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## Some problems of domestic coal mining

### Key words

Coal mining restructuring, mines closure, social package

### Abstract

The process of closing permanently unprofitable coal mines started at the beginning of 90-ies. It may consist in closure of entire mines or its parts. Closure of mine usually takes a few years but the plan of mine closure contains specific timetable for each month. 15 coal mines will be closed of the total production capacity of 18,9 mln ton/year in the years 1998—2002. Additionally in those years in 10 partly closed coal mines reduction of 7,6 mln tons of production capacity is foreseen.

The mine closure causes negative social impact. Social program of the mine is based upon the “Miner’s Social Welfare Package” which has been approved by the Government on June 30, 1998 as a part of the program “Reform of hard coal mining in Poland in the years 1998—2002”. The Miner’s Social Welfare Package contains both the welfare and the stimulation instruments. As a result of its implementation reductions of labour force in hard coal mining industry reached 36.1 thousand jobs in 1999.

Costs of mines closure is very high and therefore the subsidies from the budget have to be granted. It is assumed that the process of coal mining industry restructuring will be financed from the budget subsidies till 2002, in the years 2003—2005 both from the state budget and own sources of mines gathered at the mines closure fund. After 2005 restructuring of mines will be financed exclusively from own financial sources of mines.

The mine closures cause numerous technical and organizational problems that demand to be solved. These are: protection against water hazard in mines adjacent to the closed one, protection against fire hazard in mines under closure, protection of surface in mining districts against the migration of methane and carbon dioxide, necessity to relocate the employees from closed mines.

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## **Introduction**

The restructuring of hard coal mining industry in Poland has been undertaken in 1989, first by the Hard Coal Corporation, then by the State Hard Coal Agency and, recently, by the State Agency for Restructuring of Hard Coal Industry (Concepts... 1989). In 1992 the six coal mining companies and one holding were established and since that time the restructuring program has commenced. Among other activities, the program assumes also the closure of hard coal mines.

The program "Reform of hard coal mining in Poland in the years 1998—2002" accepted by the Council of Ministers on June 30, 1998 assumed the transformation of hard coal mining industry into the economically effective organism capable to operate under the market economy conditions. However, the decreasing demand for hard coal at the domestic market and declining prices observed in the years 1998—1999 resulted in lower incomes and, consequently, in the rise of financial losses above the limits imposed in the Government program. Therefore, on December 21, 1999 the Council of Ministers accepted the Correction of the "Reform...". The technical, economic and organizational solutions proposed in the Correction are based on the general directive to continue the closure of uneconomic mines before the year 2002.

### **Closure of hard coal mines**

The closure of permanently loss-making mines is the important element of restructuring process. As mentioned above, shutting down of hard coal mines has started in early 1990-ties. The "Reform..." also includes the mine closure.

The legislation relevant to mine closure procedure is provided by the 1994.02.04 "Mining and Geological Law" (Part III, Chapter 5). However, the "Law..." does not determine the procedure and form in which the mine owner should express his willing to close down the enterprise. At such legal circumstances the decision of mine closure is made in the form of a resolution of the company board (Marszałek, Jasiewicz 1998).

The main reasons of complete closure of a mine are (Czernicki 1999):

- exhaustion of reserves of a whole mine or its part,
- declining economic and financial conditions of old mines,
- very difficult exploitation conditions,
- overproduction in relation to sale opportunities at reasonable price level.

The mine closure can be partial or final (1998.11.26 Act...; Steinhoff et al. 1999; Czernicki 1999).

The final closure should be understood as a complete liquidation of a mining enterprise defined herein as technically and organizationally independent group of the means of production (mine workings, technological constructions, buildings, etc.) used directly for excavation of a raw material from the deposit.

The partial closure is understood as liquidation of a specified part of mining enterprise for which the closure organization schedule is prepared in accordance with the "Geological and Mining Law".

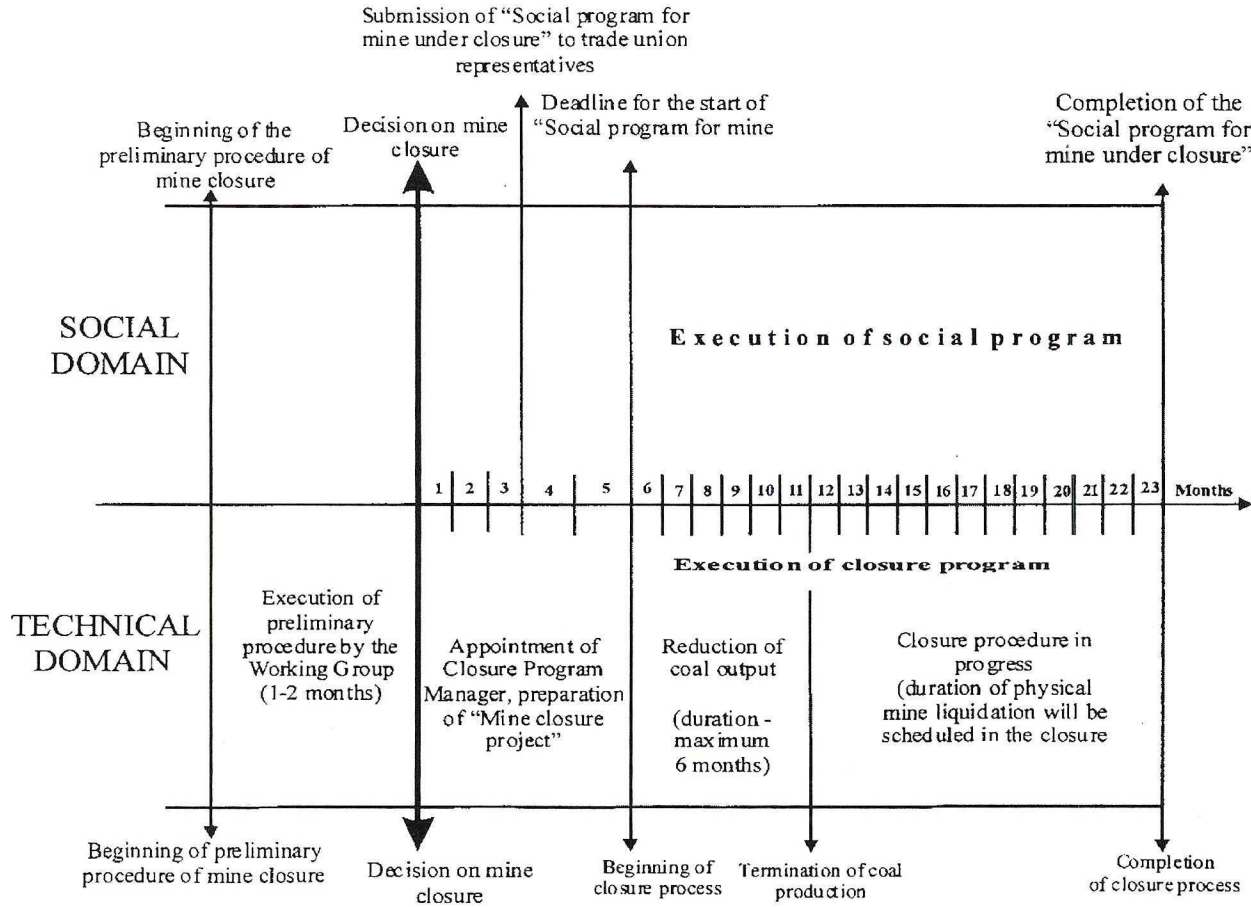


Fig. 1. Mine closure process. Source: Karbownik, Pawełczyk, Czernicki 1998

Rys. 1. Proces likwidacji kopalni. Źródło: Karbownik, Pawełczyk, Czernicki 1998

TABLE 1

Decline of hard coal production in finally and partly closed mines in the years 1998—2002

TABELA 1

Zakończenie wydobycia węgla w kopalniach likwidowanych całkowicie i częściowo w latach 1998—2000

Mine		Decline of production capacity [Mt]				
		1998	1999	2000	2001	2002
<b>Mines at final closure</b>						
1.	Grodziec	0.70				
2.	Gliwice		1.10			
3.	Niwka Modrzejów		1.60			
4.	Morcinek	1.40				
5.	ZG Rozalia		1.20			
6.	Porąbka-Klimontów	0.80				
7.	Nowa Ruda			0.40		
8.	Dębieńsko			1.70		
9.	Siersza		1.10			
10.	Czczott				3.40	
11.	Jan Kanty			1.00		
12.	Powstańców Śląskich (Bytom I)				1.50	
13.	ZG Wojkowice			0.90		
14.	ZWSM Jadwiga			0.50		
15.	Andaluzja (ZG Brzeziny)				1.60	
Total for finally closed mines		2.90	5.00	4.50	6.50	0.00
<b>Mines at partial closure</b>						
1.	Centrum-Szombierki (Szombierki Field)		0.40			
2.	Bobrek-Miechowice (Miechowice Field)		0.40			
3.	Katowice-Kleofas (Katowice Field)		1.30			
4.	Jas-Mos (Moszczenica Field)			0.20		
5.	Polska-Wirek (Polska Field)		0.40			
6.	Bielszowice (Poreba Field)	0.80				
7.	Halemba (Halemba-Shallow Field)			0.70		
8.	Marcel (1st-of-May Field)			1.60		
9.	Chwałowice (Rymer Field)		1.20			
10.	Pokój (Wawel Field)			0.60		
Total for partly closed mines		0.80	3.70	3.10	0.00	0.00
Grand total 26.5		3.7	8.7	7.6	6.5	0.00

Source: Machnicki, Kania 2000.

Both the final and partial closures are amenable to the paragraph 13 of the 1998.11.26 Act on transformation of hard coal mining industry into the market economy rules and particular authorizations and duties of mining district authorities, according to which the winding-up decision is made by the company board.

Any closure must be run in accordance with the approved management plan, which includes:

- general part which contains data on the mining enterprise which does not require the changes imposed by the “Act...” and additional information on timing of closure process (dates of: closure start, end of exploitation, liquidation of machinery and constructions, closure end date),

- detailed part which contains details of the management plan: clearing of the reserves including the calculation of reserves losses, description of specific works and buildings involved in closure procedure, evaluation of methane and rock-outburst hazards, and environmental issues.

In most cases the mine closure plan is scheduled for several years and provides detailed yearly and even monthly timetables of activities. Fig. 1 presents the scheme of mine closure process.

The Minister of Economy must approve the mine closure plan whereas the yearly schedules are verified by the State Hard Coal Agency and also approved by the Minister of Economy.

Table 1 lists the mines in which exploitation has already been stopped or which were scheduled for decline of production. As quoted, before 2002 the 15 mines of total capacity 18.9 Mt will be finally closed in the period 1998—2002. Further 10 mines will be subjected to partial closure, which will result in cumulative output decrease by 7.6 Mt.

### **Social program for mines under closure**

The mine closure causes negative social effects. Job lost affects significant number of workers directly employed in or providing services for the mines. Retrenchments result in tension among the local communities, which can be resolved by properly planned closure process. The job lost problem has been recently solved by legal and economic decisions (social program) which include the special miner’s leaves, welfare benefits etc. (Jędrychowski et al. 1999; Karbownik, Jędrychowski 1999, 2000; Skowroński 1998).

After acceptance by the company board and the general meeting of shareholders the social program must be approved by trade unions and submitted to the local authorities for opinion.

The social program defines the welfare actions which should be undertaken in order to support the employees who will lose their jobs. The program is based upon the “Miner’s Social Welfare Package” which has been approved by the Government on June 30, 1998 as a part of the program “Reform of hard coal mining in Poland in the years 1998—2002”.

The Miner’s Social Welfare Package contains both the welfare and the stimulation instruments. The welfare instrument is the miner’s leave. The stimulating instruments are:

- welfare benefits,

- single, free trainings,
- single financial allowances,
- single unconditional allowances,
- loans,
- free consultings.

The previous social program (run before 1998) included (Jędrychowski et al. 1999):

- welfare benefits,
- leaves,
- single free trainings for a new job.

In the new welfare program the principles of some welfare instruments have been changed and the new stimulation actions have been introduced. Precisely:

- amount of welfare benefit was increased from 55% to 65% of paid-leave salary,
- amount of social benefit for miner's leave was increased from 70% to 75% of paid-leave salary,
- single financial allowance (26,400 PLN) for employees not eligible to miner's leave who will take job outside the mining industry within 24 months from the date of layoff,
- single unconditional allowance (44,400 PLN brutto).

Both the social welfare and stimulation actions are limited to employees who have worked underground for at least five years.

In 1999 the reductions of labour force reached 36.1 thousand jobs, which lowered the number of employees in the hard coal mining industry to 173.6 thousands. Job reductions in the hard coal mining industry in the years 1993—1999 are listed in Table 2.

TABLE 2

Employment reduction in hard-coal mining industry in the years 1993—1999

TABELA 2

Liczba odejść osób z górnictwa węgla kamiennego w latach 1993—1999

Year	Total reductions [thousands of persons]	Employee-connected reasons [thousands of persons]			Employer-connected reasons [thousands of persons]
		total	natural reasons	others	
1993	43.2	34.5	13.1	21.4	8.7
1994	33.0	23.2	11.5	11.7	9.8
1995	24.6	16.8	11.2	5.6	7.8
1996	19.4	13.6	10.0	3.6	5.8
1997	18.4	13.3	9.5	3.8	5.1
1998	38.4	13.1	8.8	4.3	25.3
1999	36.1	9.9	8.1	1.8	26.2

The principal reasons of employee leaves in 1999 were:

- employee-connected reasons:
  - termination of sick pay — 1.8 thousands of persons,
  - retirements — 6.0 thousands of persons,
  - deceases — 0.3 thousands of persons,
  - agreements with the employer — 0.8 thousands of persons,
  - disciplinary dismissals — 0.4 thousands of persons,
  - army service — 0.3 thousands of persons,
  - others — 0.3 thousands of persons;
- employer-connected reasons:
  - transfers to daughter companies established from the assets of the mining enterprise — 1.8 thousands of persons,
  - beneficiaries of social program — 24.4 thousands of persons.

### **Financing of mine closures**

As the costs of mine closure are very high and cannot be covered from the mining company resources the possibility exists to apply for allocations from the National Budget (Czernicki, Machnicki 1999).

Application procedures for such allocations are complicated in order to eliminate the possible transfer of obtained subsidies for the purposes unrelated to the closure.

Allocations from the National Budget are granted for the following purposes:

- closure of a mine or its part,
- reclamation of damage caused by reactivation of old workings,
- job creation in daughter companies established from the assets of the mining company,
- transfer of employees.

The physical costs of mine closure include:

- remediation of mine workings,
- demolition of useless constructions,
- reclamation of mining damages,
- land reclamation,
- protection of facilities important for preventing the hazards caused by closed mines.

In the case of social program the subsidies from the National Budget can be used for:

- welfare benefits for retrenched employees, in accordance with detailed regulations,
- gratifications of claims laid by former employees,
- financial compensations for employees who lost their jobs due to employer decisions
- retraining for new jobs.

It is assumed that up to 2002 restructuring of the mining industry will be financed from the National Budget whereas between 2003 and 2005 subsidies from the National Budget will be supported by the mine closure fund supplied partly from depreciation. After 2005 the mine closure procedures will be fully financed from the mine closure fund.

The corrected Government program adopts the continuation of financing of restructuring procedures from the National Budget. Each year the Council of Ministers will secure appropriate funds in the National Budget Act (Steinhoff et al 2000).

The finances required for supporting the reforms in mining industry are listed in Table 3. It must be emphasized that after 2002 the funds from the National Budget will have to cover, e.g.:

- closure of mines,
- restructuring of employment,
- refunding of insurance premiums paid by the Social Insurance Company to the employers outside the mining industry who will give jobs to retrenched miners,
- money equivalent for the rights to free coal ratios paid by the Social Insurance Company.

TABLE 3

Required financial support from external sources in the years 2000—2002

TABELA 3

Wymagane zewnętrzne wsparcie finansowe górnictwa węgla kamiennego w latach 2000—2002

Purpose		Required funds [Millions PLN]		
		2000	2001	2002
1.	Mine closure	462.0	252.1	198.9
2.	Employment restructuring	1,068.7 <sup>1,2)</sup>	781.1 <sup>1)</sup>	777.5 <sup>1)</sup>
3.	Reclamation of damages caused by reactivation of old workings	30.0	38.0	38.0
4.	Money equivalent for the rights to free coal ratios for pensioners, paid by the Social Insurance Company	100.0	193.8	209.9
5.	Creation of new jobs in mining districts	40.0	54.3	54.3
6.	Coal allowances for entitled pensioners and miners employed in finally closed mines	29.0	30.0	14.0
7.	Compensative pensions for miners from finally closed mines	20.0	25.0	25.0
8.	Others	14.3	14.3	14.3
	Total	1,764.0 <sup>1,2)</sup>	388.6 <sup>1)</sup>	1,331.9 <sup>1)</sup>

<sup>1)</sup> Allocation decreased by repayments of loan taken from the Labour Fund: 50 Millions PLN in 2000, 100 Millions PLN in 2001 and 250 Millions PLN in 2002.

<sup>2)</sup> Anticipated loan from the Fund of Guaranteed Benefits (200 Millions PLN) and from the PHARE (42 Millions PLN)

Source: Steinhoff et al. 2000.



## Environment protection and mine closures

It should be emphasized that the mine closures cause numerous technical and organizational problems (Czernicki et al 2000; Goszcz 1999):

- protection against water hazard in mines adjacent to the closed one,
- protection against fire hazard in mining fields designed for inundation,
- protection of surface in mining districts against the migration of coalbed gases — methane and carbon dioxide.

The organizational problems include:

- relocation of employees from finally closed mines,
- more rational and effective management of closure procedures and mine drainage.

The crucial problem, which requires significant expenses, is the prevention of water hazard caused by both the already closed mines and the mines in the closing process. Estimated running costs of stationary drainage systems in the years 1999—2002 are 351 Millions PLN (Machnicki 2000; Czernicki, Machnicki, Pyka 2000).

### Summary

1. The restructuring of hard coal mining industry in Poland since 1991 has resulted in the closure of 24 mines. This figure includes 6 mines which were amalgamated into the other collieries and which stopped production.

2. Before the end of 2002 further 9 mines are scheduled for closure. After 2003 the Polish hard coal mining industry will include 40 mines.

3. Both the restructuring and the closure of mines resulted in reduction of labour force down to 173 thousands employees in 1999. Further fall of employment down to 128 thousands jobs is planned for 2002.

4. Both the partial and final closures of mines reduced the hard coal production by 33 Mt.

5. Recently, in the mines under closure submersible pumps replace the expensive, main, stationary drainage systems.

6. Financing of the mine closure will be provided by the National Budget up to the end of 2002. After 2003 finances will originate from the Mine Closure Fund. The Mine Restructuring Company recently under organization, will provide more efficient solutions of problems caused by mine closure and establishing of legal succession.

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#### WYBRANE PROBLEMY KRAJOWEGO GÓRNICTWA WĘGLOWEGO

##### Słowa kluczowe

Restrukturyzacja górnictwa, likwidacja kopalń, program socjalny

##### Streszczenie

Proces likwidacji kopalń trwale nierentownych rozpoczął się na początku lat dziewięćdziesiątych. Likwidacja może być całkowita lub częściowa. Plan likwidacji jest z reguły programem wieloletnim, który wymaga szczegółowych rozwiązań w okresach miesięcznych. Na rysunku 1 przedstawiono schemat procesu likwidacji kopalń. Do roku 2002 nastąpi całkowita likwidacja 15 kopalń o łącznej produkcji węgla w latach 1998—2002 wynoszącej 18,9 mln ton. Ponadto w tym okresie nastąpi w 10 kopalniach częściowa likwidacja, która spowoduje łączny spadek produkcji węgla o 7,6 mln ton. Likwidacja kopalni prowadzi również do ujemnych skutków społecznych. Program socjalny likwidowanej kopalni jest ujęty w Górnictwym Pakiecie Socjalnym, który został przyjęty przez rząd Polski 30 czerwca 1998 r. Górnictwy Pakiet Socjalny zawiera instrumenty osłonowe i aktywizujące. W 1999 r. z górnictwa

odeszło 36,1 tys. osób. Stan zatrudnienia w 1999 r. wynosił 173,6 tys. osób. Liczbę „odejść” osób z górnictwa w latach 1993—1999 zamieszczono w tabeli 2.

Koszty likwidacji kopalń są bardzo wysokie, dlatego też niezbędne jest przyznanie środków finansowych z budżetu państwa.

Zakłada się, że proces restrukturyzacji górnictwa do roku 2002 finansowany będzie ze środków budżetowych, natomiast od roku 2003 do 2005 finansowany będzie częściowo ze środków budżetowych oraz wspomagany środkami pochodzącymi z funduszu likwidacji kopalń, a po 2005 r. tylko z funduszu likwidacji kopalń. W tabeli 3 przedstawiono zapotrzebowanie na zewnętrzne środki finansowe dla wsparcia reformy górnictwa.

Po zakończeniu likwidacji kopalń pozostaje szereg problemów techniczno-organizacyjnych, które muszą zostać rozwiązane. Do tych problemów zaliczyć należy: ochronę przed zagrożeniem wodnym kopalń sąsiadujących z kopalnią likwidowaną, zagrożenie pożarowe rejonów kopalń likwidowanych, ochrona powierzchni obszarów przed wpływem metanu i dwutlenku węgla, konieczność alokacji załóg z kopalń całkowicie likwidowanych.