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POLAND

REFORM AND RESTRUCTURING OF THE HARD COAL SECTOR

1998-2006

AND FUTURE PROSPECTS

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POLAND HARD COAL SECTOR REFORM 1998-2006
AND FUTURE PROSPECTS

Poland has by far the highest hard coal production of any country in the European Union and hard coal will continue to play a crucial role regarding energy security for Poland. Most importantly, hard coal can reduce both the price and supply risks for Poland associated with oil and gas imports. Poland has a number of low cost mines with good quality coal where production can be expanded so that it is feasible for coal to meet domestic demand without requiring operating support from the state budget and if the remaining restructuring of the coal mining sector is completed successfully, the sector can again become an important driver for economic development of Silesia rather than a liability.

Restructuring of the hard coal mining sector conducted during the period 1998-2006 has achieved many positive results. The large majority of uneconomic production has been eliminated, employment in the sector has been reduced with use of socially acceptable instruments and no involuntary lay-offs took place. At the same time the financial performance of the hard coal mining sector has significantly improved and the majority of mines in the sector has become financially stable. During this period the sector has significantly improved its environmental performance, which was partly a result of the Government's policy and the EU requirements but was also a result of a changed attitude of the mining companies towards environment protection. Another significant outcome of the reform is improved work safety conditions in the sector. These achievements of the sector reform would not have been possible without the constructive cooperation of the main actors in this process, namely the Government, the managements of the mining companies, the trade unions and regional authorities. Furthermore the reform of the sector has been conducted with no interruption to the coal supply and without any arrears in wage payments.

However, Kompania Weglowa (KW) still has some high cost, low quality coal production which stands little chance of ever being profitable which puts the rest of the company at risk. KW was formed in 2003 by merging together the five weakest coal companies. KW is the largest mining company in Europe and in 2006 produced 49.6 million tons of coal (about 53% of Poland's coal production). KW has undertaken considerable internal restructuring and cost control and became profitable in 2004 and 2005, but this was due in large part to a boom in coal export prices which doubled from 2003 to 2004. In 2006 KW returned to a loss making situation. KW is able to sell about 80% of its production domestically and the remaining coal, about 10 million tons per year, must be exported mostly through the north sea ports into Europe which involves high transportation costs and high price volatility. KW's financial situation is further worsened in that it must now repay public liabilities which were deferred and rescheduled during the financial restructuring of the industry in 2003.

Poland needs a robust coal industry to operate in a world energy market which is subject to greater uncertainty today than at any time in the past two decades. Future oil prices could be any where in the US$30 – 70 per bbl range. There is

equal uncertainty about the future of natural gas supplies and prices. Poland needs a coal industry which can assure the country of competitively priced energy supplies if oil and gas prices rise further, but which can also stay profitable if world energy prices fall back to the level of the late 1990s. This means each of the mining companies and, in particular KW, producing good quality coal at a low cost which is sold to a stable market where the industry is more of a price maker than a price taker – such as the domestic market or export markets that can be reached by land transportation. It also means reducing or eliminating production of a poor product being sold at a poor price into a poor market. Having the right product in the right market at the right price depends on good marketing and production plans. Low quality coal that is exported through the North Sea to markets around European ports where it competes head to head with low cost Australian and South African coal would be an example of the wrong product in the wrong market at the wrong price. This type of production should be minimized and eliminated.

A competitive and profitable coal industry depends on good cost control and concentrating production in the lower cost mines. Good cost control includes ensuring efficient outsourcing and keeping good cost discipline regarding supplies and services. It also means an efficient labor force. While the other companies have few if any surplus workers, KW continues to have excess surface workers and could achieve further cost savings if it could reduce this excess employment. But, more importantly, KW has an important opportunity to reduce its production of higher cost, lower quality coal. From 2007-2010, over 25% of the underground work force will be eligible for retirement which creates a unique opportunity for further improvements to the industry's structure through natural attrition.

Concentrating production in mines with lower costs and higher quality coal can be accomplished if KW refrains from replacing the underground workers who will retire in the next four years. Instead retirement can be used to transfer workers from high cost parts of mines to replace underground workers who retire at low cost mines. In this way, production at mines with the wrong product, in the wrong market at the wrong price can be reduced in a way that helps to minimize unrest and social stress. Thus production would be adjusted to declining underground employment - rather than having large scale new hiring to maintain present capacity levels. This would not be an easy task. First, it would involve careful planning to ensure that mines have sufficient underground workers to meet safety requirements while they are operating. Second, it would require changes in work location for some of KW's workforce.

Without reducing its production that is loss making, KW will face an uncertain future. A shift towards lower cost production will not only improve KW's financial outlook, it will provide greater job security for those in the industry and will help increase energy security while reducing the need for Government support. There is little appetite in government or among the public at large for the budget to bail out KW if it makes further losses and the worst situation would be for KW to hire new workers now only to find that it cannot afford to keep them in two or three years time.

The industry needs to be financially strong with good access to new capital to modernize, improve environmental performance and introduce efficiency improvements. Poland has deep coal mines with difficult mining conditions and efficiency can be increased by improving underground transportation, introducing air conditioning in the deeper, hotter working areas and replacing aging inefficient equipment. With the exception of Jastrzebska Spolka Weglowa (JSW) which because it produces mostly high quality coking coal and has always had a higher cash flow per ton of sales than the other companies, the industry has been starved of capital for many years. And, even in the case of the JSW, there are also substantial needs for capital to develop new mining areas because its present reserves are running out. There are also promising reserves at KW, Bogdanka and Budryk which could be developed if the necessary capital can be mobilized. But, the budget cannot afford to provide the capital – it must come from internal cash flow or private capital sources.

There is a general consensus that privatization could give the industry access to the capital it needs to assure a sound future. But this can only be accomplished if the trade unions' opposition s' opposition to privatization can be overcome. The government has previously committed itself to privatizing the industry and has prepared much of the industry for privatization, but has held back from implementation due to trade union opposition. There is now an emerging recognition by the coal industry workers and their leaders that coal industry privatization could bring positive benefits in terms of, first, short term financial gain through the distribution of 15% of the shares to the workforce and, second, providing the companies with access to capital for modernization and improved efficiency.

Part of the way forward is for the Government to more actively promote the benefits of privatization to the workforce by pointing to successful examples, such as the copper industry privatization. Ministry of State Treasury (MoST) have invested substantial time and effort in preparing the pre-privatization analyses for Katowicki Holding Weglowy (KHW), JSW, Bogdanka, Budryk and Weglokoks and should be well able to design a process that results in privatization of companies with very good prospects for profitability even if prices decline. So long as the Government has a substantial ownership in the mining companies, the government should ensure sound corporate governance by ensuring that the management boards of the mining companies include well experienced managers with strong economic/financial capabilities and that competent professionals are appointed to represent the owner on the supervisory boards of each of the mining companies.

While there are many signs of growth and renewed prosperity in Silesia, there are also pockets of severe poverty and social exclusion in some of the towns where several mines have closed. Civil society groups and in particular, women's organizations are working to assist some of the neediest and most vulnerable groups that have missed out on new employment opportunities. It is important that social mitigation initiatives be focused on these very needy areas including attracting new investment to create job opportunities where they are needed most. While heavy industries such as

hard coal and steel will remain core industries for Silesia, they are unlikely to be sources of increased employment in future. The growth sectors for Silesia are to be found in higher technology (including coal-based technologies) and service industries. The next few years, while EU funds are available, offer Silesia a window of opportunity to both develop these new sectors and assist the neediest and most vulnerable groups. It is, therefore, important that the coal industry release its surplus assets and land so that Silesia can diversify into new industries and take full advantage of EU funds while at the same time having a healthy and profitable coal industry.

While there are many actions that the Government and the industry will need to take to sustain the future for the hard coal industry, there are three key actions that are essential to complete the restructuring of the hard coal mining sector. These are summarized in **Box A.1** together with the likely consequences of not taking the actions.

Box A.1 Three Priority Government Actions Needed to Complete the Restructuring of the Hard Coal Sector

The priority actions are to:

1. Ensure through the oversight of the Supervisory Board, that KW optimizes its production by using underground worker retirements from 2007-2011 to reduce production of loss making, low quality coal. *If KW does not reduce its loss making production it will face a severe risk of running out of cash in which case the government will be faced with KW initiating production cutbacks and possible layoffs of newly hired workers and/or failing to pay its obligations to government – unless operating subsidies from the budget are provided.*
2. Assist the companies to mobilize the capital needed to ensure a sound and profitable future by promptly implementing the privatization of each company once it is ready to be privatized. *If the companies are not privatized they will either need extensive support of public sector investment funds or they will not have the capital needed to assure their future sound and stable operation.*
3. Undertake social mitigation and job creation initiatives focused on the most economically depressed towns in Silesia wherever pockets of severe poverty and social exclusion can be identified. *If well focused assistance is not provided to the "pockets of extreme poverty" the residents will slip into an even more hopeless situation and fall further and further behind the rest of Silesia with rising crime rates and even deeper exclusion - which is a scenario that neither the communities nor Silesia can afford.*

There are also important strategic challenges which the mining companies must address in preparing their business plans and annual technical and economic plans which are summarized in **Box A.2**

Box A.2 Key Strategic Challenges for the Main Mining Companies

The future of Kompania Weglowa (KW) - Finding Better Markets, Rationalizing Production and Having the Funds to Meet All Its Needs

The key challenges for KW are to:

- find new market opportunities and reduce dependency on exports through northern sea ports.
- develop more flexible production systems, reduce loss making production and control costs.
- generate the funds needed to meet its financial obligations to public agencies and at the same time mobilize the capital needed for its investment needs

The future of Jastrzebska Spolka Weglowa (JSW) - Completing the Merger with Coking Plants and Budryk and Mobilizing Funds to Develop New Coal Production Capacity To Ensure Its Long Run Future

The key challenges for JSW are to:

- set investment priorities in the light of potential new deep coking coal deposits and development possibilities at Budryk
- mobilize funds needed to implement its investment program which is likely to be substantial to develop new coking coal deposits and production at Budryk
- operate in a coking coal market dominated by one buyer; and
- decrease and contain production costs.

The future of Katowicki Holding Weglowy (KHW) - A Stock Exchange Listing

The key challenges for KHW are to:

- sustain present production capacity and the present good cost control
- strengthen its relations with key domestic and export clients
- list on the Warsaw Stock Exchange

B. HARD COAL SECTOR - REFORM PROGRESS TO DATE

B.1 Overview of Hard Coal Reform Programs 1998-2006

The reform of the hard coal industry has been an important priority for successive Governments. There have been substantial accomplishments regarding employment, capacity and financial restructuring of the industry (see **Box 1** and **Table B.1**) since the introduction of the first Government reform program in 1998.

Box 1: Coal Sector Reform – Achievements 1998-2006 update

- Employment reduction - from 243,304 in January 1998 to 119,314 in December 2006.
- Capacity downsizing - from 150 million tons per year (tpy) capacity in 1998 to 96 million tpy in December 2006.
- Financial restructuring implemented - 18 billion PLN debt to public agencies forgiven and 10 billion PLN rescheduled.
- Net financial result improved from 4.2 billion PLN losses in 1998 to 0.4 billion PLN profit in 2006.
- Financial discipline imposed with companies staying up-to-date on payments of current financial obligations with all creditors including municipalities.
- Environmental performance has improved with reductions in environmental fees and penalties.
- Work Safety conditions improved.
- Mining companies operate under the commercial code and a large part of the industry is ready for privatization.

The Government has supported the process through the following Reform Programs and associated corrections and amendments:

- "*1998-2002 Hard Coal Mining Reform Program*" as adopted by the Council of Ministers on 30 June, 1998
- "*The Corrected Government 1998-2002 Hard Coal Mining Reform Program",* as adopted by the Council of Ministers on 21 December, 1999
- *"The 2003-2006 Hard Coal Mining Program*", as adopted by the Council of Ministers on November 20, 2002
- *Program for Restructuring Hard Coal Mining in Poland in the Years 2003-2006 with the Application of Anti-crisis Laws and Initiation of Privatization of Certain Mines originally accepted November 20, 2002, and Amended Version adopted by the Council of Ministers on January 28, 2003*
- "*Program of Alleviating Hard Coal Mining Employment Restructuring Effects in the Region of Silesia*" adopted by the Council of Ministers on January 28, 2003

- *Restructuring Of The Hard Coal Mining Sector 2004 – 2006 and Strategy For The Period 2007 – 2010* adopted by the Council of Ministers on April 27, 2004 (which includes both a Base Scenario and Alternative Scenario)
- *Strategy for the Privatization of the Hard Coal Mining Sector* as adopted by the Council of Ministers on December 20, 2004

Table B.1: Main Economic Indicators of Hard Coal Mining Sector in Poland 1998-2006

	1998	1999	2000	2001	2002	2003	2004	2005	2006
Capacity at Year end (million tpy)	133	121	111	106	103	103	100	98	96
Number of mines at Year end	52	48	42	41	41	37	36	32	32
Production (million t)	116	109	102	103	102	100	99	97	94
Domestic Sales (million t)	87	84	78	79	77	79	78	75	77
Exports (million t)	28	25	23	23	23	20	21	19	16
Total Sales (million t)	114	109	101	102	100	99	99	94	93
Employment at year end	207,935	173,631	155,032	145,995	140,717	136,454	127,097	123,414	119,314
Underground	157,084	132,055	118,511	113,334	110,784	105,127	97,438	94,625	91,743
Surface	50,851	41,576	36,521	32,661	32,671	31,327	29,659	28,789	27,571
Sales (billion PLN)	13,9	12,8	13,3	14,7	14,2	14.1	22.9	18.0	17.1
Male employment	182 897	150 253	138 390	132 747	125 500	121 997	113 488	110 235	106 735
Female employment	25 038	23 378	16 642	13 248	15 217	14 459	13 609	13 179	12 579
Net Result on Coal Operations (billion (PLN)	(2,6)	(1,4)	0,24	0,8	0.4	0.1	18.5	2.0	0.75
Net financial Result (billion PLN)	(4,2)	(3,2)	(1,6)	0.18	(0.66)	(3.9)[1]	2.7	1.2	0.4
Average Price (PLN/ton)	122	118	132	144	143	143	188	192	184

Note 1: Capacity was 150 million tons per year (tpy) at start of 1998
Note 2: Employment was 243,304 at start of 1998
Note 3: 2004 Net Result on Coal Operations includes effect of debt write-offs
N.A. not available
1 ton = 1,000 kg (metric ton)
Source: Ministry of Economy, Agencja Rozwoju Przemysłu (ARP)

From 1998-2002 significant progress was made in employment and capacity restructuring. The key provisions of the 1998-2002 Program which was prepared in close consultation with the social partners (i.e. the trade unions), included (i) employment restructuring instruments financed by budgetary funds to help reduce the underground

[1] Does not include debt write-off

workforce; and (ii) the establishment of the coal mine closure companies (Bytomska Spolka Restrukturyzacji Kopaln Sp. z o.o. (BSRK) and Spolka Restrukturyzacji Kopaln S.A. (SRK)) to take over mines where production had ceased and liquidate them using budgetary funds and be responsible for post-closure pension costs and dewatering expenditures;

But debt arrears increased due to negative cash flows of the mining companies The 1998-2002 Program also included forgiveness and rescheduling of arrears to public agencies. Losses were steadily reduced and a positive net result achieved in 2001, but the companies had severe negative cash flows with the result that large arrears built up in payments to central government (including ZUS) and to local municipalities. These arrears were substantially increased by interest and penalties. Mining companies' assets were seized by the tax authorities as surety against unpaid liabilities. Some of the liabilities of the mining companies started to be traded at a discount creating opportunities for third parties to buy mining companies debt at a discount in the market place and then redeem it for face value with the company concerned.

In 2003 Kompania Weglowa was established and the financial restructuring of the industry implemented. But further industry-wide employment and capacity restructuring in 2003 were largely stalled by trade union protests. Under the 2003-2006 program which was originally accepted on November 20, 2002 by the Council of Ministers, the five weakest companies were consolidated into one company in 2003 – Kompania Weglowa (KW) which today accounts for about 60% of hard coal production in Poland and 80% of energy coal exports. About 18 billion PLN of debts to the public sector were written off and repayments of 10 billion PLN of public debts rescheduled for repayment in 2005-2010. However, the 2003-2006 Program was prepared with little consultation with the trade unions, who forcefully opposed the year 2003 employment restructuring target of 19,700 workforce departures and capacity closure targets of 12.7 million tons. These aspects were substantially modified and a corrected version of the 2003-2006 Program was accepted by the Council of Ministers on January 25, 2003 and the 2003-2006 Program was then superseded by the 2004-2006 Program which was accepted by the Council of Ministers on April 27, 2004.

From 2004-2006 further employment and capacity restructuring was completed but targets were lowered. The 2004 -2006 Program was finalized at a time when the international coal market was strengthening and as a result the Program contained two variants – a Base Scenario and an Alternative Scenario (which had less ambitious targets for reducing employment and capacity than the Base Scenario). However, during Program implementation coal export prices increased strongly in line with the worldwide commodity and energy boom of 2004-2006 with the result that the eventual changes in employment, production and production capacity were somewhat lower than the Alternative Scenario. The 2004-2006 Program included the closure of one additional mine which did not take place and preparing and offering two coal companies for privatization. These two privatization transactions were prepared but not completed.

Much of the success of the 1998-2002 and 2003-2006 Hard Coal Reform Programs was achieved because there was a clear separation of roles in designing and implementing the Program. As policy maker, the Government, with the Ministry of Economy taking the lead, designed the Reform Programs and developed and put in place the necessary employment restructuring, capacity restructuring and financial restructuring instruments. The Ministry of Finance ensured that the needed resources were provided. As owner, the Government through the Ministry of Economy gave basic objectives to the companies in preparing their annual Technical and Economic Plans, approved the Plans once satisfactory, and monitored implementation progress by the mining companies. The Ministry of Economy also commissioned an *Optimal Employment Study* in 2005 which examined the issues of production capacity, employment and productivity. The Ministry of State Treasury, together with the Ministry of Economy, prepared the December 2004 *Strategy for Privatization of Hard Coal Mining* and the Ministry of State Treasury was responsible for implementing the Privatization Program. As owner, the Ministry of Economy appointed the Supervisory Board members who in turn appointed the Management Boards on behalf of the owner. While the Supervisory Boards supervise the Management Boards on behalf of the owner, it is the mining company managements who were responsible at the operational level for preparing and implementing their annual technical and economic plans which operationalized the Government's reform program.

B.2. Employment Restructuring 1998 -2006

(i) Employment restructuring under the 1998-2002 Program

Substantial progress was made in reducing surplus employment from the beginning of 1998 to the end of 2002.. The level of surplus labor was one of the main problems which had to be addressed during the restructuring of the hard coal mining sector. At the beginning of the market transformation in Poland the economy was developing fast and the labor market was robust enough to absorb workers leaving the mining sector, but with the slow down of the economy in the mid to late 1990s, restructuring of the hard coal mining sector had to be supported by Government intervention. In the 1998-2002 Program the Government framed a very ambitious plan to downsize employment in the sector by 105,000 employees and the actual accomplishment was 102,587.

The 1998-2002 Program included voluntary instruments for underground workers. Main features of the 1998-2002 employment restructuring program which proved to be successful were:

(a) Participation in the program was voluntary; all workers were well-informed what options they had.
(b) Older underground workers were offered an instrument (miner's leave) which guaranteed them 75% of their salaries during the time which was needed for them to reach retirement age. This instrument was available to workers who had no more than 5 years to retirement.

(c) Younger underground workers were able to take a lump-sum payment to leave the industry which was an equivalent of up to 24 monthly salaries- the actual amount depended on worker's length of service when the payment was received by a worker
(d) Employment restructuring instruments were only made available to underground workers not surface workers since the Government considered that special instruments were warranted for underground workers whose work was very hazardous, whereas surface workers, whose working conditions were similar to those in other section of the economy should only have access to the generally available provisions of the labor law and not any special instruments.
(e) At the time of this program the age structure of the hard coal labor force was such that a high number of workers were due to take retirement (55,000 people)

The instruments were well designed, considered attractive by the workers and were not misused. There were 36,862 underground workers who used the miner's leave instrument, 29,745 who used the lump sum instrument and 35,980 net retirements. The older workers were reported to be well satisfied with the early retirement instrument and public opinion generally considered the packages to be fair. But there was a generally negative opinion of the public in Silesia regarding the lump-sum payments, although research conducted by Main Mining Institute (GIG) indicated that this money was generally well-used by younger underground workers leaving the industry. At the time the instruments were being designed there was a concern that they might be misused either by payments being made to workers who did not really exist or by payments being made to workers who subsequently were re-employed by one of the mining companies. But this did not happen. The mining companies very carefully documented payments to workers and thorough audits were conducted which verified that no misuse took place.

(iii) Employment restructuring under the 2004-2006 Program

Further progress was made in employment restructuring from 2004-2006 although the targets from the 2004-2006 program were not fully achieved (Table B.2). In the 2004-2006 Program, the Government decided to continue the reform of the sector with more emphasis on improving the employment structure by reducing the number of surplus workers relative to the number of underground workers. Targets for employment downsizing under the Alternative Scenario were set at the level of 19,500 workers from 2004-2006 of which 4,000 were expected to use the activating and adaptation instruments for surface workers. Although employment in the hard coal mining sector was substantially reduced by 21,403from the end of 2003 to the end of 2006, the employment targets of the reforms, especially for the surface workers, were not achieved.

Table B.2: Targets for employment restructuring and results 1998-2002 and 2004-2006

	Employment at start of 1998	Target Employment year end 2002	Actual Employment year end 2002	Target Employment year end 2006 (Alternative Scenario)	Actual Employment year end 2006
Underground workers	187 654	n.a.	110 784	n.a.	91,743
Surface Workers	55 650	n.a	29 933	n.a.	27,571
Total	243 304	138,400	140 717	117,000	119,314

Source: 1998-2002 Program, 2004-2006 Program, ARP reports

The 2004-2006 Program contained a well received pre-retirement instrument for underground workers similar to the previous program. At the time of 2004-2006 Program preparation, mining companies had surveyed the roughly 15,000 eligible underground workers and had found that more than 6,000 underground workers had already expressed interest in accepting the proposed instrument. The initial interest was considered a positive indication and it was expected that the uptake would increase from that level once the instruments were being offered and as more workers became eligible according to their retirement dates. Eventually 5,373 underground workers took up the pre-retirement instrument. The lower number of workers using the miners leave instrument than expected is largely counterbalanced by higher natural attrition rates than expected and the fact that the mining companies wanted to keep some of the workers in order to keep up production given the sharp rise in the price of coal that occurred in 2004 and 2005.

The 2004-2006 Program introduced instruments to encourage surface workers to leave the industry but these proved ineffective. Even though these was a substantial decline in surface workers employment from 1998-2002, the government was concerned that there was a significant excess of surplus workers, especially in Kompania Weglowa, where these was considerable scope for rationalizing clerical staffing following the consolidation of the five smaller companies into one large company. As a result, the government with strong input from the mining companies, designed instruments to encourage the surface workers to leave the industry. The mining companies surveyed the majority of the roughly 30,000 surface workers in the industry and found that only a few individuals were then interested in accepting the surface workers instrument – which consisted of either (a) **activating instruments -** severance payments to workers voluntarily leaving the industry; or (b) **adaptation instruments -** incentives to employers to hire surface workers leaving the industry.

However, the companies were strongly of the view that a major reason for the lack of apparent interest in the surface packages was that the details of the scheme were still being finalized in early 2004 and thus were not well known. The mining companies also considered that there would be much more interest once the exact details

were available to surface workers and their families and that some initial successes would also serve as a catalyst to convince others that they too could retrain and adjust to employment out of the mining industry. But, as implementation of the 2004-2006 Program started in early summer 2004, it became evident that there was little interest by the surface workers to use the voluntary instruments and leave higher paying coal industry jobs and take lower paying jobs outside the industry. Thus, there was virtually no success in the implementation of the activating and adaptation instruments and only 68 surface workers used the instrument.

There are several reasons why the instruments aimed at reducing surface employment were not effective. The most significant reason is that the surface workers generally did not believe that mining companies would proceed with the planned reductions, particularly as the mining companies were profitable. Another reason was that an addit6ional mine closure that was included in the Progam did not proceed with the result that work positions were not eliminated at a further mine. With regard to the availability of job opportunities, GAP conducted a survey among potential employers in the region and found out that there had been considerable interest on behalf of employers to participate in these active interventions with requests to hire more than 1,000 former surface workers. This indicates that GAP did an adequate job in promoting the Program, despite the fact that they provided these employment counseling and job matching services with very limited resources.

The Ministry of Economy and Kompania Weglowa each took initiatives to see if the surface worker instruments could be usefully redesigned, but did not identify any better solutions. During project implementation, as the very low take-up of surface workers instruments became apparent different options to address this issue were analyzed, including the need to reconsider the design of these incentives. KW conducted a survey of 2,300 surface workers to determine to what extent a modified package consisting of a lump-sum of 40,000 PLN would encourage workers to voluntarily leave. The KW survey indicated that only 43 workers would have accepted such an offer. The Ministry of Economy also undertook an Employment Optimization Study (using Trust Funds arranged by the World Bank) that looked at the optimal level of employment for each company to improve their efficiency and ways to improve the take up of packages by the surface workers. While the Study confirmed the existence of surplus employment it was not able to identify any affordable improvements which would have increased the take up of the voluntary instruments and the government was unwilling to introduce measures for involuntary layoffs.

The lower use of instruments was partly counter balanced by higher than expected natural attrition. While the use of both underground and surface workers instruments was below target, this was partly counter balanced by an increase in natural attrition – mostly retirement of workers who continued working to retirement age (without using any instrument), because of the better coal market and improved conditions in the mining companies. Thus the overall level of employment at the end of 2006 was 119,314 compared with the target of 117,000 under the Alternative Scenario.

B.3. Productivity and Safety

The employment restructuring that was carried on under the restructuring programs brought steady increases in labor productivity. During this period underground labor productivity improved for the entire sector and at end 2006 was 50% higher compared to the beginning of 1998. While this positive trend is encouraging, it must be noted that underground labor productivity in Poland's mines is still well below labor productivity which can be several times higher at underground mines in Australia, South Africa and the United States, where geological conditions are generally better, coal seams are thicker and underground coal production and transport systems more highly mechanized. Labor productivity in larger scale surface mines in these other countries can reach be ten to twenty times higher than Poland's underground mines

Table B.2: Underground Labour Productivity
(Kilograms per man)

	1998	1999	2000	2001	2002	2003	2004	2005	2006
Underground worker labour productivity	**5354**	**6451**	**6635**	**7167**	**7297**	**7341**	**7615**	**8011**	**8071**

Safety conditions have been generally improving over the last 10 years but underground mining remains an inherently high risk industry as demonstrated by the tragic accident at the Halemba mine in 2006 which caused 23 fatalities. Compared with earlier years, safety has improved substantially with fatalities reduced to 10 and 15 each year in 2004 and 2005 and serious accidents reduced to 15 each year 2004 – 2006 **(Table B.3)**. Notwithstanding the departure of the most experienced workers, a general improvement of safety conditions has been achieved by the following elements:

- tightening safety control standards and more rigid execution of following these standards,
- upgrading monitoring systems (especially when it refers to monitoring methane and water hazards);
- upgrading of mining equipment;
- reducing the number of workers per million tones of production.

In order to sustain this positive trend mining companies need to further upgrade their equipment and develop special trainings for younger workers coming to the industry. Special attention should also be paid to safety standards applied by external contractors.

Table B.3: Accidents in the mining sector 1998-2006

	1998	1999	2000	2001	2002	2003	2004	2005	2006
Fatalities	**33**	**20**	**28**	**25**	**33**	**28**	**10**	**15**	**44**
Serious accidents	**30**	**36**	**17**	**11**	**33**	**34**	**15**	**15**	**15**
Fatalities per 1 million t of production	**0.25**	**0.18**	**0.27**	**0.24**	**0.32**	**0.28**	**0.10**	**0.15**	**0.47**
Serious accidents Fatalities per 1 million t of production	**0.33**	**0.32**	**0.16**	**0.11**	**0.32**	**0.34**	**0.15**	**0,15**	**0.16**

Source: ARP report

B.4. Support for Workers to Find New Employment

The government has taken job-creation initiatives to diversify the Silesia regional economy. This has helped offset the loss of jobs in mining and other heavy industries such as steel. Downsizing of the hard coal mining sector had direct impact on related industries and caused job losses in other sectors that supply goods and services to the industries. This had been taking place during time of rising unemployment both nation-wide and in Silesia (unemployment rate in Silesia rose from around 10% in the early 1990s to 17% in the early 2000s) Several economic redevelopment initiatives have been taken by the Government as well as local authorities in Silesia to promote job creation in the region and the number of job openings has been steadily increasing in recent years, reducing the gap between vacancies and registered unemployed workers although there still remains a significant gap between the number of unemployed and the available job vacancies. **(Table B.4).**

Table B.4: Silesia Job creation

	2000	2001	2002	2003	2004	2005	2006
Vacancies announced by employers	43,730	34,077	50,466	69,330	90,715	110,087	133,436
New unemployed registered	269,990	280,091	291,003	301,616	307,589	312,040	298,458
Net difference	-226,260	-246,014	-240,537	-232,286	-216,874	-201,953	-165,022

Source: Voivod Labor Office

An example of a particularly successful program was delivered by the Silesian Fund (as a supplement to the 2003-2006 Mining Sector Restructuring Program), which provides credits to municipalities and to small, medium and micro enterprises. This program has created more than 1,800 new jobs and helped to maintain 14,000 other jobs. The incentives to the private sector were well designed because of a built in multiplier affect. The receiving company was required to provide 25% of project costs, a

commercial bank was required to provide at least 50% of project costs (by way of a loan to the company) and the Government, through the Silesian Fund, provides an additional 25% by way of a loan, which is forgivable if the job created exists for at least 2 years. The end result is that the 25 million Euros invested in this manner has led to a total investment in the region of 100 million Euros.

The Mining Labor Agency (GAP) has provided support to mine workers seeking employment outside the mining industry. Downsizing has also had significant negative social impacts, and affected many of the hard coal workers directly. To address this and in order to better assist the coal industry workers, mining companies established the Mining Labor Agency (GAP) in 1993. GAP's mandate was to facilitate finding opportunities for employment outside the sector for redundant workers including identifying employees who would offer jobs using the adaptation instruments. GAP also offered training and job counseling for the registered unemployed people and people that may consider using the activation instruments. GAP's services are in addition to general labor market services which are also available. However, despite GAP's efforts to find employers interested to hire former coal industry workers, not many used their services.

B.5. The Impact on Local Communities.

Mining industry restructuring has caused social exclusion of people living in pockets of extreme poverty in towns worst hit by mine closures. All these changes were especially severe for the towns where mining was the major economic activity and where several mines were closed, creating pockets of extreme poverty. Research by Professor Marek Szczepanski (of University of Silesia) and his research team have produced a clear picture of the extent to which parts of communities and the individuals and families that live there have become physically and socially isolated due to loss of jobs and other income earning activities. The conditions in these locations (referred to as "ghettos" in the research) include high crime, extensive alcohol and substance abuse, prostitution, abandoned housing falling into disrepair and closure of small retail businesses. The seriousness of the conditions in these locations as well as the extent of "social exclusion" are only becoming recognized now and warrants special attention and initiatives to improve the situation.

Women's groups have established women's Information Centers to assist women and families in coal mining towns hardest hit by the industry restructuring. A conference and workshops were held by women's groups concerned about the negative social impacts of the industry restructuring. As a result of these events and at the request of the Plenipotentiary for Equal Rights of Men and Women of the Voivod of Silesia,, the World Bank supported the training of 24 women's leaders. This took place in 2004 and 2005 and these women's leaders have since raised the funding from local and European Commission sources to establish women's Information Centers in five towns to assist women and their families. The Information Centers provide a very useful link between local governments and communities, since the centers which are all established by local civil society organizations, have much better access to communities and they can be a

first contact for people looking for assistance and who don't know about availability of such services.

Each of the Information Centers provides free of charge legal and psychological counseling to women and their families, as well as trainings for self development, applying for jobs and starting new small business. A large number of "advice" booklets have been produced and distributed to women seeking assistance. The women's Information Centers not only provide support to improve living conditions but also can enable local and other officials to get first hand information on what is needed by the resident of these towns including those in the pockets of extreme poverty to design effective urban renewal and targeted training and job creation initiatives to provide job opportunities which are accessible to those in severe need.

B.6. Coal Production Capacity Restructuring

Coal production capacity was reduced from 150 million tons per year (tpy) at the start of 1998 to 96 million tpy at the end of 2006. Downsizing the capacity of the sector to the level accepted by the market and eliminating uneconomic production have been one of the key reform objectives. During the 1998-2002 program significant progress was made and 47 million of tpy of uneconomic capacity was liquidated. This process was conducted through closing whole mines or parts of mines. Under the 1998-2002 Program 13 whole mines were fully liquidated and 10 mines were partially closed.

Under the 2004-2006 program much less progress has been made and production capacity has been reduced by only 7 million tpy, which was 1.8 million tpy less than envisaged under the Alternative Scenario of the Program **(Table B.5)**. During this latter period the majority of capacity downsizing was conducted through liquidation of parts of mines by mining companies rather than the closure and liquidation of whole mines by BSRK and SRK.

Table B.5: Targets for capacity restructuring and results 1998-2006

	Start of 1998	Target End 2002	Actual End 2002	Target End 2002 (Alternative Scenario)	Actual End 2006
Mine Capacity Million tpy	150	102	103	94	96

Source: 1998-2002 Program, 2004-2006 Program, ARP reports

Liquidation of whole mines was organized and financed by the Government and undertaken by BSRK and SRK. There were 2 main selection conditions for mines and mining areas liquidation, namely (i) exhaustion of resources; and (ii) lack of economic justification for production. The major reason for whole mine liquidation tends to have

been exhaustion of resources rather than the economic factor. The majority of mines that were closed were located in the areas where mining has been going on for many decades, in particular Bytom and Walbrzych, where coal deposits were mostly fully exploited. Because of the selection criteria, if one takes a strictly economic view and examines the marginal cost of production with the marginal sales revenue, there are still mines in the sector which economically can not justify their existence.

The liquidation process has been regulated by the mining and geology law as well as other legal acts i.e. construction law, environment protection law etc. Implementation of the process was supervised by authorities responsible for supervision of implementation of specific laws. Thus, in the case of underground infrastructure liquidation the Higher Mining Authority has been supervising the process. The final surface reclamation was agreed with the local municipality and the site handed over to the municipality when liquidation and reclamation were complete.

The mining companies will be responsible for paying for any future capacity closures. As a result of the improved position of the mining companies and the slowdown in closure of whole mines, the government took the decision in late 2006 that the costs of future capacity closure, whether they are whole or partial mine closures will be funded by the mining companies and not by the state budget.

B. 7 Environmental Performance of Mining Companies

The environmental performance of the mining companies has improved considerably over the period 1998-2006. The amount of environmental penalties was reduced from an average of PLN 68 million from 1998-2000 to an average of PLN 0.7 million from 2004-2006 and environmental fees were reduced from an average of PLN 207 million to an average of PLN 55 million for the same periods **(Table B.6)**. An increase in underground storage of waste materials and minimisation of the quantity of waste stored in surface landfills is one of the most successful pro-ecological actions taken by the mining companies with surface storage of waste being reduced from 14.5 million tons in 1998 to just over 1 ton in 2006. Dust release has also been reduced from 3.4 million tons in 1998 to 1.1 million tons in 2006. The mining companies have shown a strong commitment to improving environmental performance in terms of preparing well designed environmental management plans during the period 2000-2006 and implementing them in a responsible manner. The fact that mining companies strive to build their image as companies minimising their negative impact upon the environment is proven by an increasing number, specifically after 2000, of awards and certificates for taking appropriate care of the environment granted to KW, KHW and JSW.

Table B.6: Main environmental indicators of the sector 1998-2006

	1998	1999	2000	2001	2002	2003	2004	2005	2006
Saline Water Discharge (m3)	199	160	129	117	101	na	204	205	207
CL+SO discharge (million tons)	1.41	1.22	1.14	1.1	1.05	1.26	1.36	1.44	1.50
Dust (million tones)	3.4	2.2	1.9	1.7	1.3	na	1.2	1.2	1.1
Methane (million tons) t	na	Na	Na	Na	0.977	0.935	1.123	1.141	1.1
Waste Storage (million tons)	14.5	9.4	4.8	3.4	1.4	0.4	0.3	0.3	1.2
Environmental fees (million PLN)	317	210	92	85	156	Na	50	51	64
Environmental penalties(m PLN)	45	73	86	73	2	na	1	0.7	0.3

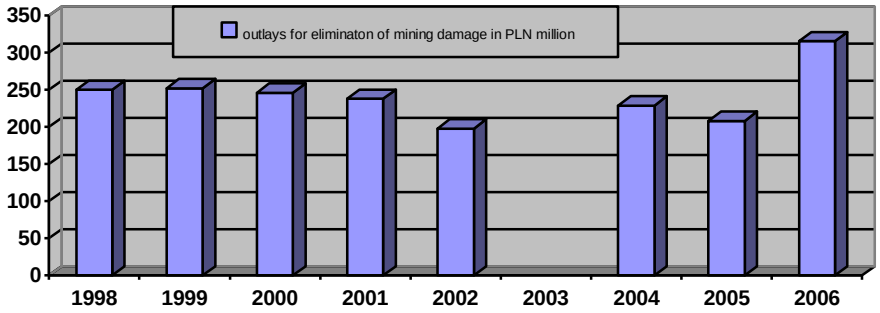
Source: ARP reports

But the progress made regarding saline water discharge from 1999-2002 has been reversed. This is a worrisome change since saline water is the most serious environmental challenge for the hard coal mining industry. and, in particular, for KW. The release of chlorides and sulphates in mine water discharges was reduced from 1.41 million tons in 1998 to 1.05 million tons in 2002 before increasing to 1.5 million tons in 2006 due to higher water pumping as mining takes place at lower depths. However, measures have been introduced (such as the use of abandoned underground areas as reservoirs, to better control the release of water and thus avoiding spikes of chlorides and sulphates releases thereby reducing the harm they cause. While actions to reduce climate change impacts are primarily taken by the power generating companies, the mining companies recognize that carbon release is influenced by the coal quality they deliver to consumers and the companies are now producing and selling coal with low-emission combustion, thus contributing to reducing both the smoke and carbon emissions from furnaces of individual users.

Implementation of these environmental management plans has been supported by an improved regulatory framework that imposes stronger pro-environmental scrutiny on the mining sector and has improved procedures for mining damage. Nowadays statutory regulations (geological and mining law and other provisions), as well as the internal regulations of coal companies provide sufficient grounds to minimise the occurrence of negative environmental impacts and improve procedures regarding mining damage. Pursuant to the revision of the Geological and Mining law, full approximation was reached with EU regulations, and an effective system was created for removing the consequences of mining damage by amicable procedure, leaving legal action in the courts as a last resort. The total area of post-industrial areas

either recultivated or under management in the years 1998-2006 was 1067.2 hectares. The final reclamation and land contouring of such areas is linked to undertaking actions aimed at attracting investors and revitalizing the area. **Figure B.1** presents the amount of expenditures each year on mining damages.

Figure B.1 Total funds spent on mining damages removal



Source: ARP reports

Dewatering needs more attention and the 2006 performance of KW requires more scrutiny. Another environmental and economic problem still pending solution relates to the rising costs of mine dewatering **Table B.7**). Without investment and organisational actions undertaken by CZOK the said outlays would be significantly higher due to increase in power and payroll costs. Dewatering expenditures are expected to be significantly reduced as of the year 2008. Another issue of particular concern and in need of prompt clarification are the considerable fluctuations of environmental indices, indicating excessive growth of negative environmental impact of KW SA in 2006. While these changes are not seriously threatening to the environment, it is important to continue monitoring such events and to retain caution in order to avoid departing from the principle that care for improvement of natural environment is an important element of restructuring of the coal mining sector, while simultaneously striving to retain the profitability of coal mines and alleviate social conflicts

Table B.7: Cost of Dewatering of closed mines (in million PLN)

Year	Cost of Dewatering
1998	NA
1999	NA
2000	NA
2001	44.8
2002	116.5
2003	127.8
2004	127.7
2005	150.7
2006	155.7

Source: SRK and ARP reports

B.8 Financial Restructuring and Financial Performance

During the 1990s the industry suffered from sever cash flow deficits which were funded by largely by shortages in payments to public authorities. Not only did the industry have large losses in the 1990s reaching over 4 billion PLN in 1998, but it also had sever cash flow shortages. The government instructed the industry to stay current on its wage payments (unlike neighboring countries such as Russia and Ukraine where wage arrears exceeded 12 months in some cases) which resulted in significant shortfalls in payments to public authorities including social security (ZUS), tax authorities, municipalities and environmental funds.

For some companies the cash squeeze was so severe that at times they did not transfer to the tax authorities all of the employment taxes that were withheld from employees salaries. Liens were placed on most of the coal companies assets by the tax authorities which further compounded their cash flow difficulties since the proceeds of assets sales would be taken by the debtors and not available to ease the cash flow situation. The financial distress of the companies resulted in some of their commercial debts being traded at a discount in the secondary market which opened the possibility for them to be bought at a discount by a third party and then presented to the company for redemption at full value if it so chose.

In 2003 the government implemented a major financial restructuring of the industry and on December 31, 2003 liabilities of 18 billion PLN were forgiven and 10 billion PLN were rescheduled. The level of arrears grew rapidly and were substantially increased by penalties and high rates of interest from the levels of 7.3 billion and 1.2 billion respectively at the start of 1998. The restructuring resulted in the mining companies short term liabilities declining from 21.3 billion PLN at the end of 2002 to 6.5 billion PLN at the end of 2003. Despite such a large restructuring, the industry was not

put on a sound financial footing. First, each company remained very short of cash and liquid assets since only the most distressed company, KW was given a cash injection and even this was not fully provided. Second, certain of the debts of KW's predecessor companies were not fully resolved and these had to be paid by KW. Third, JSW which generated substantial profits and cash due to very large increases in not only export but also domestic coking coal prices in 2004 and 2005 had to use much of its cash for the acquisition of financially distressed coking coal plants. Thus today access to capital remains a key issue for all of the companies with KW in the most difficult condition.

The employment, capacity and financial restructuring measures together with improved coal market conditions have enabled the industry to achieve a positive net income on coal since 2000. The main economic indicators for the industry are shown in **Table B.8**. Large increases in export coal prices helped increase sales revenues by over 50% in 2004 compared with 2003 which helped the industry to achieve 3.0 billion PLN net result on coal operations. However, industry profitability declined in 2005 and 2006 mainly due to cost increases.

Cash operating costs increased by 23 PLN per ton from 2004-2006 compared with 13 PLN per ton from 2000-2003. The rise in costs in 2004, 2005 and 2006 is striking compared to previous years when costs were kept strictly under control. As shown in **Table B.9**, almost all of this increase has been due to sharp rises in (a) outsourcing costs (6 PLN per ton) due to increased use of external companies by the mining sector; and (b) material costs (10 PLN per ton) which was mostly caused by substantial price increases of steel, timber, fuels and other commodities during this time. The companies have made good strides in holding down labour cost increase where wage increases have been partly offset by productivity increases. During the period 1998-2003 labor costs were kept under strict control, which caused substantial improvements in this area. The situation changed in 2004, when high profits of the mining companies increased pressure from the trade unions on wages increases. In 2004, with the exception of JSW, mining companies were able to keep wage increases in line with productivity increases and the average monthly salaries in the hard coal mining companies rose by 3.2% compared with a 3.3% increase in the average productivity for the industry. In the case of JSW, which is not obliged to follow the Government's guidelines because it did not receive any support for miners social packages, wages rose by 8 % in 2004 whereas productivity increased only by 0.8%. During 2005 coal industry salary increases exceeded productivity growth with salaries in the mining companies increasing by 3.9%-4.5% compared with 3.0% increase in average labor productivity for the sector.

Table B.8: Financial performance of mining companies 1998-2006

	1998	1999	2000	2001	2002	2003	2004	2005	2006
Sales (billion PLN)	13.9	12.8	13.3	14.7	14.2	14.1	18.5	18.0	17.1
Net Result on Coal Operations (bn (PLN)	-2.6	-1.42	0.24	0.77	0.43	0.11	3.00	1.99	0.75
Net financial Result (billion PLN)	-4.28	-3.45	-1.76	0.18	-0.66	9.67	2.59	1.17	0.40
Short-term receivables (billion PLN)	3.31	3.26	2.63	2.67	2.53	2.35	2.11	1.89	1.58
Long-term receivables (billion PLN)	0.12	0.11	0.08	0.03	0.01	0.01	0.01	0.01	0.01
Short-term liabilities (billion PLN)	15.7	19.7	20.7	16.7	21.3	6.5	6.0	5.0	5.0
Long-term liabilities (billion PLN)	0.85	0.89	1.03	4.78	1.53	2.41	2.29	1.89	1.89
Average Price (PLN/ton)	122	118	132	144	143	143	188	192	184
Av Domestic Price (PLN/ton)						153	183	190	181
Av Export Price (PLN/ton)						106	205	197	221
Average Cost per ton Sold (PLN/ton)	144	131	128	136	137	141	157	168	174
Average Labor Cost (PLN/ton)	76	69	72	74	74	78	80	77	80
Average Non Labor Cost per Ton	78	62	63	62	63	63	77	91	94
Outsourced costs (PLN/ton)	N.A.	N.A.	18	20	23	24	27	30	30
Other Cash posts (PLN/ton)	N.A.	N.A.	37	33	31	28	38	38	41
Depreciation (PLN/ton)	N.A.	N.A.	8	9	9	11	12	14	15
Payments to Government (%)	N.A.	N.A.	N.A.	N.A.	N.A.	90.5%	100%	100%	100%

Source: ARP Reports

Table B.9: Unit Production Costs 2003-2006 (PLN per ton)

Lp.	Item	2003	2006	% 2006/2003
1	**Wages and social charges**	78	80	3
2	**Outsourcing**	24	30	25
3	**Materials**	14	24	71
4	**Energy**	7	10	43
5	**Other costs (including taxes and fees)**	7	5	-29
6	**Cash Production Costs**	130	149	15
7	**Depreciation**	11	15	36
8	**Total Production Costs**	141	174	23
I	**Labor costs**	78	80	3
II	**Outsourcing**	24	30	25
III	**Other cash costs**	28	39	39
IV	**Cash Production Costs**	130	149	15

Source: ARP Reports

Table B.10 Export and Domestic Coal Sales 2003-2006 (million tons)

	2003		2004		2005		2006
KW							
- overall	58.0		53.6		50.5		49.6
domestic	35.7		38.7		35.4		38.9
- export	12.3		14.9		15.1		10.7
JSW							
- overall	13.6		13.5		12.5		13.5
domestic	11.3		11.4		10.2		10.6
- export	2.3		2.1		2.3		2.9
KHW							
- overall	18.8		18.6		17.5		16.7
domestic	15.2		15.3		15.9		15.3
- export	3.6		3.3		1.6		1.4
Entire Sector							
- overall	98.5		98.9		94.1		93.4
domestic	78.5		78.1		74.6		77.6
- export	20.0		20.8		19.5		15.8

Increased export prices have greatly benefited KW and JSW, but KW still faces a difficult financial situation. KW is only able to sell about 80% of its production on the domestic market and must export the remaining 20% almost all through North Sea ports **(Table B.10)**. Export prices for both energy coal and coking coal rose sharply from 2003-2005 but export prices for both energy coal and coking coal through North Sea Port have subsequently fallen back. Thus, while KW benefited considerably from the increase in export energy coal prices from 2003-2005 its financial performance deteriorated and remains at risk to any further declines in export prices. The biggest gainer from the increase in overall coal prices was JSW, whose average prices more than doubled from 2003 to 2004 because of a huge increase in domestic coking coal prices as well as export prices. However, coking coal prices in both markets have since declined.

While the companies have become profitable, they still remain highly capital constrained. JSW has been by far the most profitable of the mining companies but JSW's surplus cash flow has been largely used for the merger with the three coking plants all of which were is financial difficulty with large arrears (mostly to JSW) so JSW has not been able to significantly increase it capital expenditures. KHW has been moderately profitable but access to capital markets for long term capital is highly constrained and internal cash generation is only sufficient to cover replacement investment costs and make up for some of the past backlog in investment expenditures. KW is in the most difficult position since it is now paying significant deferred liabilities.

KW faces difficulty in servicing its debt. According to the Government 2003-2006 Program, KW was to receive a capital injection of 900 million PLN to stabilize its balance sheet. So far KW has only received 450 million PLN. KW is now facing the payments for debt that was deferred under the industry wide financial restructuring agreements which will add additional demands on its cash resources **(Table B.11)**. Thus, KW has remained on a very tight capital budget which will only get more difficult in coming years and KW will be very financially vulnerable to downturns in export prices.

Table B.11: KW - Schedule of repayments of deferred liabilities

	2003	2004	2005	2006	2007	2008	2009	2010
Amount (million)	**0,0**	**128,2**	**412,1**	**319,2**	**203.4**	**469.7**	**469.7**	**469.6**

Source: ARP

B.10 Use of Budget Funds

The accomplishments under the 1998 – 2006 Hard Coal Reform Programs have required significant public outlays since 1998 which included 19 billion PLN debt forgiveness, 5.6 billion PLN outlays for social packages and 2.5 billion PLN outlays for physical mine closure and reclamation **(Table B.12)**.

Table B.12: State Budget allocation for restructuring of hard coal mining sector 1998-2006[2](million PLN)-update

Items	1998-2002					2003-2006					Total
	1999	2000	2001	2002	99-02	2003	2004	2005	2006	'03-'06	'99-'06
Employment	949	927	883	608	3367	555	670	434	574	2233	5600
Mine Closure	338	455	247	165	1205	219	215	267	270	971	2176
Subsidence	30	30	30	8	98	28	39	65	80	213	311
Other[3]	134	163	207	155	659	145	144	167	211	667	1326
Total	**1451**	**1575**	**1367**	**936**	**5329**	**947**	**1068**	**933**	**1135**	**4084**	**9413**

Source: Ministry of Economy

The expenditures for employment restructuring have had a high payoff and are considered well justified in that they have reduced employment expenditures by much larger amounts and have contributed to the industry being able to close excess production capacity and thereby improve its financial performance. The expenditures for mine closure and subsidence (mining damages) repair are also considered fully necessary and were generally made efficiently and on a competitive basis. The expenditures for coal

[2] Date do not include resources spent on KW's capital injections and debt write-off
[3] Coal allowances, ZUS portion, monitoring of reform, costs of GAP services, social benefits adjustments

allowance, ZUS and social benefits are statutory requirements which must be met. In addition, expenditures for the Mining Labor Agency (GAP) and ARP for program monitoring are considered well justified and both GAP and ARP are considered to have operated effectively.

C. ENERGY SECURITY AND COAL MARKET OUTLOOK

C.1. Recent Changes in Global and Polish Energy Markets

Energy security has emerged as a key energy challenge: There are three broad energy issues which a government such as Poland must address in these times of high energy prices and energy supply uncertainties: namely:

(i) demand side management - energy saving and efficiency and mitigating the poverty impacts of higher energy prices;
(ii) energy supply security including promotion of market mechanisms and regional energy and power trading arrangements to diversify energy supplies and reduce dependency on specific sources; and
(iii) promotion of energy environmental sustainability including, in the case of Poland, meeting EU environmental commitments and developing options to increase energy resources while promoting cleaner energy.

While all three require attention, in recent years security of energy supplies has become the central issue in the discussion on energy policy in Poland and for much of Europe. This has been mainly triggered by substantial increase of demand for oil from the developing countries (especially China and India) which has caused substantial oil price increases during the last few years (from 25 USD/bbl in 2001 to over 60 USD/bbl nowadays) as well as concern about possible shortages of gas supply to Europe.

European Union policy emphasizes energy efficiency, energy security and environmental protection. . The European Union is developing a common EU energy policy which would help ensure implementation of the EU energy internal market and promotion of the environmental sustainability in the sector while at the same time increasing energy security for EU member countries. The European Council Action Plan 2007 – 2009 of the Energy Policy for Europe sets ambitious targets in terms of energy efficiency, which is closely linked with the action plan for reduction of green house gases (GHGs). Among other things the action plan "stresses the need to increase energy efficiency in the EU so as to achieve the objective of saving 20 percent of the EU's energy consumption compared to projections for 2020, as estimated by the Commission in its Green Paper on Energy Efficiency (EU 2006), and to make good use of their National Energy Efficiency Action Plans for this purpose. The new Energy Policy for Europe also proposes to develop an integrated regional energy trading market that could reduce the need for increased power generation and create much greater incentives for the region to adopt cleaner energy technology and reduce carbon emission.

Coal plays an important role in the world energy system. The role of coal must be considered in the above policy context since coal is one of the most abundant energy resources in the world and will continue to play an important role in the international energy systems, at least in the near future, despite its negative environmental impacts at the local, national, regional and global levels. During the last twenty years the share of coal and lignite in the world's consumption of primary fuels has remained almost unchanged (**Table C.1)**, but world production of coal and lignite has doubled (from 2.23 billion tons in 1973 to 4.90 billion tons in 2003)[4]. At the same time the share of oil has declined and the share of gas and nuclear has increased.

Table C.1: World Primary Energy Supply (%)

Fuel share (%)	**1973**	**2003**
Coal and lignite	24,8	24.4
Oil	45.0	34.4
Gas	16.2	21.2
Nuclear	0.9	6.5
Renewables[5]	13.1	13.5
Total (%)	100.0	100.0
Total (Million toe)	6034	10574

Source: Key World Energy Statistics 2005, International Energy Agency

Coal is an important fuel for the European Union. Currently around 18% of the EU demand for primary energy is satisfied by coal, which makes it the third most important fuel (after oil and gas) for the whole EU. There are however countries like Poland and Czech Republic, where coal is the most important energy fuel for their economies and like Germany, where coal plays a more significant role than natural gas. Consumption of hard coal in Poland constitutes nearly 50% of the total consumption of primary energy sources in Poland, which makes the Polish economy the most hard coal-dependent among all EU countries. In addition lignite provides about 10% of Poland's primary energy demand with oil at 24%, gas at 13% and renewables at nearly 5% **(Table C.2).**

Table C.2: EU- 2004 Primary Energy Demand (%)

	Poland	**Czech R.**	**Germany**	**UK**	**EU-25**
Coal/lignite	58.8	43.4	24.7	16.5	17.9
Oil	23.7	20.9	36.1	35.1	37.2
Gas	12.8	17.4	22.6	37.7	23.9
Nuclear	0.0	15.1	12.4	8.9	14.6
Renewables	4.6	3.1	4.3	1.9	6.5
Total	100	100	100	100	100

Source: Energy and transport in figures 2006, European Commission; WB Team calculations

[4] *Key World Energy Statistics 2005,* International Energy Agency.
[5] Includes Hydro

Coal is the most important fuel for global electricity production. The share of coal in the power generation fuel mix has remained almost constant over the last 20 years; around 40%[6] of electricity is generated from coal (**Table C.3**). Taking into account the fact that electricity production has been tripled over these years this segment of the coal market has significantly grown and today constitutes 70% of world coal consumption. Steel producers (which use coking coal) are the second biggest market with a share of coal consumption at the level of 15%. However, looking ahead, the economic advantages of coal compared to other fuels, especially for electricity generation, are likely to be increasingly offset by concerns over global environmental impacts. Climate change concerns are likely to become one of the most important factors influencing the future development of the coal market both in developed and developing countries alike since currently, combustion of coal contributes almost 40% to the global CO2 emission[7].

Table C.3: World Electricity Generation By Fuel (%)

Fuel share (%)	1973	2003
Coal	38.2	40.1
Oil	24.6	6.9
Gas	12.1	19.4
Nuclear	3.4	15.8
Renewables[8]	21.7	17.8
Total (%)	100.0	100.0
Total (TWh)	6111	16661

Source: Key World Energy Statistics 2005, International Energy

Coal and nuclear are the most important fuels for electricity generation within the EU. Within the EU-25, nuclear energy and coal are the dominant fuels for electricity generation. But in Poland coal and lignite together account for 92% of electricity generation (of which hard coal is 55% and lignite is 37%) compared with 30% for the EU-25 countries **(Table C.4)**.

Table C.4: EU And Poland Electricity Generation By Fuel 2004 (%)

	Poland	Czech R.	Germany	UK	EU-25	World
Coal/lignite	92.1	58.9	48.4	33.5	30.0	40.1
Oil	1.6	0.4	1.7	1.2	4.2	6.9
Gas	3.3	5.6	11.6	40.5	20.0	19.4
Nuclear	0.0	31.2	27.6	20.3	31.0	15.8
Renewables	3.1	3.9	10.7	4.4	14.8	17.8
Total	100	100	100	100	100	100

[6] Ibid.
[7] World Coal Institute
[8] Includes Hydro

Source: Energy and Transport in Figures 2004 edition; European Commission; calculations of the WB team

The EU is becoming increasingly dependant on energy imports. Currently more than 50% of the EU energy needs is covered by imported energy fuels. Import dependency is the highest for oil (80%) and gas (55%) whereas coal whereas today coal production within the EU satisfies more than 60% of the EU demand for coal (**Table C.5**)

Table C.5: EU-Primary energy supply-import vs. domestic production 2004

	Total Demand Million tons of oil equivalent (toe)	Domestic Production (%[9])	Import (%)
Coal/lignite	311.9	61.8	38.2
Oil	650.6	19.8	80.2
Gas	417.6	45.5	54.5
Nuclear	254.4	100	0
Renewables	112.7	100	0
Total	1747.2	49.5	50.5

Source: Energy and transport in figures 2006, European Commission; WB Team calculations

C.2. Poland - Domestic Coal Demand Structure and Outlook

Polish power sector consumes about 39% of polish hard coal production. With regard to demand for energy coal, the Polish coal industry operates in a highly competitive market place. In the domestic market it competes primarily with domestic and imported gas and with coal imports from neighboring countries. About 63% of Polish hard coal production is energy coal that is consumed domestically by the power sector (39%), residential sector (20%), and heating sector (4%). The balance consists of coking coal sales to coke producers (15%) and coal exports (22%) of which over 90% is energy coal and the remainder coking coal.

Better quality coal preferred by the power sector due to emissions requirements. Coal is likely to face increasing constraints in terms of carbon and sulfur emissions which may impact future coal consumption. The Poland's annual allocation for emission rights for the 2008-2012 for CO2 will be in the range of 208-260 million tones[10]. The power sector is interested to purchase and burn best-quality coal which gives higher boiler efficiency and allows taking advantage of keeping below the required European Union emission's ceilings and then being able to sell possible emission credits. Thus, mines producing low quality energy coal will have a limited market potential because low quality energy coal is not economic for export due to transport costs and domestic sales may be constrained by customers requiring better quality coal.

[9] % of total consumption

[10] There is no final decision on this since Poland has protested against the EC decision which set the limit for 208.5 million tones.

European energy outlooks indicate that there could be intense competition between coal, gas and other sources for new power generation from 2005-2020. Unlike the rest of the world where the share of coal consumption in power generation has increased slightly in recent years, the use of coal for power generation in Europe declined from 42 million toe in 1990 to 32 million tons in 2005 but future European power generation projections by the EC indicate that coal consumption for power generation could recover to about 38 million toe in 2020. (**Table C.6)**. Overall, European power generation is expected to increase from 150 TWH in 2005 to 248 TWH in 2020 (an increase of about 70%). Substantial increases in power generation from coal, gas, and others (renewables and nuclear) are expected in this period along with substantial increase in power generation efficiency.

Table C.6: EU Electricity generation – 1990-2020
(Trillion WH and Million toe)

	Annual electricity generation; fuel input for thermal						Annual % Changes		
	1990	**2000**	**2005**	**2010**	**2015**	**2020**	**90/00**	**00/10**	**10/20**
Thermal TWh:	133.0	141.0	150.4	177.2	210.1	248.3	0.6	2.3	3.4
-Coal (Mtoe)	42.1	35.0	31.7	33.7	35.0	38.2	-1.8	-0.4	1.0
-Oil (Mtoe)	1.2	0.4	0.5	0.8	1.5	2.6	-10.0	6.0	12.6
-Gas (Mtoe)	0.7	0.7	2.1	3.8	5.9	7.7	1.5	17.1	7.3
Others TWh	1.4	2.1	3.8	5.7	8.6	12.7	4.0	10.4	8.4
Total TWh	134.4	143.2	154.2	182.9	218.7	261.0	0.6	2.5	3.6

Source: European Energy and Transport – Trends to 2030 European Commission (baseline Scenario) ; calculations of the WB team

The recent Polish energy strategy document indicates that in Poland future coal consumption will depend largely on the competition between coal and gas especially for new power generation and also in the residential sector. While there is likely to be a growth in electricity generation in Poland, the need for additional fuel supplies will be partly offset by efficiency gains (efficiency of power generation sector in Poland is almost 3 times lower than EU average) and the impact on demand for coal will depend on the fuel choice by utilities (coal competing most likely with gas and possibly with nuclear energy). With regard to the residential sector, the most important factor determining coal demand over the coming years is expected to be the extent of gas taking market share from coal in coal to gas conversions. Two demand scenarios have been prepared for energy coal – the first looks at a possible lower demand scenario for coal and the second looks at a possible higher demand for coal from 2007-2025.

The Lower Scenario is for Demand for Energy Coal in Poland to Decline by about 11 million tpy from 2007-2025. Energy coal sales to the domestic market in 2004 were 63 million tons and demand projections indicate that a "Lower Scenario" demand could be 15-20% below such levels, with a most likely estimate of 17%, based on order of magnitude (not plant by plant) estimates. The "Lower Scenario" demand outlook for energy coal is influenced by three factors. First, there may be no new coal fired power generation plants – if Poland diversifies away from coal to other fuels for economic or

environmental reasons. Second, even present levels of coal fired electricity generation may need to be reduced in order for Poland to comply with EU emissions limits in future. Third, coal may be unable to compete with gas in the household and small industrial consumers market because gas is a much cleaner and more convenient fuel. The "Lower Scenario" which is considered to be the lowest likely coal demand scenario for Poland is based on power coal declining by just under 10% and residential, small industrial unit and heat demand falling by 30%.

The Higher Scenario is for Demand for Energy Coal in Poland to Increase by about 8 million tpy from 2007-2025. In the "Higher Scenario" total polish demand for energy coal could increase somewhere in the range of 10-15% (with a most likely estimate of about 13%) if coal is able to sustain its sales to household, small industry and heat customers and if there is an increase in coal consumption for power generation. Regarding the household market, any increase in residential and small boiler use of coal is considered unlikely because as income rises consumers are more willing to pay for the convenience and cleanliness of gas and move away from coal to gas. Thus, the higher scenario is for residential coal consumption to stay at present levels. Regarding power generation, the outlook for coal will depend on two potentially related factors: namely (a) the ability of the power sector to meet CO2 and SO2 limits, and (b) the competitiveness of coal against gas and nuclear for new power generation capacity. The Higher scenario is based on a 20% increase in coal use for power generation from 2007 -2025. Taking into account both the lower and higher scenarios, future domestic demand for energy coal is estimated to be in the range of 52-71 million tons of coal in 2025 compared with 63 million tons in 2004 **(Table C.7)**

Table C.7: Poland - Energy Coal Demand 2004 - 2025
(million tons)

Market Segment	**2004**	**2025** **Lower Higher** **Scenarios**
Power	39	36-47
Residential	20	14-20
Heat	4	2-4
Total Energy Coal	63	52-71

Source: World Bank staff estimates (energy coal estimates include some semi-coking coal used for energy purposes)

C.3. Coal Supply and Outlook

Poland has abundant coal reserves but of mostly lower quality coal. Coal production capacity was estimated in 2004 at about 100 million tpy. Poland has vast coal reserves with an average overall mine life for the sector of 73 years at present from known reserves **(Table C.8)**. However, reserves of the highest quality coking and

highest quality energy coal are dwindling and the mines which have the longest lasting coal reserves are typically mines with the lowest quality coal. The high quality coking coal mines at JSW have reserves for remaining mine lives of only 12-28 years. For both energy coal and coking coal, the trend will be towards declining coal quality.

The Lower Scenario is for the Supply of Energy Coal in Poland to Decline by about 9 million tpy from 2007-2025. The lower scenario is based on mines closing due to reserve exhaustion without any counterbalancing increases at other mines**.** There are three energy coal mines in KW, two in KHW and one in JSW which are likely to close in the next twenty years due to exhaustion of reserves which would reduce production capacity by about 9 million tpy (about 11%). This is the "lower scenario"

Table C.8: Poland Hard Coal Reserves

Company	Year 2004 capacity (million tons)	Reserves (million tons)	Length of life of individual mines (Years)
KW	53	4687	7-76
KHW	19	1262	13-69
JSW	14	459	12-28
Others	14	958	n.a.
Total Sector	**100**	**7367**	**73**

Source: Ministry of Economy; Optimal Employment Studies

The Higher Scenario is for the Supply of Energy Coal in Poland is to Increase by about 10 million tpy from 2007-2025. . The "Higher Scenario" takes into account possible modest net increases in production capacity at KW and KHW and significant increases by Bogdanka and Budryk. There are three main reasons for potential production increases. First, due to lack of funds, the industry has under invested for the past several years and production can be increased significantly at some of the lower cost energy coal mines if investments can be made. The *Optimal Employment Study* identified that KW and KHW could increase production by 10-20% each, mostly at low cost mines with good quality energy coal. Production at both Budryk and Bogdanka could also increase by 50% or more each if capital was available. Second, the industry generally has a five-day operating week at present. A six-day operating week, which is standard operating procedure in mines in most other countries, could boost production without requiring any substantial additional investment. Third, there is scope for significantly improving productivity of underground mine workers through improved underground transportation from the shaft to the working face and, for some deeper, high quality coking coal mines, by improved air conditioning which would facilitate longer working time at the face. For the purpose of the "Higher Scenario", production of energy coal is estimated to increase by 10% each from present levels at KW and KWH and by 50% at other mines (the aggregate of JSW, Budryk and Bogdanka).

Jaworzno – an example of substantial production increase at one single mine. The scope for increasing energy coal production at mines with good reserves and access to capital, is illustrated by the case of the Jaworzno mine **(Box C.1)**.

Box C.1: Jaworzno – An Example of Hidden Capacity

The Jaworzno mine was made into a joint venture between NSW (a predecessor of KW) and the Southern Power Company in 2002. Production at Jaworzno has increased from 0.9 million tpy in 2002 to 2.5 million tpy in 2005 as a result of investments of about 100 million PLN and improved working methods

The Future Supply of Energy Coal in Poland is expected to be in the range of 75-98 million tpy. Energy coal supply projections (including semi-coking coal used for energy purposes) indicate that in the "Lower Scenario" energy coal production would decline by about 9 million tons per year from present levels and in the "Higher Scenario" it would increase by about 13 million tons per year **Table C.9**. The "Lower Scenario" estimate is considered unlikely, because it assumes that production declines due to exhaustion of reserves are not offset by increases in production at other energy coal mines in the sector. The more likely situation is that production declines will be at least offset by increased production at other mines. The Higher Scenario estimate is considered quite possible – especially if capital can be raised for expansions at Budryk and Bogdanka and if the mining companies are able follow the example of Jaworzno.

Table C.9: Poland - Energy Coal Production Capacity in Poland 2004 - 2025 (million tons)

Company	2004	2025 Lower Higher Scenarios
KW	53	48-58
KHW	19	16-21
Others	13	11-19
Total	85	76-98

Source: World Bank staff estimates (energy coal estimates include some semi-coking coal used for energy purposes)

C.4. Energy Coal Supply and Demand Balance Outlook

Supply Demand Outlook. The interaction of demand and supply factors indicate that there is every reason to think that Poland will continue to have all the energy coal it needs from an energy security point of view. **Table C.10** brings together the demand projections from **Table C.5** and the supply projections from **Table C.9**. The overall outlook is that the industry will continue to have exports of 23-24 million tpy. Thus, from a risk standpoint, the bigger risk is not that Poland will be short of coal, but that KW

will continue to have to export 20% or more of its production in a situation where the export market is more volatile and risky than the domestic market.

Exports. Comparing the higher scenario demand (71 million tpy) with the lower scenario supply (76 million tpy), there would still be a modest excess supply of energy coal of about 5 million tons per year for exports. Conversely, comparing the lower scenario demand (52 million tpy) with the higher scenario supply (98 million tpy), there could be an excess supply of as much as 46 million tons per year which would need to be exported . However, it is to be expected that neither of these two extremes would occur. More likely scenarios are that if domestic demand is tending to decline then net production decreases are also likely to occur. Equally, if demand is rising then production would also be likely to increase. These two outlooks would put future coal exports in the range of 24-27 million tons per year i.e. very close to present levels as shown in **Table C. 10.**

Table C.10: POLAND - Energy Coal Supply-Demand Balance 2005-2025
(Million tons)

	2005	2025 Lower Higher Scenario
Domestic Supply	85	76-98
Domestic Demand	63	52-71
Balance for Export	22	24-27

Source: World Bank staff estimates (energy coal estimates include some semi-coking coal used for energy purposes)

C.5. Energy Coal Exports and Competitiveness with Other Coal Producers

Export Market Competition. About 25% of Polish hard coal production is presently exported all of which goes into the European market. Polish coal competes in the European market with imports from major exporters with low cost production such as Australia, South Africa, Russia and the United States. The production cost differentials between Poland and low cost export producers in other countries are partly offset, at least in the case of Australia, South Africa, and the United States, by ocean transportation costs. But even so, some of KW's mines are scarcely competitive for exports.

Uncertain Coal Export Prices. World coal export prices are subject to large swings. Using the annual average coal export prices from Australia as a marker price, these increased from USD27.8 per ton in 2003 to USD54.7 per ton in 2004 before falling back to USD 47.62 per ton in 2005 and stabilizing at the level of USD 49.09 per tone in 2006 **(Table C.11)**. But the annual average prices mask a much sharper movements in monthly terms. The average monthly coal export price from Australia peaked at USD63.1 per ton in July 2004 and then declined by nearly 30 % to USD44.9 per ton in October 2005. This negative trend has been reversed and during the first three months of 2007 prices have been slightly above USD 50 per ton.

Table C.11: Australia Coal Export Prices
(USD per ton)

	2002	2003	2004	July 2004	2005	2006
Price	27.1	27.8	54.7	63.1	47.62	49.09

Source: World Bank

World coal market prices are likely to decline in the longer terms. Average coal production costs **(Table C.12)** are as low as USD12-14 per ton at large surface mines in countries like Australia, Russia, South Africa and USA. There are abundant reserves of coal worldwide and plenty of scope for increased coal production at this lower end of the cost range which would indicate that, even after allowing for ocean transportation costs, international coal prices are presently well above the long run world marginal cost curve. Thus, Polish coal export prices can be expected to decline as world coal supply and demand move back into balance in the next several years.

Table C.12: Hard Coal Production Costs (USD per ton) 2006

	Av. Prod. Costs	**Average Productivity (thousand tones/employee/year)**
Poland	27 – 70	0.8
Australia	13 – 38	12.9
South Africa	14 – 25	4.7
USA	12 – 38	12.8
Russia	12-35	n.a.

Source: World Bank estimates

Poland is a high cost producer compared to other exporters. The average costs of polish underground coal production are in the range of USD30 – 70 per ton, which puts Poland at a competitive disadvantage. Poland's hard coal is found in deep deposits which can only be mined through underground methods. Due to the nature of the coal deposits, the difficult underground mining conditions and the lack of investment in new equipment, average coal worker productivity is much lower in Poland than in these other countries. While there is scope for the industry to modernize and reduce costs Poland will always have higher mining costs than its competitors and will depend on its transportation advantage to help it compete in Europe.

There will be a plentiful supply of Polish energy coal in future to contribute to Poland's energy security. The coal market analysis as summarized in **Table C.10** indicates that the risk of Poland running short of coal is very modest. Domestic markets needs will be easily covered and exports are expected to be in the 24-27 million tpy range

– slightly above present levels. Even, in the very lowest case for exports (where capacity falls by 9 million tpy and domestic demand increases by 8 million tpy) there is still likely to be a surplus of domestic supply over demand of about 5 million tons per year. But if overall capacity increases and demand declines, exports of 46 million tpy could be needed for capacity to be fully utilized. **Thus, the bigger risk will not be if the hard coal industry will be able to supply all the coal it needs for its domestic consumers, but rather if the industry will be able to export all of its surplus energy coal and sell it at a profit or not**

C.6 Coking Coal production and Domestic and International Markets Outlook

The strong world coking coal market is also starting to weaken. The market boom for coking coal which has been observed during the last 3 years has been mainly driven by substantial increase of demand for steel from both China and India. Although demand for coking coal will likely still be strong in the coming years, consolidation of the steel industry has decreased bargaining power of coking coal producers, which has already been seen by prices declining in 2005 and 2006.

The Polish Coking Coal producers are facing a smaller number of buyers who have stronger buying power than previously. Due to consolidation of the steel industry (recently LNM and Arcelor, who were JSW's two largest customers in both the domestic and international markets, have merged) JSW may find itself with lower bargaining power in both the domestic and the international market than previously.

JSW is doing its best to sustain present production levels of higher quality coking coal, but its production will progressively decline. As demonstrated by the reserve data in Table C.8 JSW has only limited reserves of higher quality coking coal and its present mines have remaining lives of only 12-28 years. Some of JSW's mines will be merged together due to make the best use of it present limited reserves of high quality coking coal. JSW will be able to add new capacity because it is merging with Budryk which has very large coal reserves, but these are not the same high quality coking coal as at most of JSW's present mines. JSW also sees possibilities for developing new deep deposits if the capital needed can be mobilized and if the deposits are economic. JSW also sees possibilities for developing new deep deposits of high quality coal if the capital can be mobilized - but the development costs will be very large – as much as 2 billion Euro over two decades.

D. THE FUTURE OF THE POLISH COAL INDUSTRY

D.1 Key issues to consider for the Future for Poland's hard coal mining sector-

There are several key issues to be addressed in completing the restructuring of the hard coal industry. If the mining companies are to achieve sustained profitability, they need to be able to see the right product in the right market at the right price and to build a lower

cost, safer and more competitive industry where production is shifted towards the lowest cost mines. There are a number of actions that companies can take to improve labor productivity, reduce labor costs and reduce their environmental footprints. For KW the key strategic challenges are to finding better export markets, rationalize production and strengthening its balance sheet. For JSW the challenges are to complete the merger with coking plants and mobilizing funds to develop both new capacity at Budryk with which it is being merges and new coking coal capacity in undeveloped new, deep coal deposits. KWH has developed into a strong, well managed company and the next step is a stock exchange listing. The government can help ensure that the industry is financially strong and has access to the capital it needs by setting and implementing a new privatization timetable. Holding back from privatization would leave the companies with very limited access to capital and the government at risk if the industry should start to lose money again in future. Limited, ad hoc privatizations would improve corporate governance and depending on the nature and size of the transaction may improve access to capital. A comprehensive approach to privatization can substantially improve corporate governance and access to capital and would also likely provide some revenues for the treasury.

Key measures can be taken to strengthen corporate governance until such time as privatization takes place. Improving corporate governance in the mining companies should be a key priority for the Government and, until such time as privatization takes place, should cover the following aspects:

- ensure that the management boards of the mining companies include managers with strong economic/financial capabilities;
- ensure that competent professionals are appointed to represent the owner on the supervisory boards of each of the mining companies;
- make one supervisory Board member a full time appointment;
- ensure that annual financial audit is conducted by top-class international auditors;
- ensure publication of full annual financial statements including auditors' comments and notes;
- give clear guidance to the supervisory board members, and through them to the management board members, as to what the owner requires, including, in particular, actions to reduce costs such as
    - improved cost control of labor costs, out sourcing costs and non-labor (e.g. materials, energy and services) costs;
    - optimal production concentration – shifting production from high cost mines to low cost mines

Such actions will help match the standards of supervision in private companies and will help the Government to prepare companies for privatization.

D.2 The Right Product in the Right Market at the Right Price.

World energy markets are subject to greater uncertainty today than at any time in the past two decades. Future oil prices could be any where in the US$30 – 70 per bbl range. There is equal uncertainty about the future of natural gas prices. Poland needs a

robust coal industry to deal with this situation. The industry needs to be able to stay profitable if world energy prices fall back to the level of the late 1990s. This means ideally producing good quality at a low cost which is sold to a stable market where the industry is more of a price maker than a price taker – such as the domestic market or export markets that can be reached by land transportation. It also means reducing or eliminating production of a poor product (e.g. low grade coal) being sold at a poor price into a poor market (e.g. to coastal ports in Europe where Poland's coal competes directly with coal from other major exporters such as Australia and South Africa). Having the right product in the right market at the right price depends not only on well designed marketing but also on well prepared production plans, both of which are part of the mining companies annual Technical and Economic Plans (TEPs). Low quality coal that is exported through the North Sea ports would be an example of the wrong product in the wrong market at the wrong price. This type of production should be minimized and eliminated.

D.3 Building A Lower Cost, Safer and More Competitive Industry .

The guiding principles are to produce from the lowest cost mines, while minimizing new hiring and strictly controlling non-labour costs. The market analysis in Section C underscores the importance of the mining companies improving their competitiveness if they are to compete effectively against other producers and other fuels. Thus, it will be important to continue the same approach as before with the Ministry of Economy as owner's representative giving clear guidelines and objectives to each company so long as it remains under state ownership and control. The guiding principles that Ministry of Economy should give to the companies are to (i) shift production to the lowest cost mines or parts of mines, and reduce production at the highest cost mines or parts of mines if they cannot meet the test of profitability; (ii) to refrain from hiring new employees, except for those required by statutory agreements or needed to sustain mining for the domestic market or for exports that can meet the test of profitability; and (iii) to make a concerted effort to reduce non-labor costs, which have risen sharply in 2004 and 2005 largely due to increases in outsourcing and materials costs. This will require more stringent cost control, in particular, through purchasing goods and services on a strictly competitive basis and wherever possible introducing computerized "procurement" bidding procedures for standardized goods and services.

(i) Shifting production towards lowest cost mines;

Restructuring slowed down in 2004-2006 and capacity reduction targets were not achieved. The improved financial performance of the hard coal mining companies has led to a noticeable slow down in restructuring activities in 2004, 2005 and 2006 and the implementation of the *"Alternative Restructuring Scenario"* under the Government's *Hard Coal Reform Program for 2004 – 2006*" with less capacity closure and employment downsizing than in the original "Base Scenario". While some further closure of parts of mines (mostly by KW) and mergers of mining areas by all three mining companies that took place in 2005 and 2006, there was no new whole mine closures. As a result the

industry capacity was not only above the targets of the original 2003-2006 Reform Program, but also above the more modest targets of the Alternative Scenario.

Production is not presently being optimized by the mining companies. Most importantly, *the Optimal Employment Study* finds that there is scope to increase production at some of the lower cost mines and reduce production at higher cost mines. Specifically, *the Optimal Employment Study* identified scope for increased production at mines such as Marcel and Jankowice at KW and Wesola and Staszic at KWH. The Ministry of Economy is well familiar with the operations of the companies and, as the representative of the owner, should clearly indicate through the Supervisory Boards that it expects the mining companies to prepare annual technical and operating plans that take into account the findings of the *Optimal Employment Study* and result in a progressive ramping up of production at the mines with lower costs and a reduction of production at mines or parts of mines that are higher cost and/or have poorer quality coal.

Non-Labor Costs rose sharply from 2003-2006 and need to be carefully monitored and addressed.

It needs to be emphasized that costs discipline is one of the element which requires especial scrutiny in this sector and the owner should employ every effort to impose this on the mining companies. Ensuring that outsourcing is efficient and finding ways to reduce materials costs will be an important part of improving the industry's competitiveness and would help offset possible coal price declines. The Ministry of Economy, through the Supervisory Boards, should ensure the 2008 Technical and Operating Plans address the need to demonstrate efficient outsourcing and to contain and reduce materials costs.

(ii) Improving labor productivity and reducing labor costs

There are still many excess surface workers but government instruments to encourage voluntary departures have proved ineffective. A second important finding of the *Optimal Employment Study* is that there is also scope for the mining companies to reduce employment at existing operations especially related to auxiliary services and surface workers. As part of the 2003-2006 Program, the Government had introduced some instruments specifically designed to encourage surface workers to leave the industry and to encourage employers to create new jobs for surface workers – but very few workers have used these instruments, largely because the improved financial performance by the hard coal mining companies has reduced workers' concerns about the industry's future and the perceived need to leave the industry. To date less than 100 surface workers have used the available instruments, whereas the mining companies had expected several thousand workers to use the instruments.

Government initiatives to create non-mining jobs can help excess workers leave the hard coal industry. Downsizing of the surface labor force is clearly much easier when alternative jobs are available. Coal industry employment restructuring was supported by the Government approved "*Program of Alleviating Hard Coal Mining*

Employment Restructuring Effects in the Region of Silesia" which was approved by the Council of Minister on January 28, 2003 (the Silesia Economic Program). This Program was aimed at job creation and economic recovery initiatives for the whole of the Silesia Region (not just the coal industry). This initiative proved to be successful with more than14,000 jobs saved and 1,800 new jobs created and should be seen as best practice for regional development initiatives. While heavy industries such as hard coal and steel will remain core industries for Silesia, they are unlikely to be sources of increased employment in future. The growth sectors for Silesia are to be found in higher technology and service industries. The next few years, while EU funds are available, offer Silesia a window of opportunity to develop these new sectors. It is, therefore, important that the coal industry release its surplus employees and land so that Silesia can diversify into new industries and take full advantage of EU funds while at the same time having a smaller but healthy and profitable coal industry.

About 25% of underground workers will retire from 2007-2010 which creates a unique opportunity to close higher cost/lower quality coal production without layoffs. As many as 23,000 underground miners could leave the industry from 2007-2010 due to the renewal of early retirement provisions for underground miners (**Table D.1).** While KW is presently exercising great control over any hiring, the general approach of the other mining company managements is to be gearing up for a significant round of hiring to replace these workers. If this happens, a key opportunity to downsize the industry and close the higher cost/lower coal quality production mines and parts of mines will have been missed. In order to avoid a situation where Government is paying to reduce employment at the same time that mining companies are hiring, the Ministry of Economy as owner's representative should ensure that Supervisory Boards carefully scrutinize any new proposed new hiring and ensure that there is no large scale hiring of workers to replace retiring workers.

Table D.1: Expected Retirements – Based on Present Miners Pension Law

	2007	2008	2009	2010	Total
Underground	6038	5872	5535	5330	22775
Surface	585	576	646	597	2404
Total	6623	6448	6181	5927	25179

Source: Mining Companies 2004-2010 Business Plans

The 2005 Optimal Employment Study concluded that the industry continues to have excess production capacity and surplus workers. Recognizing the need to address the near term situation, and in particular a lack of take up of alternative employment opportunities by surface workers, the Ministry of Economy commissioned an *Optimal Employment Study* in 2005 which was undertaken by a combination of local and international consultants. The major conclusion of the study was that despite the restructuring progress so far, the industry continues to have excess production capacity and surplus workers. The study outlined a number of actions each mining company could take to reduce its costs and improve its competitiveness. The findings have since been discussed with the mining companies, who each prepared their response. In view of

the conclusions of the study it would be important for the Ministry of Economy, through the Supervisory Boars, to ensure that the mining companies limit their hiring of new workers to the following actions: (i) hiring due to statutory requirements (such as workers returning from military service); (ii) filling the need for scarce skills (such as workers with information technology skills); (iii) meeting underground safety and efficiency needs (for example skilled electricians); and (iv) sustaining production at mines which sell to the domestic market or can sell profitably in the export market.

The Ministry of Economy as Owner should give guidance to Supervisory Boards to carefully scrutinize new hiring and ensure that large scale new hiring does not take place especially by KW. The Ministry of Economy has an important choice to make as the owner's representative. It can either allow the companies to make employment decisions without any guidance from the owner or it can clearly indicate that it expects the mining companies to prepare annual technical and operating plans for 2007-2009 and thereafter that take into account the findings of the *Optimal Employment Study* which includes most importantly redeploying workers so that production can be increased at low cost mines and reduced at high cost mines. Given the need to reduce loss-making excess capacity, KW should be especially cautious about hiring new workers to replace retiring workers and instead should keep positions at profitable mines filled by moving workers from loss making mines and then reducing loss making capacity.

Controlling Labor Costs. Wage Negotiations. Pressure to increase salaries has been always high in the hard coal mining sector. This became especially visible during 2005 and 2006 when prices of coal have increased substantially both on international and domestic markets. In 2004, with the exception of JSW, mining companies were able to keep wage increases in line with productivity increases and the average monthly salaries in the hard coal mining companies rose by 3.2% compared with a 3.3% increase in the average productivity for the industry. In the case of JSW, which is not obliged to follow the Government's guidelines because it does not receive any support for miners social packages, wages rose by 8 % in 2004 whereas productivity increased only by 0.8%. During the 2005 coal industry salary increases have exceeded productivity growth with salaries in the mining companies increasing by 3.9%-4.5% compared with 3.5% increase in average labor productivity for the sector. The same situation repeated in 2006, when the coal industry salary increased by 3.5% (in KW and KHW) to 9% in JSW, compared with 0.3% increased in average labor productivity for the sector. In the long-run, higher salary gains compared to productivity increases might jeopardize development perspective of the companies by limiting their investment abilities and competitiveness.

Possible Improvements. In order to better control labor costs and improve the sector's competitiveness the Government should improve owner's oversights of the sector (especially wage settlement process) and to reconsider if new arrangements can be devised which could help establish a stronger linkage between wages and productivity. The present linkage between wages and financial performance while politically appealing may result in substantial difficulties in future years because it may mean that wages ratchet upwards during periods of price increase but do not come down if coal prices fall.

An alternative approach would be to introduce explicit caps into the tripartite negotiations (for example, wages shall not rise more than productivity in the sector), which will be then implemented on a company level. A flexible wage element or performance bonuses can be considered (on top of the base wage) which could be based on annual performance and results of a company. Such a wage structure would allow more flexibility in case of prices falling down and/ or financial performance of a company deteriorating.

Underground Worker Transportation. All mining countries have regulatory requirements to ensure sound mine safety practices. But not all countries share the same regulations. In Poland, the regulations on underground transportation of workers tend to be more restrictive than in other countries because of the more difficult operating conditions – such as steepness of incline and descent, roof height and roadway width. As a result at some mines anywhere from 10%-20% or more of available working time can be lost because of the time needed for the worker to get from the shaft to the coal face. There may well be possibilities to improve productivity and competitiveness by updating the regulations to provide for increased use of mechanized underground transportation for mine workers (such as increased man riding on underground conveyors) as happens in other countries while at the same time maintaining present safety standards. To see if any such possibilities exist, the Ministry of Economy, together with the Higher Mining Authority and in consultation with representatives of the mining companies and the trade unions, could set up a process to review the regulatory regime with a view to identifying and introducing changes that would support increased industry competitiveness while at the same time ensuring fully adequate safety standards**.**

D.4 Coal Mining Continuing to Reduce Its Environmental Footprint

Environment Protection Plans 2007-2015 Mining enterprises should continue the implementation of strategies that help limit the negative environmental impact of hard coal mining for the years 2007-2015. The objectives and tasks set forth in such strategies should be taken into consideration in the Technical and Economic Plans (PTE) and Business Plans (BP) of coal companies. Such strategies shall be submitted to the Ministry of Environment for opinion, while the supervisory boards of the companies shall be responsible for incorporating the pro-environmental provisions into the PTE and Business Plans to supervise their implementation. The undertaking by coal companies of actions related to increasing revenues by rational management of by-products and waste (such as natural gas, waste rock, water) which can result in cost savings and revenue generation is an important element of such strategies.

Large–scale dewatering. Large–scale dewatering is necessary for the protection of the operating mines against flood hazards including those from nearby operating mines and, also closed mines. The Ministry of Economy and Ministry of Environment have organized studies to identify options to reduce dewatering costs and a Dewatering Master Plan has been prepared and an Implementation Action Plan is being developed by SRK in consultation with other parties. A Task Force consisting of representatives of the mining companies and SRK was set up for the preparation of an implementation action plan. Regarding the possibility of achieving savings by having pumping take place at operating

mines (instead of closed mines), careful assessment of the implications for institutional and payment arrangements is needed so that the option can be considered for implementation. The Ministry of Economy should ensure that SRK finalizes the least cost dewatering options while taking into account safety requirements and then prepares a well costed action plan. Following review and approval by the Ministry of Economy, MoE should put in place the necessary implementation and funding arrangements with support from Ministry of Finance as needed.

Mining Damages. The issues regarding removal of mining damages relate to improving procedures to address mining damages within mining company license areas, preparing a full assessment of past legacy outside of mining companies license areas, developing a well costed and prioritized action plan to repair the damages and making the necessary implementation and funding arrangements. Existing procedures place the burden on the property owner to seek repair of mining damages through legal actions, which sometimes causes long delays in such repairs being made by the responsible parties, and there is also a lack of good implementation capacity. In order to identify the scale of this problem, the Ministry of Economy should ensure that a comprehensive subsidence data base is prepared and made available to the public together with a subsidence monitoring system for the whole Silesia region. The Ministry of Economy should then ensure that a long term program for subsidence removal is prepared with identified priorities and is then properly funded with support from the Ministry of Finance for any necessary budget allocations for areas outside the mining companies licensee areas. Removal of mining damages might help accelerate economic development of post-mining areas and create employment opportunities for people leaving the sector.

D.5 Future Prospects of the Polish Hard Coal Mining Companies

(i) Kompania Weglowa KW - Finding Better Markets, Rationalizing Production and Having the Funds to Meet All Its Needs

Kompania Weglowa's financial outlook is heavily dependant on sales to export markets where prices are much more uncertain than in the domestic market. Broadly speaking, there are three possible export price scenarios. First, if export prices remain at present levels or higher, all should be well for KW. Second, if export prices decline only slowly (say 10% per year), and if KW gets needed assistance in terms of completing the capital injection and stretching out its payment of deferred liabilities, KW may have time to make needed adjustments and be able to cope. Third, if export prices decline rapidly and severely (say back to 2003 levels in 24 months), KW will face an unmanageable financial situation and will have to rapidly reduce loss making production for export markets if it is to stay viable. The year 2006 demonstrated how financially vulnerable KW is. With reduction of export prices from 171 PLN per ton to 155 PLN per ton KW has incurred overall loss on its operations of 55 million PLN.

Kompania Weglowa (KW) remains financially at risk and specific measures are needed to strengthen its financial stability. Kompania Weglowa has been a major actor in the restructuring process of the industry over the years 2003-2006. During this

period the company managed to reduce employment by around 14,000 people, downsize production by around 4 million tons per year (tpy) and meet a hard budget constraint. Over this time, KW has also been largely profitable which has been achieved by a combination of its restructuring efforts and an improving coal market situation- especially the international coal market. Despite the good financial performance of the company during the past three years KW is still financially vulnerable.

Given KW's current situation there are three main challenges which the company must address if it is to be profitable and avoid the risk of sever financial distress

- find new market opportunities and reduce dependency on exports through northern sea ports.
- develop more flexible production systems, reduce loss making production and control costs.
- generate the funds needed to meet its financial obligations to public agencies and at the same time mobilize the capital needed for its investment needs

KW's financial risks are due to large coal exports where costs may exceed price. The total volume of KW coal exports has been at the level of 12-15 million tpy which is roughly 30% of the company's annual production. 80% of this coal is sold through the northern sea ports, which puts KW in a very vulnerable position, because of its high transportation costs and low market power as it competes with other major international coal producers. While these exports have been profitable during the recent world coal price boom, KW is vulnerable to large losses if world prices fall back to the level of the early 2000s. There are three ways to address this issue of dependence on exports through the northern sea ports:

- Find new market opportunities on the domestic market
- Find new inland export markets and redirect export from sea ports;
- Reduce production by the amount of coal sold through northern sea ports.

The strategy to find new market opportunities should be based on an assessment of KW's ability to reduce its dependency on exports through northern sea ports. This will need to take into account the comparative strengths and weaknesses of its products, its marketing capabilities and its transportation costs and logistics compared with other producers seeking to sell in the domestic and inland foreign markets which are both highly competitive markets. There are also clear possibilities to shift some coal from export markets to the domestic market to be sold as "ecological" coal products for household markets. But overall even if KW is successful in expanding such sales and in taking away some sales from competitors in other market segments in both the domestic and export markets, the increased volumes that KW may be able to sell in these markets are likely to be rather modest, perhaps 3 – 4 million tons per year at most. To implement the any such changes in the sales structure, KW would need to develop much stronger marketing competencies than it has had so far. This might require changing its business model to establish much closer relations with key clients both in the domestic and

international markets and much better ability to adjust to market expectations regarding coal quality, logistics, etc.

KW's approach is to develop more flexible production systems and reduce costs. The management of KW well recognizes the need to improve its production systems in order to strengthen its competitiveness. Currently the production structure of KW is very inflexible in terms of the ability of the management board to concentrate production in the most economically and technically efficient parts of coal deposits. Lack of such flexibility shows a significant risk for company's operations in the next few years. With the present system in place KW will not be able to use available labor and equipment in the optimal way which might jeopardize competitiveness of the company. The management of KW plans to improve its production systems by (i) establishing regional production centers which would coordinate production and be responsible for human resources for the mines in the regional centre; and (ii) centralizing procurement, financial management and marketing for the entire company. The best opportunities for KW to reduce its average costs are considered to be by shifting production from higher mines to lower cost mines. In addition, KW should also maintain a strong cost focus to improve its long-term competitiveness and stability by reducing costs and (i) making every effort to establish a common labor agreement and (ii) finding further ways to improve its procurement procedures including maximizing the use of "e-procurement" and other approaches that would help ensure competitive bidding.

New Government initiatives are needed if KW is to be able to continue servicing its debt and continue meeting a hard budget constraint. KW took over the majority of liabilities from the five predecessor mining companies, which currently amount to 1.7 billion PLN. Most of these liabilities were deferred and are now becoming due for payment until the end of 2010 **(Table D.2)**, which imposes financial obligations on KW at the level of roughly 425 million PLN annually starting in 2007. Because of the improved export prices and financial performance of the past two to three years, the restructuring of KW's balance sheet under the 2004-6 Program has not been completed. Taking into account the present cash flow of the company and the overall structure of its operations, KW does not expect to be able to service this deferred debt without using one of or a combination of the following instruments:

- The government as owner completing the capital injection in accordance with the 2003 – 2006 Reform Program;
- The government agreeing to rescheduling to 2013 repayment of deferred liabilities by KW to different government entities

Both these instruments warrant careful consideration since the financial stability of KW in the event of further coal price declines in export markets is a high priority towards demonstrating sustainability of reforms undertaken in the sector.

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Table D.2: KW - Schedule of repayments of deferred liabilities

	2003	2004	2005	2006	2007	2008	2009	2010
Amount (million)	**0,0**	**128,2**	**412,1**	**319,2**	**203.4**	**469.7**	**469.7**	**469.6**

Source: ARP

KW should prepare a cash flow analysis under different price scenarios separating cash and non- cash items. Cash flow analysis remains one of the continued weaknesses of the all of the mining companies' business planning activities because it typically includes both cash and non-cash items. The management board of KW should present to the owner the outlook for KW's liquidity and cash flow under a variety of price scenarios carefully separating cash and non-cash items. At the same time, the owner through the Supervisory Board should also carefully scrutinize the production, sales, cost and price assumptions underlying the various scenarios in the light of the production and marketing actions which KW intends to take as outlined above. The owner should ensure that KW has the financial robustness to deal with export price volatility; otherwise all that has been accomplished so far could be put at risk for lack of willingness to properly address the continuing vulnerability.

(ii) The Future of JSW - Completing the Merger with Coking Plants and Mobilizing Funds to Develop New Coking Coal Capacity

JSW's faces a challenging and potentially difficult future despite recent years of record profitability. JSW has benefited much more than the other companies from the coal market boom because the market for coking coal has been even better than the market for steam coal in the past few years. Specifically domestic coking coal prices increased by 70-80% from 2003-2005 compared with only 20% for domestic energy coal prices, although coking coal prices have decreased since.

JSW has been very profitable in recent years but this has mainly been caused by external market factors rather than a conscious strategy of the management of the company. Over the years, JSW has also used the good performance of its coking coal mines to offset the poorer performance of its energy coal production. JSW has been less successful in controlling costs and has been more generous with wage settlements than the other companies in the sector. Furthermore, the government took the decision to merge JSW with three financially troubled coke plants (Przyjazd, Walbrzych and Myslowice) to form a coking coal/coke combinat which has delayed possible privatization actions and swallowed up most of JSW's recent financial gains.

Given JSW's current situation there are four main challenges which the company must address if it is to have a long run future.

- setting investment priorities in the light of potential new deep coking coal deposits plus development possibilities for energy coal and semi-coking coal at Budryk
- mobilizing funds needed to implement an investment program which is likely to be substantial
- operating in a market dominated by one buyer; and
- decreasing and then containing production costs.

With the potential addition of Budryk, JSW need to carefully consider its future development options. JSW faces rapidly declining high quality coking coal reserves and it is inevitable that JSW's production of high quality coking coal will decline in coming years. New deposits of high quality coking coal are available to be developed but these will require vast amounts of capital to develop and will not fully cover the amount of high quality coking coal production decline in the future. In addition, the recent decision to merge Budryk into JSW has given JSW access to very large energy coal and semi-coking coal reserves. In order to set investment priorities JSW needs to prepare a strategic analysis of the costs and benefits of (a) developing new deep coking coal deposits; and (b) developing reserves at Budryk so that it can set strategic priorities for its future.

In order to secure its future JSW needs to mobilize substantial funds to develop new coking and thermal coal reserves. Before JSW can approach the capital markets for the funds that are needed to develop new mining areas it must first finalize establishment of the coking coal group consisting of JSW, Budryk and the three coking plants which is long overdue. Once this is completed, the best way for the owner to ensure that JSW can raise the funds it needs is to ensure, through the Supervisory Board, that JSW's Management Board prepares and presents a strategy that is accepted by the market and can demonstrate sound development perspectives for the company. JSW may well face significant challenges in raising the funds to both develop new, deep high quality coking coal reserves and expand production at Budryk which has attractive possibilities. JSW could then be offered for listing on the Warsaw stock exchange according to the privatization strategy. By doing this JSW would get access to the needed capital and without which its future remains highly uncertain. At the same time the company would be subject to scrutiny of private investors who would make sure that their money is put into the stable business.

JSW also faces a more difficult market situation because its two main customers – in both the Polish and the export markets – have merged. Beyond mobilizing the capital to ensure it has a future, like KW, JSW willl need to posotion itself to respond to changing market circumstances and will need to improve its marketing capabilities and consider carefully how to position itself so that it has reliable customers and does not again have difficult selling its coal during periods of very high prices.

JSW will also need to be much more cost conscious. In the past it has benefited greatly from its high quality coking coal reserves, but these days advantages position will likely

soon be gone. It has had higher wage settlements and has not shown a high degree of costs conciuonsness and will need to adapt to more difficult financial situation.

(iii) The Future of KWH - A Stock Exchange Listing

The last 3 years has been a very good period for KHW. The company managed to position itself on stable markets (both domestic and international) which helps ensure more stable prices. Such an approach allowed the company to increase its year to year profit in 2006 by 10%, which was exceptional looking at the performance of the entire sector. The main elements of KHW's strategy which helped the company be successful are:

- Eliminating export through sea ports and hence reducing both transportation costs and the risk of export price declines;
- Developing strong relations with key clients and adjusting the quality of products to clients' requirements;
- Developing a market segment which uses "clean" coal products.

KHW's strategy for the period 2007-2015 is to :

- Sustain present production capacity of the company;
- Strengthen its relations with key domestic clients and increase its ability to penetrate foreign markets through inland water channels.

Continued implementation of these elements will likely allow KHW to secure its future. The best way to ensure that the company's strategy is implemented in the most satisfactory manner would be privatization through the stock exchange. This would be beneficial for the company because of improved access to capital for its operations and stronger shareholder and lender oversight. Thus the key challenges for KHW are to:

- sustain present production capacity and the present good cost control
- strengthen its relations with key domestic and export clients
- list on the Warsaw Stock Exchange

(iv) The Future of Other Sector Companies

Bogdanka has some of the greatest development potential of all mines in the sector. This mine can continue functioning as an individual enterprise and privatized to improve its access to capital for expansion. However, there could be possible savings on overheads in the case of integrated enterprises. Another options could be to integrate this mine with one of its key clients i.e. one of the major power groups if an attractive e offer is received.

Weglokoks has developed over years very good logistics although its marketing strategies appear to have been less effective in recent years. When deciding about the future of this company, the Government should analyze how the whole sector and especially KW can benefit from Woglokoks' skills. It should be emphasized that logistics and marketing capabilities of Weglokoks could be best used if the substantial financial margins generated by this entity on coal exports were used to improve the financial situation for KW.

SRK and BSRK were established with a special purpose to conduct mine closure and post-liquidation activities. In future major liquidation and post-liquidation works will be conducted by the mining companies, so the Government should carefully analyze what scope of work (besides dewatering) can be conducted by these two entities and adjust their structure to new tasks, if such are established, or in other case decide how best to phase out operations of one or both entities. Both companies have developed very valuable skills in planning and implementing mine closure process and post-liquidation activities which may be of use to the mining companies.

D.6 Ensuring that the Industry is Financially Strong and has Access to the Capital it needs.

Privatization can help ensure that the gains made so far are consolidated so that the industry contributes to Poland's energy security and does not become a burden for the Government again. What is the best way to ensure that the industry does not return to a loss making condition given the progress that has been made so far? A successful coal company privatization would be a major achievement for the Government and a clear demonstration to the rest of Europe of its resolve to stake out a more limited role for the public sector. This would send a powerful signal to all investors both domestic and foreign. Privatization will bring with it improved corporate governance in terms of being subject to the discipline of private sector owners and lenders. A properly structured privatization will help improve, not reduce, energy security since it would improve the access of the industry to private sector capital for much needed investment funds and would help ensure that energy coal production capacity evolves in line with market forces. Last but not least it would enable the industry to lock up the efficiency gains achieved so far and, through improved corporate governance to push for continued growth of economic value by making capital-market enforced investment and operating management decisions.

The Government has prepared a privatization strategy but not implemented it. Over the past several years, the Ministry of Economy and the Ministry of State Treasury, have undertaken considerable analysis of privatization and based on extensive deliberations between the two ministries, a clearly stated Government policy has been developed to privatize the industry. The *Strategy for the Privatization of the Hard Coal Mining Sector* (Privatization Strategy) was adopted by the Council of Ministers in December 2004. Under this strategy privatizations advisors have been appointed for KHW (which was offered for privatization) and for JSW and Weglokoks (for which pre-privatization analyses were prepared). Both KHW and JSW were prepared for

privatization and could have been partially or fully privatized when the international coal market was at its strongest, with potential important revenues for Government in the case of the then highly profitable JSW, but the government has now missed that excellent market opportunity. Nevertheless, privatization can still provide important benefits in terms of improving corporate governance and mobilizing badly needed investment capital.

Coal Privatizations are extremely challenging. Coal privatizations are especially challenging. First, there are historic environmental and health liabilities to be addressed. In particular, investors may be concerned about the risk of future health claims by miners (for illnesses such as black lung) that may be more the result of past production than present or future production. Second, extensive work will be needed to establish legal title to assets and to resolve issues concerning liabilities, especially in the case of KW. Third, because of the specialized nature of mining, there is a limited pool of qualified investors (for trade sales) and interested financial institutions (for public offering of shares). Mining is a long run business and in order for higher quality investors are to make large investments in the industry, Government will need to provide a clear picture of its policies for the energy sector and the implications of those policies for fuel choice for future power generation.

The choice of method of sale depends on Government objectives. The two main methods of privatization are: (i) "trade sales", which involves selling part or all of the equity to a strategic investor and (ii) "public offerings", which involves listing part or all of the equity on a local or international stock exchange. Which of these methods is best suited to specific cases will depend on the objectives that the Government, as the owner, is trying to achieve. Key among them are the following: (a) does the company need capital for investment?; (b) does the company need to improve corporate governance?; (c) does the company need better management skills? and (d) does the company need unique sector expertise?.

A trade sale to an investor brings fresh management and capital and advantages to the workers but also the risk of a poor outcome with a poorly qualified investor. A "trade sale", if well structured and implemented, can achieve all of the objectives listed above, namely improved access to capital, corporate governance, managerial skills and sector expertise. A well qualified investor can strengthen both the management and the financial structure of the company. A new owner can also bring in new managers with a broader set of skills and technical capabilities than those presently available within the company and can provide access to new sources of debt and equity as needed. The workers are also likely to benefit directly from a trade sale since they would be offered 15% of the shares and would also be able to negotiate an agreement with the new investor regarding future employment arrangements. There is a risk however, if the transaction is not properly structured or implemented, that a poorly qualified investor may be selected and may not have the skills or resources necessary to move the company forward and, in the worst case, may even squeeze the company for short term profits and then walk away leaving behind it environmental and social liabilities that the government would then need to resolves. This is a normal privatization

risk. MoST have invested substantial time and effort in preparing the pre-privatization analyses for KHW, JSW and Weglokoks and should be well able to design a process that results in privatization of a sound company with very good prospects for profitability even if prices decline. A well designed privatization package with the investor taking over a company with good products and good markets could minimize this risk.

A public offering of company share provides less potential benefits than a trade sale but also has less potential risks. A public offering will typically address the company's need for capital and will also help improve corporate governance. But it is unlikely to improve management capabilities and sector expertise, since a key prerequisite is the existence of credible and capable management. A public offering can offer local institutional investors and the public with an opportunity for ownership and therefore to share in the upside of the business. Furthermore it has the advantage that it is very transparent. The downside of this method, however, is that it can result in a "status quo" approach to strategy and performance and if things go badly can result in a loss of value for the share holders.

Private sector companies are better positioned to respond to the market place and be profitable than public sector companies. The experience of the past twenty to thirty years is that state enterprises are typically less well governed than private sector companies. There are several reasons for this, chief among them, complex and often inconsistent objectives that state enterprises are expected to meet and political influence. Private sector companies typically have a core objective of profitability and increasing long term shareholder value and must respond to the demands of the capital markets. Private sector companies have to respond to the discipline of a market place, which requires them to make investment and operating management decisions that are consistent with requirements of the market. By comparison, state companies can be subject to a much wider range of often conflicting objectives, including employment creation and protection while also trying to meet at the same time profitability objectives. Private sector management is generally selected on the basis of competence and performance whereas the selection of managers in state enterprises can be influenced by political affiliation and by local interest groups. At the same time supervisory boards consisting of Government officials, who are usually not familiar with all the nuances of companies' operations and do not have sufficient time or appropriate incentives for protecting stake holder's interests, are typically unable to provide the same degree of supervision as the supervisory board of private sector companies.

Some Polish hard coal companies are ready to be privatized, others need to be prepared. KHW was offered for a trade sale and MoST received two preliminary bids. Although no decisions in this respect were ever taken, this demonstrated that there was potential interest on the market in the coal mining companies. Pre-privatization work for JSW and Weglokoks also was completed, but further privatization decisions were put on-hold. Bogdanka was offered for privatization previously, but the offer failed because the preferred bidder was unable to mobilize the funding to complete the transaction. In the case of Budryk, the pre-privatization analysis was prepared but the company was never offered to bidders because of disputes over its operating boundaries

and because of a large debt burden to the Government from when the mine was constructed. KW is essentially ready for advisors to be appointed for the pre-privatization analysis. But a capital injection for KW and internal restructuring of the company need to be completed and extensive preparation work will be needed to verify the assets and liabilities that KW inherited from its predecessor companies.

Three options regarding privatization. The Government has three broad options regarding privatization. It can hold back on privatization; undertake limited and ad hoc privatizations; or implement a comprehensive approach to privatization.

1. Holding back would leave the companies with very limited access to capital and the Government at risk if the industry loses money again. The first option is that the Government may decide to hold back from any further privatization actions. This would be unfortunate since it would send a very mixed signal to potentially interested investors – both to possible trade investors as well as potential institutional investors. Long delays or even the decision to defer privatization completely would mean that the hard coal companies would have less access to private capital markets and would not have access to new equity that is needed to modernize operations and improve competitiveness. To delay privatization because the industry is now financially profitable is no guarantee that the industry will remain profitable. To the contrary, it means that Government would continue to have very significant exposure in the event of poor performance and future industry losses. In the event that export coal prices decline back towards 2003 levels, then as much as half to two thirds of Polish energy coal exports could be loss making and KW, in particular, would likely need substantial further Government assistance and another Reform Program to survive. So long as the industry is state owned, management will lack the ability to make independent decisions regarding wage settlements and Government, as owner, bears the risk that rising costs, if not contained, would lead to a deterioration of financial performance and lack of resources for paying public obligations and for investment both to improve production and to improve environmental performance.

2. A limited privatization would improve corporate governance and depending on the nature and size of the transaction may improve access to capital. The second option is that Government may decide to go ahead with limited privatizations – offering a minority share (in the range of 10-40%) in some of the companies to investors or for public offering. This has distinct advantages over the first option from a corporate governance standpoint since companies would be subject to the discipline of preparing for the offering to a trade investor or for a public listing, meeting the requirements of the listing exchange (for a public offering) and (at least in the case of a trade sale) coming to an agreement with the trade unions regarding the offering of 15% of the shares to the workers. But, minority stake holders might not be interested in the long-term development of the company if they have limited impact on its functioning and, depending on the size of the transaction. In addition, depending on the amount of the company offered for privatization, this option might not solve the problem of lack of

access to the private capital market. Moreover, there would likely be no privatization revenues for the treasury, and Government as majority owner would still have considerable exposure to possible losses. The companies would still be tied closely to Government, and in the case of a trade sale, better quality potential investors might not be interested in such a minority holding – at least in the case of companies which are in the coal industry.

3. A Comprehensive Approach can substantially improve corporate governance and access to capital and would also likely provide some revenues for the Treasury. The third option is for Government to (a) move promptly to set a timetable for privatization of all of the hard coal mining companies; (b) promptly initiate the next steps for Bogdanka, and KW; and (c) move ahead to complete the privatization of KHW, JSW and Weglokoks with a majority of shares either sold or listed. For Bogdanka this would mean appointing an advisor to update the pre-privatization analysis prepared previously and propose the privatization method. For KW, it would mean appointing a Privatization Advisor to undertake the pre-privatization analysis. For KW, the process would be more effective if the Government completed the financial injection to improve the company's balance sheet and if the deferral liabilities are rescheduled. This "Comprehensive Approach" of selling or listing a majority of the shares of each company should result in potentially significant improvements in corporate governance and access to private capital markets for all companies as well as potential revenues for Government. It would also result in all of the production capacity being subject to a market test with the result that the market would determine if any further capacity or employment restructuring is needed.

But a comprehensive privatization action timetable will only be meaningful if it is operationalized. A new timetable that is not implemented will in fact be no different from simply holding back. It may therefore be useful to put in place arrangements designed to minimize further delays in privatization decision making. For example, since Ministry of Economy has the industry expertise needed for informed decision making, it should continue to have clear responsibility for making the strategic decisions at each stage of the privatization process, while Ministry of State Treasury would have the responsibility for implementing those decisions. The track record is that delays have often occurred.

- The approval of the Government's *Privatization Strategy* in 2004 was delayed by over six months due to time needed for the two ministries to come to agreement.
- There has also been subsequent slippage on implementing the privatization actions for KHW, JSW and Weglokoks compared to the timetable in the Privatization Strategy.
- There has been no action to select the privatization advisor for KW even though the procedure for selection of the privatization advisor for KW was due to be started during the 3rd quarter of 2004 according to the Privatization Strategy, and the privatization advisor was due to be selected by the end of 2005 according to the March 20, 2004 Hard Coal Sector Letter of Development Policy.
- Little progress has been made regarding the approach for Budryk and Bogdanka.

Delays have largely been the result of trade union opposition which could be reduced by a strong communications campaign. Despite the endorsement of the Council of Ministers, the Government has been hesitant to implement the privatization policy in large part due to the opposition of the hard coal industry trade unions. While it is reported that some of the workers are staring to recognize that privatization could be bring them benefits in terms of possible share ownership and a better future with companies that have good access to capital for modernization to improve efficiency, the trade union leaders remain opposed to privatization. A well designed communications campaign is needed to counterbalance the negative views of the trade union leaders and to bring out more clearly to workers that privatization can offer important benefits to them.

It is noteworthy that there are many privatizations that have not been opposed by trade unions. Part of the way forward is for the Government to more actively promote the benefits of privatization to the workforce. On the one hand this can mean short term financial gain through the distribution of 15% of the shares to the workforce. On the other hand it can also mean an industry that has access to capital for modernization and improved efficiency – which should lead to greater profitability and a more assured future for the workforce. Rather than simply hold back, the Government could look for successful examples – such as the copper company and for ways to reduce worker opposition – just as it had to do when it announced the employment restructuring measures in 1998. .

D.7. Building the support of key stakeholders for decisions that will ensure the best future for the coal industry

Knowledge about both the positive and negative effects of the sector reforms is distributed unevenly among representatives of different groups in Silesia including NGOs, local communities, local authorities, academia and mining sector workers while many people understand rationale for the reforms and the need to complete restructuring of the sector. A better understanding of the situation could be achieved if the Government prepares a targeted information campaign which would show the positive effects of mining sector restructuring achieved so far i.e. lower air and water pollution, increased safety standards, less mining damages etc. together with the potential benefits of completing reforms and privatization to both the region and industry workers. The key messages of such an information campaign could be related to:

- Employment security in the mining sector and positive impact on the service proving industries;
- Stable income for local Governments in Silesia;
- Improved environment;
- Smaller mining damages;
- Income for the industry workers from owning mining companies' shares;
- Improved work safety standards;

- Better organization of work and better management of companies.

what is needed is to find a way to privatize with the support of the social partners.

While heavy industries such as hard coal and steel will remain core industries for Silesia, they are unlikely to be sources of increased employment in future. The growth sectors for Silesia are to be found in higher technology (including coal-based technologies) and service industries. The next few years, while EU funds are available, offer Silesia a window of opportunity to develop these new sectors. It is, therefore, important that the coal industry release its surplus employees and land so that Silesia can diversify into new industries and take full advantage of EU funds while at the same time having a healthy and profitable coal industry.

D.8 Possible Future Support from The World Bank

Previous Support. The World Bank has extensive technical, financial, social and environmental capabilities regarding hard coal reform and has worked closely with Government counterparts in the Ministry of Economy, Ministry of Finance, Ministry of State Treasury, Ministry of Environment and (in its different forms) the Ministry of Labor to support the implementation of sector reform in Poland through four loans (two completed, two on-going) starting from 1999. The first two loans (US$300 million Hard Coal SECAL 1 in June 1999 and US$100 million Hard Coal SECAL 2 in August 2001) offered support to the budget. The third loan (US$200 million Hard Coal Social Mitigation Loan, March 2004) is helping finance employment restructuring costs for underground miners and surface workers. The fourth loan (US$100 million Hard Coal Mine Closure Loan, July 2004) is helping finance the cost of coal mine liquidation.

Lessons Learned. The most important lessons learnt from these operations show that successful change does not come easily – it requires (i) a well formulated Government strategy, developed in consultation with social partners, that is updated as and when needed; (ii) strong commitment at the highest levels of Government; (iii) one Ministry having clear leadership responsibility to implement the strategy; (iv) effective coordination between the different ministries involved; (v) strong oversight by the owner and guidance to the mining companies as they prepare and implement their operating and business plans; (vi) fast acting and targeted income support with demand driven labor re-deployment programs for employment restructuring to be implemented on a voluntary basis; and (vii) significant budgetary support for employment, capacity and financial restructuring.

Possible Future Support: The restructuring of the industry is moving into its final stage and the focus is now on ensuring the sustainability of the reforms and the mining companies. This requires key actions to be taken by government as outlined previously in this report together with the preparation and implementation by the mining companies of sound business and technical and economic plans that respond to the challenges that they each face. World Bank is ready to support the Government for the period 2007-2015 in:

- formulating and updating its strategy to complete the restructuring of the sector
- reviewing and commenting on the mining companies strategies and plans
- monitoring future program implementation and industry performance.

If the government so wished, the Bank would also be prepared to consider further financial support which might include, but would not be limited to the costs of (a) repair/mitigation of past mining damages (in particular subsidence) at mines that have been liquidated or may be closed and liquidated in future; (b) support for non-mining job creations and/or (c) measures needed for preparation of the companies for privatization. The International Finance Corporation (IFC) could also support individual privatization transactions.