billion TCE	2007 Billion TCE	2015 Billion TCE	2030 Billion TCE	2007-2030[1] %
Coal	2.556	3.282	4.553	5.753	6.989	1.9
Petroleum	4.443	5.218	5.853	6.471	7.163	0.9
Natural Gas	1.766	2.986	3.592	4.151	5.092	1.5
Nuclear Energy	0.266	0.965	1.014	1.168	1.367	1.3
Hydroelectric Power	0.212	0.322	0.379	0.459	0.575	1.8
Biomass and Rubbish	1.070	1.494	1.682	1.966	2.294	1.4
Other Renewable Energy Sources	0.017	0.079	0.106	0.226	0.529	7.3
Total	**10.330**	**14.346**	**17.179**	**20.194**	**24.009**	**1.5**

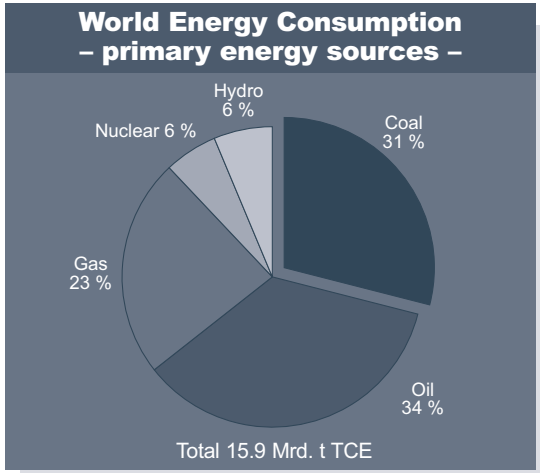
[1] Average annual growth rate

Source IEA, Energy Outlook 2009

During the period 2007–2030, electricity consumption will grow by 2.5 % annually, an even faster rate than that of primary energy consumption.

The fact that the greatest share of the long-term increase in coal consumption will be for the electric power sector makes it all the more necessary to develop modern hard coal technologies with less impact on the climate. It will not be possible to reduce the CO_2 emissions of the countries whose electric power generation is based primarily on coal without the utilisation of CCS technology. These countries include China, the USA, India, Russia and, more and more, other Asian countries such as Indonesia and Vietnam. The majority of the higher consumption (80 %) will occur in the non-OECD countries.

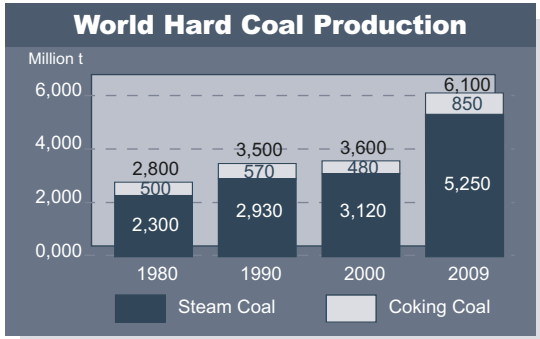
Despite high growth rates, energy sources largely free of CO_2 emissions, including nuclear power, will achieve a share of only 20 % in 2030 leaving fossil energy sources to still cover 80 % of the world's energy needs. This demonstrates that all energy sources will be required if we are to come even close to satisfying demand. In 2009, China, for example, overtook the USA in terms of investments for renewable energies.



Source: Own calculations

Hard Coal Output Rises To 6.1 Billion Tonnes

In 2009, hard coal output worldwide increased once again and rose by about 250 million tonnes to about 6.1 billion tonnes. Total output breaks down into 5.25 billion tonnes of steam coal and 0.85 billion tonnes of coking coal.



Source: IEA, 2009 preliminary, own estimation

Since 2000, i.e. in the last 9 years, hard coal output worldwide has grown by 2.5 billion tonnes. The major force behind this development is to be found in China, where production during this period increased by 1.2 billion tonnes.
But other countries have also increased production significantly. The majority of the worldwide growth in production clearly derives from Asia, as the developments of recent years show:

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

Producing Countries	2007	2008	2009
China	2,466	2,761	2,910
India	454	489	532
Australia	322	334	344
Indonesia	230	255	280
Vietnam	43	40	43
Total	**3,515**	**3,879**	**4,109**

Source: IEA, 2009 provisional

In addition to the Asian countries shown above, substantial quantities of coal are also being mined in North Korea, Mongolia and New Zealand.
The incredible backlog of demand for energy in the Asian economies for improvement of living conditions can be covered, above all in China and India as well as in Indonesia and Vietnam as well, only by rapidly and enormously expanding the coal-fired generation of electricity and the production of coal. But all of the other forms of energy sources – from renewable energies to nuclear energy –

will also be required to keep pace with the dynamic development of demand. For example, coal consumption in China will increase from 3.0 billion tonnes today to 3.5 billion tonnes annually in only a few years (2012/2013).

Outside of the Asian boom zone, developments in hard coal output varied.

Output in North America declined as domestic demand for steam coal decreased and exports fell. US mining companies in the Appalachian coalfields are finding it increasingly difficult to obtain permits for "mountain top" mining. Canada adjusted its hard coal production, which is essentially oriented to export and dependent on the steel industry, downwards in view of weaker demand for coking coal and PCI coal.

In South America, Colombia was forced to cut back on output because of the falling demand from the USA and Europe. But smaller deposits of coking coal attracted growing attention as future prospects in Colombia. Production in Venezuela, on the other hand, fell even further. The government has limited output – in the Zulia Province, at least – to 10 million tonnes per year. Strikes and bad weather conditions also contributed to this continued decline.

The 10 Largest Coal Producers in the World

Company	2007 Mill. t	2008 Mill. t	2009* Mill. t
Coal India	322	403	431
Peabody [1)]	238	255	244
Shenhua	158	186	210
Rio Tinto	149	153	132
China Coal	91	114	125
Arch [1)]	132	125	113
BHPB	86	116	104
Anglo	95	100	96
SUEK	90	96	91
Xstrata	83	86	95

[1)] Own production and purchases

Source: The McCloskey Group 2009, own projections, Annual Reports*

The economic crisis forced Russia to cut back its output. Production increased slightly in South Africa. One must hope that the many BEE groups (Black Economic Empowerment) will now utilise the mining rights granted to them and start coal production. New coal projects are being examined in Mozambique above all, but also in Botswana and Zimbabwe and, most recently, on Madagascar. Projects in Mozambique are already advanced and under development.

Output in the European region (EU 27) declined further from 149 million tonnes in 2008 to 135 million tonnes in 2009. The greatest declines occurred in Poland (6 million tonnes) and Germany (4 million tonnes). The sharp decline in world market prices in 2009 caused a weakening of the competitive position in inner-European production.

In its reference scenario, the IEA predicts an expansion of world hard coal output from today's approximately 4.900 billion TCE or 6.1 billion tonnes (t=t) to about 7.0 billion TCE or 8.7 billion tonnes (t=t) by 2030. Most of this growth will occur in Asia, but there will also be some growth in North, Central and South America and the CIS countries.
European hard coal consumption will fall steadily in the middle and long-term and to a share of little more than 5 % of the worldwide coal consumption by 2030. Emissions of CO_2 gases will decrease correspondingly.

Varying Impact of the Economic and Financial Crisis on Coal Producers

Coal companies responded in different ways to the crisis. According to information from the Coal Industry Advisory Board of the IEA, the following trends could be observed:

- *Companies which use coal themselves (RWE) or produce for one customer (Sasol) have not changed their investment budgets.*
- *Producers with high costs who serve the export market especially (Canadian coal companies, many US producers and SUEK) have reduced their production targets for 2009 and later.*
- *Producers with low costs (Indonesia) are responding to expectations for rising sales with new investments.*
- *Multinational mining companies have cancelled or postponed projects.*
- *Government-owned companies (China and India) are orienting their investments so that they promote domestic economic growth.*

Coal Reserves Adequate For 120–125 Years

It has now become necessary to distinguish between the two terms “resources” and “reserves” when speaking about natural resources, including coal. Resources refer to the total amount of the mineral or coal found in a deposit. The reserves are the part thereof which can be verified and which can be feasible be mined efficiently using today’s technology. As prices rise, it becomes possible to attribute parts of the resources in deposits to reserves because production can now be economically viable despite the higher costs involved. When prices fall, on the other hand, the exploitation of some deposits may become a losing proposition economically.
The current estimates of the hard coal reserves based on what is now known about the economically mineable reserves worldwide (see table) show a figure of 729 billion tonnes, corresponding to about 616 billion TCE. This latest estimate comes from the Federal Institute for Geosciences and Natural Resources (BGR).
The BGR estimates hard coal resources in 2009 to be 15,675 billion tonnes. The ratio of resources to reserves stands at 21:1 and has substantially improved since the last estimate (2007) by the BGR (12:1) because the total volume of resources has risen dramatically. The world's coal resources have not been explored nearly as intensively as the resources of petroleum and natural gas.

Reserves and Output of Hard Coal According to Region

Region	Reserves as per 2009		Output 2009 [1]	
	Bn t	%	Bn t	%
Europe	19	2.6	135	2.2
GIS	124	17.0	452	7.4
Africa	33	4.5	250	4.1
North America	237	32.5	1,016	16.7
South Amerika	9	1.3	85	1.4
PR China	181	24.8	2,910	47.7
Rest of Asia/Other	85	11.7	902	14.8
Australia/New Zealand	41	5.6	350	5.7
Total	**729**	**100**	**6,100**	**100**

[1] Provisional figures

Source: Federal Institute for Geosciences and Natural Resources, Hanover, 2009
Source Output: VDKI/BP Statistical Review of World Energy (Reserves Status 2009, published at the end of 2009)

Coal reserves currently have a statistical reach of about 120–125 years based on an output of 6.1 billion tonnes (base 2009). Hard coal represents a share of about 47 % of the total reserves of 1,324 billion TCE in fossil energy sources and nuclear fuel; in terms of the resources of 19,427 billion TCE, the volume of 13,178 billion TCE means its share reaches 68 %.

Compared to hard coal, oil reserves are adequate only for 40–45 years, natural gas reserves for 60–65 years, assuming the current rate of global production.

Hard Coal World Market Stagnating, Seaborne Trade Growing

The world market for hard coal declined slightly overall (1.5 %) in 2009. The worldwide economic crisis impacted inland trade above all.

World Trade in Coal

	2007	2008	2009	Change 2008/2009	
	Mill. t	Mill. t	Mill. t	Mill. t	%
Seaborne Trade	821	839	859	+20	+2.4
Inland Trade	86	91	57	-34	-37.0
Total	**907**	**930**	**916**	**-14**	**-1.5**

So the world market for hard coal in 2009 was a stable pillar against the backdrop of the steep plunge in world trade of -12 %. A slight decline in coking coal exports was noted in seaborne trade because of the steel crisis in the OECD region. The steam coal market continued to grow. The demand in the Pacific region balanced out the decline in consumption on the Atlantic market.
The following development was observed in the segments steam coal and coking coal for seaborne trade:

Seaborne World Trade in Coal

	2007	2008	2009	Change 2008/2009	
	Mill. t	Mill. t	Mill. t	Mill. t	%
Steam Coal	619	631	658	+27	+4.3
Coking Coal	202	208	201	-7	-3.4
Total	**821**	**839**	**859**	**+20**	**+2.4**

Bilateral trade contracted sharply by about 34 million tonnes. As a consequence of the economic crisis, procurements in the individual economic regions decreased significantly: by 10 million tonnes USA–Canada, an estimated 14 million tonnes Kazakhstan–Russia. Only China's purchases from its neighbours increased.
So bilateral trade in 2009 developed as shown below:

Bilateral Trade World Market

	2007 Mill. t	2008 Mill. t	2009[1] Mill. t
USA – Canada	16.6	20.6	9.5
USA – Mexico	0.4	0.5	0.5
Canada – USA	1.7	1.7	1.0
Mongolia– China	3.2	3.8	6.0
North Korea – China	3.7	2.5	3.0
Vietnam – China[1]	2.0	2.0	2.0
Poland – EU-countries	7.7	6.5	5.2
CR – EU-countries	7.0	6.8	6.0
Russia – CIS-countries (Ukraine)	9.6	9.3	4.0
Russia – overland outside of the CIS	5.4	7.9	6.0
Kazakhstan – Russia	24.0	24.0	10.0
Within EU excluding Poland/CR	4.4	5.0	4.0
Total	**85.7**	**90.6**	**57.2**

[1] Estimated. share overland in total export

The share of the world trade in the production has risen slightly since 2000. However, most of the coal output was consumed in the country where it was produced.

World Output/ Seaborne World Trade

Hard Coal	2000 Mill. t	2009 Mill. t	Growth %
World Output	3,800	6,100	+61
World Trade	530	859	+62
Share of World Trade in Production	13.9%	14.1%	

The seaborne trade volume breaks down into a coking coal market and a steam coal market. The steam coal market in turn comprises Pacific and Atlantic partial markets, which are characterised by differing supplier structures. The exchange volume between the partial markets in 2009 came to about 8 % or about 59 million tonnes of the steam coal market. About 12 % of the global steam coal production was transported to the consumers via seaborne trade.
The coking coal market, in contrast, is a uniform world market due to the low number of supplier countries on the one hand and the worldwide distribution of demand on the other. About 24 % of worldwide production in 2009, a significantly greater share than for steam coal, went to overseas trade.
Differences in development were observed on the partial markets of coal world trade. The following comments refer only to the seaborne hard coal trade.

Main Trade Flows in Seaborne Hard Coal-Trade, 2009 (in Million t)

Seaborne trade: 859 Mill. t
Thereof 658 Mill. t steam coal
201 Mill. t coking coal

Global hard coal production: 6.1 bn t

The largest import countries are found above all in the Southeast Asia region. China has joined Japan, South Korea and Taiwan as one of the largest importers. India has also moved up in the rankings. The two largest coal importers in Europe are Germany and Great Britain.

The 10 Largest Hard Coal Import Countries[1)]

	2007 Mill. t	2008 Mill. t	2009 Mill. t
Japan	186	190	162
China	51	41	127
South Korea	88	100	103
Taiwan	66	65	59
India	52	54	59
Germany	43	48	40
Great Britain	43	48	37
Spain	24	33	25
USA	33	34	21
Italy	24	26	20
Total	**610**	**639**	**653**
Share of World Trade	74%	76%	76%
EU-27	**231**	**213**	**183**
Share of World Trade	28 %	25 %	21 %

[1)] Some figures provisional, seaborne quantities

Steam Coal Market Continues to Grow

Atlantic Region

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

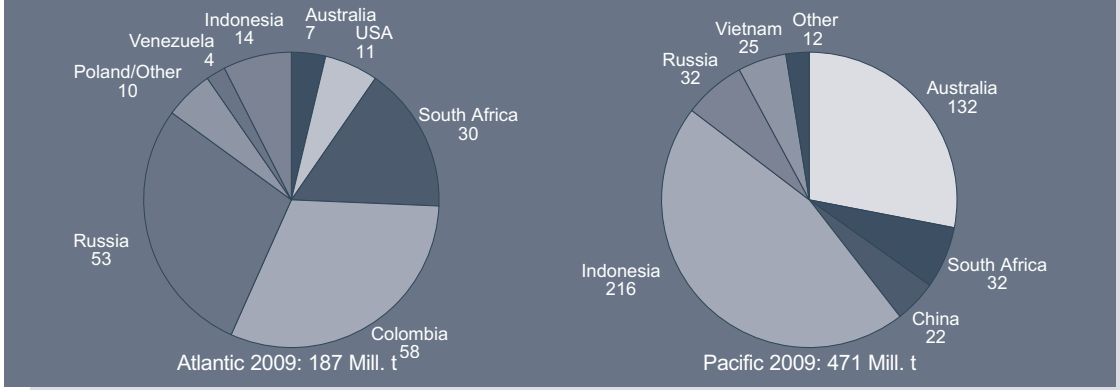
The Atlantic region was hit especially hard by the world economic crisis. This affected demand in North, Central and South America as well as in Europe. Demand in 2009 declined by 45 million tonnes (19%) to 187 million tonnes. So Colombia, Venezuela and the USA had to cut back their exports. South Africa found compensation on the Asian market for the shortfall in European quantities. Russia's power plant business on the Atlantic market remained stable. Norway was also able to maintain the previous year's level for its exports, about 3 million tonnes. The Atlantic market has a market share of 28%.

Pacific Region

The Pacific region continued to grow dynamically, and the demand on the world market for coal for the generation of electric power rose further by 71 million tonnes to 471 million tonnes (18%). Almost all of the Asian economies increased their procurement levels. The market can be expected to continue to grow strongly over the next few years, above all as a consequence of demand from China and India.

The year 2009 in the Pacific region was marked in particular by the tremendous leap in steam coal imports by China. Australia (+13 million tonnes), Indonesia (+28 million tonnes) and Vietnam (+6 million tonnes) were able to increase their exports. Russia also profited greatly from China's additional needs thanks to its Far East ports. Without this "special upswing" from China, the price level on the steam coal market would possibly have decreased much more sharply. The Pacific market has a market share of 72 %.

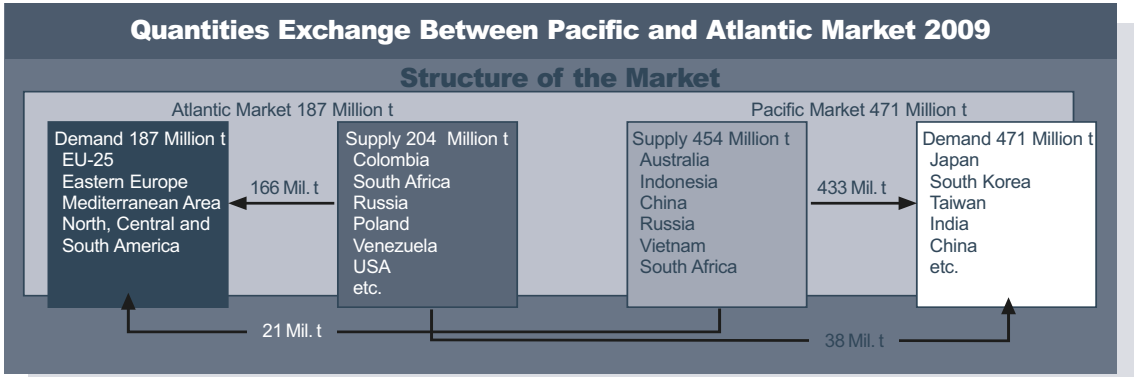
Seaborne Trade Steam Coal 2009 - Structure of Supply in Million t



Sources: Several examinations, own calculations

Exchange Volume Between Pacific and Atlantic Markets

Indonesia and Australia supplied about 21 million tonnes to the Atlantic market in 2009, a share of about 11 % of the supplies to this region. Of the Atlantic suppliers, South Africa, Colombia and the USA delivered 38 million tonnes, corresponding to 8 % of demand, to the Pacific market. Total exchange volume came to 59 million tonnes (previous year 45 million tonnes).



In particular, South Africa sold deliveries to India above all, but other countries were also customers. Indonesian exports to the Atlantic region, on the other hand, declined.

Steam Coal Prices Normalise – Pacific Market Decisive for Prices

Prices

Owing to the world economic crisis, the growth in demand for steam coal slowed down as a whole. While in the Atlantic region the need for steam coal from the world market, in the USA and in Europe above all, declined sharply, the Pacific steam coal market continued to grow. The bottom line of this development, however, was to put a lid on prices. There were substantial differences in the FOB prices of the Atlantic and Pacific suppliers.

Development of FOB Prices in US$/t of Important Supplier Countries[1)]

	01.01.2009	31.12.2009	01.04.2010
Atlantic Suppliers:			
• Richards Bay	65	81	88
• Bolivar	60	60	63
• Poland	60	75	75
• Russia (Baltic)	58	66	74
Pacific Suppliers:			
• Newcastle	63	86	95
• Quinhuangdao	76	115	107
• Kalimantan	63	73	73
• Russia	66	88	103

[1)] All data translated to 6,300 kcal/kg

Source: Own evaluation

There was a price range at the beginning of April 2010 from a low of US$63/t to a high of US$107/t.

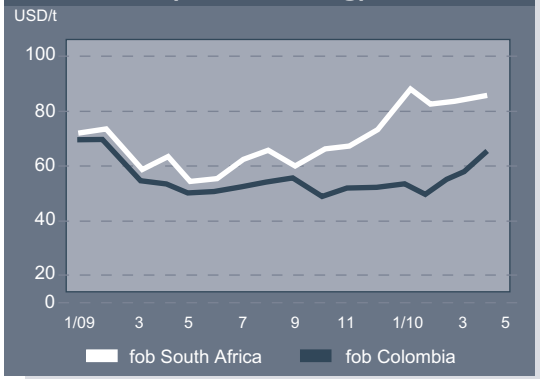
Whereas the Atlantic suppliers Colombia, Russia (Baltic) and Poland had to offer lower prices to sell their tonnage, the Far East suppliers, above all Australia and Russia (Pacific), were able to charge significantly higher prices, a consequence of the high demand from China and India.

Since South Africa was able to find customers in India and the Far East for a large part of its production, it was able to maintain prices at a higher level than its competitors who were dependent on the Atlantic market. The gap in the FOB prices at the beginning of April 2010, for example, between Colombia (US$63/t) and Newcastle (US$95/t) amounted to US$32/t, a difference never before observed to this extent.

Over the course of 2009, the CIF–ARA prices declined to about US$68/TCE, but then rose steadily to about US$90/TCE by the end of the year. On April 1st 2010, the price was US$88/TCE. The growing strength of the US dollar led to a slight increase in prices for the euro countries.

The demand for steam coal in the Atlantic region has remained restrained in 2010. So the further course of price developments for steam coal will be largely dependent on the developments in the Pacific region, specifically on the needs of China and India. China above all, being a swing customer, has an enormous impact.

Development of FOB Steam Coal Spot Prices South Africa/Colombia (6000 kcal/kg)



Source: Examination of various sources

Steam Coal Quotations

Prices for steam coal are being set more and more on coal exchanges, especially in Europe, whereby capital investors are playing an increasingly important role. The number of participants on the exchanges is rising. The latest published exchange figures are frequently used as benchmarks for contract conclusions. There is still a lack of satisfactory transparency concerning the collection of market data and the methods used to determine the price indices.

On the other hand, no reliable alternatives have appeared. In the meantime, there are a number of indices (from McCloskey above all) for various regions, e.g.

- *NW Europe steam coal marker (US$/t),*
- *Asian steam coal marker (US$/t),*
- *Indonesian subbit marker (US$/t),*
- *Anthracite Index - Mapi 1.*

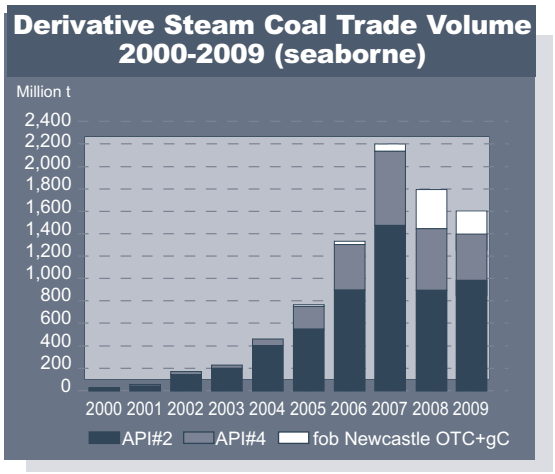
Additional indices, e.g.

- *API#2, cif ARA,*
- *API#4, fob Richards Bay,*
- *API#6, fob Newcastle,*
- *McCloskey, swaps Indonesian sub-bit*

and others are maintained for OTC transactions. It is highly disconcerting, as observed in the recent past, that the index API#4 has been higher than API#2.

The volume of paper trade has exploded exponentially since 2000 and in 2009 amounted to 2.5 to 3.0 times the amount of the total physical steam coal trade. Most of the paper trade is found in the Atlantic region. But in 2009, the trading volume fell by about 7 %.

The chart below shows the development.



Source: Perret Associates

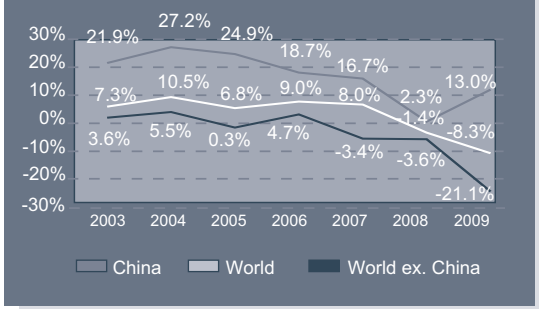
It is remarkable that the volume on the basis of API#2 in 2009 recovered in comparison with 2008 despite the crisis.

In addition to steam coal quotations, exchanges for trading emission certificates have become established in the European region.

Weaker Coking Coal Demand, But Expected Collapse Did Not Materialise

Worldwide crude steel production in 2009 fell by 110 million tonnes from 1,330 million tonnes to 1,220 million tonnes. The greatest part of this decrease was in the OECD countries, but Russia and Ukraine were also affected. The production decline which began in the 4th quarter of 2008 continued during the first half of 2009. The steel markets slowly began to recover starting in the middle of 2009.

Crude Steel Production Growth Trend



Source: World Steel Association

The pig iron production decisive for the consumption of coking coal, PCI coal and coke declined by 29 million tonnes from 927 million tonnes in 2008 to 898 million tonnes in 2009. The share of crude steel production using pig iron melted in the blast furnace process, however, remained high because the growth in crude steel production, above all in China, was largely based on this process due to the lack of adequate supplies of scrap.

Crude Steel and Pig Iron Production in China

	2007 Mill. t	2008 Mill. t	2009 Mill. t	Growth 2008/2009 %
Crude Steel	489	502	568	+13
Pig Iron	469	471	544	+15
Share of Pig Iron in Crude Steel	95.9 %	93.8 %	95.8 %	

Due to China's rise in world market share of steel production from 38 % in 2008 to 47 % in 2009, its share of world pig iron production in total steel production also increased.

Crude Steel and Pig Iron Production in the World

	2007 Mill. t	2008 Mill. t	2009 Mill. t	Change 2008/2009 %
Crude Steel	1,334	1,330	1,220	- 8.3
Pig Iron	946	927	898	- 3.1
Share of Pig Iron in Crude Steel	70.9 %	69.7 %	73.6 %	

The world's largest steel producers developed as shown below in 2009:

The 10 Largest Steel Producers in the World

Country	2007 Mill. t	2008 Mill. t	2009 Mill. t
China	489.2	502.0	568.0
Japan	120.2	118.7	88.0
USA	98.2	91.5	58.0
Russia	72.2	68.5	60.0
India	53.0	55.1	57.0
South Korea	51.4	53.5	49.0
Germany	48.6	45.8	33.0
Ukraine	42.8	37.1	30.0
Brazil	33.8	33.7	27.0
Italy	32.0	30.5	20.0
Total World	**1,344.0**	**1,330.0**	**1,220.0**

Source: World Steel

China (+66 million tonnes) and India (+2.0 million tonnes) were the only countries which were able to increase steel production.

	2007	2008	2009	2008/2009 Change
	Mill. t	Mill. t	Mill. t	Mill. t
Crude Steel:				
World excl. China	855	828	652	-176
China	489	502	568	+ 66
Total Crude Steel World	**1,344**	**1,330**	**1,220**	**- 110**
Pig Iron:				
World excl. China	477	456	354	-102
China	469	471	544	+ 73
Total Pig Iron World	**946**	**927**	**898**	**- 29**

Due to the sharp plunge in production, especially in the OECD countries, the assumption at the turn of the year 2009 was that the coking market would also suffer a major collapse, particularly since the stockpiles at the steel mills were being utilised first. However, the strong growth of the crude steel production in China absorbed large quantities of coking coal from the world market, preventing a greater decrease in world production and prices.

As the steel industry began to recover over the course of 2009 and the stockpiles were replenished, the coking coal market stabilised.

The supplier structure on the seaborne world market remained largely unchanged. There was a slight decline for Australia; the USA, Canada and China also reduced their exports. Overall, no shortages were observed in 2009.

Market Share
Coking Coal World Market

	2007		2008		2009	
	Mill. t	%-share	Mill. t	%-share	Mill. t	%-share
Australia	138	68	135	65	134	67
China	3	2	4	2	1	1
USA	26	13	35	17	32	16
Canada	25	12	25	12	21	10
Russia	5	2.5	3	1.5	5	2
Miscellaneous	5	2.5	5	2.5	8	4
Total	**202**	**100**	**207**	**100**	**201**	**100**

So the supplier structure did not display any major changes, and Australia's market share is about 67 %. Despite serious problems in logistics, Australia managed to keep its exports at almost the same level as the previous year. Coke production declined worldwide by 1.2 % from 527 million tonnes to 521 million tonnes. China, the largest coke producer and exporter by far, reduced its exports to virtually zero. China produced 66 % of the world production (345 million tonnes) and increased coke output by 33 million tonnes in 2009. In comparison with production, the world market for coke is relatively small. Only about 5 %–6 % of the total production is normally traded seaborne and across the greenline. World trade in coke was probably cut to less than half in 2009.

Coke World Market

	2007	2008	2009[1)]
	Mill. t	Mill. t	Mill. t
Total World Market	31	28	14
% of World Coke Production	5 %	5 %	3%
thereof overland	6	6	5
thereof seaborne	25	22	9
thereof China	15.3	12.1	0.5

[1)] provisional

Prices Decline in 2009/2010, Sharp Rise Again in 2010/2011

The sharp rise in coking coal prices during the boom years 2007/2008 was followed by a drop in the benchmark prices for hard coking coal from US$300/t FOB to US$125–US$130/t FOB. This was in reaction to the steel crisis.

Change in Contract Prices for Metallurgical Coal

	US$/t „fob“ Australia			
	2006	2007	2008	2009
„Hard-coking-coal“	116	98	300	129
„Semi-soft-coking-coal“	53	65	235	78
PCI	63	68	245	85

Source: Macquarie Research Commodities

By the end of March 2010, the negotiations round for contract year 2010/2011 had resulted in substantially higher benchmark conclusions in view of the strong demand from China and the recovering demand from the OECD countries.

Initial signs indicate that there will be a substantial upward price correction for metallurgical coal.

Indicators of a Price Correction

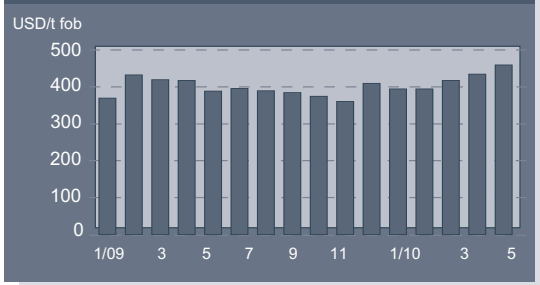
	Forecast for 2010/2011 US$/t „fob“ Australia
Hard-coking-coal	200-220
Semi-soft-coking-coal	170
PCI	180

The small number of coking coal producers is essentially an oligopoly which is able to dictate prices on the market with relatively little effort. This situation is being viewed with an increasingly critical eye.

Due to a lack of quality parameters suitable for an exchange, prices for coking coal are not determined on a coal exchange. This is still done traditionally by means of direct agreement usually via contract between producers and consumers. The contract price for hard coking coal agreed between Australian suppliers and the Japanese steel industry for the current Japanese fiscal year (April/March) serves as a benchmark.

But this practice is now in a process of change. The large coking coal producers are moving away from the previous system of annual contract prices to pricing on a quarterly basis. At the same time, the first attempts are being made to establish coking coal indices. As a result, spot market elements are having greater impact on pricing.

Chinas Export Coke Prices (12-12.5 % Ash) FOB

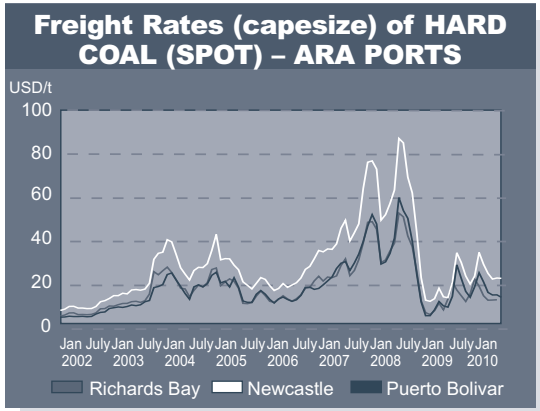


Source: China Coal Report

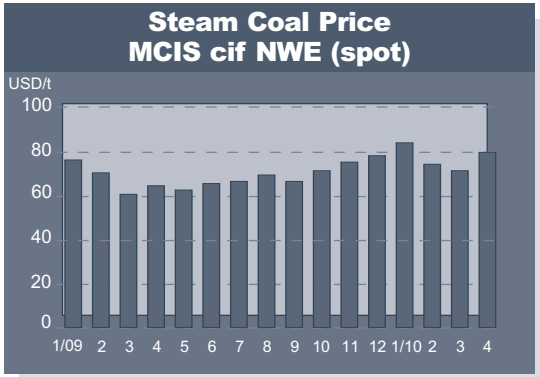
Coke prices ex China still remain very high. But there are practically no sales. ARA prices in 2009 were substantially lower, but have been rising again in recent months.

Freight Rates – Crash from Historic Record Highs to Rock Bottom

Following the plunge from US$50/t to US$5/t for the route South Africa–ARA in 2008, freight rates started at a low level in 2009. After recovering from the low mark, they varied over the year in a range of US$10–US$20/t.



The fleet/capacity or supply increase in 2009 came to about 10 %, while the bulk goods volume or demand on the world market declined by 3 %. This created a large gap between supply and demand. Demurrage situations in Australia, China and Brazil reduced available capacities. Nevertheless, yet another strong increase of more than 10 % in fleet capacity in 2010 and the expectation of only a moderate recovery in the bulk goods transport volume means that it will remain a buyer's market, holding freight rates in a corridor of US$10–US$20/t for the benchmark route South Africa–ARA. The simultaneous decline in FOB prices and freight rates led to import coal prices CIF–ARA becoming more moderate.



Source: McCloskey

US Dollar Exchange Rate

The US dollar exchange rate, a major component of the international energy and raw material business, developed as described below.

During the 1st quarter of 2009, the US dollar remained strong, but weakened over the course of the year. It began to rise again at the end of 2009. The currency of important raw material countries such as Australia, Canada and South Africa stabilised with respect to both the euro and the US dollar.

Raw Material Energy Policies – Still Challenged –

Owing to the strongly increasing demand – despite the global crisis – for energy and natural resources around the world, more and more countries are beginning to see the marketing of their primary energy deposits as a strategic task. This becomes clearly visible in the oil and natural gas industry, where a number of countries have nationalised oil and natural gas production so that optimal use can be made of limited reserves.

In this context, it is significant that the leading natural gas countries want to join forces in a kind of natural gas OPEC. This project is currently being pushed by Russia and Iran being in the lead. Rising natural gas prices can be expected as a consequence despite an excess supply in the short term.

The coal sector comprises largely privately owned structures, but there are also observable tendencies towards government influence, e.g. in Venezuela. In view of the still vast worldwide coal reserves, massive intervention is not to be expected for the moment. In the long term, however, the self-interest of individual countries could cause their attention to focus increasingly on domestic coal production, e.g. in Vietnam and South Africa.

In free market economies, however, the increased efforts to consolidate the companies and position them for sustained profitability takes the place of a national interest. As a whole, the supply security, especially in the Pacific region, for the economic development of the threshold and developing countries is steadily gaining importance. Besides Japan, which has been active for many decades, China and India are now pursuing specific energy procurement and raw material policies and are securing reserves all around the globe by acquiring participating interests in companies and projects.

They will most likely continue to pursue these policies in 2010 and in following years as well. A number of Chinese companies are seeking to acquire mines abroad most notably in Australia.

The policy discussions about energy and natural resources in Europe, on the other hand, continue to be dominated by environmental policies and increasingly ignore the aspects of supply security and economic efficiency.

An initial step for the EU can be seen in the "Strategic Energy Review" (SER II), which at least is attempting to conduct a thorough review of EU strategy regarding energy supply.

CO_2-Emissions Worldwide 2008/2009 at 30 Billion Tonnes

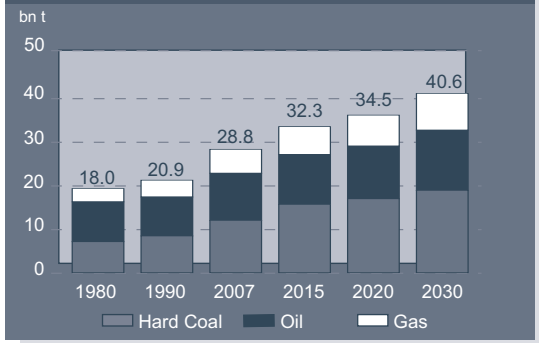
Early figures indicate that CO_2 emissions in 2008/2009 stagnated at 30 billion tonnes. They continued to rise in the Pacific region, mostly in China and India – countries whose economic growth is based on fossil energy sources, above all coal.

Rise in CO_2-Emissions

	2007[1] Billion t CO_2	2008[2] Billion t CO_2	2030 Billion t CO_2
China	6.1	6.5	11.7
India	1.4	1.5	3.3
Russia	1.6	1.6	2.0
USA	6.1	5.9	5.8
Total	**15.2**	**15.5**	**22.8**
Rest of world	14.5	14.7	17.8
Total	**29.7**	**30.2**	**40.6**

Sources: [1] IEA World Energy Outlook 2009, Reference Case
[2] Ziesing, 2009

World Energy-Related CO_2-Emissions by Energy Source in the Reference-Scenario



Source: IEA

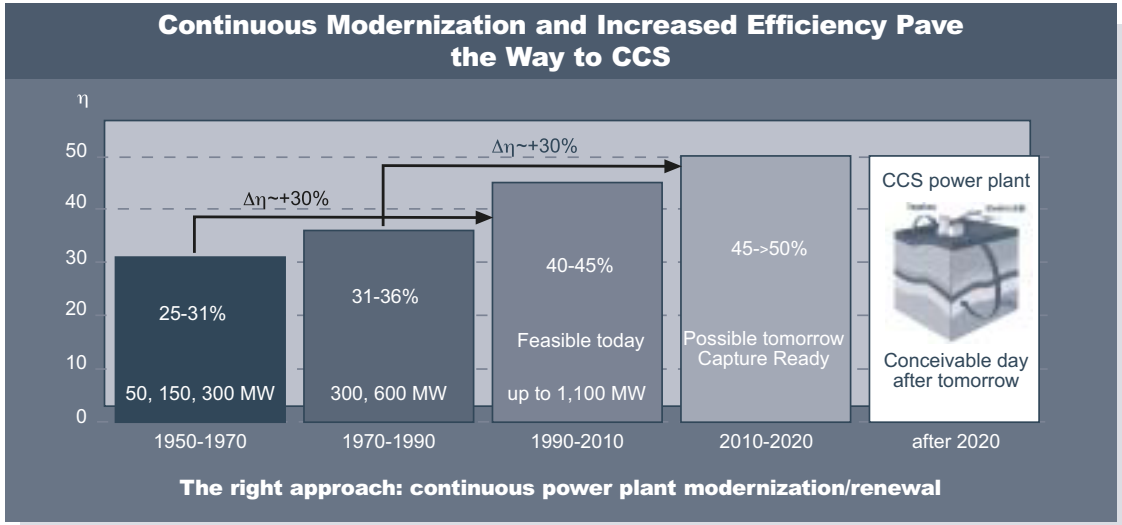
Europe's energy consumption has only a slight impact on the planet's climate. A reduction of the EU 25 quantity by 30 %, for example, equalling 1.2 billion tonnes by 2030 would have the effect of reducing the global situation by 3 %. This compensates for the CO_2 world growth rates of about 2 years and would thus postpone further climatic warming by only 2 years, while burdening the citizens of the EU with enormous costs – an unpleasant fact.
Moreover, the global economic crisis will almost certainly severely limit the manoeuvring room for climate change measures for the next several years.

Uniform Worldwide CO_2 Trade Required – Receded into the Far Distant Future After Copenhagen

It is becoming increasingly clear that the EU emissions trading system will, from a global viewpoint, almost certainly remain an island solution because priority worldwide is understandably being given to other problems requiring solutions. Raising the standard of living, providing access to electricity, water shortages and combating hunger and poverty are seen as more pressing issues in threshold and developing countries. Still these countries will be largely responsible for the increase in CO_2 concentrations over the next 30–60 years.

Technology Makes Coal Cleaner

The energy-generating industry, above all in the coal-producing countries, has launched a worldwide technology campaign to make the conversion of coal into electric power more environmentally friendly. This will be carried out via a number of steps.

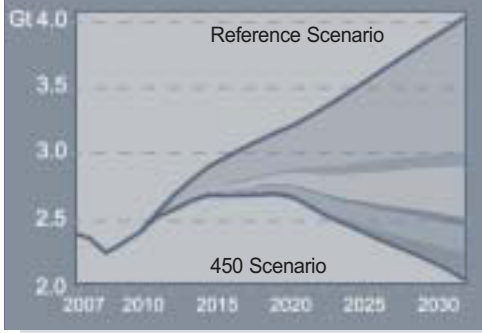


The safest method, and most economical with the quickest effect, is the optimisation of the current hard coal-fired power plant technology to improve efficiencies to as much as 45 %–50 %. Greater efficiency in the burning of fuels (such as in the power plant Moorburg in Hamburg) can be achieved in combination with the district heating. In the USA, Australia, the EU and other countries, government funds are being invested in the further development of power plant technology so that rapid progress can be made. Private industry is also investing major sums in the development of new technologies. The lion's share of government aid is going to the financing of pilot projects for CCS technologies rather than into measures for increasing plant efficiency.

The development of technologies to reduce CO_2 and to separate CO_2 emissions in hard coal fired generation is the most important contribution industrialised countries can make to promote environmentally friendly hard coal generation in threshold and developing countries. The same countries which rely in the long on hard coal.

The IEA emphasised the importance of CCS technology and the improvement in the degree of efficiency as a scenario for preventing emissions in its "World Energy Outlook 2009". Improving the degree of efficiency and the use of CCS technology could prevent the emission of about 2.1 billion tonnes of CO_2 annually by 2030. The CCS Institute for the coordination of worldwide CCS activities was founded in Australia in 2009. CCS technology is being pushed forward by massive efforts in many countries. CCS technology has the potential to greatly reduce CO_2 emissions at a low cost. The IEA describes what effects and investments are necessary as related to worldwide measures for the prevention of CO_2 emissions in its "Technology Outlook 2009". The report shows that CCS

World: Energy-related CO_2 Emissions Abatement/Investment



	Abatement (Mt Co_2)		Investment ($2008 billion)	
	2020	2030	2010-2020	2021-2030
Efficiency	2517	7880	1999	5586
End-use	2284	7145	1933	5551
Power plants	233	735	66	35
Renewables	680	2741	527	2260
Biofuels	57	429	27	378
Nuclear	493	1380	125	491
CCS	102	1410	56	646

Source: IEA, World Energy Outlook 2009, Graphic 9.2, Page 323

technologies could help to prevent 1.4 billion tonnes p.a. of CO_2 emissions in 2030. CCS technologies have the most favourable ratio between the prevention effect and investment needed.

EUROPEAN UNION

Slight Recovery of Economic Growth in 2009

The economic situation stabilised starting in the middle of 2009. The decisive factors here were the need to replenish low stockpiles and the initial impact of economic recovery programmes.

Economic Growth EU 27 in Percent

Member States	2007	2008	2009	2010
Countries -Euro Zone (EU-15)	2.6	1.2	-3.9	0.7
EU-18 (incl. Denmark, Sweden, Great Britain)	2.6	1.2	- 4.0	0.7
New Members (EU-9)	6.0	5.0	- 4.2	0.7
EU-27	2.9	1.4	- 4.0	0.7

Unemployment across the EU rose from 7 % to 9 %. A further rise to more than 10% is expected in 2010. The inflation rate, on the other hand, remained at a low level. The worldwide economic slowdown caused problems above all for the export-oriented EU countries. In addition, the UK and Spain are also suffering from the weakness of the real estate market and the turmoil on the financial markets. 2010 will surely be an extremely difficult year for the EU, which will be confronted with a significant decline in gross national product. Some countries, above all the new member states, will find themselves in substantial financial trouble.

Despite the current economic outlook, a stable development in hard coal imports is expected for 2010 and the following years.

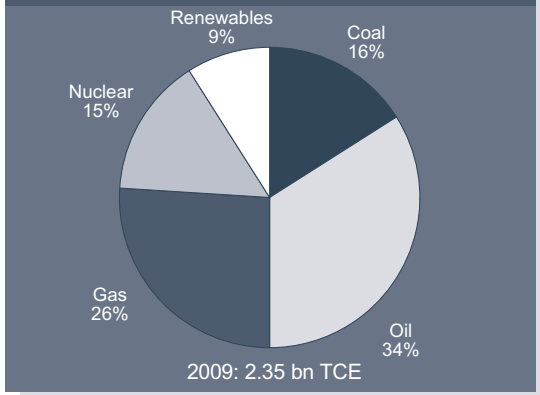
Overall Energy Consumption on the Decline

The sharp downturn in economic performance in 2009 led to correspondingly low energy consumption, which impacted all of the energy sources with the exception of renewable energies. However, the structure of primary energy consumption essentially remained unchanged. In total, primary energy consumption declined by 6 % from 2,500 million TCE to 2,350 million TCE.

All countries noted lower energy consumption. For the most part, energy consumption fell significantly more sharply than economic performance.

Energy consumption for 2009 is estimated as shown below according to the provisional information available:

Primary Energy Consumption of EU-27



Sources: Various examinations, own calculations

Success in reducing CO_2 varies widely within the EU 15. While the industrial heavyweights in the EU, Germany and Great Britain, largely achieve their goals, most of the other countries fall short, some by a large margin, and the lethargy of the EU Commission in pushing delinquent countries to achieve their goals remains elusive.

EU-27 CO_2-Emissions: 1990-2008

	Mill. t CO_2-Equivalent		Change	
	1990	2008	Mill. t	%
EU-15(excluding Germany and Great Britain)	1,738	1,978	+240	+14
Germany and Great Britain	1,627	1,371	-256	-16
EU-17	**3,365**	**3,349**	**-16**	**-0.5**
EU-10	1,039	801	-238	-23
EU-27	**4,404**	**4,150**	**-254**	**-6**

Source: Ziesing, et-Heft 9 (2009)

The table demonstrates that without the contributions of Great Britain, Germany and the EU 10 countries, emissions growth of +14 % would mean that the EU would fall far short of its targets. However, the successes in reducing emissions in Germany are largely a consequence of the economic transitional situation in eastern Germany. Great Britain profited from the decline in hard coal mining by 80 million tonnes during the period 1990–2010, and the EU 10 countries recorded a drop in emissions of 23 % due to the collapse of many industrial structures in Eastern Europe; in other words, a

major portion of the reduction successes are "onetime offsets" which cannot be repeated.

On the contrary, the EU 10 states, following their consolidation, will presumably begin a stronger growth phase with a simultaneous rise in energy requirements. However, this may be delayed by 3–4 years owing to the economic crisis with nearly all new member states suffering a major economic setback. This in turn could have a positive effect on the EU's mid-term CO_2 balance. According to initial estimates in the analyses prepared by ETS, CO_2 consumption declined by 11% in 2009.

In view of these circumstances, one must nevertheless question whether the EU reduction targets for 2012 and 2020 are at all realistic. The reduction of greenhouse gases must aim more rigorously at transport and heating markets and not be restricted to the energy industry. Moreover, high energy prices lead to further savings in the transport and heating sectors.

Hard Coal Market (EU 27) Still Declining

There were further reductions in the output of European hard coal production in 2009.

Bulgaria	– 0.7 Mill. t
Germany	– 4,1 Mill. t
Poland	– 6.1 Mill. t
Spain	– 0.9 Mill. t
Czech Republik	– 1.3 Mill. t
Romania	– 0.5 Mill. t
Great Britain	– 0.2 Mill. t

a total of 13.8 million tonnes.

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

Overall, hard coal consumption in the EU 27 presumably declined by 60–70 million tonnes (stockpile reductions included):

Hard Coal and Lignite Volume in the EU

	2007 Mill. t (t=t)	2008 Mill. t (t=t)	2009 Mill. t (t=t)
EU-27 Output	158	149	135
EU-27-Coal Imports/Inland Trade	231	217	182
EU-27-Coke Imports/Inland Trade	11	11	8
Hard Coal Volumes	400	377	325
EU-27 Lignite	424	422	407
Total – Coal Consumption	**824**	**799**	**732**

The collapse in the steel industry and the subsequent reduction in stockpiles at steel mills, along with the decline in demand for electric power, led to significantly lower sales. Hard coal consumption decreased by 52 million tonnes. The decline in imports of 38 million tonnes was the most significant change. Lignite production and consumption remained relatively stable.

The hard coal consumption of 325 million tonnes in the EU is estimated to have the following breakdown by sectors:

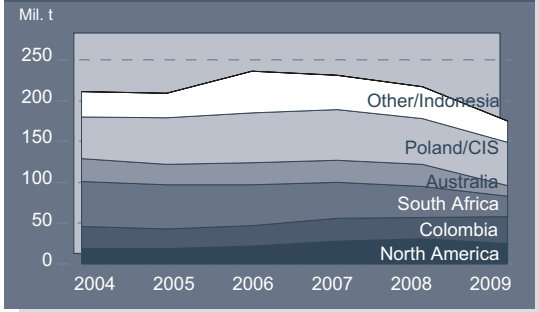
Distribution of Hard Coal Consumption in the EU

	2007 Mill. t	%	2008 Mill. t	%	2009 Mill. t	%
Power Plants	266	67	245	65	230	71
Steel Mills/Coking Plants	86	21	88	23	60	18
Heating Market	48	12	44	12	35	11
Total	**400**	**100**	**377**	**100**	**325**	**100**

Provisional

There was virtually no change in the structure of the hard coal imports in 2009. Declining exports to the EU from Indonesia, Poland and South Africa were compensated by greater supplies from Colombia and Russia.

EU Hard Coal Imports from Third Countries and EU-internal Trade



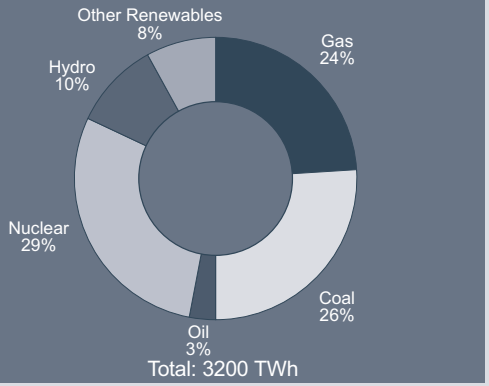
Sources: EUROSTAT, Statistics of Producing Countries

Poland continues to lead the list of countries producing hard coal.

Hard Coal Output in the EU

	2007 Mill. t (t=t)	2008 Mill. t (t=t)	2009 Mill. t (t=t)
Germany	24	19	15
Spain	11	10	9
Great Britain	17	18	18
Poland	87	83	78
Czech Republik	13	13	11
Romania	3	3	2
Bulgaria	3	3	2
Total	**158**	**149**	**135**

EU Energy Mix 2009 Within Power Generation



Sources: EWEA and Platts Power Vision

Adequate and Flexible Infrastructure

The infrastructure for Europe is being steadily expanded as import volumes rise. The railway lines between the interior and the ARA ports are also being improved.

Coal Handling in Northwest European Ports in Million Tonnes

Ports	2007	2008	2009
Hamburg	5.7	5.2	5.2
Bremen	2.0	1.8	1.4
Wilhelmshaven	1.3	2.2	2.2
Amsterdam	22.2	22.2	18.0
Rotterdam	28.2	28.6	24.8
Zeeland Seaports	3.5	4.4	3.9
Antwerp	8.6	9.9	6.1
Gent	3.4	4.2	2.6
Dunkirk	9.6	9.7	6.1
Le Havre	2.4	2.7	2.2
Total	**86.9**	**90.9**	**72.5**

Source: Port of Rotterdam

Port shipment volume in 2009 declined by about 18 million tonnes (20 %) due to weaker demand.

Energy Policy – Ambitious EU-27 Climate Targets Fail to Find Acceptance in Copenhagen

The EU climate policies are in a shamble. Energy policy objectives in Europe are being defined increasingly in Brussels. As in the past, the EU has still not found a way to persuade the world to accept its climate policy targets. Countries such as China, India and many others simply see their priorities in economic growth, raising the living standards of their populations and reducing unemployment. This was demonstrated dramatically during the Climate Change Conference in Copenhagen. Instead of defiantly sulking, the EU should attempt to analyse the reasons for the failure. The conference in Copenhagen leaves in its wake a political stage which has changed globally. It is no longer possible to speak of a trailblazing role for Europe, because no one is following the marked path. At this point of time the world outside of Europe is not interested in the European ideas for regulation. Continuing in the same vein is not acceptable. Even today, industry and private households suffer by the costs for the exaggerated EU policies to reduce CO_2 in addition to rising costs for raw materials.

The fundamental climate policy of the EU was defined as shown below in the so-called Climate Package of March 9th 2007:

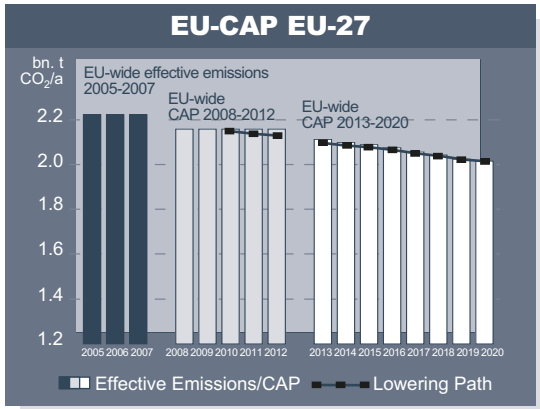
- By 2020 binding reduction of GHG emissions by 20 % in comparison with 1990;
- By 2020 reduction of GHG emissions by 30% in comparison with 1990, to the extent that other states undertake comparable efforts;
- Reduction of primary energy consumption (PEC) by 20 % by 2020 in comparison with current forecasts (basis 2005);
- Increase in the share of renewable energies in PEC to 20 % by 2020;
- Share of biofuels in 2020: 10 % in every member state

The reduction of the GHG emissions is the primary for the coal-consuming industry and the CO_2 emissions trading system implemented for it.

As of 2013, there will be a several changes to the systems in place for the reduction of CO_2 emissions:

- The national CO_2 allocation budgets will be merged into one EU CO_2 budget.
- The emission budget for the emission trade in 2020 is targeted at 21 % below the emission level in 2005.
- From 2010 on, the emission budgets will be reduced by 1.74 % p.a.

The chart below shows the procedure:



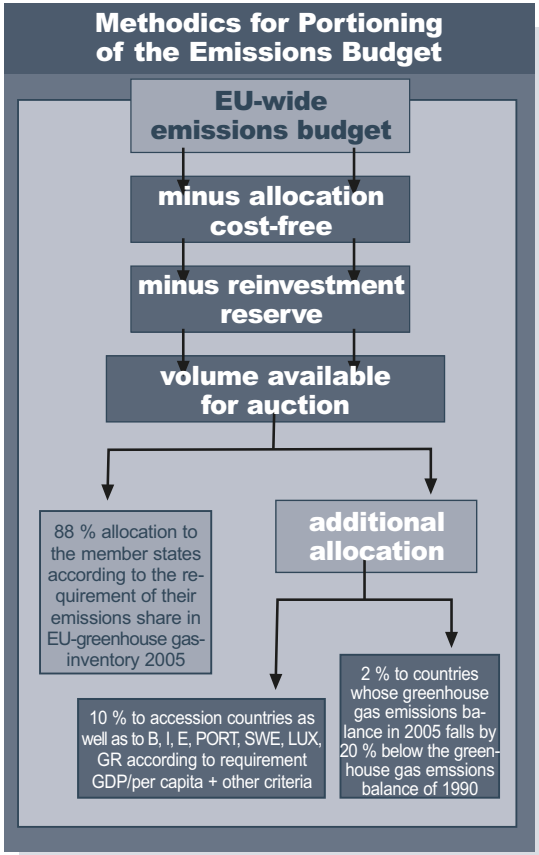
The proposed development of the CO_2 budget for the EU-27 is shown here:

EU-27: Budget of CO_2-Certificates

Time Period	Mill. t
1st Period 2005-2007	2,299
2nd Period 2008-2012	2,083
3rd Period 2013-2020	1,720
Total Reduction 2005-2020	**579**

Initial estimates of CO_2 emissions from the facilities recorded by the ETS in 2009 amounted to 1,882 million tonnes and were thus below the cap stipulated by the EU in 2009. The surplus of certificates is estimated at 162 million tonnes, a figure which does not include certificates from CDM and JI measures into account. The major decrease in industrial activity in the EU caused energy consumption to fall at a rate which is far higher than the decrease in the gross national product over the same period. An economic recovery will surely cause energy consumption and the parallel CO_2 emissions to rise again, rapidly consuming the current surplus.

CO_2 certificates are allocated as shown in the figure below:



Source: Franzjosef Schafhausen, Klimapolitik, et Heft 3/2009

This method causes substantial problems in terms of fairness of competition among the various countries. Above all, Germany is at a disadvantage.

The CO_2 certificates

- are supposed to be auctioned off at 100 % for power generation and
- initially will be allocated to the industry at no charge if they could otherwise be at a disadvantage to international competition.
- Other industry sectors must buy 20 % of the shares from 2013 on. This share will rise to 70 % by 2020 and is supposed to reach 100 % by 2027 at the latest.

The failure of the Copenhagen Conference means that the 100 % auctioning for electric power generation serves neither climate protection nor cost savings for power consumers; its sole purpose is to open up new revenue sources for the government.

The planned restrictive handling of CDM/JI measures is also questionable. Since climate warming is a global problem, it should be possible to implement the CO_2 prevention measures, without any restrictions, at the places where they are most efficient.

The full scope of the planned reduction of CO_2 emissions between 2005 (2.3 billion tonnes) and 2020 (1.7 billion tonnes) amounts to 0.6 billion tonnes CO_2. According to the IEA reference scenario, the world's CO_2 emissions in 2020 will total 36 billion tonnes. In reality, the total effect of the EU efforts will result in a reduction of only 1.7 % of the CO_2 emissions from electric power generation achieving virtually nothing in reducing global GHG or improving the global climate.

Overall, we must wait and see whether Europe, in view of weak industrial activity during the next few years and the return of rapidly rising prices for raw materials, will be able to afford additional costs for the prevention of CO_2 emissions in the face of international competition. France has already decided against the introduction of a CO_2 tax.

Emissions Trade Jeopardises International Competitiveness of Industry Sectors

The risk of corporate migration has risen since the failure of the Copenhagen Conference. On January 5th

2010, the EU Commission published a list of industrial sectors which are facing a significant risk of production relocations to countries outside of the EU to avoid additional CO_2 costs and the intense international competition in the future EU emissions trade (the so-called Carbon Leakage List). While 100 % of the emissions certificates will be allocated to these industrial sectors at no charge, the procedure will take place within the framework of demanding technical benchmarks which are hotly disputed. The scope of the Carbon Leakage List confirms the reality of the existing relocation risk arising from the unilateral EU climate change policy, which for the moment has no chance of being implemented in a similar fashion in other economic regions.

According to the list, 164 industrial sectors and subsectors are threatened by the relocation of production to countries outside of the EU. A major part of manufacturing industry is jeopardised by possible production relocation. The Carbon Leakage List covers 77 % of the emissions of the manufacturing sectors included under the EU emissions trade. In total, the Carbon Leakage sectors are responsible for 25 % of the emissions included in the EU emissions trading system.

The Carbon Leakage List has an initial term of application of 5 years. During this period, the list can be extended by additional sectors after submission and review of requests. Moreover, the list can be modified on the basis of an international climate change treaty, provided that it can be assumed that the conclusion of such a treaty means that the risk of the relocation of CO_2 emissions is no longer viewed as being significant. Yet the failure of the Copenhagen Conference has caused the risk to increase.

CCS Technology: EU Supports Projects to the Tune of € 1,250 Million

The EU member states are currently in the process of implementing the directive for CCS technology into their national legislation. The process has progressed to an advanced stage in the Netherlands and Great Britain since these countries want to take advantage of the business opportunities associated with CCS technology.

The EU is supporting the following projects:

Jänschwalde, Brandenburg

Fuel: lignite. Capacity 500 MW; separation technology: oxyfuel and post-combustion. Storage concept: two alternative solutions. EU contribution: €180 million. Operator: Vattenfall Europe.

Rotterdam (Netherlands)

Fuel: hard coal. Capacity 250 MW; separation technology: post-combustion (CO_2 wash from the flue gas). Storage concept: offshore gas field 25 km from the power plant. EU contribution: € 180 million. Operator: Massvlakte (NL), E.ON Benelux, Electrabel (NL).

Bechatów (Poland)

Fuel: lignite. Capacity 858 MW (new power plant next to Europe's largest lignite-fired power plant of 4,440 MW). Separation technology: post-combustion. Storage concept: three saline aquifers within a radius of 60 to 140 km. EU contribution: € 180 million. Operator: PGE EBSA.

Compostella, León (Spain)

Fuel: hard coal. Capacity 30 MW (to be expanded to 320 MW by 2015); separation technology: oxy-fuel. Storage concept: one saline aquifer within a radius of 100 km. EU contribution: € 180 million. Operator: Endesa.

Hatfield, Yorkshire (Great Britain)

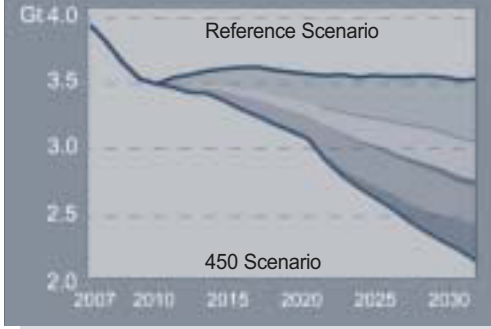
Fuel: hard coal. Capacity 900 MW, combined cycle power plant. Separation technology: IGCC. Storage concept: one offshore gas field at a distance of 170 km. EU contribution: € 180 million. Operator: Powerfuel Power Ltd.

Porto Tolle (Italy)

Fuel: hard coal. Capacity 660 MW (planned); separation technology: post-combustion. Storage concept: one offshore saline aquifer at a distance of 200 km. EU contribution: € 100 million. Operator: Enel.

A national legislative framework for the CCS technology is an essential requirement for the utilisation of EU funds. According to a study from the IEA (Technology Outlook 2009), CCS technology could make a substantial contribution to CO_2 reduction in the EU.
The following figure shows effects and investments.

EU: Energy-related CO_2 Emissions Abatement/Investment



	Abatement (Mt Co_2)		Investment ($ 2008 billion)	
	2020	2030	2010-2020	2021-2030
Efficiency	206	438	392	709
End-use	197	414	387	709
Power plants	9	24	5	0
Renewables	80	256	113	268
Biofuels	1	50	4	60
Nuclear	143	253	0	88
CCS	16	250	9	126

Source: IEA, World Energy Outlook 2009, Graphic 9.17, Page 335

European Energy Market Must Be Developed Further; EU Trade with Certificates for Renewable Energies Sensible

The sheer number and diversity of national support programmes for renewable energies must be translated

into a uniform regulation for the single European market. This is the only way to ensure that renewable energies are developed efficiently where they can be generated at the lowest cost. Their expansion at this time is not oriented to efficiency, but strictly to the amount of the available subsidies. Great Britain is working successfully with a certificate system. Certificate trade for "green electric power" across the entire EU could achieve a form of control appropriate for the free market.

European Market Also Needs a Centralised CO_2 Platform

The current practice of all EU member states in auctioning off their CO_2 certificates nationally is not in conformity with a common EU single market for energy. Since there is a regulation that the income from the auctions goes to the individual member states, there is nothing to be said against the establishment of a centralised CO_2 platform, a goal which the EU Commission continues to work towards.

GERMANY

Sharp Downturn in Gross Domestic Product by 5 % in 2009

The global financial market and economic crisis hit Germany with full force.
Worldwide economic production declined for the first time in the post-war era. Germany, being highly dependent on export trade, was impacted especially hard and suffered severe drops in production, above all in the processing industry.

Selected Key Data for Overall Economic Development in Germany[1)]

	2008	2009	2010 Outlook
	Change from Previous Year in %		
Gross Domestic Product (price-adjusted)	1.3	- 5.0	1.4
Labour Force	1.4	- 0.1	- 1.0
Unemployment in % [2)]	7.8	8.2	8.9
Usage of GDP (price-adjusted)			
Private Households and Non-profit Private Organisations	0.4	0.4	- 0.5
Equipment	3.3	- 20.0	3.1
Buildings	2.6	- 0.7	1.1
Domestic Demand	1.7	- 1.8	0.6
Exports	2.9	- 14.7	5.1
Imports	4.3	- 8.9	3.4
Trade Balance (GDP Growth Contribution) [3)]	- 0.3	- 3.4	0.8

[1)] Until 2009. provisional results from the German Federal Statistical Office; Last revision: 13. January 2010
[2)] In relation to total labour force
[3)] Contribution to growth rate of GDP

Source: Annual Economic Report 1/2010 of Germany

A cautious recovery began in the middle of 2009 and has continued up to now. Nevertheless, the effects of this deep slump will probably not be overcome for the next 2–3 years, i.e. 2012/2013.

Energy Consumption in 2009 Declines

The primary energy consumption in Germany fell by about 29 million TCE (6 %)

from 484 million TCE in 2008 to 455 million TCE in 2009.

The negative overall economic contraction had a decisive influence on this sharp decline. The primary industries with high energy requirements were hit hard in comparison with the previous year:

- Pig iron production -31 %
- Metal products -22 %.
- Basic chemical products -15 %

Production also plunged in other industries requiring less energy:

- Machine construction -26 %
- Motor vehicle construction -22 %
- Electrotechnology -22 %.

The bottom line was that the decline in energy consumption of 6 % was greater than that of the gross national product (5 %). Energy consumption will consequently rise again over-proportionately as the economy begins to recover.

In 2009, energy consumption reached the lowest level in the area of present-day Germany since the start of the 1970s. Although the slightly lower average temperatures increased consumption in the heating market, this factor was unable to balance out the sharp in consumption caused by weak industrial activity.

The structure of the primary energy consumption in 2009 changed very little in comparison with the previous year 2008.

Oil and natural gas remained the most important primary energy sources (56.5 %). Petroleum consumption fell by 5 % or 8.4 million TCE to 158 million TCE. The sale of industrial products (HFO, chemical benzine, lubricants) declined by 2 million tonnes, the sale of light fuel oil by 3.2 million tonnes.

Natural gas consumption also declined by 5 % to 99 million TCE in 2009. Above all, the demand from industry and power plants decreased. Hard coal and lignite lost in sales as well.

Hard coal – primarily an energy source and raw material for industry – was hit especially hard by the economic crisis in 2009. Consumption declined by 11.1 million TCE (18 %) to 50.3 million TCE. Sales to the steel industry fell by 30%, supplies to the electrical industry by 13 %.

Lignite, on the other hand, suffered only moderate losses of 1.5 million TCE to 51.5 million TCE (3 %).

Power generation from nuclear power plants fell by 9 % or 5.2 million TCE. However, a number of nuclear power plants had were offline. Only 17,186 MW or just under 84 % of the installed nuclear power performance of 20,470 MW was generating.

Renewable energy sources increased their contribution by 1.2 million TCE to 40 million TCE and covered 9 % of the primary energy consumption. Most of the growth came from biomass and highly subsidised solar energy.

The approximately 40 million TCE from renewable energy sources were utilised as shown below:

- About 22.4 million TCE (56%) for the generation of electric power,
- about 13.6 million TCE (34%) for the heating market.
- about 4.0 million TCE (10%) for the production of fuel.

The growth in energy productivity was thus substantially below the 1.8 % average of many years (1990–2009).

Primary Energy Consumption in Germany 2008 and 2009[1)]

Energy Source	2008 Mill. t TCE	2009 Mill. t TCE	Change 2008/2009 Mill. t TCE	Change 2008/2009 %	2008 Share in %	2009 Share in %
Petroleum	166.4	158.0	- 8.4	- 5.0	34.3	34.7
Natural Gas	104.4	99.2	- 5.2	- 5.0	21.6	21.8
Hard Coal	61.4	50.3	- 11.1	-18.1	12.7	11.0
Lignite	53.0	51.5	- 1.5	- 3.0	11.0	11.3
Nuclear Energy	55.4	50.2	- 5.2	- 9.3	11.4	11.0
Renewable Energies	39.1	40.3	1.2	3.0	8.1	8.9
Other [2)]	4.4	5.7	1.3	-	0.9	1.3
Total	**484.1**	**455.2**	**- 28.9**	**- 6.0**	**100.0**	**100.0**

[1)] All of the figures are provisional
[2)] Including balance of foreign trade in electricity

Source: AGEB

Energy Productivity Continues to Improve – But Growth Below Average

Energy productivity – measured in euros per gigajoule – increased further in 2009. The best way to evaluate the structural development is to use the values as adjusted for temperature and stockpiles:

Energy Productivity

	2008	2009	Difference %
Gross Domestic Product (€ bn)	2,274	2,161	-5.0
Primary Energy Consumption in Petajoules (Adjusted for Temperature and Stockpiles)	14.317	13.523	-5.5
Energy Productivity (in €/GJ)	160	162	+1.0

Source: AGEB

Electric Power Generation Falls Significantly by 6.3 %

Gross electric power generation fell by about 40.0 TWh (6.3 %) from 637 TWh in 2008 to 597 TWh in 2009. German consumption declined by about 32 TWh, and net exports fell by about 8 TWh.

The Energy Mix of the Gross Power Generation

Energy Source	2007 TWh	2008 TWh	2009 TWh	Difference 2008/2009 TWh
Lignite	155.1	150.6	146.5	-4.1
Nuclear Energy	140.5	148.8	134.9	-13.9
Hard Coal	142.0	124.6	109.0	-15.6
Natural Gas	75.9	86.7	77.0	-9.7
Petroleum	9.6	9.2	12.5	+3.3
Renewable Energies	87.5	92.7	93.0	+0.3
Miscellaneous	26.6	24.6	23.9	-0.5
Total	**637.2**	**637.2**	**596.8**	**40.2**

Source: AGEB

The border-crossing electric power trading volume (total of imports and exports) totalled about 95 TWh or 16 % of the gross power generation in 2009. It declined as well because the neighbouring customer countries were also suffering from the recession.

Almost all energy sources were impacted negatively by the decline in the demand for electric power. Power generation from hard coal suffered the most. Generation decreased by 12.3 % or 15.6 TWh, corresponding to about 5.0–5.5 million TCE. The decline in the use of lignite, which is found essentially in the base load sector, was less severe.

The installed output of wind energy rose by about 1,870 MW to 25,780 MW in 2009. A total of 21,160 wind power plants were in operation. Despite additional construction of 6.9 %, production fell from 40.6 TWh to 37.8 TWh (-6.9 %). In other words, the wind power plants supplied about 1,466 h full-load hours in 2009, only 16.5 % of their annual capacity. Evidently the specific output per windmill declines as the number of onshore windparks rises.

Power Generation from Renewable Energy Sources

Energy Source	2007 Bn kWh	2008* Bn kWh	2009* Bn kWh
Hydroelectric Power	21.2	20.4	19.0
Wind Power	39.7	40.6	37.8
Biomass	19.1	22.3	25.0
Waste**	4.5	4.9	5.0
Photovoltaics	3.1	4.4	6.2
Geothermal Energy	0.000	0.018	0.020
Total	**87.6**	**92.62**	**93.02**

* Provisional figures
** Renewable share only (50 %)

Source: BDEW-PGr "Strombilanz"

Unfortunately, wind capacities are evidently being expanded where the highest subsidies are available and at locations with the best wind exposure. New studies show that the conditions for wind energy are substantially better in England and Norway. So it is all the more important to harmonise the subsidy system in the EU so that renewable energies are located in places where they can be operated at the lowest costs.

Power generation from biomass also grew enormously; although its combustion creates CO_2, it is evaluated as CO_2-neutral.

Photovoltaics, which is subsidised most heavily per KWh, also increased. Subsidies amounting to billion of euros lead to share of gross electric power generation of 1 %.

Owing to the uneven generation of wind energy, part of the wind power can – during times of weak demand – be diverted to the Netherlands and Poland only by paying high premiums. In other words, German taxpayers are subsidising the power consumption and climate protection of neighbouring countries who, at the same time, take some of the burden off of their CO_2 balance. The premiums increase the EEG allocation for electric power consumers.

Steel Production Suffers Massive Collapse in 2009 – But Tendency Towards Improvement from the Middle of 2009

The steel industry suffered an enormous collapse in sales in 2009. As a consequence, crude steel production fell by 13.1 million tonnes from 45.8 million tonnes in 2008 to 32.7 million tonnes in 2009. Pig iron production plunged as well. It fell by 9 million tonnes from 29.1 million tonnes in 2008 to 20.1 million tonnes in 2008. A slight improvement in sales and production was noted from the middle of 2009.

Pig Iron Production

	2007 Mill. t	2008 Mill. t	2009 Mill. t	Difference 2008/2009 %
Crude Steel	48.4	45.8	32.7	-28.6
Pig Iron	31.0	29.1	20.1	-30.9

The table below shows the average specific consumption in the German steel industry:

Consumption by the Steel Industry

Energy Source	2007	2008	2009
Coke (kg per t/pig iron)	362	366	386
Blasting Coal (kg per t/pig iron)	107	106	92
Sintering Fuels (kg per t/pig iron)	49	51	63
Oil (kg per t/pig iron)	20	19	13

The poor utilisation of the blast furnace capacities raised the specific consumption of coke.

Hard Coal Market Collapses in 2009, Hard Coal Imports Also in Sharp Decline

The primary energy consumption of hard coal fell by 11.1 million TCE from 61.4 million TCE in 2008 to 50.3 million TCE in 2009. Over the last two years, hard coal consumption has declined by a total of 17 million TCE. While the decline in sales in 2008 was compensated mainly by the reduction in German output, coal imports in 2009 had to accept a decline of 8.5 million TCE and bore the brunt of the market adjustment. Imported coal proved its success as a flexible "swing supplier."
Hard coal consumption in million TCE was covered as shown below:

Cover of Hard Coal Consumption in Germany

	2007 Mill. TCE	2008 Mill. TCE	2009 Mill. TCE	2008/2009 Decline Mill. TCE
Import Coal	45.1	43.6	35.1	-8.5
Domestic Production	22.3	17.8	15.2	-3.6
Total	**67.4**	**61.4**	**50.3**	**-12.1**

German production adjusted its output once again and reduced production by 3.7 million TCE from 17.8 million TCE in 2008 to 14.2 million TCE in 2009.
The sale of hard coal in t=t developed as shown here:

(The difference in quantities between the "TCE" figures and the "t=t" figures results mainly from the steam coal sector because coal with heating values under 7,000 kcal/kg is also included causing the "t=t" figures to be higher).

Hard Coal Sales Total in Germany

Utilisation	2007 Mill. t	2008 Mill. t	2009[1)] Mill. t
Power Plants	55.4	52.3	43.4
Steel Industry	18.8	17.7	12.1[1)]
Heating Market	1.6	1.7	1.3
Total	**75.8**	**71.7**	**56.8**
Total in Mill. TCE	**67.4**	**61.4**	**50.3**

[1)] Provisional figures

Imports again contributed 70 % to the high-quality supplies for the German market in 2009. Without the import and supplies of high-quality import coking coal, the RAG-Kokerei Prosper, for example, would not be able to produce coke in the required quality for the steel mills since German coking coal is mined in only small quantities and does not meet all of the mills´ requirements in terms of quality. Import coal and domestic coal contributed to supplies in the various consumption sectors in 2009 as shown here:

Consumption Sectors Import Coal and Domestic Coal

	Import coal Mill. t	Domestic coal Mill. t	Total Mill. t
Power Plants	30.7	12.7	43.4
Steel Mills	9.1	3.0	12.1
Heating Market	0.9	0.4	1.3
Total	**40.7**	**16.1**	**56.8**

So import coal covers

- 71 % of power plant demand;
- 75 % of steel mill demand;
- 69 % of heating market demand.

Imports break down according to quality as shown here: (It must be pointed out here that the import figures in 2009 as in previous years differ from the consumption figures due to stockpile movements).

Imports According to Quality in Mill. t (t=t)

Products	2007 Mill. t	2008 Mill. t	2009 Mill. t
Steam Coal	32.7	33.2	29.3
Anthracite	0.5	0.5	0.4
Coking Coal	10.2	10.3	6.9
Coke	4.1	4.0	2.9
Total	**47.5**	**48.0**	**39.5**

Source: German Federal Statistical Office, own calculations

The steam coal was dominated by:

- Russia 8.6 Mill. t
- South Africa 5.3 Mill. t
- Colombia 5.1 Mill. t
- USA 3.2 Mill. t
- Poland 2.5 Mill. t
- Spitzbergen 1.4 Mill. t.

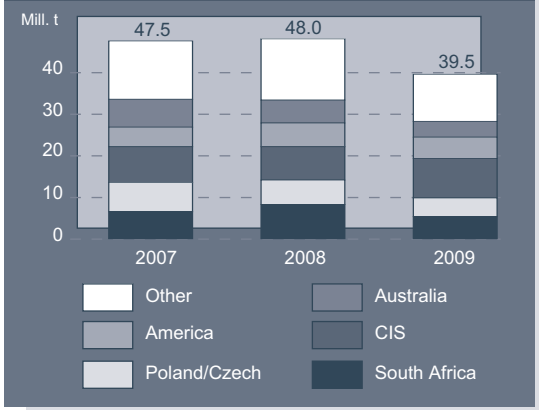
The supply structure for steam coal is broadly diversified. Russia moved up to the position of largest supplier, followed by South Africa and Colombia. The USA and Poland also supplied significant tonnages. However, the trend of a decline in Poland's importance for the German market is accelerating.

The most important suppliers for coking coal were:

- Australia 3.3 Mill. t
- USA 1.9 Mill. t
- Canada 1.1 Mill. t
- Russia 0.5 Mill. t.

Overall, the supply structure for all qualities is broadly diversified and is sourced primarily from politically stable countries. There were no logistical problems in 2009.

Steam Coal Imports into Germany (Inclusive Coke)



Sources: German Federal Statistical office, own calculations

No Problems for Import Logistics to Germany

The approximately 40 million tonnes of import coal entered Germany via the following transport routes:

Transport Routes for Import Coal in Germany

Transport Route	2007 Mill. t	2008 Mill. t	2009[1] Mill. t
German Ports	14.1	14.7	14.0
Rail	11.2	10.1	7.8
Barges from ARA Ports	22.2	23.2	18.2
Total	**47.5**	**48.0**	**40.0**

[1] Provisional figures

As volume was substantially lower, there were no bottlenecks at any point along the transport chain.

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Energy Prices Fall Across a Broad Front, But Steam Coal Maintains Its Competitive Advantages

The major prices for steam coal competitors declined in 2009 as did the coal prices, but the price developments for HS and natural gas varied.

This is what happened during the year:

Development of Energy Prices 2009

	01/01 €/t TCE	01/07 €/t TCE	31/12 €/t TCE
Heavy Fuel Oil (HFO)	163	219	237
Natural Gas to Power Plants	286	227	233
Import Coal Price CIF ARA (Spotmarket)	74	54	62

HFO followed the trend of crude oil prices and recovered over the course of 2009. Natural gas

prices continued to deteriorate throughout the entire year. The falling trend has continued in 2010. In the spring of 2010, natural gas prices fell due to an abundant supply of LNG in the world market.

Despite all of the market situations, import coal enjoyed a competitive advantage in 2009, which was amplified with respect to natural gas in 2008 because the coal prices fell by the greatest margin.

Energy Price Development as a Yearly Average

	2007	2008	2009	2008/2009 Decline
	€/TCE	€/TCE	€/ TCE	%
Heavy Fuel (HFO)	198	275	208	-24
Natural Gas/Power Plants[1)]	210	269	246	- 9
Cross Border Price/ Imported Coal	68	112	79	-30

[1)] Annual mean value BAFA price

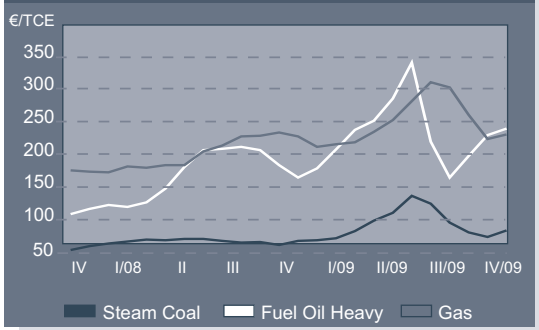
The price advantages of import coal over HS and natural gas developed on the basis of the above values as shown below: Imported hard coal was able to maintain a significant price advantages over natural gas and HFO in 2009.

Price Advantages of Import Coal

	2007 €/TCE	2008 €/TCE	2009 €/TCE
Import Coal/HS	130	163	129
Import Coal /Natural Gas	142	157	167

The German border-crossing price ("BAFA" price) follows the spot market development (API#2) with a time lag of 4–6 months. In the past several years, this time lag has shown the tendency to become shorter.

Development of Energy Prices free Power Station



Sources: Statistik der Kohlenwirtschaft/Gas preliminary, BAFA , own calculations

The price behaviour of steam coal and coke is in line with the short-term market tendencies. Coking coal is generally negotiated in annual agreements and price increases/decreases always appear in the border-crossing prices with a certain time lag during the year.

Contract benchmark prices for hard coking coal in the most recent negotiations (2009/2010) and the border-crossing prices for coking coal from third countries developed as shown in the tables below. They demonstrate that the border-crossing prices follow the contract prices after a certain time lag.

Contract Benchmark Prices for Metallurgical Coal in US$/t FOB

	$/t „fob“
2007/2008[1)]	98.00
2008/2009[1)]	300.00
2009/2010[1)]	129.00
2010/2011[1)]	200.00

[1)] April–March = Japanese fiscal year

Third Countries
Border-crossing Price in €/t[1)]

	€/t „fob“
2006	106.00
2007	96.00
2008	126.00
2009	173.00

[1)]Average values for all metallurgical coal

The German border-crossing price is often influenced by the inclusion of semi-soft coking coal and PCI qualities in the price and is not determined solely by the hard coking coal price.
Just as is the case for steam coal, the relationship of the euro to the US dollar plays a significant role.
In 2009, however, the average price of € 173/t was a record high for coking coal. In the 4th quarter of 2009, the average coking coal price had again fallen to € 123/t, substantially below the highest values.
The low contracted prices for 2009/2010 did not begin to affect the border-crossing prices until September 2009.
We expect a transition to quarterly price setting to lead to high price fluctuations and more volatility in the future.
The coke prices developed as shown below:

Third-country/EU Imports

	Third-country Imports €/t	EU-Imports €/t
2007	157.00	182.00
2008	272.00	282.00
2009	240.00	193.00
Decline 2008/2009	**32.00**	**89.00**

Coke prices fell sharply because of the collapse of the steel industry. Lower quantities can be expected for 2010. Prices will most likely recover.

Prices and Trading with CO_2 Certificates – Weakening Economy Pushes Down Certificate Prices – Substantial Certificate Surplus from Manufacturing Industry in 2009

2008 saw the start of the 2nd period of CO_2 trading which will run from 2008 to the end of 2012.
Due to the shortage of the allocated certificates, a substantially higher price once again developed after the zero price at the end of the first trading period 2005–2007.

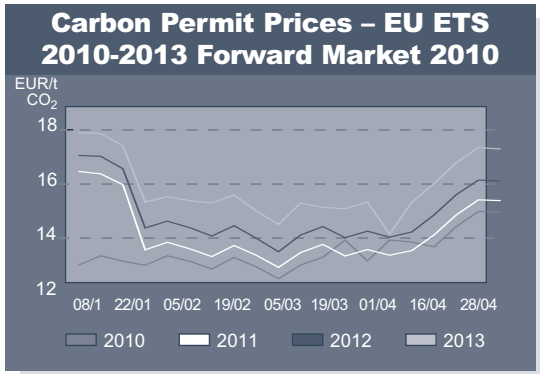
Prices for CO_2-Certificates 2005-2009/Forwad Market

Source: Reuters

However, liquidity on the certificate market rose strongly due to the economic collapse so that the price fell sharply. It can also be conjectured that banks withdrew

from the business. However, the decisive point is most likely that many industrial companies released certificates when they scaled back production and offered them into the market. A further free fall of certificate prices was prevented by stockpiling purchases by utility companies which have a shortfall in the allocation of certificates. Market volatility are normal in a trading system which is subject to supply and demand. The prices will most likely rise again when the economy recovers and industrial demand for coal and natural gas increases.

The figure below shows price expectations as per 04/2010.



Source: EEX

At this time difficult to assess how great the volume of CO_2 certificates from CDM and JI measures is. Germany is allowed to purchase an additional 22 % of the allocation quantity for each measure type. A sluggish bureaucracy has been created for the certification of CO_2 certificates from CDM and JI measures, delaying and making it more difficult to obtain the availability of imported certificates.

The failure of the Climate Change Conference in Copenhagen last year has also made the application of CDM and JI measures uncertain for the long-since the Kyoto Protocol expires in 2012 and a successor treaty is not in sight.

Low certificate prices weaken the profitability of climate improvement measures abroad. According to the UBA, the 1,654 plants, which are subject to emission trade, emitted 428.2 million tonnes of CO_2 in 2009. The demand was therefore covered in comparison with a national budget of 451.86 million tonnes of CO_2 (EUA) because 390 million tonnes of CO_2 certificates were allocated at no charge and 41 million tonnes of CO_2 certificates were purchased at auction. So the supply of 431 million tonnes of CO_2 certificates and the demand for 428 million tonnes of CO_2 certificates were by and large in balance. Added to this are CO_2 certificates from CDM and JI projects, so that Germany was a surplus country for CO_2 certificates in 2009.

Trends in Price Development in 2010 – Varying Development in Import Prices Expected

The FOB prices for steam coal continued to develop moderately during the first months of 2010. Freight rates also stayed at a low level.

On the other hand, the US dollar has gained in strength with respect to the euro. Only time will tell if the expansion of the money supply in the USA will not eventually lead to a renewed weakening of the US dollar in the mid-term.

Based on the spot market prices for steam coal in the 1st quarter of 2010 and the strong US dollar, the BAFA price will most likely hover around a price level of about € 79/TCE (average in 2009).
The coking coal prices will probably fall from their historic highs in 2009 as well. Following the moderate contract prices of US$ 130/t FOB for hard coking coal in contract year 2009/2010, coking coal prices are again climbing steeply. The benchmark contract between the Japanese steel mills (JSM) and leading Australian producers has a level of US$ 200–US$ 220/t FOB for the 2nd quarter of 2010, and prices of up to US$ 250/t FOB have been mentioned for the 3rd quarter of 2010.
To this extent, significant increases in coking coal prices must be expected from the middle of 2010. Coke prices will presumably follow this trend.

No Change After Elections – Energy Policy Still Lacking a Clear Direction

German energy policies cannot seem to find their way into clear framework conditions. The economics ministry and environmental ministry are supposed to submit a jointly developed concept in October 2010. In the meantime, the national government has engaged scientific institutes (Prognos, Basle; EWI/Cologne and GWS Gesellschaft für Wirtschaftliche Strukturforschung) to draw up a concept.

High Environmental Protection Costs Are a Disadvantage for Germany as a Business Site

Even under the new coalition, German energy policies have lost sight of the critical balance of the target triangle comprising
- affordability
- supply security
- environmental compatibility

and are increasingly putting Germany's industrial position at risk. Despite the lip service paid by politicians of all parties to its importance, the triangle is assigning priority to environmental compatibility and ignoring the economic crisis.
The absurdity of allowing two ministries to represent German energy policies has been continued by the present coalition government, contrary to statements made prior to the election. This situation leads to blockades and prevents the establishment of a consistent energy policy, which meets the goals of the target triangle and should and could ensure a balanced, low-cost energy mixture. The priority given to the feed-in from renewable energies is increasingly hampering the part of the electric power market which must face competition, yet at the same time there are complaints of a lack of competition. Coal-fired power plant projects conducted by new market players are fought and prevented at the community and state levels.

The division of responsibility between two ministries is a disaster for the representation of German interests in Brussels, because German industrial interests are not being given due consideration. We can only hope that access to Brussels will improve through the direction of the Energy portfolio by the former governor of Baden-Württemberg, Günther Oettinger.

Yet many countries envy Germany for having an electric power generation structure which is largely independent of short-term world market procurements at this time:

- Nuclear energy
- Lignite
- Hard coal (domestic)
- Renewable energies

provide 65 %–70 % of the power, offering comfortable assurance of supply security. The rest is supplemented by imported hard coal and natural gas which come from various geopolitically secure countries at favourable prices. The import sources are broadly diversified.

Germany, which has slightly more than 1 % of the world's population and produces just over 3 % of the greenhouse gas emissions in the world, has only a marginal influence on the global climate. There is no understandable reason for weakening the position of imported coal, a tried and proven pillar. The use of hard coal for power generation in Germany caused only 0.3 % of worldwide CO_2 emissions in 2009.

The lack of clarity in the attitude of the new German government, however, encourages provincial thinking because there is no overall concept concerning energy policies for the federal government. "Give me a good washing, but don't get me wet," is the slogan, especially among municipal authorities.

Basically speaking, no energy source is still considered desirable:

• Nuclear energy:	Exit decided, extension of operating times controversial
• Coal:	CO_2 emissions too high
• Natural gas:	Dependency on Russia too great
• Renewable energy sources:	High subsidies, disfigurement of the landscape

In addition, there are the problems in the slow expansion of the network. The new geographic production structure, which is becoming transparent, demands the expansion of the national grid so that electric power can be transported from the north and east of Germany to the consumption centres in the west, south-west and south of Germany and a massive expansion of storage capacity. Network expansion and storage facility construction must be attributed to the costs of renewable energy.

Burdens placed on consumers by government levies and taxes on energy are increasing, while real income is declining because of globalisation. A trend which has now been exacerbated by the economic and financial crisis. Relief for the citizens in the form of a proposed tax reform will easily be negated today, just as in the past, by consumer subsidies, especially for solar energy.

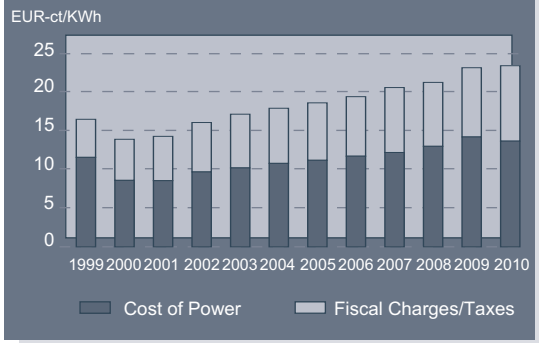
The government is the greatest price driver. Levies and taxes have reached a share of more than 40 % of the price, e.g. for household electricity. This turns the price

increases in enduser prices induced by the government into a social problem.

It is therefore clearly necessary to turn the energy policies back to emphasise supply security and economic efficiency. It makes little sense to relocate production with high CO_2 emissions to other countries and to import unemployment.

The high demand for energy in the threshold and developing countries will in the long run continue to drive energy prices up, and this alone will be enough to ensure energy conservation and improvements in efficiency.

Development of Electricity Tariffs for Households 1999-2010



Source: BDEW, Status 1/2010

No Change in the Coal Policy Decision to Discontinue in 2018

The exit schedule for German mining was defined in the German Hard Coal Financing Act passed at the end of 2007.

The quantities shown below are the short-term result:

Presumed Quantities/ Production

	2009 Mill. TCE	2010 Mill. TCE
West	3.0	3.0
Prosper Haniel	3.2	3.2
Auguste Viktoria	3.2	3.2
Ost (Closing 09/2010)	1.8	0.8
Ensdorf	1.0	1.0
Ibbenbüren	1.9	1.9
Total	**14.1**	**13.1**

Source: Own evaluation

This provides for an additional loss in output of about 1 million tonnes for the period from 2009 to 2010.

The development in output shown below could result in the longer term:

Presumed Evolution of Production

Year	Estimate up to 2018 Mill. TCE	
2009	14.1	Closure of Lippe as per 01/01/2009
2010	13.1	Closure of Ost as per 30/09/2010
2011	12.3	
2012	11.3	Closure of Ensdorf
2013	8.0	Closure of West
2014	8.0	
2015	6.0	
2016	6.0	
2017	4.0	
2018	4.0	

Source: Own evaluation

Prompted by the temporarily high world market prices in 2008, discussions about continuing German mining operations were reopened.

Assuming average production costs of €170/TCE for German production, the following competitive position for German steam coal was determined in the course of 2009. The German production costs were compared in this case with the spot prices CIF ARA in TCE:

Comparison of German Steam Coal/Spot Prices CIF ARA 2009

	01/01 €/TCE	30/06 €/TCE	31/12 €/TCE
Costs German Coal – Free Mine	170	170	170
Spot Price – CIF ARA	74	59	62
Advantage Import Coal	96	111	108

The following figures are the result of a comparison of German costs with the border-crossing price (BAFA price):

Comparison of German Steam Coal/ Border-crossing Price (BAFA) 2009

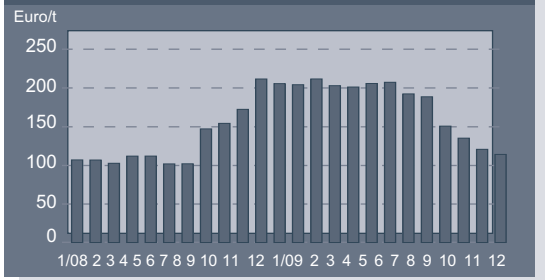
	01/01 €/TCE	30/06 €/TCE	31/12 €/TCE
Costs German Coal – Free Mine	170	170	170
BAFA-Price (Cross Border Price)	102	72	73
Advantage Import Coal	68	98	97

These comparisons assume that the costs for German mines remained constant in 2009. Even if the pollution legacies of German mining are taken into account, the difference is still substantial.

The comparison makes it clear that the difference between German steam coal and import coal over the entire year was very large, calling into question whether domestic steam coal could be competitive with the world market.

The prices for the imports of coking coal until January–December 2009 averaged € 174/t and were almost in line with world market prices.

German Cross Border Prices for Coking Coal 2008/2009



Over the course of 2009, the import price declined steadily from the peak of € 211/t in February to € 114/t in December. This reflected the lower international coking coal contract prices 2009/2010, which became fully effective in the second half of the year. Prices can be expected to remain moderate during the 1st half of 2010 as well. However, the international contract prices concluded for 2010/2011 are substantially higher so that rising coking coal prices must be expected again from the middle of 2010. Additionally, there is currency impact of the US dollar which has stabilised in the 1st half of 2010.

Overall, it can be stated that the world market prices for coking coal are significantly closer to the average production costs in Germany than is the case for steam coal. The political agreements provide a revision clause for 2012. It remains to be seen whether another boom in demand, and its corresponding effects on prices, would make German coal internationally competitive on a sustained basis by this decisive date.

Renewable Energy Sources on the Advance – From Start-up Financing for New Technologies to Massive Permanent Subsidisation by the Populace

The proportion of renewable energies rose further in 2009 owing to the generous compensation rates and the feed-in priority pursuant to the EEG (German Act Regarding Renewable Energy Sources).
Renewable energies accounted for

- 40.3 million TCE of primary energy demand, equalling a share of 8.9 %,
- 93.0 TWh of gross electric power generation, equalling a share of 15.6 %.

Primary Energy Consumption/ Renewable Energies According to Sectors

	2007 Mill. TCE	2008 Mill. TCE	2009 Mill. TCE
Electric Power	22.0	21.3	21.8
Heating	12.2	13.3	14.5
Fuels	4.5	4.5	4.0
Total	**38.7**	**39.1**	**40.3**

Source: AGEB

Renewable Energy Sources: Self-sufficiency Increased at the Expense of Heavy Burdens on the Citizenry, Effect on Global Climate Does Not Materialise

Power generation from renewable energy sources thus stagnated. Nevertheless, their market share rose because of the decline in overall demand and their priority for feed-in on the grid.
The positive aspect is undoubtedly that a certain independence from world market procurements has been gained, albeit at a high price. As the president of the Ifo Institute notes, the EEG makes no sense for climate protection if the emission trade functions properly. On the contrary, its effects run counter to the emission trade. The support of "green electric power" in Germany reduces energy production based on fossil energy sources, releasing CO_2 certificates for trade. The price for the CO_2 certificates falls. Other EU countries can then generate more and less expensive electric power using fossil energy sources. The German consumers end up subsidising fossil electric power generation in the EU and the world. The effect for the climate is virtually nil.

Competition-free Reservation for Renewable Energies on the Electric Power Market Growing Steadily

Emission trade in Europe itself achieves almost nothing in terms of global climate improvement. Although it reduces the demand for fossil energy sources in Europe and makes

their use more expensive, it does nothing to reduce the worldwide supply of fossil energy sources. Unless a worldwide CO_2 trading system is established and a global climate protection treaty is concluded, German and European efforts are doomed to failure and are an unnecessary expense for taxpayers.

"Consequently, the CO_2 reduction resulting from the Act Regarding Renewable Energy Sources is virtually nil because of the logic of the certificate system." [1)]

(1) Handelsblatt 4/5 2009, Blankart)

According to information from the BDEW, the German electricity customers paid € 10 billion remuneration for support of ecological electricity, about 13.6 eurocents/KWh, in 2009. The market value of the EEG power amounts to about € 4.0bn– € 4.5bn so that direct subsidies totalled € 5.5bn–€ 6.0bn in 2009. The support of renewable energy sources is moving away from a start-up financing for new technologies and in the direction of permanent subsidisation by consumers. This financing is increasing in volume and is far in excess of the subsidies for German coal mining.

More Solar Energy in "Mum's Hotel" – Antisocial to a High Degree – Redistribution from the Bottom to the Top – "Solar Debt" of the Populace Rises to € 100bn

Subsidies for solar energy – subsidised at unimaginably high levels – were reduced by only 16 % despite drastic price reductions for many of the construction elements for solar power generation due to increased competition. A "subsidy bubble" is still being built without making any major contribution to power supply and prevention of CO_2.

Solar energy infeeds in 2009 made up about 1 % of total power generation and about 8 % of the power generation from renewable energies, but took in about € 3 billion or 30 % of the remuneration totalling about € 10 billion.

According to initial projections for 2010, the year 2010 will most likely be a record year for the installation of photovoltaic systems. Capacity of more than 15,000 MW could be reached in 2011. Over the next 20 years, this will presumably drive the "solar debt" of the population to more than € 100 billion, a figure which must be amortised via electricity bills. This reaches the dimensions of the measures for the rescue of the banks or the stabilisation of the euro.

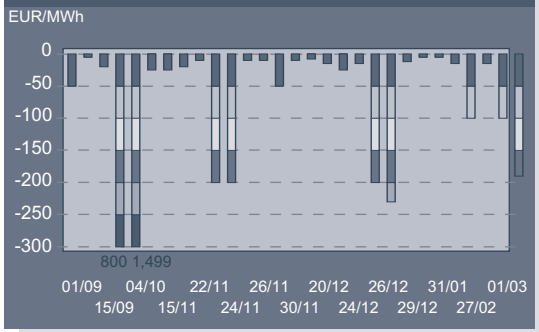
Since solar energy subsidies largely benefit the more prosperous part of the population who can afford to invest the money required for solar energy equipment, there is a transfer of assets from small consumers to the owners of solar energy facilities via the electricity prices.

"Windy Minus", Der Spiegel 10/2010

Since wind energy is not generated on the basis of demand, increasingly large quantities must be redirected to other countries (Netherlands/Poland) at low prices. Assuming a feed-in payment of about 9.0 eurocents/KWh and a wholesale price of 4.0 to 4.5 euro-

cents/KWh, the subsidy comes to 4.5 to 5.0 eurocents/KWh. In other words, subsidies per KWh paid for wind energy are currently more than twice as high as those for German domestic coal. When wind power is redirected into the network in Germany and abroad during periods of low power demand, wind energy suffers a loss, making the subsidies even higher. The figure below shows the half-year 09/2009–02/2010 with negative electricity prices. The trend is accelerating.

Negative Electricity Tariffs – Daily Rock-Bottom Price for one MWh, in euro



Source: Der Spiegel

A more forceful reduction of the subsidies for wind energy should also be called for. A further increase in wind energy subsidies for "repowering" would be completely wrong in terms of regulatory policies. After all, "repowering" is intended to reduce the costs for power generation.

The VDN predicts the following EEG expenses from power generation using renewable energy sources (2009–2015):

Renewable Energy Sources Act: Quantities and Subsidies

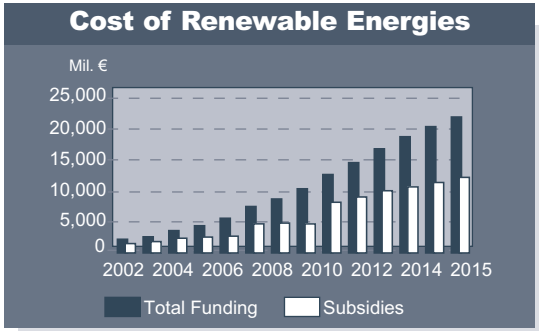
Source: BDEW (EEG-Mittelfristprognose 2000 to 2015)

Unfortunately, the revision of the EEG shows that only slight corrections have been made. A subsidisation mentality has become deeply rooted in the EEG industry.

€ 8bn in Subsidies for RE to Be Expected in 2010 – Trend is Still Upwards – EEG Allocations Soon to Reach 50 %–60 % of the EEX Stock Exchange Prices

Initial estimates indicate that the subsidies will be increased for 2010 due to the excess supply of green electricity. Feed-in remuneration of € 12.7 billion and a market value of € 4.5 billion mean a presumable subsidy of more than € 8 billion which must be paid by consumers through

the EEG allocation. In the mid-term, i.e. by 2015, the EEG allocation, according to calculations by PricewaterhouseCoopers, will probably rise from 2.1 eurocents/KWh to 3.4 eurocents/KWh, an increase of more than 60 %. The subsidies will rise correspondingly. In the long-term, the people of this country will be carrying a load of subsidies with the financial dimensions of the programmes to rescue banks.



Source: VIK

CCS Technology in Urgent Need of Legal Framework, Preliminary Act Inadequate and Not in Conformity with EU

The EU took an important step for climate protection in 2008 with its framework directive for CCS technology. The initial drafts from the German government for a national law did not make an appearance until the beginning of 2009. As customary, a difference of opinion arose between the involved ministers for economics and for environmental protection.

Since German companies have initiated a number of pilot projects, a legal framework is urgently needed to drive forward the development and testing of this technology and to create a basis for gaining public acceptance. The countries with the largest coal reserves in the world – the USA, China, Russia and India – are counting on a major expansion of coal-fired electric power generation in the long term. In this respect, the development of the CCS technology will lead to great market opportunities in the long run. Moreover, these are high-tech products which, unlike simple solar and wind energy technology, cannot be easily copied.

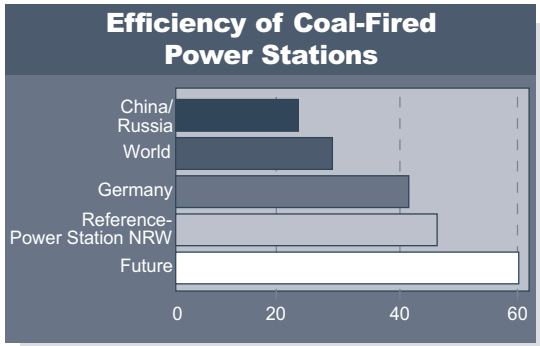
Great Britain and the Netherlands are finishing up the process for the adoption of national legislation for the implementation of the EU directive now in 2010. In Germany, the bill has been stopped by opposition from the CDU/CSU. Yet the EU directive must be implemented as national law by the middle of 2011, and the implementation must also be compatible with other EU laws/directives, especially the European emissions protection directive (IED), which includes the options for the elimination of CO_2 in the approval process.

In other words, a law which has been tailored for one trial facility is not enough because enormous legal problems can arise during the construction of any large combustion plant or facility with CO_2 emissions.

CO_2 Emissions from Hard Coal Consumption Fall by About 28 Million Tonnes in 2009 – Reduction by 80 % by 2050

The decline in hard coal consumption for electric power generation and steel production caused a reduction in

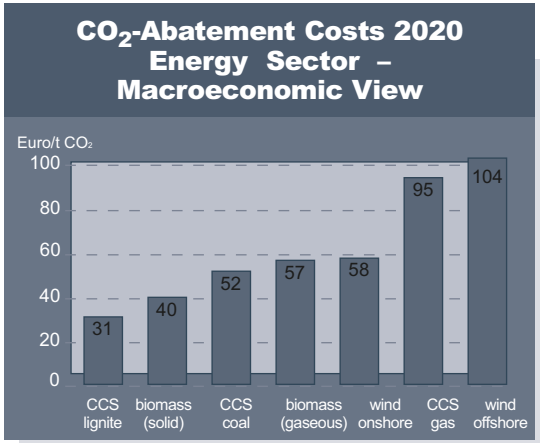
CO_2 emissions in 2009. The lower emissions in the steel industry are the consequence of the severe drop in production. The hard coal-fired power plants ran at a lower level because of the economic slump. The CO_2 emissions of the steel mills fell by an estimated 8.5 million tonnes of CO_2, the CO_2 emissions from hard coal-fired power generation by 19.5 million tonnes of CO_2. This significant decrease is of course tied to economic performance; when the economy recovers, a part of the decline will be erased. Nevertheless, a substantial structural improvement in emissions volume can be achieved in the mid and long-term.



Source: GVST

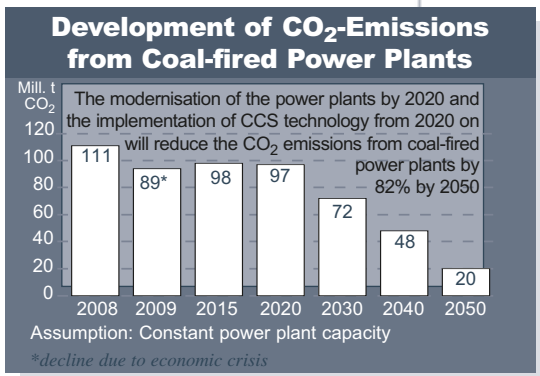
The realisation of the projects currently in the approval process and in the planning stage could cause a further substantial reduction of CO_2 emissions owing to an improved degree of efficiency.

CCS technology costs are substantially lower compared to a number of renewable energy sources and the technology incurs lower costs for the prevention of CO_2. For example, offshore power generation is presumably twice as expensive as power generation in hard coal-fired power plants using CCS technology.



Source: McKinsey & Company, ‚Kosten und Potenziale der Vermeidung von Treibhausgasemissionen in Deutschland, Sektorperspektive Energie' ‚Berlin 2007'

CCS technology will result in even further reductions from 2020 on. The chart below shows the potential.



Sources: Arbeitsgemeinschaft Energiebilanzen, 12/2007 Arbeitsgemeinschaft WI, DLR, ZSW, PIK, Own calculations

It is assumed here that the utilisation of nuclear power continues and that the hard coal output remains at about 30 MW. The successive implementation of CCS technology could reduce CO_2 emissions from hard coal-fired power plants by more than 80 % by 2050.

Hard Coal-Fired Electric Power Generation – 7,600 MW Under Construction

German Chancellor Angela Merkel[1]: "It would also be a fatal mistake to discontinue the use of coal." She continues: "Coal should continue to function as one of the pillars of the German energy mixture."

([1] Trend 1/2009)

Dr. Norbert Röttgen, Environmental Minister, is also in favour of electricity from highly efficient coal-fired power plants.

But despite this support, hard coal-fired power generation is struggling with the modernisation programme. Still, 7,600 MW (gross output) are under construction. But a number of projects have been pushed back because of local opposition, a lack of clarity concerning energy policies and the weak economy.

All of the new plants achieve degrees of efficiency greater than 45 %. Co-generation of district heating improves the overall efficiency of the fuel even further.

However, the construction of modern hard coal-fired power plants is becoming increasingly difficult as a consequence of regional resistance. This also delays the possible reduction of CO_2 emissions. At the same time, it prevents the development and implementation of modern German power plant technology. The worldwide expansion of coal-fired power generation from today's 40 % to a share of 43 % of total worldwide power generation in 2030 urgently requires modern coal-fired power plants which have been proven to be highly efficient in operation so that the CO_2 emissions can be reduced by a technological approach. Modern coal technology is the key to CO_2 reductions worldwide.

The increased competition in the electric power sector, which the federal government would like to see, is simultaneously being undermined by its actions. The construction of new hard coal-fired power plants by municipal operators and foreign companies is being systematically prevented, although they could represent production alternatives to the four large utility companies in Germany.

The fast-paced modernisation of hard coal-fired power plants could also provide an important stimulus for the economy.

Hard-coal Fired Power Plant Projects

Operator	Location	Capacity (MW)
1.) Coal-fired power plants now under construction or approved		
Electrabel	Wilhelmshaven	800
EnBW	Karlsruhe	912
E.ON	Datteln	1,055
Evonik Steag/EVN	Duisburg-Walsum	790
RWE Power	Hamm	1,600
Trianel	Lünen	750
Vattenfall	Hamburg-Moorburg	1,640
Total gross output		**7,547**
2.) Coal-fired power plants in approval process		
Electrabel	Brunsbüttel	800
E.ON/ Stadtwerke Hannover	Hanau	1,100
GKM	Mannheim	910
SüdWestStrom/Iberdrola	Brunsbüttel	1,800
Trianel	Krefeld/Uerdingen	750
Total gross output		**5,360**
3.) Coal-fired power plants in approval process, but momentarily suspended		
E.ON/Stadtwerke Kiel	Kiel	800
Evonik Steag	Herne	750
Evonik Steag	Lünen	750
Total gross output		**2,300**
4.) Coal-fired power plants in planning		
EnBW/BKW	Dörpen	900
E.ON	Stade	1,100
E.ON	Wilhelmshaven	500
Total gross output		**2,500**

Source: BDEW, January 2010

PROSPECTS FOR THE WORLD COAL MARKET

Outlook Good for World Coal Trade

The abrupt decline in the growth of gross national product and world trade is now being followed by a return of the world economy to a path of growth in 2010/2011.
The Pacific region is once again providing the stimulus for growth dynamics. In total, the non-OECD region is growing twice as fast as the OECD area. Recovery can be observed in the Eurozone and Japan, but growth rates are modest so that the depression of 2009 will most likely not be completely overcome until 2012/2013.

Gross National Product

	2008 %	2009 %	2010 %	2011 %
World	3.0	-1.2	4.1	3.9
USA	0.4	-2.4	3.8	3.5
Japan	-1.2	-5.2	1.7	0.5
Eurozone	0.6	-3.9	1.5	1.2
Asia (excl. China)	4.9	2.0	6.2	5.8
China	9.6	8.4	9.0	9.0
OECD	0.5	-3.4	2.7	2.3
Non-OECD	3.0	1.5	6.0	6.0

Source: OECD 02/2010

World trade for the key bulk goods did not experience any decline in 2009. This was essentially thanks to the strong rise in China's ore imports.

Most Important Bulk Goods in Million Tonnes

Natural Resources	2008 Mill. t	2009 Mill. t	2010 Mill. t	Difference 2009/2010 %
Steel Industry				
• Iron Ore	843	907	1,007	+11
• Coking Coal	207	201	226	+11
• Scrap	93	86	93	+8
• Coke	23	17	19	+11
• Pig Iron	17	14	15	+7
• Steel Products	268	225	250	+11
Total	**1,451**	**1,450**	**1,610**	**+11**
Steam Coal/ Bauxite/Phosphate	638	668	696	+4
Grain	323	313	312	-0,4
Total	**2,412**	**2,431**	**2,618**	**+8**

Source: Clarkson/VDKi 03/2009

Moreover, this is above all dependent on the stability of demand in the Pacific region as a whole. The growth rate of the non-OECD region of 1.5 % from 2008 to 2009 was low in comparison with previous years.

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

	2008 m dwt	2009 m dwt	04/10 m dwt	Planned Additional Construction 2010 m dwt	2011 m dwt
Capesize	143	170	179	+54	+51
Panamax	115	121	124	+23	+26
Handymax	83	92	95	+21	+17
Handysize	77	77	78	+12	+11
Total	**418**	**460**	**476**	**+110**	**+105**

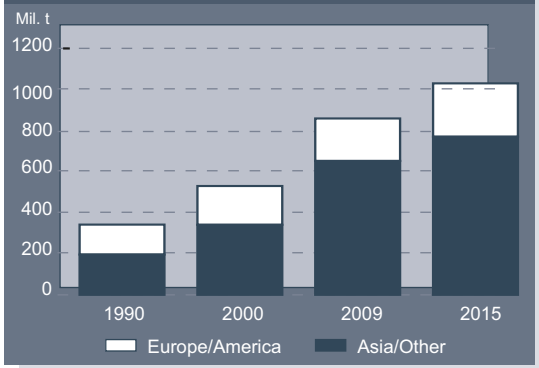
Source: Clarkson 03/2009

The capacity of the bulk goods carriers recorded the highest growth rate in a long time, about +10 %, in 2009. An even higher growth rate is expected for 2010, even if only 50 % of the planned additional construction is realised. For this reason, there is adequate capacity in bulk goods carriers available, even if growth in bulk goods traffic is greater than forecasted in 2010. This fundamental data indicates that there will not be any major upswings in freight rates.

World Coal Market Returns to a Path of Growth in 2010/2011 After Period of Stagnation

The unexpectedly stable state of world coal trade in 2009 is a good basis for renewed growth in 2010. Both, the worldwide revival of the steel industry and the uninterrupted demand for steam coal in the Pacific region will most likely serve as market stimuli.

Development Seaborne Hard Coal Trade – Import Regions 2009-2015 –



Evaluation of several sources

Steam Coal Market with Good Outlook for Growth in 2010

Demand

The demand for electric power on the Asian market continues to grow rapidly and is recording high growth rates in many countries.

But large parts of the Asian, African and South American populations still have no access to electricity, so we can expect growth to continue for some time to come.

In Europe, imported coal is replacing the decline in domestic output, but it is also viewed increasingly as a low-price alternative to natural gas in the long run. Since it must be assumed that domestic production in Germany, Poland and Spain will continue to decline, the import volume will probably be maintained for the long-term as well, but not increase substantially because of the additional burdens compared to other fuels. Coal continues to face the costs of the CO_2 certificates, assuming the EU emissions trade system remains in operation as a global island solution.

The DOE projects an increase in power consumption worldwide from 18,000 TWh in 2007 to 31,800 TWh in 2030 (an average of 2.5 % per year).

Average growth rates for this period of 4.6 % and 5.7 % are projected for the developing countries China and India, respectively.

The share of power generated using coal will rise from 7,400 TWh to 13,600 TWh in 2030. The share of power generated using coal in the worldwide power production will rise by 2 % from 41 % in 2006 to 43 % in 2030.

Population with/Without Access to Electric Power

	China		India		World	
	Mill.	%	Mill.	%	Mill.	%
Population with Access to Electricity	1,302.0	99.4	607.6	55.5	4,875.0	75.6
Population Without Access to Electricity	8.5	0.6	487.2	44.5	1,577.0	24.4
Total	**1,310.5**	**100**	**1,094.8**	**100**	**6,452.0**	**100**

Source: IEA 2007

Supply

The Pacific suppliers – above all Indonesia – are continuing to increase their supplies. The programme for the expansion of ports and railways in Australia will most likely reap increasingly greater rewards in 2010/2011. China is continuing to reduce its export supplies because of high domestic demand, but remains an important exporter of a smaller scope. It is difficult to assess Vietnam's potential. However, exports have always been handled flexibly. The Vietnamese government was concerned about the high export volume and cut it back yet the government recently eased the restraints on export because domestic demand is estimated to be weaker. Russia is also increasing its Pacific exports and expanding loading capacities in the Far East.

In the Atlantic region, Colombia and Russia in particular have the potential to increase their exports; South Africa is currently stagnating, but should again raise exports in the coming years. Poland's contribution to seaborne exports is now stabile as domestic consumption declines. Indonesia will presumably give up market share on the Atlantic market in favour of Asian customers. The smaller steam coal producers – Venezuela, USA and Spitzbergen – round off the available pool.

The low market prices are causing the competitive position of the USA as a swing supplier to worsen. Still if world market prices rise, this country remains a potential exporter, as was demonstrated in 2008. Venezuela will remain a restricted source in terms of volume for the foreseeable future.

Coking Coal Market – Again on the Upswing

Demand

The positive trend in the steel economy continued at a faster pace in the first two months of 2010. All of the steel-producing countries have increased pig iron production. The increased demand for coking coal has already led to price increases. Since China is raising its steel production, largely based on pig iron, and the OECD countries in particular are producing more, the coking coal market could grow by 10 %–12 % or 20–24 million tonnes in 2010.

Supply

In addition to the traditional supply sources, the first deliveries from the Elgen project in Russia and from the Vale project in Mozambique could occur in 2011 and expand the possible range of suppliers. The high price level is also likely to encourage the expansion of capacities around the globe.

Australia, the USA and Canada continue to be the major suppliers to the global market. They will presumably continue to increase production and exports in 2010 and the following years. Russia, Colombia and New Zealand supply smaller quantities of coking coal. Indonesia,

Venezuela, Vietnam and South Africa contribute PCI coal.

New coking coal projects are under review in Indonesia, Mongolia and Colombia.

Mozambique could begin exporting from the Moatize Mine in 2010/2011; it has been designed for production of 11 million tonnes annually, thereof 8.5 million tonnes of coking coal and 2.5 million tonnes of steam coal. Construction has begun. Riverdale is also planning a project in Mozambique of 15–20 million tonnes per year, 50 % of it coking coal.

Growth in Crude Steel Production

	2008 Mill. t	2009 Mill. t	2010 Mill. t
China	502	568	579
World excl. China	828	652	662
Total	**1,330**	**1,220**	**1,241**

Source: World Steel Association

Infrastructure of World Hard Coal Trade – Weak Demand Worldwide Eases the Situation

Owing to the rapid growth in recent years of bulk commodities as a whole and coal in particular, bottlenecks have occurred in the infrastructure. There have been major bottlenecks in both loading and discharging ports, domestic railway lines and sea transport. However, the chance to exploit market opportunities due to a rising demand for coal triggered a worldwide expansion – even though it was late – of the infrastructure across all of the links of the transport chain two years ago. Expansion projects along the entire coal chain have been launched by almost all of the major countries involved in world coal trade. Yet the problems differ from one country to another. In Australia, for example, the primary problem is the bottlenecks in port and railway capacities, while South Africa has been unable to increase output.

The realisation of many measures has significantly improved the situation, above all in Australia, and the queues in the loading ports have already been falling.

No bottlenecks in the logistics of the coal world market, which would significantly hinder growth, are expected in 2010/2011, even against the backdrop of rising demand for coking coal.

Expansion projects in the loading ports have been launched in Indonesia, Colombia, Russia and South Africa, and some of them are already being carried out or have been completed.

Market Consolidation Continues

The tendency towards market consolidation continues in all of the producing countries. The Chinese, for example, are striving to create large hard coal companies with over 100 million tonnes in output

for the long term. Five to six companies are also handling the lion's share of production and export in Indonesia.

However, the long-term world market prospects are also luring new companies into the coal export business, thereby expanding the pool of suppliers.

In the case of coking coal – above all, hard coking coal – Australia has created a strongly dominant position with almost 65%–68% market share, which in turn is in the hands of just a few producers. However, another player – Vale (CVRD) – has stepped onto the coking coal scene. Vale (CVRD) is developing into an additional market participant through projects in Mozambique as well as the entry into Australian coal mining.

BHP's efforts to take over its competitor Rio Tinto have come to naught for the moment. Nor are Vale (CVRD)'s efforts to incorporate Xstrata a way to promote competition; fortunately they have been dropped.

The competition in the area of steam coal continues to be broader, and in recent years Russia and Indonesia have strengthened their positions on markets alongside the traditional suppliers Australia, South Africa and Colombia. The USA has also returned to the ranks of the worldwide suppliers, although only in the role of a swing supplier.

Damper on Developments for Coal Gasification And Liquefication Projects

Due to high oil and gas prices, coal liquefaction projects (CTL = coal to liquids) were being considered in Australia, China and the USA on the basis of low-cost coal deposits. This could lead to the development of a new sales market for coal in 5–10 years. The prerequisite is low mining costs.

But the rapid drop in the price of oil has put a major damper on many of the projects and could delay them for a number of years.

If oil supplies worldwide should become tighter, natural gas could push its way more strongly into the fuel sector. South Africa is currently the only country where coal is liquefied in large amounts. About 45 million t of coal are processed.

COUNTRY REPORTS

AUSTRALIA

Production

Australia's export provinces were once again able to increase production in 2009 by 12 million tonnes from 321 million tonnes to 333 million tonnes.

There are still some smaller hard coal production facilities in Western Australia and Tasmania (about 11 million tonnes p.a.) in addition to the output in NSW and QL. This output is used exclusively on the domestic market. Total output came to 344 million tonnes. Domestic consumption amounts to about 69 million tonnes of hard coal.

Besides hard coal production, about 70 million tonnes of lignite, which are consumed domestically, are mined annually in Victoria.

Chinese and Indian companies are attempting to secure long-term coverage of their coal needs by acquiring shares in Australian mines and projects.

Saleable Production of the Major Production States of Australia

	2007 Mill. t	2008 Mill. t	2009 Mill.t
New South Wales (NSW)	133	137	143
Queensland (QL)	180	184	190
Total NSW/QL	**313**	**321**	**333**
Western Australia/Tasmania	9	13	11
Total	**322**	**334**	**344**

Australia is making great efforts to improve coal technology, in particular in mining, firing and better exploitation of the potential of deposits. Currently 23 % of Australian mining is done in underground operations and 77 % in opencast pits. The project list for steam coal as well as for coking coal is long. Unlike other exporting nations, the scope and speed of the increase in output is being increasingly dictated by the development of the infrastructure, which is lagging behind need, instead of issues related to financing and reserves.

At this time, bottlenecks are found primarily along the railway lines ahead of the export ports.

Australia holds a world market share of about 33 % of global coal trade and has the largest sustainable expansion potential for steam and coking coal in the long-term. In the long-run, i.e. until 2030, expansion of exports to 400–500 million tonnes is imaginable.

Infrastructure

The burdens on the infrastructure were once again high in 2009. However, the first steps in the improvement of the ports have been noted. Export volume increased by another 14 million tonnes. The 3rd coal terminal began operations in Newcastle; it could handle as much as 11 million tonnes in 2010. The planned terminal Wiggins Island near Gladstone has been approved and is expected to increase the export capacity of Gladstone to 150 million tonnes annually. Now that a series of expansion measures for the ports has been initiated or even concluded, the focus is shifting to the bottleneck caused by rail transport. Still progress can be seen in railway projects as well. Queues continue to develop at the Australian ports.

Exports of Coal by Ports

Coal Loading Ports	2007 Mill. t	2008 Mill. t	2009 Mill. t
Abbot Point	11.756	13.685	15.329
Dalrymple Bay	44.787	47.983	54.537
Hay Point	39.675	35.972	35.993
Gladstone	53.382	56.075	58.240
Brisbane	5.263	5.322	6.354
Total Queensland	**154.863**	**159.037**	**170.337**
Newcastle	84.796	91.436	92.774
Port Kembla	12.924	11.715	14.384
Total New South Wales	**97.720**	**103.151**	**107.158**
Total	**252.583**	**262.188**	**277.495**

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 plans for expansion:

Expansion Plans Australian Ports

Ports	Current Capacity Mill. t	Cargo Handling in 2009 Mill. t	Mid-term Expansion 2010-2012 Mill. t
Newcastle	113	93	133
Port Kembla	14	14	14
Dalrymple Bay	60	55	85
Hay Point	44	36	55
Gladstone	60	58	88
Abbot Point	21	15	50
Brisbane	5	6	5
Wiggins Island	–	–	50
Total	**317**	**277**	**480**

AUS $ 9 billion are supposed to be invested in the expansion of the infrastructure, including railways, in Queensland alone in the coming years. Xstrata-Coal is examining the possible construction of its own terminal for 20 million tonnes annually near Port Alma.

Export

At the start of 2009, there were fears of a major collapse in coking coal exports because all of the traditional import countries were facing the consequences of a crisis in the steel industry. This can also be seen in the following development of the hard coking coal exports:

Export Development Hard Coking Coal

	2008 Mill. t	2009 Mill. t	Differencce 2008/09 Mill. t
Europe	20.5	9.8	- 10.7
South America	6.7	4.5	- 2.2
Japan	26.3	22.2	- 4.1
Total	**53.5**	**36.5**	**- 17.0**

Surprisingly, however, China increased its imports of hard coking coal from Australia from 1 million tonnes to 19 million tonnes, compensating for all of the declines in this quality segment. Besides hard coking coal, China also imported semi-soft coking coal and PCI coal from Australia with a volume of about 12 million tonnes in 2009 (previous year: 0.4 million tonnes) so that the plunge in demand from the OECD countries was balanced out.
Australia also increased its exports of steam coal to China.
Overall, Australia increased exports to China within one year as shown below:

Development of Australia's Exports to China

	2008 Mill. t	2009 Mill. t
Hard-coking-coal	0.9	18.9
Semi-soft-coking-coal/PCI	0.4	12.0
Steam Coal	2.3	16.0
Total	**3.6**	**46.9**

Within a surprisingly short time, China has become Australia's second-largest customer, topped only by Japan. Thanks to the China effect, Australia was able to maintain its total coking coal exports at the level of the previous year.

Coal Exports by Qualities

Coal Quality	2007 Mill. t	2008 Mill. t	2009 Mill. t
Coking Coal (HCC)	85	84	84
Semi-soft Coking Coal	53	51	50
Steam Coal	112	126	139
Total	**250**	**261**	**273**

Australia was even able to increase its exports of steam coal by about 13 million tonnes. Mexico became a first-time customer, buying 3.7 million tonnes. While sales to Japan declined, China as well as both South Korea and Thailand purchased more coal.

The focus of Australian sales is shifting more and more to the Pacific region (for all qualities):

Sales Development Australia

	2008 Mill. t	2009 Mill. t
Atlantic	37	19
Pacific	224	254
Total	**261**	**273**

Australia's key figures are shown below:

Key Figures Australia

Hard Coal Output	2007 Mill. t	2008 Mill. t	2009 Mill. t
Hard Coal	322	334	344
Exports	250	261	273
• Steam Coal	112	126	139
• Coking Coal	138	135	134
Imports Germany	6.7	5.5	3.8
• Steam Coal	1.2	0.5	0.5
• Coking Coal	5.5	5.0	3.3
Export Rate in %	76.0	79.0	79.0

INDONESIA

Production

Indonesian coal mining continued to expand in 2009. Preliminary estimates indicate that output rose from 255 million tonnes to 280 million tonnes. Official figures put output at only 217 million tonnes, but there is additional output not yet included in the official records which was bought up in part by large companies. Output breaks down into 106 million tonnes high-quality hard coal and 174 million tonnes low-quality hard coal (sub-bituminous).

The Largest Hard Coal Producers in Indonesia

Company	Output 2008 Mill. t	Output 2009 Mill. t	Exports 2008 Mill. t	Exports 2009 Mill. t
Bumi	52.8	57.5	46.3	52.9
Adaro	34.5	40.6	30.2	31.6
Kideco	21.6	24.4	15.9	19.2
Banpu	19.8	21.5	19.5	21.6
Berau	12.9	11.3	8.1	10.1
Bukit Asam	10.0	10.8	4.3	4.4
Total[1)]	**151.6**	**166.1**	**124.3**	**139.8**
Indonesia Total	**255.0**	**280**	**202**	**230**

[1)] Excluding additional purchases

Of the total output, 230 million tonnes were exported and 47 million tonnes were used for domestic consumption. The stockpile situation in Indonesia is unknown.

The mid to long-term tendency of the Indonesian output and with it the country's exports are in the direction of lower calorific values. The Indonesian hard coal production of 280 million tonnes is estimated to break down into

250 million tonnes in Kalimantan and
30 million tonnes in Sumatra.

The production in Sumatra is mainly required for domestic consumption because the deposits are located close to the power consumption centre in densely populated Java. The interest in the drying and briquetting of low calorific coal is rising as well, and a number of pilot facilities are being planned or are already under construction.

Besides hard coal production, there is a lignite output of 38–40 million tonnes.

A number of coking coal projects (Kalteng, Guloi, Lampunet, Tulup) are also being examined in Indonesia. Japanese, Chinese and Australian companies (Sumitomo/BHP) are beginning to develop coking and steam coal projects in Eastern and Central Kalimantan. There are coking coal deposits on Sumatra as well which are attracting some interest.

Infrastructure

Indonesia currently has six larger deep-water ports on Kalimantan with an annual handling capacity of 268 million tonnes, allowing to load freighters of 60,000 to 180,000 DWT. In addition, there are ten more coal terminals nationwide (including Samarinda and Palikpapan) with an annual capacity totalling 80–100 million tonnes and a depth which, as a rule, is adequate for Panamax shipsizes. Handling capacities are also available on Sumatra. Moreover, there are numerous off-shore loading facilities for smaller ships.

The large number of loading opportunities has favoured the strong development of exports. In the long-term, continued growth is also dependent on an improvement in the infrastructure farther away from the coasts via the construction of railway lines. At this point of time, only the coal reserves which are either in the proximity of the coasts or which have a good river connection for further transport to the coast have been developed.

Structure of Indonesia's Export Capacities

	2009 Mill. t
East-Kalimantan	**155**
• 4 ports	142
• 4 offshore loading facilities	13
South Kalimantan	**149**
• 2 ports	126
• 8 offshore loading facilities	23
Sumatra	**50**
• 2 ports	27
• 5 offshore loading facilities	23
Total	**354**
thereof ports	295
thereof offshore	59

Shipments are handled through the following ports:

Port Throughput in Indonesia

	2007 Mill. t	2008 Mill. t	2009 Mill. t
Adang Bay	15.0	21.0	21.0
Banjarmasin	10.0	33.0	37.6
Kotabaru	16.0	16.5	9.2
Pulau Laut	30.0	12.0	22.9
Tanjung Bara	37.0	35.0	35.9
Tarahan	3.0	3.0	4.5
Total	**111.0**	**120.5**	**131.1**
10 additional smaller coal loading ports			
20 offshore loading ports	78.0	81.5	98.9
Total Throughput	**189.0**	**202.0**	**230.0**

Export

The official export figure for 2009 (announced at time of publication) amounts to about 177 million tonnes, an increase of 19 million tonnes in comparison with 2008. But based on available statistics, exports will most likely total about 230 million tonnes. This means an increase of 28 million tonnes in 2009 in comparison to 2008.

So Indonesia expanded further and maintained its leading world market position as steam coal exporter in 2009. Indonesia was able to seize the opportunity offered by the decline in Chinese exports. An estimated 2–3 million tonnes from Indonesian output enter the market as PCI coal. The focus of Indonesian exports is on the Pacific market. Volumes to the European and American countries declined in 2009:

Coal Exports According to Markets

	2007 Mill. t	2008 Mill. t	2009[1] Mill. t
Pacific	167	176	216
Europe	17	20	12
America	5	5	2
Total	**189**	**201**	**230**

[1] Estimated

The largest individual buyers are found in Asia.

The Largest Buyers of Indonesian Coal

	2007 Mill. t	2008 Mill. t	2009 Mill. t
Japan	34.1	39.7	32.1
South Korea	26.5	26.6	33.7
Taiwan	25.8	25.8	25.2
India	24.8	29.2	37.7
China	14.9	16.1	39.4

Exports will continue to grow. Domestic demand, on the other hand, is growing slowly because many projects of the 10,000 MW special programme for hard coal-fired power plants have been delayed. The focus of exports

will remain in Kalimantan. The long-term goal of the government is to provide electric power to 97 % of the population and to increase coal-fired power generation to about 110 million tonnes by 2018 for this purpose.

Key Figures Indonesia

	2007 Mill. t	2008 Mill. t	2009 Mill. t
Hard Coal Output (sub-bituminous)	231	255	280
Steam Coal Exports	189	202	230
Imports Germany	1.2	0.5	0.1
Export Rate in %	82	79	82

RUSSIA

The countries of the former Soviet Union with major coal production are shown below:

– Russia
– Ukraine
– Kazakhstan.

Coal Production

	2007 Mill. t	2008 Mill. t	2009[1)] Mill. t
Russia	314	330	300
Ukraine	75	78	72
Kazakhstan	94	104	80
Total	483	512	452

[1)] Provisional, IEA

Coal is being reassessed in all countries due to the high prices for oil and gas, but the economic crisis forced all countries to reduce output.

Only Russia is of any significance for the world market. In recent years, Ukraine exported about 4 million tonnes of steam coal and anthracite and about 1–2 million tonnes of coke from its own production, depending on the market situation, through the Black Sea ports. Kazakhstan traditionally exported about 24–25 million tonnes of steam coal to Russia and smaller quantities of coking coal to Ukraine. But the export from Kazakhstan to Russia has declined sharply as a consequence of the economic crisis.
Only Russia is considered in the following remarks.

Production

Production of coal in Russia declined by 9 % or by about 28 million tonnes to approximately 300 million tonnes owing to the global economic crisis. Demand for hard coal fell by 22.5 million tonnes to 182.3 million tonnes. Initial estimates indicate that opencast pit output came to 200 million tonnes, while production from underground operations amounted to 100 million tonnes.

Coal Production in Russia

	2007 Mill. t	2008 Mill. t	2009[1)] Mill. t
Coking Coal	70	74	61
Steam Coal	244	256	239
• High Volatile Coal	122	145	145
• Low Volatile Coal	51	50	38
• Anthracite	7	6	6
• Lignite	64	55	50
Total	314	330	300

[1)] estimation

The most important area for Russian hard coal output is in the Kemerovo region.

The most important Russian producers developed as shown below:

Coal Producers in Russia

Producers	2008	2009	Difference 2008/09
	Mill. t	Mill. t	Mill. t
SUEK	92.7	87.8	- 4.9
Kuzbassrazrezugol	49.3	46.1	- 3.2
SBU Coal	12.9	14.7	+ 1.8
Yuzhkuzbassugol	13.0	14.0	+ 1.0
Vostsibugol	5.3	2.1	- 3.2
Raspadskaya	9.4	10.6	+ 1.2
Yuzhny Kuzbass	14.9	9.6	- 5.3
Yakutugol	10.9	5.2	- 5.7
Total	**208.4**	**190.1**	**- 18.3**

Source: McCloskey

Russian production will increase again in 2010 because the domestic demand is likely to improve. Exports to the Far East could increase as well. The Russian mining and steel group, Mechel, announced that the first production (200,000 tonnes) from the long-awaited coking coal project "Elgen" will be mined by the end of 2010. Production in 2011 could total 1 million tonnes. The goal is to achieve 27–30 million tonnes annually as final capacity in about 5 years. The 200-km connection of the Elgen mine with the Baikal-Amir main line is under construction and is scheduled for completion in the 4th quarter of 2010.

Russian Ports

	2007 Mill. t	2008 Mill. t	2009 Mill. t
Baltic Sea Ports and North Russia			
Murmansk	11.7	10.6	11.3
Vysotsk	4.3	2.8	2.9
Riga	10.4	12.8	13.5
Ventspils	4.2	4.3	5.2
Tallinn (Muuga)	3.7	-	1.6
St. Petersburg	2.3	2.1	2.4
Ust-Luga	6.4	4.9	6.5
Miscellaneous	0.6	3.3	2.8
Total	**43.6**	**40.8**	**46.2**
South Russia and Ukraine			
Mariupol	2.2	1.4	1.5
Tuapse	2.9	3.1	3.0
Yuzhny	3.7	3.3	3.5
Miscellaneous	7.5	7.7	6.9
Total	**16.3**	**15.5**	**14.9**
Russia Far East			
Vostochny	15.3	14.1	14.1
Vanino	0.6	0.7	1.5
Muchka	-	-	4.9
Miscellaneous	3.4	6.5	7.9
Total	**19.3**	**21.3**	**28.4**
Total	**79.2**	**77.6**	**89.5**

Infrastructure

The Russian infrastructure was able to handle the increase in exports of about 12 million tonnes more or less effortlessly, although during the year there were at times problems with rail transports.

The Russians are seeking to employ their own harbours, above all in the Baltic region, because of the high transit fees in the Baltic countries. Still Riga was able to maintain its position. Total exports through the Baltic ports increased by 5.3 million tonnes. Transshipments in the

Black Sea ports were down slightly by 0.6 million tonnes. The largest increase was noted in the Far East ports at 7.1 million tonnes; the new port Muchka handled almost 5 million tonnes. Its capacity is 12 million tonnes annually. The port of Vanino is supposed to be expanded from today's capacity of approximately 4.5 million tonnes to 12 million tonnes by 2012.
Overall, a highly dynamic development of export capacities in the Russian Far East ports can be observed. There will be no lack of port capacity over the next few years to restrict further increases in exports to the Pacific market. Krutrade is investing in its own railway cars so that it can be more independent of the national railway system. In total, Russia's export capacities are supposed to be expanded to as much as 135 million tonnes by 2020.

Export

Owing to the weak demand on the domestic market as well as satisfactory prices in the Pacific region, Russia exported about 12 million tonnes more in seaborne trade than in the previous year, reaching a mark of 90 million tonnes. In addition, about 10 million tonnes were traded crossborder with former CIS states. The major increase was in the steam coal sector of 10 million tonnes, so about 100 million tonnes were exported in total.
In the Far East, China bought about 9 million tonnes in 2009 after purchasing only 0.5 million tonnes in 2008. Korea and Japan, on the other hand, reduced their purchases volumes. But the bottom line still showed a net growth of about 5 million tonnes.
The net decline in the Mediterranean region was about 1 million tonnes in 2009. Israels import rose by 0.9 million tonnes more than previously, but Bulgaria reduced its imports by 1.4 million tonnes.

Key Figures Russia

	2007 Mill. t	2008 Mill. t	2009 Mill. t
Coal Output	314.0	330.0	300.0
Hard Coal Exports[1)]	79.0	78.0	90.0
• Steam Coal	74.0	75.0	85.0
• Coking Coal	5.0	3.0	5.0
Imports Germany	8.6	8.0	9.3
• Steam Coal	7.3	6.9	8.7
• Coking Coal	1.1	0.9	0.5
• Coke	0.2	0.2	0.1
Export Rate in %	25.0	24.0	30.0

[1)] Seaborne only

Imports increased in the north-west European region. Russia was able to take advantage of weaker supplies from South Africa, Poland and Venezuela and increase its market shares, especially in Germany. The UK bought 3.4 million tonnes less. The net effect was still growth of about 7 million tonnes for Russian coal in 2009.

COLOMBIA

Production

Colombia was unable to increase its output of hard coal any further in 2009. Since Colombia is dependent on Europe and the American markets, the recession had a major effect, impairing plans to increase exports.
At the beginning of 2010, Glencore exercised an option to purchase Prodeco back from Xstrata. Prodeco holds the mines

Calenturias and La Jagua – both of them opencast pits – port facilities and a participating interest of 39.8 % in the coal transport company Tenoco.

CoalCorp sold the "La Francia" mine to Goldman Sachs, including a supply agreement for 2.4 million tonnes.

All companies are hoping for a recovery of the markets in 2010 so that output can be further expanded..

Exports According to Companies

Exporter	2007 Mill. t	2008 Mill. t	2009 Mill. t
Cerrejon	29.9	31.4	30.3
Drummond	22.7	22.2	20.5
Prodeco/ Carbones De la Jagua	10.7	11.5	9.0
Vale/Carbones del Caribe	0.7	2.0	1.8
Coal Corp. (*incl. coking coal)	-	-	1.5
Miscellaneous	0.8	1.6	3.2
Total	**64.8**	**68.7**	**66.3**

In the mid-term, output of more than 100–110 million tonnes per year is expected in 2015, most of which will be exported.

Infrastructure

Export capacities were not utilised to the full in 2009 owing to the declining exports.

A coal port with a capacity of 12 million tonnes annually is planned for construction in the vicinity of Dibulla on the Caribbean Sea; the loading operations could start up in the middle of 2011. This port has been planned for the loading of 2 Panamax ships.

The Colombian government is also planning the construction of a large coal terminal – Puerto Nuevo – with an initial export capacity of 30 million tonnes annually and an additional expansion stage to 50 million tonnes annually. A number of export-oriented companies want to participate in a construction syndicate. So far, the infrastructure has been able to handle the increasing export volume.

Port Capacities of Colombia

	2006 Mill. t	2007 Mill. t	2008 Mill. t
Puerto Bolivar	32.0	32.0	32.0
Cienaga (Drummond)	28.0	28.0	28.0
Prodeco Puerto	6.0	9.0	9.0
Carbosam	4.0	4.0	4.0
Rio Cordoba	3.0	3.0	4.0
Barranquilla	1.5	1.6	1.6
Cartagena	0.7	1.7	1.7
Buenaventura	-	-	0.5
Total	**75.2**	**79.3**	**80.8**

The government has promised to build feeder roads in the areas where rail access is difficult.

Export

Colombia, despite a decline of 3 million tonnes, was able to hold onto its 4th place in the rankings of the large world market exporters, exporting 66 million tonnes in 2009 and remain ahead of South Africa.

Colombian coal goes primarily to the Atlantic market. Of the total exports of steam coal, about 5 million tonnes went to the Pacific region (South America) and about 58 million tonnes were shipped to the Atlantic region.

Exports to Europe grew by 4.5 million tonnes to 38.9 million tonnes, while export volume to North, Central and South America declined by 9.7 million tonnes. The greatest decline in sales, 7.7 million tonnes, was in trade to the USA. On the European market, Germany and the UK bought more Colombian coal.

Steam Coal Exports – Structure of Colombia

	2007 Mill. t	2008 Mill. t	2009 Mill. t
America	**29.5**	**34.3**	**24.5**
North America (USA + Canada)	23.3	24.2	16.0
South and Central America	6.2	10.1	8.5
Europe	**35.2**	**34.4**	**38.9**
Mediterranean Region	11.2	11.2	10.5
North-west-Europe	23.9	23.2	28.4
Total	**64.7**	**68.7**	**63.4**

Smaller quantities of coking coal and coke are not included in the export figures.
Exports will most likely rise again in 2010. The government is supporting the expansion of coal production.

Key Figures Colombia

	2007 Mill. t	2008 Mill. t	2009 Mill. t
Hard Coal Output	69.0	73.0	70.0 [1]
Hard Coal Exports	65.5	69.3	66.3
• Steam Coal	64.7	68.7	63.4
• Coking Coal	0.8	0.6	2.9
Imports Germany	6.9	5.8	5.2
Export Rate in %	95	95	95

[1] Provisional

In the long-term, the expansion of the Panama Canal planned for 2014 could open up Pacific sales potential to Colombia as well. The speed with which production is expanded will depend on further economic developments in the USA and in Europe.
The first trial deliveries to Chinese and Indian customers were carried out at the turn of the year 2009/2010. However, at this point in time there was a price difference of almost US$ 33–US$ 34/tonne FOB.
The FOB price Newcastle at the end of February 2010 was quoted at around US$ 94.50/tonne and the FOB price Bolivar listed at about US$ 61/tonne for comparable quality.
This would mean that, provided that freight rates are low, Colombian coal could be offered competitively in the Pacific region. However, the long-term duration of this extreme price difference of the FOB prices to the Australian prce is not to be expected.

REPUBLIC OF SOUTH AFRICA

Production

South African production in 2009 rose by 4 million tonnes (+1.6 %) from 246 million tonnes to 250 million tonnes.
Currently the many new companies under the BEE regime (Black Economic Empowerment) have regrettably not made any contributions to an expansion of production due to a lack of investments. In some cases, BEE companies have done nothing more than to take over existing mines from large mining companies. On the positive side, there are now initial indications that concrete steps are being

taken to initiate a number of expansion projects. There are in some cases approval problems for projects, but the BHP project "Douglas-Middelton" is in the implementation stage and Exxaro is also investing in the expansion of the "Grooteluk" mine. BHP (Klipsprint), Xstrata (Goedgevonden) and Amcoal (Zondagsfontein) are planning additional projects. Other smaller projects are on the way. In the mid-term, the trend of stagnating production in South Africa will most likely turn around with rising production possible again in 2010/2011.

The critical power supply to the South African industry also casts a bad light on South Africa's economic policies. One highly disturbing point is the poor management of the electric power supply of the country. Since prices for power are kept low by government measures, inadequate generation capacity have been built so that it is no longer possible to cover demand completely, a situation which has caused black-outs to occur for a number of years.

One hopeful sign is that Eskom has now succeeded in pushing through massive price increases over a period of 3 years so that rising funds for investments can be realised.

The economic crisis reduced the demand for power in South Africa in 2009. However, new construction of coal-fired power plants will presumably increase domestic coal consumption again as of 2012.

The domestic markets in South Africa consumed the following quantities in 2009:

Consumption of the Domestic Markets

	2007 Mill. t	2008 Mill. t	2009[1] Mill. t
Power Generation	111.2	119.4	112.0
Synthetic Fuels (Sasol)	45.4	44.1	45.0
Industry/Domestic Fuel	15.6	18.1	15.0
Metallurgical Industry	5.5	4.7	3.0
Total	**177.7**	**186.3**	**175.0**

[1] Provisional

In contrast, new coal production is developing in South Africa's neighbouring states. Projects have been launched in Botswana, Mozambique and Zimbabwe. The possibility of opening a mine is also being examined on Madagascar.

Mozambique

Mozambique is on the way to becoming a significant coal exporter in the coming years. The Vale project "Moatize" is advanced and in development. The aim is to expand operations to a capacity of 26 million tonnes annually (11 million tonnes p.a. of coking coal/15 million tonnes p.a. of steam coal).

Riversdale is planning the export of 8 million tonnes yearly including 6 million tonnes of coking coal and 2 million tonnes of steam coal. The coal will be loaded in the port Beira which is now being prepared for export. The rail connection – Sena Rail – has almost been completed over a length of 665 km. The first Panamax shipping could take place at the end of 2010/beginning of 2011.

Infrastructure

The South African infrastructure – especially rail transport – is still unable to function satisfactorily. Mining companies and Spoornet are busy blaming one another, while the authorities responsible for economic policies are inert nothing.

Exports Through South African Ports

	2007 Mill. t	2008 Mill. t	2009 Mill. t
RBCT	66.2	61.8	61.1
Durban	0.8	1.0	0.9
Maputo/Mozambique	0.7	0.9	1.3
Total	**67.7**	**63.7**	**63.3**

RBCT currently has a loading capacity of 76 million tonnes, but only about 82 % of the capacity is utilised. The expansion to 91 million tonnes is in progress and is expected to be concluded in the 2nd quarter of 2010. But doubts are growing as to whether this capacity can be fully utilised in view of stagnating output development and the inadequacy of railway deliveries.

The two smaller ports were able to increase their export volumes slightly.

Export Rights to Richards Bay Coal Terminal After Expansion

Richards Bay Coal Terminal (RBCT)	Mill. t/a **72,00**	% **79,13**
Ingwe	26.95	29.62
Anglo Coal	19.78	21.74
Xstrata	15.06	16.54
Total	4.09	4.49
Sasol	3.60	3.96
Kangra	1.65	1.82
Eyesizwe	0.87	0.96
South Dunes Coal Terminal	**6.00**	**6.59**
other Exporters (incl. BEE)	**9.00**	**9.89**
Common Users (incl. BEE)	**4.00**	**4.39**
Total	**91.00**	**100.00**

Alternatives – although currently not necessary regarding the output – are being considered in Namibia and Mozambique.

Export

2009 exports to the amount of 63 million tonnes once more fell short of the set targets, and South Africa was again unable to exploit its export potential to the fullest. Despite substantial declines in prices, the international price level for steam coal is attractive, and South Africa was able to maintain its FOB prices at a higher level than the Atlantic competitors (Colombia, Russia) thanks to demand from India and the Far East.

Structure of the Overseas Exports in 2009

	Total Mill. t	Europa[1] Mill. t	Asien Mill. t	Miscellaneous Mill. t
Steam Coal	62.8	31.5	25.6	5.7
Anthracite	0.5	0.1	0.2	0.2
Total	**63.3**	**31.6**	**25.8**	**5.9**

[1] incl. neighbouring Mediterranean countries

There has been a major shift in the structure of exports towards Asia. Fortunately, the low demand from Europe was compensated by increased need elsewhere, above all from India, which in 2009 purchased almost 19 million tonnes (+11 million tonnes over 2008) from South Africa. In addition, Taiwan procured 2 million tonnes. In view of India's growing need for steam coal in the future, the exports to this country could continue to rise.

Europe, including the Mediterranean region, remained the most important market, but now

accounts for only 48 % of the exports. The largest European consumers were Germany, Spain, France, the Netherlands and Israel.

Key Figures Republic of South Africa

	2007 Mill. t	2008 Mill. t	2009 Mill. t
Hard Coal Output	243.0	246.0	250.0
Hard Coal Exports[1]	68.0	63.0	63.0
• Steam Coal	67.0	62.0	62.0
• Coking Coal	1.0	1.0	1.0
Imports Germany	6.5	8.2	5.3
• Steam Coal	6.1	8.1	5.2
• Coking Coal	0.4	0.1	0.1
Export Rate in %	28.0	25.6	25.2

[1] Seaborne only

USA

Production

Production in the USA declined by 85 million tonnes (-8 %) to 983 million tonnes in 2009. The fall in output is a consequence of the decreasing demand for electric power resulting from the recession in the USA (about -65 million tonnes) and falling exports (-20 million tonnes). The greatest decline of -53 million tonnes was noted in the coalfields "West of Mississippi".

The generation of electric power in the USA continues to be based largely on coal. Owing to the stabilised gas output (shale gas), coal-fired power generation is not likely to increase in the near future.

Output Breakdown USA

	2007 Mill. t [2]	2008 Mill. t [2]	2009 Mill. t [2]
Appalachian [1]	344	355	326
Interior	138	137	130
Western	561	576	527
Total	**1,043**	**1,068**	**983**
East of Mississippi	435	448	416
West of Mississippi	608	620	567
Total	**1,043**	**1,068**	**983**

[1] Incl. coal from stockpile processing, incl. lignite

[2] Metric tonnes

Source: EIA

The new administration wants to exploit coal potential more strongly by employing modern technology as a way to reduce the dependency of the USA on oil imports. Coal to liquid (CTL) projects are also under consideration. However, the sharp decline in oil prices has put a damper on expectations. President Obama classifies coal as the most important energy resource. The plan for modernisation of the energy sector provides US$ 3.4 billion for the CCS programme.

Infrastructure

The infrastructure of the railways and ports is well developed. Freight rates have risen substantially in recent years due to the monopolistic position held by the private railway companies with their networks in some of the output areas. About 53 million tonnes, including domestic deliveries (about 10 million tonnes), were handled by the American seaports in 2009. There are technical reasons related to customs which account for the discrepancy between port shipments and export volumes.

Utilisation of Port Capacity USA

Port	Terminal	2007 (Actual) Mill. t	2008 (Actual) Mill. t	2009 (Actual) Mill. t
Hampton Roads	Lamberts Point	11.70	16.06	
	DTA	5.34	8.77	24.79
	KM Pier IX	3.46	8.54	
Baltimore	Chesapeake	0.88	1.92	5.75
	CNX Marine (Consol)	5.80	7.78	
Mobile		6.70	7.51	7.09
Lower River	IMT (2/3 KM)	3.15		
	United (Electrocoal)	5.40	7.96	4.27
	IC Marine Terminal	1.08		
Total		**43.51**	**58.54**	**41.90**

Source: McCloskey

Export/Import

The USA is strongly oriented to Europe for its exports and suffered losses in both coking coal and steam coal owing to the recession. Exports declined by about 20 million tonnes.

Seaborne exports declined by 9 million tonnes to about 44 million tonnes. Overland exports to Canada, which also recorded negative economic development, declined by more than 50 % or 11 million tonnes to only 9 million tonnes.

Exports USA 2009

	Coking Coal Mill. t	Steam Coal Mill. t	Total Mill. t
Seaborne	31.6	12.1	43.7
Overland (Canada)	2.2	7.3	9.5
Total	**33.8**	**19.4**	**53.2**

Primary destinations of seaborne exports totaling about 44 million tonnes were Europe (28 million tonnes) and Brazil (7 million tonnes).

The largest customer in Europe was Germany, purchasing 5 million tonnes of coking coal and steam coal. Imports, of Colombian coal in particular, also declined sharply. Still the USA remains a net exporter.

Import-Export Balance USA (Seaborne)

	2000 Mill. t	2002 Mill. t	2004 Mill. t	2007 Mill. t	2008 Mill. t	2009 Mill. t
Export (seabaorne)	33	21	26	37	53	44
Import (seaborne)	11	15	25	31	31	19
Balance	**22**	**6**	**1**	**6**	**22**	**25**

Imports from Colombia declined by about 8 million tonnes, while the volumes from Indonesia and Venezuela fell by 1 million tonnes each. Coking coal exports increased again at the end of 2009.

A revival of exports, above all for coking coal, is expected for 2010. Weak demand in Europe and the current world market prices will most likely cause stagnation in steam coal.

Key Figures USA

	2007 Mill. t	2008 Mill. t	2009 Mill. t
Hard Coal Output[1)]	1,043	1,068	983
Hard Coal Exports	53	74	53
• Steam Coal	24	35	19
• Coking Coal	29	39	34
Hard Coal Imports (incl. Canada)	33	31	19
Imports Germany	2.9	5.7	5.1
• Steam Coal	1.1	3.1	3.2
• Coking Coal	1.8	2.6	1.9
Export Rate in %	5.0	7.0	5.0

[1)] without Lignite

PEOPLE'S REPUBLIC OF CHINA

China continued to grow in 2009 and increased its gross national product by 8 %–9 %. This growth was supported by a massive economic programme which focused above all on the expansion of the infrastructure, stimulating demand for steel, cement and electric power. The need for coal rose accordingly. For all practical purposes, China blocked out the world market crisis by strongly stimulating domestic demand.

Electric Power/Crude Steel/ Pig Iron/Coal Production

		2007	2008	2009
Power Generation	TWh	3,260	3,405	3,664
Crude Steel Production	Mill. t	489	502	568
Pig Iron Production	Mill. t	469	471	544
Coal Production	Mill. t	2,523	2,716	2,910

At the end of 2009, installed power generation in China amounted to 874,070 MW, an increase of 81,300 MW (+ 10 %). The installed coal-fired power plant output in 2009 came to 652,050 MW, increasing by about 8 % or 48,000 MW in comparison with 2008. The capacity of Chinese electric power generation is supposed to be expanded to 1,400,000 MW–1,500,000 MW by 2020. About 70 % of this, i.e. 980,000 MW–1,050,000 MW, is supposed to come from coal-fired power plants.

Electric power generation increased by 7.6 % to 3,664 TWh, coal-fired power generation by 6.3% or 175 TWh to 2,962 TWh. The greatest increase in consumption, 12 %, was recorded by private households. Pig iron and crude steel production also continued to grow strongly. In 2009, China remained the only country to increase steel production. As a consequence, China achieved a world market share in steel production of 47 %. Including imports, China consumed 3 billion tonnes of coal in 2009.

The Chinese government has once again targeted the achievement of economic growth in 2010, this time at a rate of 8 %.

Production

Coal production was expanded further and rose by 194 million tonnes to 2,910 million tonnes in 2009.

The largest growth was recorded by the state-owned operations which increased production by 141 million tonnes and provided 52 % of total output, a volume of about 1.5 billion tonnes. Provincial mines and small operations also increased their production. The small operations had an output of over 1 billion tonnes, 35 % of total production, and are currently indispensable for meeting China's coal needs.

Coal Production in China

	2007 Mill. t	2008 Mill. t	2009 Mill. t
State-owned Mines	1,240	1,377	1,518
Provincial Mines	324	345	365
Small Operations	959	994	1,027
Total	**2,523**	**2,716**	**2,910**

The number of small operations is systematically being reduced as a means of improving the safety and environmental compatibility of coal production.

Coal production is being increasingly burdened by government levies for recultivation, mine safety and exploration.

Hard coal output is to be increased further. At the moment, according to Chinese information, capacities of about 1 billion tonnes annually are under construction. A total of 200–300 million tonnes of this capacity is supposed to go into production in 2010. It remains to be seen how much capacity will be lost from the closure of small operations. As growth rates in the demand for electric power and steel remain high, coal production will presumably grow at an average rate of 150–200 million tonnes annually and will pass the 3 billion tonnes a year mark in 2010. The consolidation process in the Chinese coal industry continues. China wants to reduce the number of small mines to below 10,000. China's coking plant capacity amounts to 400 million tonnes a year, its coke production totals about 345 million tonnes. Nevertheless, smaller coking plants are being closed; new plants are being constructed so that capacity continues to grow resulting at the time in overcapacity. It is almost inevitable that a reduction and consolidation will take place.

Infrastructure

China's infrastructure is steadily being expanded and was targeted strongly by the economic programme in 2009. Chinese railways transported 1.33 billion tonnes of coal in 2009, almost 45 % of the total output. The expansion of the railway system is a great challenge for China because more and more coal must be transported from the north to the consumer centres in the south.

Port shipments of coal amounted to 477 million tonnes, breaking down into

- 23 million tonnes export of coal/coke
- 127 million tonnes import of coal
- 327 million tonnes shipments via Chinese ports for retransport to the interior.

Exports in 2009 were handled as shown below:

Import/Export

Export Coal Shipments 2008/2009 in China

Port	2008 Mill. t	2009 Mill. t
Quinhuangdao	14.0	2.7
Huang Hua	16.0	0.3
Tianjin	13.0	9.9
Qindao	0.9	2.0
Rizhao	1.6	1.7
Lianyungang	2.7	0.6
Jingtang	2.3	2.0
Bayuquan/Yinkou	0.1	0.3
Other or Border Transport	7.0	3.3
Total	**57.6**	**22.8**

China's import/export development in 2009 had a major effect on the hard coal world market:

Import/Export Development

	2008 Mill. t	2009 Mill. t	Difference 2008/09 Mill. t
Import Steam Coal	33	92	+ 59
Import Coking Coal	7	35	+ 28
Total Imports	**40**	**127**	**+ 87**
Export Steam Coal	42	22	- 20
Export Coking Coal/Coke	16	1	- 15
Total Exports	**58**	**23**	**-35**

Due to 87 million tonnes in additional imports and 35 million tonnes in lower exports, China's total impact on the world market totalled 122 million tonnes. China alone compensated coal exporting countries almost completely for the weak demand for steam and coking coal in the Atlantic region.

China's total export declined by 35 million tonnes from 58 million tonnes in 2008 to 23 million tonnes in 2009. The export of steam coal fell further by 20 million tonnes to 22 million tonnes (including anthracite): the export of coking coal from 3 million tonnes to 1 million tonnes.

The fall in coke export from 12.1 million tonnes in 2008 to 0.5 million tonnes in 2009 was dramatic. Exports more or less came to a standstill. The drop is rooted in the international steel crisis and the consequent lack of any demand for coke.

The largest customers from these sharply reduced exports were South Korea (9.9 million tonnes), Japan (6.4 million tonnes) and Taiwan (4.9 million tonnes).

Coal Exports According to Qualities

	2007 Mill.t	2008 Mill.t	2009 Mill. t
Steam Coal	45.3	35.9	18.6
Coking Coal	2.5	3.5	0.7
Anthracite	5.3	6.1	3.3
Total	**53.1**	**45.5**	**22.6**
Coke	15.3	12.1	0.5

The strong increase in imports were covered above all by Australia (about 44 million tonnes), Indonesia (about 30 million tonnes) and Russia (about 12 million tonnes). Vietnam supplied 24 million tonnes of anthracite, largely to south-west China.

A breakdown according to quality is shown below:

Coal Imports According to Qualities

	2007 Mill.t	2008 Mill.t	2009 Mill. t
Steam Coal	16.0	14.3	57.8
Coking Coal	6.3	7.2	34.5
Anthracite	28.4	19.5	34.4
Total	**50.7**	**41.0**	**126.7**

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

Balance Exports/Imports

	2007 Mill. t	2008 Mill. t	2009 Mill. t
Exports	53	45	23
Imports	51	41	127
Balance	**2**	**4**	**-104**

So China was a net importer.

The export volumes for the large Chinese exporters declined parallel to the decrease in exports.

Companies with Export Licence

	2007 Mill. t	2008 Mill. t	2009 [1] Mill. t
China Coal	19.2	16.1	4.3
Shenhua	25.6	22.3	13.6
Shanxi	5.0	4.2	3.6
Minmetals	4.0	3.0	1.1
Total	**53.8**	**45.6**	**22.6**

[1] Provisional

Imports are predicted to remain high during 2010. On the other hand, the domestic production will be expanded further. The degree to which China imports coal will largely depend on the international price level. At this time – start of 2010 – the Chinese domestic price level is higher than the world market price level; this is the main reason why the power plants and steel mills located on the coast procure their supplies from the world market instead of from domestic sources.

Key Data People's Republic of China

	2007 Mill. t	2008 Mill. t	2009 Mill. t
Hard Coal Output	2,523	2,716	2,910
Hard Coal Exports	53.1	45.3	22.6
• Steam Coal	50.6	41.8	21.9
thereof Anthracite	5.3	6.1	3.3
• Coking Coal	2.5	3.5	0.7
Coke Exports	15.3	12.1	0.5
Hard Coal Imports	50.7	41.1	126.7
• Steam Coal	16.0	14.8	57.8
• Coking Coal	6.3	6.9	34.5
• Anthracite	28.4	19.4	34.4
Imports Germany	0.9	0.6	0.15
• Steam Coal	-	-	-
• Coke	0.9	0.6	0.15
Export Rate in %	2.0	2.0	0.8

CANADA

Production

Coal output in Canada totalled 63 million tonnes in 2009. It breaks down into 28 million tonnes of hard coal and 35 million tonnes of lignite. The provinces with coal production include: British Columbia, Alberta and Saskatchewan. Of this output, about 35 million tonnes of steam coal is sourced from Alberta and Saskatchewan, with the majority consumed as hard lignite or lignite in local power plants.

Most of the hard coal production amounting to 28 million tonnes – largely from British Columbia – is exported as coking coal (23 million tonnes), PCI coal and, in smaller quantities (5 million tonnes), as steam coal.

During the contract year 2009/2010, the Canadian export mines suffered from the worldwide steel crisis and had to throttle their production.

The significantly higher price level for 2010/2011 will most likely support the further long-term expansion of Canadian mining. The Donkin project being conducted by Xstrata and Erdene in eastern Canada is in planning. However, the search for another partner is still ongoing. The coking coal project is supposed to be reduce capacity from the original 5 million tonnes to 2.75 million tonnes annually.

Canadian exports are extremely dependent on the worldwide steel business. Volume reductions could put pressure on the Canadian mining industry even if the price level is sufficiently high. In the long-term changes are high that Canada has the potential to increase its exports by 20–25 million tonnes made up primarily of coking coal and PCI coal.

Infrastructure

Export coal is delivered to the Westshore Terminal near Vancouver by CP Rail, while CN transports the coal to the Neptune Terminal. The more northerly Ridley Terminal was again able to handle significant coal tonnage (5 million tonnes) in 2009. A further increase is possible in the middle-term. These potential quantities come from newly opened mines in north-east British Columbia.

Handling capacities are shown below:

Handling Capacities 2009

Terminal	Capacities 2009 Mill. t/a	Exports 2009 [1] Mill. t/a
Neptune Bulk Terminal	8	3
Westshore Terminal	26	20
Ridley Terminal	16	5
Total	**50**	**28**

[1] Provisional figures

Clearly port capacities are prepared for additional exports in the event of a rise in demand and production. Thunder Bay Terminal, which has a capacity of 11–12 million tonnes, is used for the inland shipment of Canadian coal to the USA over the Great Lakes. Thunder Bay Terminal is also used for the handling of US import coal from the Powder River Basin.

Exports

Seaborne exports of 27 million tonnes break down into about 6 million tonnes of steam coal and about 21 million tonnes of coking coal. 1 million tonnes went overland to the USA, most of it coking coal.

The decline in exports came to almost 5 million tonnes; all of the OECD countries purchased smaller amounts. The export balance was rescued by the increased demand from China, which purchased an additional 3.3 million tonnes of coking coal and 0.6 million tonnes of steam coal.

There is a chance that Canada's export situation will improve in 2010 as the steel industry recovers.

The import development of India and China will be of decisive importance for the long-term increase in Canadian exports.

Key Figures Canada

	2007 Mill. t	2008 Mill. t	2009 Mill. t
Hard Coal Output[1)]	37	38	28
Hard Coal Exports	31	33	28
• Steam Coal	4	6	6
• Coking Coal	27	27	22
Imports Germany	1.8	1.7	1.1
• Coking Coal	1.8	1.7	1.1
Export Rate in %	84	87	100

[1)]Excl. sub-bituminous. lignite

VIETNAM

Production

Production rose in 2009 by about 3 million tonnes to 43 million tonnes. Domestic consumption, however, decreased from 20 million tonnes to 18 million tonnes. Most of this 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.

The output capacities of the Vietnamese mines were estimated as shown below on the basis of information from Vinacom (2006):

Opencast pits	26.5 Mill. t
Underground operations	38.1 Mill. t
Total	64.6 Mill. t

To this extent, the capacities are not utilised in full.

Production is supposed to be increased to 50 million tonnes in 2010 and to 60 million tonnes by 2015. The long-term target is 80 million tonnes. Production from opencast pits is currently dominant, but it will be necessary to change over to underground operations as reserves are depleted if these output targets are to be reached. The higher-priced exports subsidise domestic sales.

Vietnam has put great hopes in the development of coal reserves, mostly lignite deposits, in the Red River Delta.

Vietnam's dynamically growing economy could trigger an increase in import demand for steam coal. However, Vietnam was also hit hard by the economic crisis in 2009 and the gross national product contracted. Nonetheless, in the mid-term – from 2013 – Vietnam could become a significant importer of steam coal and reduce its exports.

Infrastructure

The waters on the eastern coast of Vietnam are mostly shallow and have in the past allowed access only to ships of less than 10,000 DWT. As a result of dredging work in Cam Pha, larger ships can now be loaded at the port and it is possible to handle 65,000-DWT ships with additional loading in the roadstead. Hon Gai Port can handle 10,000-DWT ships at the pier and 30,000-DWT ships in the roads. The first deep-water port is supposed to be constructed in Central Vietnam.

According to information from Vinacom, export capacities in the ports amount to about 34 million tonnes p.a.

Export and Port Capacities in Vietnam

Ports	Mill. t
Cam Pha/Cua Ong	15.0
New Ports in Cam Pha	10.0
Hon Gai/Nam Cau Trang	3.0
Hon Gai/Dien Väng	1.5
Hon Gai/Troi	1.5
Uong Bi/dien Cong	3.0
Total	**34.0**

The inland infrastructure, i.e. roads and railway lines, is also being expanded with Chinese aid.

Export

Vietnam increased exports by almost 6 million tonnes in 2009. This rise was primarily due to increased demand from south-west China.

In addition to China, Japan, Thailand and South Korea bought smaller volumes. The Vietnamese anthracite coal is also used in part as PCI coal but sales declined as a consequence of the steel crisis.

The high Vietnamese export of anthracite steam coal is in part low calorific and is profitable only because of the short sea routes to China. This coal would not stand a commercial chance on the normal international steam coal market. Nevertheless, it covers demand which otherwise might have to be satisfied by purchases on the world market and thus alleviates pressure on this market. A small part of the exports also goes overland to China.

Key Figures Vietnam

	2007 Mill. t	2008 Mill. t	2009 Mill. t
Output	45.0	40.0	43.0 [1]
Export	32.5	19.4	25.1
thereof China	24.6	16.9	24.1
Export Rate in %	72.0	48.5	58.0

[1] Privisional

Lower export volume is expected in 2010. The target is 18–20 million tonnes.

VENEZUELA

Production

Activities are becoming increasingly paralysed because of domestic political problems. The production at Carbones Del Guasare in particular dropped sharply. Hard coal output in 2009 amounted to 3.7 million tonnes, 40 % lower than the previous year. Venezuela is planning to nationalise the mines. On the whole, the development of the Venezuelan coal industry is a fiasco. Ultimately, nothing less than a change in political power structure will be able to reactivate Venezuela's export potential. The Venezuelan mining minister has announced that the concessions now granted for Mina Norte (expiration in 2011) and Paso Diablo (expiration in 2013) will not be renewed. In future, mining will be conducted only within the framework of operation of management agreements or joint ventures between Venezuela and private partners (no large corporations). Amcoal has announced the sale of its 25.5 % interest in Carbones Del Guasare. Peabody holds another 25.5 % interest, Venezuela 49 %.

Production/Exports by Company

	2007 Mill. t	2008 Mill. t	2009 Mill. t
Carbones Del Guasare	6.00	4.45	2.84
Interamerican Coal	0.65	0.56	0.61
Carbones De La Guajira	1.01	0.61	-
Miscellaneous	0.67	0.62	0.28
Total	**8.33**	**6.24**	**3.73**

Infrastructure

Now that President Chavez has set the maximum annual exports at 10 million tonnes, the existing infrastructure is adequate, although not ideal. The entire transport from the mines to the shipping ports is handled by lorries.

Exports of Venezuelan Coal Via Venezuelan Ports

Port	User	2007 Mill. t	2008 Mill. t	2009 Mio t
Bulk Wayuu	Carbones Del Guasare	6.00	4.45	2.84
El Bajo	Carbones De La Guajira, Interamerican Coal	1.00	0.75	0.55
Guanta	Geoconsa	0.20	0.20	-
La Ceiba	Carbones Del Caribe, Interamerican, Millinton	0.8	0.6	0.34
Palmarejo	Xcoal, Caneveca, Millinton, Carbones Del Guasare	0.4	0.25	-
Total		**8.40**	**6.25**	**3.73**

Export

Exports declined in 2009 by 2.5 million tonnes from 6.2 million tonnes in 2008 to about 3.7 million tonnes. Despite the best sales opportunities, Venezuela is unable to utilise its potential. The purchase of 1.1 million tonnes made the USA the largest customer, but Europe also bought 1.3 million tonnes. The remainder went to Central and South America.

Key Figures Venezuela

	2007 Mill. t	2008 Mill. t	2009 Mill. t
Hard Coal Output	8.3	6.2	3.7
Hard Coal Exports	8.3	6.2	3.7
Imports Germany	0.15	0.92	0.35
• Steam Coal	0.15	0.92	0.35
Export Rate in %	100.0	100.0	100.0

POLAND

Production

The decline in Polish output continued in 2009. Total output fell by 6.1 million tonnes from 83.6 million tonnes to 77.5 million tonnes. Despite the positive earnings in recent years, Polish production has declined by more than 10 million tonnes.

The Largest Hard Coal Producers in Poland

Company	Output 2008 Mill. t	Output 2009 Mill. t	Exports 2008 Mill. t	Exports 2009 Mill. t
Kompania Weglowa	44.6	42.2	5.5	6.2
Katowicka Grupa Kapitalowa	14.0	13.5	1.2	0.7
Jastrzebska Spólka Weglowa	13.6	11.4	1.6	1.8
Independent Mines	11.4	10.4	-	-
Total	**83.6**	**77.5**	**8.3**	**8.7**

Polish coking coal production and coke production were hit hard by the steel crisis and recorded sharp losses in sales. The consequence was a decrease in output and the throttling of production. Despite such measures, stockpiles increased by 3 million tonnes to about 5 million tonnes.

Ultimately, all of the mining groups cut back on production. It is becoming increasingly evident that too little has been invested in recent decades in the mines for the new development of reserves. Another factor negatively affecting the economic efficiency of mining is the conclusion of pay scale agreements far in excess of the progress in productivity raising production costs. Due to the expected recovery of the steel industry, a stabilisation of production is expected for 2010.

Virtually no progress is being made in the privatisation of the Polish mining industry. The trade unions oppose privatisation. Nor are there any serious potential buyers for the steam coal mines. The coking coal mines, while more interesting, are in need of massive investments. Tenders for the sale of Polish mines have remained unsuccessful.

Owing to the improved economic position of recent years, efforts are being made to stabilise production by opening new mines but the economic crisis has hampered these efforts. A high coking coal prices on the world market from the middle of 2010 will most likely improve the economic situation, especially for the coking coal mines.

Poland is importing increasing quantities of coal, primarily steam coal, but smaller quantities of coking coal and anthracite as well. The volume in 2009 amounted to 10 million tonnes and came primarily from Russia; most of it is used in northern Poland.
Poland has also been given the opportunity by the EU to pay subsidies related to closures to the mining companies.

Infrastructure

In 2009, there were no changes in the transport infrastructure, which is now too large for the declining export volume. The export logistics in Poland are well developed. Loading ports include Gdansk, Swinoujscie, Szczecin and Gdynia. While Gdansk is able to load Capesize freighters, Swinoujscie and Gdynia are accessible only to Panamax ships, and only Handysize vessels can access Szczecin. Rail transport has also become increasingly important for coking coal and ballast coal exports, above all for Germany. Both Polish and German freight companies are active in this sector.
Domestic shipping (Oder) is of no major importance for export (potential about 1.5 million tonnes). The export facilities previously used for ore have in part been converted for utilisation in the import of coal.

Export

Exports remained stable in 2009. With imports of almost 10 million tonnes, Poland remains a net importer. Of the exported 8.7 million tonnes, 6.7 million tonnes were marketed by Weglokoks; 2.0 million tonnes were marketed directly by the mining companies.
Exports in 2009 break down as shown below:

Export 2009	Coking Coal Mill. t	Steam Coal Mill. t	Total Mill. t
Seaborne	0.5	3.0	3.5
Overland	0.5	4.7	5.2
Total	**1.0**	**7.7**	**8.7**

Seaborne exports rose from 2.0 million tonnes in 2008 to 3.5 million tonnes in 2009.
The largest customers for steam coal were Germany (about 3 million tonnes) and Austria (about 1 million tonnes). A large part of this volume was transported by rail.
In view of weak domestic demand, Poland might increase its exports slightly in 2010.

Key Figures Poland	2007 Mill. t	2008 Mill. t	2009 Mill. t
Hard Coal Output	87.0	84.0	78.0
Hard Coal Exports	12.1	8.3	8.7
• Steam Coal	8.5	7.3	6.7
• Coking Coal	3.6	1.0	2.0
Coke Exports	6.3	5.6	4.6
Hard Coal Imports	6.0	9.0	10.0
Imports Germany	6.4	5.4	4.2
• Steam Coal	4.6	3.8	2.5
• Coking Coal	-	-	-
• Coke	1.8	1.6	1.7
Export Rate in % (coke converted into coal terms)	20.0	10.0	11.0

Coke exports came to about 4.6 million tonnes.

CZECH REPUBLIC

Production

The hard coal year 2009 saw a substantial decline in production of 1.6 million tonnes for the Czech Republic. Hard coal output fell from 12.6 million tonnes in 2008 to 11.0 million tonnes in 2009.
Coke production by the Czechs amounted to 2.3 million tonnes. Lignite production came to about 45.2 million tonnes, a slight increase.
The Czech hard coal production of 11 million tonnes breaks down into 5.9 million tonnes of coking coal and 5.1 million tonnes of steam coal. Coking coal and coke production were impacted especially severely by the difficult situation in the steel industry. The Czech hard coal production is in desperate need of investments if it is to maintain its output level. However, the economic situation should improve in 2010 because the steel industry will most likely be increasing its demand.

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 6.5 million tonnes including 6.0 million tonnes of coal and 0.5 million tonnes of coke. Austria (2.0 million tonnes), Slovakia (1.6 million tonnes) and Poland (1.3 million tonnes) were the largest customers. A large part of the exports consists of coking coal. The Czech Republic imported small quantities of coal and coke – about 2.4 million tonnes – from Poland and Russia.

Key Figures Czech Republic

	2007 Mill. t	2008 Mill. t	2009 Mill. t
Hard Coal Output	13.0	12.6	11.0
Hard Coal Exports	7.0	6.1	6.0
Coke Exports	0.8	0.7	0.5
Imports Germany	0.6	0.5	0.3
• Steam Coal	0.3	0.2	0.2
• Coke	0.3	0.3	0.1
Export Rate in % (coke converted into coal terms)	60.0	54.0	62.0

The export rate of output rose to 62 %.

Report in Figures

World-Energy Consumption by Source of Energy and Regions

Source of Energy	2003	2004	2005	2006	2007	2008	Mill. TCE 2009[1)]
Mineral Oil	5,280	5,460	5,792	5,584	5,645	5,617	5,400
Natural Gas	3,400	3,509	3,768	3,653	3,767	3,898	3,700
Nuclear Energy	867	905	940	907	888	886	900
Hydro Power	875	920	1,000	996	1,013	1,026	1,000
Hard Coal	3,460	3,700	4,106	4,014	4,207	4,394	4,570
Lignite	330	330	330	330	330	330	330
Total	**14,212**	**14,824**	**15,936**	**15,484**	**15,850**	**16,151**	**15,900**
Region of Consumption	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	Shares in % **2009**
North America	27,9	27,2	26.5	25.8	25.6	24.8	24.0
Asia/Australia	30.0	31.3	32.7	33.4	34.3	35.3	36.3
Since 2007 EU-27	15.4	16.8	16.0	15.8	16.4	15.8	14.8
CIS	10.0	9.8	9.2	8.8	8.7	7.8	8.2
Remaining World	16.7	14.9	15.6	16.2	15.0	16.3	16.7
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
Coal Consumption (Hard Coal and Lignite)	**3,490**	**3,790**	**4,030**	**4,436**	**4,344**	**4,724**	Mill. TCE **4,900**
Region of Consumption	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	Shares in % **2009**
North America	24.1	24.0	20.8	19.9	19.3	18.9	16.6
Asia/Australia	51.3	52.0	56.7	58.3	59.7	61.0	66.5
Since 2007 EU-27	8.7	11.1	10.0	11.1	10.6	9.5	5.0
CIS	7.0	6.3	6.0	5.5	3.6	5.2	6.0
Remaining World	8.9	6.6	6.5	5.2	6.8	5.4	5.9
Total	**100.0**	**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

Table 1

World Hard Coal Production

Mill. t (t=t)

	2004			2005			2006		
	Production	Export	Import	Production	Export	Import	Production	Export	Import
Germany	29	0	39	28	0	36	24	0	42
France	0	0	20	0	0	20	0	0	21
Great Britain	25	0	37	20	0	44	19	0	50
Spain[1]	14	0	24	12	0	25	12	0	27
Poland	99	19	2	97	20	2	94	16	4
Czech Republic	13	4	1	13	4	1	14	5	1
Romania	0	0	0	0	0	0	2	0	0
Since 2004 EU-25/ since 2007 EU-27	180	24	211	170	24	209	168	21	236
Russia	283	66	26	300	70	0	309	89	25
Kazakhstan	70	26	0	86	24	0	92	25	0
Ukraine	80	4	9	78	8	12	80	3	4
Countries Total	433	96	35	464	102	12	481	117	29
Canada	29	26	18	31	28	20	34	28	21
USA	1,020	43	25	1,029	45	27	1,066	46	30
Colombia	52	51	0	60	55	0	64	58	0
Venezuela	8	8	0	8	8	0	8	8	0
Countries Total	1,109	128	43	1,128	136	47	1,172	140	51
South Africa	243	68	0	241	75	0	244	69	0
Australia	297	225	0	306	234	0	314	237	0
India	348	0	31	370	0	40	390	0	53
China[2]	1,992	87	19	2,190	72	26	2,326	63	38
Japan	0	2	179	0	0	181	0	0	177
Indonesia	135	105	0	153	129	0	199	171	0
Countries Total	2,475	194	229	2,713	201	247	3,473	540	268
Other Countries	130	21	243	136	39	296	57	40	274
World	4,794	758	758	5,158	811	811	5,351	858	858

2009 preliminary figuresl.

1) Production incl."Lignito Negro"

2) Production incl. lignite (about 50 Mill. t estimated)

Sources: Statistik der Kohlenwirtschaft, ECE, IEA, statistics of import and export countries, Barlow Jonker, internal calculations

Foreign Trade – (Inland Trade and Seaborne Trade)

Mill. t (t=t)

2007 Production	2007 Export	2007 Import	2008 Production	2008 Export	2008 Import	2009 Production	2009 Export	2009 Import	
24	0	48	19	0	46	15	0	36	Germany
0	0	18	0	0	19	0	0	16	France
17	0	43	18	0	48	18	0	37	Great Britain
11	0	25	10	0	33	9	0	18	Spain[1]
87	12	5	83	8	9	78	9	10	Poland
13	7	2	13	7	3	11	6	2	Czech Republic
3	0	3	3	0	0	4	0	2	Romania[3]
158	19	231	149	15	217	135	15	182	**Since 2004 EU-25/ since 2007 EU-27**
314	93	24	330	95	28	300	90	25	Russia
88	26	0	90	25	0	80	25	0	Kazakhstan
75	3	9	78	5	0	72	4	0	Ukraine
477	122	33	498	125	28	452	119	25	**Countries Total**
37	31	29	38	33	23	28	28	2	Canada
1,043	53	33	1,068	74	31	983	53	19	USA
69	65	0	73	69	0	70	66	0	Colombia
8	8	0	6	6	0	4	4	0	Venezuela
1,157	157	62	1,185	182	54	1,085	151	21	**Countries Total**
243	68	0	235	63	0	250	63	0	**South Africa**
322	250	0	334	261	0	344	273	0	**Australia**
430	0	52	465	0	54	532	0	59	India
2,523	53	51	2,716	45	41	2,910	23	127	China[2]
0	0	180	0	0	190	0	0	162	Japan
231	189	0	255	202	0	280	230	0	Indonesia
3,184	242	283	3,436	571	285	3,722	253	348	**Countries Total**
59	49	298	13	37	346	112	42	340	Other Countries
5,600	907	907	5,850	930	930	6,100	916	916	**World**

[1] Russia, Kazakhstan, Ukraine: separate since 2004

Table 2

Seaborne Hard Coal Trade in Million t

Exporting Countries	2004 Coking Coal	2004 Steam Coal	2004 Total	2005 Coking Coal	2005 Steam Coal	2005 Total	2006 Coking Coal	2006 Steam Coal	2006 Total
Australia	118	107	225	124	110	234	124	113	237
USA	20	6	26	22	5	27	20	6	26
South Africa	1	67	68	1	70	71	1	68	69
Canada	22	1	23	26	2	28	23	3	26
China	6	81	87	5	67	72	4	59	63
Colombia	0	51	51	0	55	55	1	58	59
Indonesia	0	105	105	0	129	129	0	171	171
Poland	2	10	12	0	11	11	1	9	10
Russia	10	51	61	8	60	68	6	69	75
Venezuela	0	9	9	0	8	8	0	8	8
Other	1	17	18	2	21	23	3	30	33
Total	**180**	**505**	**685**	**188**	**538**	**726**	**183**	**594**	**777**

Importing Countries/ Regions	2004 Coking Coal	2004 Steam Coal	2004 Total	2005 Coking Coal	2005 Steam Coal	2005 Total	2006 Coking Coal	2006 Steam Coal	2006 Total
Europe[1)]	52	166	218	53	170	223	45	167	212
EU-15/since 2004 EU-25	48	163	211	46	163	209	40	164	204
Asia	110	304	414	116	319	435	123	310	433
Japan	56	124	180	55	126	181	73	119	192
South Korea	15	64	79	12	63	75	20	60	80
Taiwan	0	61	61	0	61	61	9	58	67
China	5	6	11	5	9	14	3	13	16
Hongkong	0	12	12	0	15	15	0	11	11
India	15	18	33	17	23	40	19	23	42
Latin America	16	11	27	16	17	33	13	4	17
Other (incl. USA)	2	24	26	3	32	35	2	113	115
Total	**180**	**505**	**685**	**188**	**538**	**726**	**183**	**594**	**777**

2009 preliminary figures; excl. land transport

1) incl. Mediterranian countries

Analysis of several sources

Mill. t

2007 Coking Coal	2007 Steam Coal	2007 Total	2008 Coking Coal	2008 Steam Coal	2008 Total	2009 Coking Coal	2009 Steam Coal	2009 Total	**Exporting Countries**
138	112	250	135	126	261	134	139	273	Australia
26	11	37	36	17	53	32	12	44	USA
1	67	68	0	63	63	1	62	63	South Africa
25	4	29	25	6	31	21	6	27	Canada
2	51	53	4	42	46	1	22	23	China
1	65	66	0	69	69	3	63	66	Colombia
0	189	189	0	202	202	0	230	230	Indonesia
1	4	5	0	2	2	1	3	4	Poland
6	72	78	3	75	78	5	85	90	Russia
0	8	8	0	6	6	0	4	4	Venezuela
2	35	37	4	24	28	3	32	35	Other
202	**618**	**820**	**207**	**632**	**839**	**201**	**658**	**859**	**Total**

2007 Coking Coal	2007 Steam Coal	2007 Total	2008 Coking Coal	2008 Steam Coal	2008 Total	2009 Coking Coal	2009 Steam Coal	2009 Total	**Importing Countries/ Regions**
50	161	211	50	159	209	36	152	188	Europe[1)]
45	156	201	45	143	188	36	137	173	EU-15 since 2004 EU-25
131	346	477	139	368	507	119	370	489	Asia
74	126	200	56	131	187	45	113	158	Japan
21	65	86	23	73	96	16	81	97	South Korea
9	61	70	11	60	71	11	59	70	Taiwan
3	20	23	3	17	20	31	85	116	China
0	12	12	0	11	11	0	12	12	Hongkong
23	29	52	29	25	54	12	47	59	India
14	6	20	18	5	23	6	4	10	Latin America
7	105	112	0	100	100	40	132	172	Other (incl. USA)
202	**618**	**820**	**207**	**632**	**839**	**201**	**658**	**859**	**Total**

Table 3

World Coke Production (1000 Metric Tonnes)

Country/Region	2003	2004	2005	2006	2007	2008	2009
Europe							
Austria	1,358	1,360	1,360	1,360	1,428	1,360	1,290
Belgium	2,675	2,681	2,833	2,714	2,667	1,983	1,570
Bosnia-Herzegovina	0	218	459	450	596	816	714
Bulgaria	777	768	682	615	500	300	0
Croatia	0	0	0	0	0	0	0
Czech	3,367	3,337	3,227	3,231	3,063	3,206	2,172
Finnland	895	904	894	870	865	860	740
France	4,438	4,412	4,301	4,290	4,374	4,422	2,710
Germany	7,529	8,292	8,040	8,250	8,520	8,260	6,770
Hungary	582	605	614	913	1,014	999	746
Italy	3,688	4,010	4,515	4,560	4,632	4,455	2,687
Netherlands	2,144	2,205	2,260	2,160	2,180	2,166	1,500
Norway	0	0	0	0	0	0	0
Poland	10,112	9,989	8,396	9,599	10,264	9,832	6,947
Portugal	0	0	0	0	0	0	0
Romania	1,637	1,950	1,910	1,804	1,669	1,017	237
Serbia	0	0	0	0	0	0	0
Slovakia	1,779	1,777	1,739	1,749	1,750	1,735	1,200
Spain	2,764	2,702	2,590	2,742	2,753	2,400	2,105
Sweden	1,059	1,179	1,191	1,182	1,193	1,174	980
Great Britain	4,142	3,919	3,991	4,276	4,280	4,152	3,400
Europe in total	**48,946**	**50,308**	**49,002**	**50,765**	**51,748**	**49,137**	**35,768**
CIS	**53,417**	**55,318**	**50,025**	**51,067**	**54,054**	**50,783**	**44,653**
North America	**20,554**	**20,622**	**20,337**	**20,237**	**20,184**	**19,031**	**14,557**
Latin America	**9,695**	**10,288**	**10,406**	**10,760**	**12,001**	**12,247**	**9,102**
Africa	**2,622**	**2,778**	**2,861**	**2,855**	**3,232**	**2,975**	**1,970**
Middle East	**5,744**	**5,765**	**5,892**	**6,211**	**6,135**	**5,661**	**4,464**
Asia							
China	177,750	206,186	254,117	297,680	321,714	312,148	345,017
India	15,485	16,776	18,683	18,904	18,168	18,415	18,680
Japan	38,544	38,314	38,095	38,077	38,354	38,200	30,420
South Korea	10,380	10,446	10,246	9,887	9,949	10,614	9,577
Other	4,769	4,599	4,537	3,963	4,585	4,580	4,479
In total	**246,928**	**276,321**	**325,678**	**368,511**	**392,770**	**383,957**	**408,173**
Austral-Asia	**3,277**	**3,361**	**3,278**	**3,117**	**3,323**	**3,161**	**2,498**
World in total	**391,183**	**424,761**	**467,479**	**513,523**	**543,447**	**526,952**	**521,185**

Sources: Several sources, data from associations and industry

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	6,000-7,200
South Africa	16-31	8-15	6-10	0.5-1.7	51-61	43-65	5,400-6,700
Colombia	30-39	4-15	7-16	0.5-1.0	36-55	43-60	5,000-6,500
Venezuela	34-40	6- 8	5-8	0.6	47-58	45-50	6,500-7,200
Poland	25-31	8-16	7-11	0.6-1.0	44-56	45-50	5,700-6,900
Czech	25-27	6- 8	7-9	0.4-0.5	58-60	60-70	6,700-7,100
Russia	27-34	11-15	8-12	0.3-0.6	47-58	55-67	6,000-6,200
Pacific Supplier							
Australia	25-30	8-15	7-8	0.3-1.0	47-60	45-79	5,900-6,900
Indonesia	37-47	1-16	9-22	0.1-0.9	30-50	44-53	3,700-6,500
China	27-31	7-13	8-13	0.3-0.9	50-60	50-54	5,900-6,300
Russia (east coast)	17-33	11-20	8-10	0.3-0.5	47-64	70-80	5,500-6,800
Vietnam/Anthr.	5-6	15-33	9-11	0.85-0.95	58-83	35	5,100-6,800
Germany	19-33	6-7	8-9	0.7-1.4	58-65	60-90	6,600-7,100

Indication in gross bandwidths

Sources: see table 6

Table 4/5

Qualities of Coking Coal Traded on the World Market

Exporting Countries/ Qualities	Volatile %	Ash %	Latent 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

Coke strength CSR-value[2)]	Fluidity max ddpm	Con-traction max %	Dilatation max %	Reflection middle %	Macerale reactive %	Macerale inert %	Minerals %
50-65	500-2000	20-30	25-140	1.23-1.29	38-61	36-58	3-4
60-75	34-1400	24-34	35-140	1.12-1.65	61-75	20-34	3-5
65-72	10-150	20-26	7-27	1.22-1.35	70-75	20-35	5
60-70	30-100	25-28	30-60	1.30-1.40	65-75	20-30	3
40-60	200-2,000+	25-35	0-65	1.01-1.05	50-53	43-44	4-6
50-70	150-7,000	19-33	(-)5-240	1.00-1.10	58-77	20-38	3-4
50-70	150-600	21-28	50-100	1.04-1.14	70-76	20-24	5
60-70	500-7,.000	22-18	50-100	1.10-1.50	72-78	18-24	4
n/a	n/a	26-32	30-120	n/a	n/a	n/a	n/a
35-55	100-4,000	27-45	(-)10-60	0.69-0.83	67-84	11-28	2-5
65-75	950-1,000+	23-24	35-160	0.95-1.03	61-79	18-36	3-4
50-60	600-30,000	22-31	50-148	1.00-0.95	76-81	17-19	2-4
60-70	18,000-26,847	26-33	150-217	1.00-1.10	75-78	18-21	4
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
50-65	30-3,000	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	2003	2004	2005	2006	2007	2008	2009
Germany	5,022	4,357	4,445	5,372	6,744	5,156	3,759
France	4,736	4,639	4,033	4,542	3,733	3,446	2,077
Belgium/Luxembourg	1,182	1,790	1,906	1,600	2,580	2,927	680
Netherlands	2,202	3,622	3,704	3,975	3,240	2,523	500
Italy	2,734	2,533	2,286	2,234	2,466	2,041	1,122
Great Britain	5,777	5,477	5,034	4,568	3,478	3,943	2,746
Denmark	909	156	130	0	0	0	151
Spain	3,688	3,321	3,508	2,977	3,043	2,105	776
Portugal	797	0	0	0	0	0	0
Sweden	1,193	1,323	1,261	1,289	1,273	1,379	716
EU-27 since 2007	28,240	27,218	26,307	26,557	27,709	24,730	12,904
Israel	2,130	987	849	300	348	824	672
Turkey	1,381	758	815	1,118	838	2,242	759
Romania	487	45	0		0	0	0
Other, Europe[1)]	1,289	1,867	1,246	1,120	315	383	350
Europe	33,527	30,875	29,217	29,095	29,210	28,179	14,685
Japan	95,271	101,896	104,812	103,293	115,466	117,962	101,618
South Korea	22,488	30,061	30,158	23,576	22,096	36,797	41,662
Taiwan	13,968	18,828	21,868	22,653	25,463	24,385	22,517
Hongkong	619	1,038	0	0	0	303	1,175
India	12,829	16,556	18,985	18,938	22,511	25,694	27,092
China	5,222	6,271	5,468	7,450	3,957	3,295	46,546
Brazil	4,887	3,143	3,454	2,929	3,360	5,036	3,713
Chile	1,215	1,605	984	1,625	462	592	481
Other Countries	24,971	14,775	18,123	27,718	27,899	17,576	13,902
Export in Total	**214,997**	**225,048**	**233,069**	**237,277**	**250,454**	**259,819**	**273,391**

[1)] incl. Mediterranean countries

2009 preliminary figures

Source: McCloskey

Hard Coal Export of Indonesia

1,000 t

Importing countries	2003	2004	2005	2006	2007	2008	2009
Germany	405	492	132	1,509	1,168	513	86
Netherlands	1,881	1,106	2,139	3,704	1,822	1,669	239
Italy	4,580	5,198	6,285	8,626	6,290	6,252	5,427
Great Britain	531	1,080	1,302	1,822	1,141	2,126	786
Ireland	0	0	602	609	152	318	0
Denmark	8	0	0	0	0	0	0
Spain	3,004	2,776	3,317	4,033	4,226	3,826	4,361
Slovenia	0	623	634	1,562	1,242	2,032	840
Other	0	1,106	770	2,835	2,000	1,014	376
EU-27 since 2007	10,409	12,381	15,181	24,700	18,041	17,750	12,115
USA	1,914	1,960	2,050	2,646	2,962	2,956	2,025
Chile	271	839	1,368	1,733	1,600	498	437
Japan	20,486	22,700	27,313	32,842	34,135	39,719	32,109
South Korea	7,857	11,741	14,377	20,780	26,521	26,620	33,698
Hongkong	6,814	7,439	9,409	10,514	11,550	10,382	11,131
Taiwan	15,798	17,769	17,896	24,397	25,753	25,754	25,206
Malaysia	5,199	6,113	7,400	7,324	7,814	9,415	11,184
Philippines	3,091	3,603	3,906	4,113	4,290	6,160	7,066
Thailand	4,338	4,787	6,404	7,800	9,413	11,371	10,334
India	7,846	10,674	16,255	19,822	24,840	29,283	37,735
China	534	1,473	2,503	6,219	14,894	16,093	39,402
Other Countries	4,477	4,386	4,981	8,049	7,492	6,259	7,844
Export in total	**89,034**	**105,865**	**129,043**	**170,939**	**189,305**	**202,260**	**230,286**

2009 preliminary figures

Sources: Own calculations, companies' information

Table 7/8

Hard Coal Export of Russia

1,000 t

Importing countries	2003	2004	2005	2006	2007	2008	2009
Germany	2,600	5,460	6,620	9,100	8,367	7,800	9,449
Belgium/Luxembourg	400	900	1,000	1,747	1,327	1,867	0
Italy	1,660	2,400	1,800	1,522	818	1,723	1,017
Great Britain	5,200	9,820	18,000	22,701	19,828	21,434	15,501
Spain	1,960	3,130	4,200	2,761	905	2,623	1,439
Finnland	5,900	5,430	2,400	4,440	5,080	3,745	4,770
Poland	0	2,300	2,500	3,327	5,000	5,267	1,766
Romania	0	0	0	0	982	1,009	222
Other	0	0	0	6,039	8,029	5,533	11,325
EU-27 since 2007	21,100	32,000	37,000	51,637	50,336	51,001	45,489
Turkey	5,000	6,500	7,000	6,500	4,013	2,229	8,672
Romania	1,700	2,500	3,000	1,505	0	0	0
Japan	7,600	9,280	10,700	9,204	11,491	9,960	8,718
South Korea	3,500	5,140	3,300	1,071	6,358	7,495	4,541
Taiwan	2,000	1,380	1,200	1,305	1,329	1,203	1,652
China	2,000	570	800	1,030	269	760	12,122
Other countries[1)]	6,500	2,830	5,200	2,248	5,104	4,952	8,409
Export in Total[2)]	**49,400**	**60,200**	**68,200**	**74,500**	**78,900**	**77,600**	**89,603**

[1)] 2003-2009 exports via Cyprus/Libanon; the quantities were partially exported in other not known countries
[2)] only hard coal exports (seaborne trade) in countries outside of the former UdSSR
2009 preliminary figures

Sources: 2003-2009: information from companies, own calculations

Hard Coal Export (only Steam Coal) of Colombia

1,000 t

Importing countries	2003	2004	2005	2006	2007	2008	2009
Germany	5,918	4,719	4,256	3,729	6,931	5,906	5,173
France	2,686	4,348	2,228	3,341	2,720	2,589	2,232
Belgium/Luxembourg	147	134	510	0	0	149	168
Netherlands	1,435	3,765	4,597	6,031	5,554	5,986	10,726
Italy	2,074	2,441	2,589	1,993	1,887	2,026	2,080
Great Britain	2,344	2,853	2,133	2,511	3,003	4,041	4,471
Ireland	271	1,152	893	1,129	475	661	980
Denmark	2,715	1,388	1,252	1,998	2,259	1,869	1,973
Greece	0	0	0	71	149	0	0
Spain	1,662	1,290	1,988	1,501	2,219	2,301	2,441
Portugal	1,812	2,550	2,521	2,920	2,590	1,903	1,929
Finnland	59	0	0	158	0	130	72
Sweden	41	184	0	0	0	0	0
Slovenia	-	782	426	220	238	356	341
EU-27 since 2007	21,164	25,606	23,393	25,602	28,163	28,359	32,587
Israel	2,690	2,838	4,722	3,371	3,527	2,092	2,549
Other Europe[1)]	2,849	2,851	2,703	2,898	3,437	3,901	3,718
Europe	26,703	31,295	30,818	31,871	35,127	34,352	38,854
Japan	31	0	0	27	28	31	30
Hongkong	0	0	0		0	0	0
USA	11,989	13,342	17,641	20,179	21,830	21,919	14,191
Canada	1,514	1,671	2,132	1,944	1,450	2,214	1,794
Brazil	244	442	285	268	208	1,038	750
Other Countries	3,876	4,440	3,924	4,211	6,034	9,123	7,814
Export in Total	**44,357**	**51,190**	**54,800**	**58,500**	**64,677**	**68,677**	**63,433**

[1)] incl. Mediterranean countries, Turkey

2009 preliminary figures

Sources: IEA, McCloskey, companies´ information

Hard Coal Export of South Africa

1,000 t

Importing countries	2003	2004	2005	2006	2007	2008	2009
Germany	8,962	9,876	9,453	8,189	6,505	8,190	5,251
France	4,140	8,760	5,473	4,267	4,799	5,450	2,050
Belgium/Luxembourg	2,159	2,456	1,677	1,512	1,088	1,140	300
Netherlands	11,439	3,116	7,713	13,687	10,580	8,234	4,162
Italy	4,503	4,758	5,286	4,616	4,776	4,170	4,269
Great Britain	8,443	10,210	11,837	8,431	4,580	3,110	1,000
Ireland	566	510	788	389	478	0	460
Denmark	2,590	1,430	1,651	2,300	2,130	1,140	1,080
Greece	0	0	132	0	0	0	0
Spain	8,882	9,700	8,836	7,585	6,724	5,981	5,122
Portugal	2,340	1,750	1,561	1,000	1,970	1,660	1,240
Finnland	300	0	0	120	0	150	0
Other			441	170	535	185	176
EU-27 since 2007	54,324	52,556	54,848	52,266	44,165	39,410	25,110
Israel	5,220	6,910	5,123	4,780	4,520	3,720	3,250
Morocco	2,130	1,780	2,835	2,890	1,267	1,333	300
Turkey	1,647	1,550	1,302	1,913	1,349	1,350	1,070
Japan	320	0	140	0	440	50	390
South Korea	120	0	130	0	290	1,150	525
Taiwan	1,576	1,390	411	70	410	160	2,220
Hongkong	0	0	0	0	0	0	340
India	3,000	738	3,904	2,469	8,492	7,766	18,690
China	260	60	0	0	30	0	790
USA	130	40	126	0	100	0	0
Brazil	780	760	654	1,484	759	1,223	296
Other Countries	1,475	2,136	5,089	3,064	6,068	6,493	10,019
Export in Total	**70,982**	**67,920**	**74,562**	**68,936**	**67,890**	**62,655**	**63,000**

2009 preliminary figures

Sources: IEA, South African Coal Report, own calculations

Hard Coal Export of the United States

1,000 t

Importing countries	2003	2004	2005	2006	2007	2008	2009
Germany	1,283	1,540	606	2,191	2,065	5,662	5,104
France	975	787	1,146	1,475	2,162	3,213	3,052
Belgium/Luxembourg	1,637	1,545	1,881	1,959	1,907	2,746	2,503
Netherlands	1,798	1,622	4,247	1,191	4,117	2,976	2,458
Italy	2,373	1,908	2,226	2,975	3,212	2,891	2,125
Great Britain	1,337	1,793	1,599	2,251	3,032	5,342	4,052
Ireland	216	0	0	0	74	142	0
Denmark	261	67	66	348	72	283	291
Spain	1,605	1,380	1,685	1,472	1,337	2,161	1,581
Portugal	406	405	143	267	258	391	1,020
Finnland	449	426	259	661	265	425	202
Sweden	346	570	535	426	483	667	434
Other			239	849	2,300	6,315	1,920
EU-27 since 2007	12,686	12,043	14,632	16,065	21,284	33,214	24,742
Israel	0	0	0	0	0	0	0
Turkey	991	1,179	1,708	1,106	1,306	1,736	1,295
Romania	0	256	1,391	1,002	0	0	0
Other Europe[1)]	1,423	225	1,495	1,240	4,087	5,414	2,033
Europe	15,100	13,703	19,226	19,413	26,677	40,364	28,070
Canada	18,212	15,722	17,577	18,030	16,625	20,589	9,509
Mexico	1,078	929	906	454	422	1,092	1,161
Argentina	218	265	218	317	273	331	417
Brazil	3,186	3,942	3,792	4,110	5,908	5,785	6,720
Japan	5	4,014	1,888	301	5	1,572	822
South Korea	176	112	1,304	515	201	1,225	1,562
Taiwan	2	449	0	2	2	71	77
Other Countries	190	3,829	0	1,581	3,091	2,468	4,891
Export in Total	**38,167**	**42,965**	**44,911**	**44,723**	**53,204**	**73,497**	**53,229**

[1)] incl. Mediterranean countries 2009 preliminary figures

Source:McCloskey

Table 11/12

Hard Coal Export of China

1,000 t

Importing countries	2003	2004	2005	2006	2007	2008	2009
Germany	257	347	75	0	43	14	5
France	556	240	8	0	166	216	0
Belgium/Luxembourg	82	127	282	189	170	143	0
Netherlands	240	313	141	245	51	57	5
Italy	380	185	0	0	0	0	0
Great Britain	84	172	54	34	0	0	0
Spain	319	0	332	292	0	104	0
Greece	0	136	0	0	0	0	0
EU-15	1,918	1,520	892	760	430	534	10
Japan	31,255	28,471	23,175	20,586	15,548	13,337	6,391
South Korea	29,722	24,798	21,206	18,779	19,225	16,457	9,919
Taiwan	16,040	19,855	16,230	13,258	12,690	10,597	4,870
Hongkong	2,118	1,123	944	855	674	475	122
India	2,363	3,084	3,855	5,001	539	1,006	0
Malaysia	102	65	46	36	37	52	12
Thailand	69	249	0	28	1	1	0
North Korea	468	407	147	576	237	228	52
Philippines	2,908	2,928	1,916	1,035	1,019	1,119	839
Brazil	2,489	548	278	191	283	156	0
Other Countries	4,187	3,512	2,986	2,127	2,435	1,309	133
Export in Total	**93,639**	**86,560**	**71,675**	**63,232**	**53,118**	**45,271**	**22,348**

2009 preliminary figures

Source: McCloskey

Hard Coal Export of Canada

1,000 t

Importing countries	2003	2004	2005	2006	2007	2008	2009
Germany	1,295	2,123	1,757	1,608	1,733	1,708	1,070
France	324	388	529	372	598	569	117
Belgium/Luxembourg	309	293	0	0	0	0	0
Netherlands	1,250	1,139	807	1,194	1,047	272	300
Italy	994	892	1,469	1,178	1,013	1,084	465
Great Britain	1,078	1,064	1,677	1,418	1,492	1,123	317
Denmark	0	0	0	0	0	0	0
Spain	392	113	344	175	227	235	1
Portugal	0	0	0	0	0	0	0
Finnland	197	200	516	494	345	426	258
Sweden	0	0	0	0	0	0	0
EU-27 since 2007	6,022	6,212	7,099	6,439	7,086	5,587	2,528
Other Europe[1)]	685	1,707	1,170	1,582	1,203	1,426	952
Europe	6,524	7,919	8,269	8,021	8,289	7,783	3,480
Japan	7,753	5,384	7,499	8,676	10,548	11,482	8,765
South Korea	3,659	0	5,014	4,975	6,078	6,736	7,381
Taiwan	1,077	991	1,276	1,221	1,130	1,154	795
Brazil	1,642	1,483	1,718	1,584	1,545	2,020	936
USA	1,789	2,497	1,709	1,750	1,758	1,725	1,045
Chile	349	322	549	721	702	411	214
Mexico	467	1,395	406	274	230	695	283
Other Countries	1,716	5,950	1,490	344	369	468	4,931
Export in Total	**24,976**	**25,941**	**27,930**	**27,566**	**30,649**	**32,474**	**27,830**

[1)] incl. Mediterranean countries

2009 preliminary figures

Sources: McCloskey, own estimations

Hard Coal Export of Poland

1,000 t

Importing countries	2003	2004	2005	2006	2007	2008	2009
Germany	7,020	7,170	7,022	7,330	4,651	3,834	2,513
France	1,013	819	1,227	762	340	0	358
Belgium	2	500	649	291	1	1	79
Netherlands	2	191	270	320	70	1	165
Italy	0	94	540	248	111	0	0
Great Britain	2,031	1,365	1,614	1,008	277	197	565
Ireland	263	276	287	235	255	266	240
Denmark	860	1,088	821	523	350	151	82
Spain	16	134	111	150	64	0	0
Portugal	0	0	221	0	0	0	0
Finnland	2,081	1,626	653	513	273	88	224
Austria	1,346	1,328	1,155	1,233	1,807	906	853
Sweden	567	327	172	283	288	60	59
Czech Republic	-	1,227	1,146	1,642	2,365	1,017	746
Slovakia	-	1,147	802	1,030	617	64	71
Hungary	-	183	380	249	259	127	58
Other	-	53	50	72	8	1,029	2,096
EU-27 since 2007	15,201	17,528	17,120	15,889	11,736	7,741	8,109
CIS	1,176	0	13	36	0	0	10
Czech Republic	1,174	-	-	0	0	0	0
Slovakia	588	-	-	0	0	0	0
Hungary	315	-	-	0	0	0	0
Bulgaria	0	0	0	0	0	0	0
Romania	0	0	0	0	0	0	0
Brazil	0	0	0	70	0	0	0
Other Countries	2,300	3,062	1,438	514	364	559	581
Export in Total	**20,754**	**20,590**	**18,571**	**16,509**	**12,100**	**8,300**	**8,700**

2009 preliminary figures

Sources: McCloskey, WEGLOKOKS, allocation of countries only for WEGLOKOKS quantities since 1998 Germany: Federal Statistical Office, own calculations

Hard Coal Import of EU-Countries: Import and Inland Trade

1,000 t

	2003	2004	2005	2006	2007	2008	2009
Germany	35,360	39,080	39,900	46,500	47,480	44,000	36,400
France	18,500	19,300	20,500	20,700	19,200	19,400	15,800
Italy	21,190	25,500	24,500	24,500	24,600	26,200	20,400
Netherlands	13,800	14,000	13,000	12,000	13,000	12,100	10,800
Belgium	9,500	11,100	10,000	9,000	8,000	6,000	4,100
Luxembourg	150	150	150	150	150	150	200
Great Britain	31,490	36,110	43,800	49,000	45,300	43,200	36,500
Ireland	2,100	2,300	2,500	3,000	3,000	2,300	2,300
Denmark	9,030	7,120	5,200	7,000	8,000	7,700	6,300
Greece	850	800	700	800	800	800	400
Spain	21,480	24,300	24,700	22,550	20,800	16,500	17,500
Portugal	5,000	5,500	5,300	5,700	5,500	3,800	3,100
Finnland	9,070	7,650	4,500	7,000	7,000	4,600	3,200
Austria	4,000	3,900	4,100	4,000	4,000	4,200	4,000
Sweden	3,000	3,000	2,700	3,000	3,200	2,500	2,400
Poland	2,000	2,000	2,000	5,200	5,800	9,900	10,000
Czech Republic	1,000	1,000	1,000	1,900	2,500	2,200	1,700
Hungary	600	600	500	1,900	2,000	1,900	1,400
Slovakia	6,500	6,000	5,600	5,600	5,300	4,900	3,200
Slovenia	500	500	500	600	500	0	0
Latvia	200	200	200	300	n/a	n/a	n/a
Lithuania	500	500	500	700	n/a	n/a	n/a
Estonia	500	500	500	100	n/a	n/a	n/a
Cyprus	-	-	-	-	-	-	-
Malta	-	-	-	-	-	-	-
Bulgaria	-	-	(1,500)	(1,600)	1,400	1,300	1,300
Romania	-	-	(3,500)	(3,300)	3,300	3,200	900
EU-25	**196,320**	**211,110**	**212,350**	**231,200**			
EU-27 since 2007			**217,350**	**236,100**	**230,830**	**216,850**	**181,900**
			thereof Coke:	thereof Coke:	thereof Coke:	Coke:	Coke:
Coke	13,000	10,000	11,000	12,000	11,000	11,000	8,000

2009 preliminary figures

Sources: McCloskey, internal calculations

Coal Consumption in the EU-Countries in Million t

Mill. t

	Hard Coal		Therefrom Hard Coal Import in t=t		Lignite	
	2008	2009	2008	2009	2008	2009
Germany	61.0	52.2	44.0	36.4	175.2	169.9
France	23.4	16.6	19.4	15.8		
Italy	24.7	23.6	26.2	20.4		
Netherlands	13.4	10.8	12.2	10.8		
Belgium	6.0	4.1	6.0	4.1		
Luxembourg	0.2	0.2	0.2	0.2		
Great Britain	62.3	57.8	43.2	36.5		
Ireland	2.3	2.3	2.3	2.3		
Denmark	8.0	6.3	7.7	6.3		
Greece	0.8	0.4	0.8	0.4	65.6	64.8
Spain	26.8	26.9	16.5	17.5	0.0	
Portugal	3.7	3.0	3.8	3.1		
Finnland	4.5	3.2	4.6	3.2		
Austria	4.2	4.0	4.2	4.0		
Sweden	2.9	2.4	2.5	2.4		
EU-15	**244.2**	**213.8**	**193.6**	**163.4**	**240.8**	**234.7**
Poland	101.5	87.5	9.9	10.0	59.4	57.9
Czech	15.0	12.7	2.2	1.7	47.5	45.6
Hungary	1.9	1.4	1.9	1.4	9.4	9.0
Slovakia	4.9	3.2	4.9	3.2	2.4	2.6
Slovenia	0.0	0.0	0.0	0.0	4.5	4.4
Latvia*						
Lithuania*						
Estonia*						
Cyprus*						
Malta*						
Bulgaria	5.2	3.3	1.3	1.3	26.1	25.1
Romania	4.3	3.1	3.2	0.9	32.6	27.4
*Other						
EU-27 since 2007	**377.0**	**325.0**	**217.0**	**181.9**	**422.7**	**406.7**

Sources: Arbeitsgemeinschaft Energiebilanzen, BP statistical review, own calculations, 2009 estimations
The coal consumption differs from hard coal supply by changes in stock.

Primary Energy Consumption in Germany in Million TCE

Energy Sources	2003	2004	2005	2006	2007	2008	2009
Hard Coal	68.7	65.8	62.8	65.6	67.4	61.4	50.3
(thereof Import Coal)	(37)	(40)	(37.8)	(45.3)	(46.0)	(43.6)	(35.1)
Lignite	55.9	56.2	54.5	53.7	55.0	53.0	51.5
Mineral Oil	180.2	177.9	175.8	176.7	157.9	166.4	158.0
Natural Gas	110	110.4	110.9	112.1	106.6	104.4	99.2
Nuclear Energy	61.5	62.2	60.7	62.3	52.3	55.4	50.2
Hydro and Wind Power	4.6	5.6	5.9	6.3	7.4	7.5	6.9
Foreign Trade Balance Electricity	-1	-0.9	-1.0	-2.4	0.2	0.0	0.0
Other Energy Sources	13.2	15.1	18.0	23.2	25.6	36.0	39.1
Total	**493.1**	**492.3**	**487.6**	**497.5**	**472.4**	**484.1**	**455.2**
							shares in %
Energy Resources	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**
Hard Coal	13.9	13.4	12.9	13.2	14.3	12.7	11.0
(thereof Import coal)	(7.5)	(8.1)	(7.8)	(9.1)	(9.7)	(9.0)	(7.7)
Lignite	11.3	11.4	11.2	10.8	11.6	11.0	11.3
Mineral Oil	36.6	36.2	36.1	35.5	33.4	34.3	34.7
Natural Gas	22.3	22.4	22.7	22.6	22.6	21.6	21.8
Nuclear Energy	12.5	12.6	12.4	12.5	11.1	11.4	11.0
Hydro and Wind Power	0.9	1.1	1.2	1.3	1.5	1.6	1.5
Foreign Trade Balance Electricity	0.2	-0.2	-0.2	-0.5	0.0	0.0	0.0
Other Energy Sources	2.7	3.1	3.7	4.6	5.5	7.4	8.7
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

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

Coal Handling in German Ports

1,000 t

	2003	2004	2005	2006	2007	2008	2009
North Sea Ports							
Hamburg	4,794	4,944	4,636	4,963	5,781	5,195	5,189
Wedel – Schulau	700	700	600	871	0	0	0
Bützfleth	43	12	19	13	6	4	9
Wilhelmshaven	1,453	1,672	1,520	1,332	1,360	2,229	2,404
Bremen	1,464	1,505	1,216	1,715	1,965	1,668	1,410
Brunsbüttel	387	393	273	622	749	874	500
Emden					5	5	1
Nordenham	1,439	2,058	1,915	2,129	2,162	1,889	2,284
Papenburg	260	289	214	170	143	149	121
Remaining North Sea Ports S.H.	67	126	37	70	632	574	502
Remaining North Sea Ports N.S.	2	-		-	-	-	-
Total	**10,609**	**11,699**	**10,430**	**11,885**	**12,803**	**12,587**	**12,420**
Baltic Sea Ports							
Rostock	1,145	1,187	1,145	1,251	993	1,443	823
Wismar	41	42	33	30	22	35	26
Stralsund	2	1	3	0	0	1	-
Lübeck	3	-	-	-	-	-	-
Flensburg	358	343	325	275	246	301	230
Kiel	113	418	402	193	123	291	453
Saßnitz					7	3	1
Wolgast					2	-	-
Remaining Baltic Sea Ports	7	4	2	3	-	1	-
Total	**1,669**	**1,995**	**1,910**	**1,752**	**1,393**	**2,075**	**1,533**
Tonnage Total	**12,278**	**13,694**	**12,340**	**13,637**	**14,196**	**14,662**	**13,953**

Source: Federal Statistical Office

Hard Coal Sales in Germany

1,000 t

	2003	2004	2005	2006	2007	2008	2009
Total Sales in Hard Coal and Coke							
Power Stations	51,618	55,319	50,000	53,800	55,400	52,300	43,400
Iron and Steel Industry	14,588	14,836	17,400	18,400	18,800	17,700	12,100
Heating Market/Other	2,155	1,882	1,100	1,300	1,600	1,700	1,300
Total	**68,361**	**72,037**	**68,500**	**73,500**	**75,800**	**71,700**	**56,800**
Sources: Statistik der Kohlenwirtschaft, internal calculations							
Therefrom Import coal							
Power Stations[1)]	27,900	30,900	27,300	33,400	34,400	35,700	30,700
Iron and Steel Industry	11,300	11,600	11,300	14,700	14,700	13,500	9,100
Heating Market/Other	2,000	1,800	700	1,000	1,200	1,300	900
Total Imports	**41,200**	**44,300**	**39,300**	**49,100**	**50,300**	**50,500**	**40,700**

[1)] Imports of power plants accord, to K-Bogen (BAFA, Division 431), own calculations

Sources: BAFA, Statistik der Kohlenwirtschaft, internal calculations/partly estimations

Imports of Hard Coal and Coke

Countries	2006 Steam Coal	Coking Coal	Anthr.	Coke	Total	2007 Steam Coal	Coking Coal	Anthr.	Coke	Total
Poland	7,158	155	17	1,637	8,967	4,613	37	0	1,720	6,370
Czech Republic	525	0	1	405	931	302	0	1	314	617
Spain	0	0	0	701	701	0	0	0	744	744
France	0	0	0	279	279	0	0	0	23	23
Other	0	0	0	0	0	1,100	27	67	248	1,442
since 2004: EU-25/ since 2004: EU-27	7,683	155	18	3,022	10,878	6,015	64	68	3,049	9,196
CIS	8,215	548	338	201	9,302	7,357	701	349	196	8,603
Norway	1,138	133	0	0	1,271	1,816	0	81	0	1,897
USA	338	1,852	0	0	2,190	1,102	1,803	0	0	2,905
Canada	0	1,608	0	0	1,608	104	1,734	0	0	1,838
Colombia	3,997	0	0	0	3,997	6,917	15	0	0	6,932
South Africa	8,505	161	2	0	8,668	6,187	317	2	0	6,506
Australia	819	4,553	0	0	5,372	1,176	5,544	0	0	6,720
China	8	27	2	883	920	10	38	2	870	920
Indonesia	1,509	0	0	0	1,509	1,168	0	0	0	1,168
Venezuela	108	0	0	0	108	8	7	0	10	25
Other Third Countries	388	24	65	200	677	762	3	0	1	766
Third Countries	25,025	8,906	407	1,284	35,622	26,607	10,162	434	1,077	38,280
Total	**32,708**	**9,061**	**425**	**4,306**	**46,500**	**32,622**	**10,226**	**502**	**4,126**	**47,476**

2009 preliminary figures

Sources: Federal Statistical Office, BAFA, own calculations

to Germany

1,000 t

2008					2009					
Steam Coa	Coking Coal	Anthr.	Coke	Total	Steam Coal	Coking Coal	Anthr.	Coke	Total	**Countries**
3,790	45	0	1,566	5,401	2,489	24	0	1,712	4,225	Poland
168	0	0	183	351	151	0	0	129	280	Czech Republic
0	0	0	482	482	0	0	0	0	0	Spain
0	0	0	459	459	0	0	0	408	408	France
969	6	70	484	1,529	459	0	89	427	975	Other
4,927	51	70	3,174	8,222	3,099	24	89	2,676	5,888	**EU-27 since 2007**
6,939	607	292	173	8,011	8,696	478	260	102	9,536	CIS
1,522	148	70	0	1,740	1,321	0	0	0	1,321	Norway
3,079	2,583	0	0	5,662	3,207	1,897	0	0	5,104	USA
22	1,651	0	0	1,673	0	1,070	0	0	1,070	Canada
5,710	82	0	0	5,792	5,105	68	0	21	5,194	Colombia
8,086	140	0	0	8,226	5,246	4	0	0	5,250	South Africa
520	5,020	0	0	5,540	447	3,311	0	0	3,758	Australia
10	2	2	628	642	3	0	2	141	146	China
513	0	0	0	513	86	0	0	0	86	Indonesia
63	0	0	29	92	346	0	0	7	353	Venezuela
1,851	0	35	1	1,887	1,687	0	10	2	1,699	Other Third Countries
28,315	10,233	399	831	39,778	26,144	6,828	272	273	33,517	**Third Countries**
33,242	**10,284**	**469**	**4,005**	**48,000**	**29,243**	**6,852**	**361**	**2,949**	**39,405**	**Total**

Table 21

Consumption, Import/Export and Generation of Electric Power in Germany

	2003	2004	2005	2006	2007	2008	2009
Gross Electricity Consumption in TWh	599.5	608.6	610.5	617.0	618.1	614.8	582.5
Electricity Foreign Trade in TWh							
Exports	53.8	51.5	61.9	65.9	63.4	62.7	54.8
Imports	45.8	44.2	53.4	46.1	44.3	40.2	40.5
Balance	-8.0	-7.3	-8.5	-19.8	-19.1	-22.5	-14.3
Gross Electricity Generation in TWh	607.5	616.0	619.0	636.8	637.2	637.3	596.8
Utilization of Energy Resources for Power Generation in TWh							
Hard Coal	146.5	140.8	134.1	137.9	142.0	124.6	109.0
therefrom Import Coal[1)]	(81.4)	(91.8)	(85.3)	(85.4)	(86.2)	(86.4)	(77.4)
Lignite	158.2	158.0	154.1	151.1	155.1	150.6	146.5
Natural Gas	61.3	61.4	71.0	73.4	75.9	86.7	77.0
Fuel Oil	9.9	10.3	11.6	10.5	9.6	9.2	12.5
Nuclear Energy	165.1	167.1	163.0	167.4	140.5	148.8	134.9
Hydro/Wind Power	42.2	52.4	53.9	57.5	67.8	67.1	62.3
Other	24.3	26.0	31.3	39.1	46.4	50.3	54.6
Total	**607.5**	**616.0**	**619.0**	**636.8**	**637.2**	**637.3**	**596.8**

[1)] Sales to power stations 2009 preliminary figures

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

Residual Electricity Volumes of Nuclear Power Stations Years 2000 to 2010

Produced Electricity Quantities (net) of German Nuclear Power Stations
Transfer of Production Entitlements and Registration of Residual Electricity Volumes

From 1 January 2000 to February 2010 produced electrical net production and residual electricity volumes [GWh]

Nuclear Power Station	Residual Electricity Volme as from 1/1.2000	1 Jan.2000 to 31 Dec 2008	Electricity Volume Transmitted by 28 Feb 2010	1/1.2009 to Dec 2009	January 2010	February 2010	In Total 01-02/2010	Remaining Residual Eletricity Volume
Biblis A	62,000.00	56,791.15		1,012.98	0.00	0.00	0.00	4,195.87
Neckarwestheim 1	57,350.00	50,889.02		4,361.98	381.98	263.71	645.69	1,453.31
Biblis B	81,460.00	68,860.58		1,51,.33	860.03	796.19	1,656.22	9,431.87
Brunsbüttel	47,670.00	36,670.33		0.00	0.00	0.00	0.00	10,999.67
Isar 1	78,350.00	61,683.60		6,796.00	651.97	354.66	1,006.63	8,863.77
Unterweser	117,980.00	83,679.99		10,028.91	979.05	915.76	1,894.81	22,376.29
Philippsburg	87,140.00	59,132.06	-5,499.89	6,149.84	660.35	583.32	1,243.67	15,114.54
Grafenrheinfeld	150,030.00	90,205.32		10,447.26	952.13	851.28	1,803.41	47,574.01
Krümmel	158,220.00	69,639.92		334.97	0.00	0.00	0.00	88,245,.11
Gundremmingen B	160,920.00	90,840.65		10,389.87	975.24	676.34	1,853.58	57,835.90
Philippsburg 2	198,610.00	95,943.41		10,969.60	1,030.46	933.02	1,963.48	89,733.51
Grohnde	200,900.00	97,603.85		10,867.47	995.79	884.27	1,880.06	90,548.62
Grundremmingen C	166,350.00	89,163.28		10,275.18	972.44	870.40	1,842.84	67,068.70
Brokdorf	217,880.00	100,970.86		11,459.42	1,047.39	938.53	1,985.92	103,463.80
Isar 2	231,210.00	103,524.70		11,484.85	1,057.29	953.95	2,011.24	114,189.21
Emsland	230,070.00	99,142.42		10,849.24	1,000.44	900.96	1,901.40	118,176.94
Neckarwestheim 2	236,040.00	94,528.12		10,779.73	974.69	884.56	1,859.25	128,872.90
In Total	**2,482,180.00**	**1,349,269.26**		**127,718.63**	**12,539.25**	**10,806.95**	**23,548.20**	**978,144.02**
Stade*)	23,180.00	18,394.47						4,785.53
Obrigheim**)	8,700.00	14,199.89	5,499.89					0.00
Mülheim-Kärlich	107,250.00							107,250.00
Total amount	**2,621,310.00**							**1,090,179.55**

The table takes account of the Atomic Energy Act, referred to in paragraph 1c neccessary documents and certificates for the calendar year 2009 (column 5).

*) The NPP Stade was put out of operation on 14 Nov 2003 and shut down on 7 Sep 2005. On the further disposal of the remaining residual electricity volume has not yet been decided.

**) The NPP Obrigheim was put out of operation on 11 May 2005 and shut down on 28 Aug 2008. The remaining residual electricity volume of NPP O (0.11 GWh) was retransferred to NPP Philippsburg.

Source: BfS, Federal Office for Radiation Protection

Table 22/23

European/International Price Quotations

	2003	2004	2005	2006	2007	2008	2009
Crude Oil Prices							
USD/Barrel Brent	29.00	38.00	55.00	65.14	72.44	96.99	67.86
USD/TCE	150.00	195.00	283.00	335.00	373.00	499.21	349.28
Source: MWV							
Natural Gas Prices: Free German Border							
€/TCE	111.00	105.00	142.00	191.00	180.00	237.00	198.00
Source: Statistik der Kohlenwirtschaft							
Steam Coal Marker Prices 1 % S. CIF NW Europe							
USD/TCE	50.00	83.90	71.25	74.41	101.03	174.74	81.75
€/TCE	44.20	67.44	57.27	59.23	73.17	118.29	58.69
Source: McCloskey							
Sea Freight Rates Capesize Units - Port of Destination ARA (Amsterdam, Rotterdam, Antwerp)							
South Africa USD/t	14.60	20.60	15.75	15.94	32.33	30.36	13.66
USA/East Coast USD/t	11.90	19.60	16.60	14.87	34.47	32.65	16.68
Australia/NSW USD/t	20.50	31.00	24.00	24.07	51.77	50.91	22.46
Colombia USD/t	12.10	20.10	16.10	14.89	33.55	31.71	16.25
Sources: Frachtcontor Junge, internal calculations							

EU: Price Development for Imported Hard Coal from non-EEC Countries

	2003 EU-15	2004 EU-15	2004 EU-25	2005 EU-25	2006 EU-25	2007 EU-27	2008 EU-27	1.Hy. 2009 EU-27
Steam Coal €/TCE	39.80	56.20	55.98	61.86	60.43	72.49	106.83	84.96
Coking Coal €/t	53.50	61.66	61.20	91.03	104.26	103.27	141.07	179.78

Steam Coal: Utilisation in power plants; weighted average of cross border price in the EU-countries
Coking Coal: Indicative CIF-price, own calculations for determination of the annual values.

Source: EU-commission

Germany – Energy Prices/Exchange Rates

	2003	2004	2005	2006	2007	2008	2009
Exchange Rates							
€/USD	0.884	0.8039	0.8038	0.7965	0.7296	0.6799	0.7169
Source: Deutsche Bundesbank							
Cross Border Price for Coking Coal and Coke – €/t							
Imported Coking Coal	56.47	63.50	95.25	105.88	96.22	132.62	173.75
Imported Coke	102.15	214.35	230.30	166.79	175.55	281.20	196.91
Sources: Coking Coal since 2003 Federal Statistical Office							
Coke: Federal Statistical Office							

Cross Border Price for Steam Coal in €/TCE: Utilization in Power Plants

Year	1. quarter	2. quarter	3. quarter	4. quarter	Annual Value
2001	50.17	54.08	55.26	53.47	53.18
2002	50.76	47.33	40.31	39.41	44.57
2003	38.42	37.83	40.43	42.27	39.87
2004	48.68	55.44	58.76	61.81	55.36
2005	64.81	64.01	65.59	65.80	65.02
2006	63.03	61.61	59.75	62.54	61.76
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

Source: BAFA Division 431 (cross border prices=cif price ARA + freight German border)

Energy Prices free power station €/ TCE

	2003	2004	2005	2006	2007	2008	2009
Sources of Energy							
Natural gas	167.00	176.00	206.00	220.00	209.00	269.00	246.00
Heating Oil, Heavy	124.00	117.00	166.00	203.00	198.00	275.00	208.00
Steam Coal	45.00	60.00	70.00	67.00	73.00	117.00	84.00

Sources: BAFA, Statistik der Kohlenwirtschaft, own calculations,
2009: preliminary

Hard Coal Market in Germany

Quantities and Prices 1957-2009

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

2009 preliminary figures; since 1991 incl. new federal states, €-values are rounded

[1] Price free German border (BAFA Div. 432), since 1996: BAFA Div. 431
[2] Estimated cost-covering price

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

Table 26

Glossary

ARA	Amsterdam-Rotterdam-Antwerp
BAFA	Bundesamt für Wirtschaft und Ausfuhrkontrolle (Federal Office of Economics and Export Control)
BDEW	Bundesverband der Energie- und Wasserwirtschaft e.V. (German Energy and Water Association)
BEE	Black Economic Empowerment
capesize	definition for bulk-carrier > 100.000 - 150.000 DWT
CCS	Carbon Capture Storage
cif	INCOTERM: cost-insurance-freight
CIS	formerly Soviet Union
DIW	Deutsches Institut für Wirtschaftsforschung (German Institute for Economic Research)
ECE	Economic Commission for Europe
EEG	Erneuerbare-Energien-Gesetz (Renewable Energy Sources Act)
EEX	European Energy Exchange AG, Leipzig
fob	INCOTERM: free on board
GVSt	Gesamtverband Steinkohle (German Hard Coal Association)
IEA	International Energy Agency
HS	fuel oil heavy
kWh	kilowatt hour
KWK	combined heat and power
LNG	liquified natural gas
NAR	coal trade: net as received
mt	metric ton
Panamax	definition for bulk-carrier 50.000 - 90.000 DWT
PCI-Kohle	metallurgical area: pulverized coal injection
Sintering coal	low-volatile coal, used in sintering plants
TCE	ton coal equivalent (7.000 kcal/kg)
Spotmarket	short-term market
st	short ton (= 0,90719 mt)
t	ton
t/a	ton per annum
VDN	Verband der Netzbetreiber (Association of German network operators)
WCI	World Coal Institute

Institutions/Links

AGEB (Arbeitsgemeinschaft Energiebilanzen/ The Working Group on Energy Balances)
www.ag-energiebilanzen.de

American Coal Council
www.americancoalcouncil.org

Australian Bureau of Agriculture and Resource Economics
www.abareconomic.com

Australian Coal Association
www.australiancoal.com

Australian Institute of Energy
www.aie.org.au

Banovici Coal Mining (Bosnian Coal Producer)
www.rmub.ba

BRGM (Bureau de Recherces 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

CoalImp (Association of UK Coal Importers)
www.coalimp.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 Braunkohle/ German Lignite Organization)
www.braunkohle.de

DTEK (Ukrainian Coal Producer)
www.dtek.com

EIA (Energy Information Administration)
www.eia.doe.gov

EPS (Electric Power Industry of Serbia)
www.eps.co.yu

Euracoal
www.euracoal.org

FDBR – Fachverband Dampfkessel, Behälter- u. Rohrleitungsbau e.V. (Association of Steam Boiler Pressure Vessel and Piping Manufacturers)
www.fdbr.de

GVSt Gesamtverband Steinkohle (German Hard Coal Association)
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. (Information Centre for Climate-Friendly Coal-Fired Power Plants)
www.iz-klima.de

KOMAG (Institute of Mining Technology)
www.komag.eu

MATRA (Mátra Erömü 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.ppwb.org.pl

Premogovnik Velenje (Slovenian Lignite Producer)
www.rlv.si

Rock Mechanics Technology Ltd. (Rock Mechanics Consultancy)
www.rmtltd.com

Svenska Kolinstitutet
www.kolinstitutet.se

University of Nottingham
www.nottingham.ac.uk

US Department of Energy - Fossil.Energy.gov
www.fe.doe.gov

World Coal Institute
www.wci-coal.com

ZSDNP (Czech Confederation of the Coal and Oil Producers)
www.zsdnp.cz

Members of VDKI

Member Company	Area Code	Phone	Fax	Website
AG der Dillinger Hüttenwerke Werkstr. 1, 66763 Dillingen/Saar, Germany	+49 6831	47-2220	47-3227	www.dillinger.de
AMCI CARBON GMBH Baumstr. 25, 45128 Essen, Germany	+ 49 201	879-1570	879-1561	www.amciworld.com
Antwerp Port Authority Entrepotkaai 1, 2000 Antwerp, Belgium	+ 32 3	205 22 46	205 22 69	www.portofantwerp.be
Brunsbüttel Ports GmbH Elbehafen, 25541 Brunsbüttel, Germany	+ 49 4852	884-0	884-26	www.schrammgroup.de
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, Swizerland	+ 41	916115-130	916115-137	www.bulktrading.ch
CMC Coal Marketing Company Ltd. Fumbally Square, New Street, Dublin 8, Ireland	+ 353 1	708 2600	708 2699	www.cmc-coal.ie
Constellation Energy Commodities Group Ltd. Rivercourt, 120 Fleet Street, London EC4A 2BB, UK	+ 44 20	70512937	7051 6704	
CS Additive GmbH Rüttenscheider Straße 2, 45128 Essen, Germany	+ 49 201	879 15-0	879 15-50	www.cs-additive.de
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 Heinrich-Heine-Str. 9, 58456 Witten, Germany	+ 49 2302	730 47	718 16	www.dako-coal.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	
Duisburger Hafen Alte Ruhrorter Str. 42-52, 47119 Duisburg, Germany	+ 49 203	803-330	803-436	www.duisport.de
EDF Trading (Switzerland) AG Berlin Office, DomAquaree, Karl-Liebknecht-Str. 5, 10178 Berlin, Germany	+ 49 30	700140460	700140150	www.edftrading.com
EEX European Energy Exchange AG Augustusplatz 9, 04109 Leipzig, Germany	+ 49 341	2156-0	2156-559	www.eex.com
Electrabel GDF SUEZ S.A. Regentlaan 8/Boulevard du Régent 8, 1000 Brussels, Belgium	+ 32	2 518 66 84	2 501 59 06	www.electrabel.be

Member Company	Area Code	Phone	Fax	Website
EnBW Trading GmbH Durlacher Allee 93, 76131 Karlsruhe, Germany	+ 49 721	63-15419	63-18848	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 Energy Trading SE Holzstraße 6, 40221 Düsseldorf, Germany	+ 49 211	732 75-0	73275-1552	www.eon-energy-trading.com
E.ON Kraftwerke GmbH Tresckowstraße 5, 30457 Hannover, Germany	+ 49 511	439-02	439-4052	www.eon-kraftwerke.com
EUROKOR Logistics B.V. Ridderpoort 40, 2984 BG Ridderkerk, The Netherlands	+ 31 180	485 55 55	485 533	www.eurokor-logistics.com
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	20012352	200 82352	www.evn.at
Evonik Steag GmbH Rellinghauser Straße 1-11, 45128 Essen, Germany	+ 49 201	177-0	177-3196	www.evonik.com
Evonik Trading GmbH Rüttenscheider Straße 1-3, 45128 Essen, Germany	+ 49 201	801-3500	801-3501	www.evonik-trading.de
Exxaro International Coal Trading B.V. (Zug Branch) Baarerstrasse 8, 6300 Zug, Switzerland	+ 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
GLENCORE International AG Baarermattstrasse 3, 6341 Baar, Switzerland	+ 41 41	7092000	7093000	www.glencore.com
Grosskraftwerk Mannheim AG Marguerrestr. 1, 68199 Mannheim, Germany	+ 49 621	8684310	8684319	www.gkm.de
GUNVOR International B.V., Amsterdam, Geneva Branch Quai Général-Guisan 14, 1204 Geneva, Switzerland	+ 41 22	718 79 00	718 79 29	www.gunvorgroup.com
HANSAPORT Hafenbetriebsgesellschaft mbH Am Sandauhafen 20, 21129 Hamburg, Germany	+ 49 40	740 03-1	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	
HMS Bergbau AG An der Wuhlheide 232, 12459 Berlin, Germany	+ 49 30	656681-0	656681-15	www.hms-ag.com

Member Company	Area Code	Phone	Fax	Website
Holcim (Deutschland) AG Willy-Brandt-Str. 69, 20457 Hamburg, Germany	+ 49 40	360 02-0	36 24 50	www.holcim.com
HTAG Häfen und Transport AG Baumstraße 31, 47198 Duisburg, Germany	+ 49 2066	209-112	209 194	www.htag-duisburg.de
Imperial Reederei GmbH Dr.-Hammacher-Str. 49, 47119 Duisburg, Germany	+ 49 203	5794-0	5794-229	www.imperial-reederei.de
Infracor GmbH, DG-IR-VO-EAW Paul-Baumann-Straße 1, 45722 Marl, Germany	+ 49 2365	49-6084	49-806084	www.infracor.de
L.B.H. Netherlands B.V. Rijsdijk 13, 3161 HK Rhoon, The Netherlands	+ 31 10	506 50 00	501 34 00	www.lbh.nl
LEHNKERING Reederei GmbH Schifferstraße 26, 47059 Duisburg, Germany	+ 49 203	31 88-0	31 46 95	www.lehnkering.com
Mark-E Aktiengesellschaft Körnerstraße 40, 58095 Hagen, Germany	+ 49 2331	12 3-0	123-22222	www.mark-e.de
OBA Bulk Terminal Amsterdam Westhavenweg 70, 1042 AL Amsterdam, The Netherlands	+ 31 20	5873701	6116908	www.oba-bulk.nl
OVET B.V. Mr F.J. Haarmanweg 16 d, 4538 AR Terneuzen, The Netherlands	+ 31 11	5676700	5620316	www.ovet.nl
Oxbow Coal GmbH Schifferstraße 200, 47059 Duisburg, Germany	+ 49 203	31 91-0	31 91-105	www.oxbow.com
Peterson Agricare & Bulk Logistics B.V. Boompjes 270, 3011 XZ Rotterdam, The Netherlands	+ 31 10	28 23 333	28 23 282	www.controlunion.com
Pfeifer & Langen KG Dürener Str. 40, 50189 Elsdorf, Germany	+ 49 2274	701-300	701-293	www.pfeifer-langen.com
Port of Amsterdam De Ruijterkade 7, 1013 AA Amsterdam, The Netherlands	+ 31 20	523 45 77	523 40 77	www.portofamsterdam.nl
Port of Rotterdam Wilhelminakade 909, 3072 AP Rotterdam, The Netherlands	+ 31 10	252 1638	252 4041	www.portofrotterdam.com
Railion Deutschland AG, Railion Montan Rheinstraße 2, 55116 Mainz, Germany	+ 49 6131	15-61100	15-61199	www.railion.com
RBS Sempra Energy Europe Limited 155 Bishopsgate, London EC2M 3 TZ, UK	+ 44	2078471234	2078471150	www.rbssempra.com
Rheinbraun Brennstoff GmbH Stüttgenweg 2, 50935 Köln, Germany	+ 49 221	480-1364	480-1369	www.energieprofi.com
Rhenus PartnerShip GmbH & Co. KG August-Hirsch-Str. 3, 47119 Duisburg, Germany	+ 49 203	8009-326	8009-221	www.rhenus.de
RWE Supply & Trading GmbH Altenessener Str. 27, 45141 Essen, Germany	+ 49 201	12-09	12-17900	www.rwetrading.com

Member Company	Area Code	Phone	Fax	Website
SEA-Invest N.V. Skaldenstraat 1, 9042 Gent, Belgium	+ 32 9	255 02 51	259 08 93	www.sea-invest.be
Stadtwerke Flensburg GmbH Batteriestraße 48, 24939 Flensburg, Germany	+ 49 461	487-0	487-1880	www.stadtwerke-flensburg.de
Stadtwerke Hannover AG Ihmeplatz 2, 30449 Hannover, Germany	+ 49 511	430-0	430-2772	www.enercity.de
SUEK AG, Swiss Office Vadianstrasse 59, 9000 St. Gallen, Switzerland	+41 71	226 85 00	226 85 03	www.suekag.com
SüdWestStrom Kraftwerke GmbH & Co. KG Eisenhutstraße 6, 72072 Tübingen, Germany	+ 49 7071	157-381	157-488	www.suedweststrom.de
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