THE GEOLOGICAL EXPLORATION ACTIVITY (GEA) AND THE COAL MINING INDUSTRY (CMI) AS ENVISAGED IN THE ENERGY STRATEGY OF BULGARIA

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INTRODUCTION

The Bulgarian Government declared that the industrial policy it would follow highlights 5 priority areas one of which is the energy. Based on the Government program the Ministry of Energy and Energy Resources (MEER) worked out a strategy for development of the energy industry (MEER web-site, <u>www.doe.bg)</u>. An essential portion of it is devoted to production of fuels (energy resources) and more specifically of crude oil, natural gas and coal. The attending exploratory, geological, appraisal and commercial appraisal works have not been subject to strategic planning, however, these are understood as necessary.

The present paper makes a review of the operations anticipated in the sphere of GEA and CMI. These issues have been discussed many times in the specialized literature, on forums of NGOs, industry organizations and specialists. The subject sector, however, develops with extreme dynamics that calls for timely response aiming at supporting the administration in managing the sector of the national economy. This in fact is the key task of the authors – to outline the main trends in the development of the sector and formulate recommendations towards its more successful management with the following clearly defined goals in mind:

- to keep the coal mining industry alive, with its servicing activity;
- rational utilization of national energy resources;
- to balance the employment in the coal mining regions;
- to secure energy independence of the country through volumes of produced energy resources;
- to reduce to minimum the negative trade balance formed mainly by imports of energy resources.

THE ENERGY STRATEGY OF BULGARIA AS SEEN IN THE EUROPEAN ENERGY AND LEGAL ENVIRONMENT

The economic environment within which the energy strategy is considered to be implemented is described by several important features among which are the accelerating globalization, market liberalization and unification of the energy legislation of the European countries. These particularities lead to integration processes that urge Bulgaria to pursue and achieve harmonization with the EU energy legislation in view of successful accession to the European Union and more specifically to its energy and energy legislation framework. The fundamental documents of the energy legislation in Europe regulating the public relations include the following:

- Directive 96/92/EC of the European Parliament and of the Council of 19 December 1996 concerning common rules for the internal market in electricity;
- Directive 98/30/EC of the European Parliament and of the Council of 22 June 1998 concerning common rules for the internal market in natural gas;
- Directive 94/22/EC of the European Parliament and of the Council of 30 May 1994 on the conditions for granting and using authorizations for the prospection, exploration and production of hydrocarbons (from the subsurface).
- Declaration of 25 June 1999 on the role of the coal in Europe in the 21st century.

The particular community legislative framework for the GEA may be found in Directive 94/22/EC, however, the practice of the member candidates is still regulated by the legislation of the respective countries.

COAL MINING IN THE REPUBLIC OF BULGARIA

Current status and problems

Presently the coal mining sector includes 21 commercial entities 13 of which are involved in mining, processing and sale of coals; 6 are announced for closing down and 2 are announced insolvent (Table 1). Coals are produced from 22 mines in total 9 of which are open and the remainder are underground. For 2001 the total production amounts to 27 364 thousand tons of coal, after cleaning the figure is 26 586 thousand tons; the producers are shown in Table 1. Based on data by Markov (2001) and data by the authors the total

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production shows trends to reduction compared to previous years. The reasons for this tendency are generally known to the specialists, as more significant are: reduced electricity consumption; reduced purchase power, reduced labour productivity, insufficient investment to open new mining units and for maintenance of facilities, out-of-date and worn-out mining equipment and machinery for extraction and processing.

Table 1. Ma	in indices o	f the coal industi	y and the coa	l mines ai	nnounced i	in liquidation	(based c	on data by	Markov /2	001/ a	and data by
the authors))		-					•			-

Total annual	1989	1990	1992	1994	1996	1998	2000	2001	
coal production									
(in thousand tons)	35 801	33 060	31 423	29 782	32 363	30 962	26 278	26 586	
Coal producing	State		Announced in		In liquidation with production restored				
	Comp	oanies	liquic	lation					
Maritsa East EAD		*							
Beli breg AD									
Chukurovo EAD									
Staniantsi EAD									
Christo Botev EAD									
Vitren EAD									
Bobov dol EAD	*								
Cherno more-Burgas EAD	*								
Pirin EAD		*							
Zdravets EAD		*							
Balkan - 2000 EAD		*							
Lev EOOD									
Antra EAD		*							
Toplofikacia – Pernik EAD	*		*		St.Anna mine, section "Central"				
Balkan EOOD				*					
Marishki basein EOOD	:	*		*					
Ivan Roussev EOOD	*			*	Iv. Roussev mine, sections III, VII				
Kolosh-BD EOOD	*			*	Minior mine, section V				
Kanina EOOD		*		*	Kanina mi	ne			

A common feature of the active coal mines is the insecure financial standing. At present only Mini Maritsa-East EAD show relatively stable financial parameters. The financial standing of the remainder of the mines, esp. the underground ones is poor to very poor. Although the prices are liberalized, the monopoly position of the thermal-power plants prevents any optimistic forecasts. A typical example of this situation is Mini Cherno More EAD, where despite the satisfactory level of restructuring and optimization of the personnel, the poor collection of receivables from consumers is a major hindrance to enduring stabilization of the company. Without any in-depth analysis of the main reasons for these conclusions, developed quite in detail by Rizov (1998), Dimitrov (2001), Markov (2001) and others, we will only point out that the limited individual incomes of the population appear to be one of the most essential element in overcoming the constant shortage of cash flow in the companies. Most of the mines follow a negative trend of decapitalization, which on the other hand reduces the interest of potential strategic investors to null. These problems are reflected in the Energy strategy of the country and it is expected these to be remedied by applying the measures as listed below.

- 1. With respect to open coal mines
- to mobilize financial resources for rehabilitation and modernization of the heavy mine machinery;
- to introduce new equipment and facilities in the coal mining operations to improve the labour productivity;

to protect the environment along with restoration and recultivation of the mining areas.

- 2. With respect to the underground coal mines
- to develop a strategy to improve the financial standing of the coal mines;
- to develop schemes to improve the effectiveness of the mining activity;
- to develop schemes to gradual reduction of due payments to null;
- to formulate and justify schemes to improve the collection from debtors;
- to optimize all levels of operations in order to achieve competitive cost of production, thus allowing broader market opportunities;
- to optimize the personnel along with adequate financial funds for social protection and re-qualification of the dismissed personnel.

In line with the above measures it is planned to apply conventional instruments to revitalize the sector relating to its restructuring and privatization following a model that will secure the activity, the investment programs on behalf of the buyer, as well as effective post-privatization control to prevent from the negative trend to withdraw the resources and subsequent compulsory liquidation of the company at lack of liquid assets.

The above stated considerations are based on the projected macroeconomic indices for medium- and long-term development of Bulgaria. Based on data from the World Bank and the Economic Analyses and Forecasts Agency with the Ministry of Finance it is envisaged the GDP will grow from 29 618 bln BGL in 2001 to over 50 bln BGL in 2010 which is by 3.5-4.5 per cent average per year. This growth is anticipated to be reached through secured production of primary energy by the end of the period of up to 500-600 PJ. Forty to forty-five per cent of the production will be due to fossil fuels. However, we need to point out the "negative" estimations of the World Bank that outline reduction of the fossil fuels' share at the expense of liquid fuels and eventual growth of nuclear energy. The World Bank experts expect the fossil fuel portion of 45 per cent in 2010 to decrease to 43.7% in 2015 which in volumes appears to be a reduction of more than 30 mln tons. The authors of the paper are not inclined to accept these forecasts and anticipate increase in domestic coal consumption and the production of around 27 364 thousand tons in 2001 will gradually rise to 30-34 mln tons by 2005-2008 and will retain that level for the period 2010-2015. This conclusion is supported by the analysis of expected growth of power generation on local energy resources and briquette production for households. Extensive household gasification is not envisaged for this period and the pricing and tariff policy of NEK is oriented towards more effective utilization of electricity in the industry.

The above presented model of macroeconomic development is assessed as more favourable or "maximum scenario". Under the minimum scenario the growth rate of GDP is projected to be 3-3.5 per cent which prevents strongly any prognoses with respect to the coal mining industry and it is most probable to expect reduction to termination and further liquidation of the underground coal mining and concentration of the mining operations only in the open mines of the Maritsa basin. In such situation the state financing institutions will not be able to support the industry at sufficient levels and the government will be forced to privatize the coal mines at utterly unfavourable conditions. The practice shows that in such privatization only few companies manage to keep the activity, and the sector, respectively.

Measures to optimize the management of the coal mining industry

The national Energy strategy stipulates a series of measures in several directions. In the first place it is anticipated to introduce appropriate legislation in order to optimize the public relations in the energy resources extraction sector as well as in the attending areas that render services to the industry. Improvement of the secondary legislation to facilitate the regulation procedures on behalf of DKER (the State Commission on Energy Regulation), the procedures under the Public Commissions Act, the Law on Structure of the Territories and the subsidiary regulatory documents. Also of crucial importance appears to be the declared willingness to develop and adopt a pricing and tariff policy that would most adequately correspond to the real incomes of the population and particularly of the lowest income population. The practice to support the lower income households in covering their energy costs will continue in a way to secure that funds will be distributed to eligible households on the one hand, and to achieve regular load of the capacities (i.e. the briquette plant) on the other.

The second trend is development of models to mobilize resource support in a liberalized competitive energy market environment. The estimations for the rehabilitation and modernization of coal mining industry indicate that by 2010 the required investment amounts to USD 400-500 million. The mobilization of such financial resource is beyond the capacity of the national economy. Therefore, it is more expedient to look for alternative sources. Up to now interest is shown only to Mini Maritsa – Iztok EAD while for the other companies no strategic investor is identified. The public is aware of the foreign companies' interest to Maritsa basin, however, the intersection of both parties' interest is still not found.

Certain resource to overcome the critical situation is tied to the intentions for economically justified privatization. The privatization is envisaged to proceed by stages. Initially the companies are to be restructured to become more attractive for the market followed by privatization. The accumulated experience suggests that the direction is correct but financial stability is achieved through a package of measures some of which are rather restrictive and unacceptable for the people. Regardless of some difficulties the orientation is steady and is perceived both by the practitioners and the European consulting structures as the only viable approach.

GEOLOGICAL EXPLORATION ACTIVITY IN THE REPUBLIC OF BULGARIA

The geological exploration activity in principle is not projected in the Energy strategy but it takes indirect part in formulating the general policy in resources provision of Bulgaria and that is why the authors discuss it as an element of securing the sustainable development of the energy system of the country.

The state policy in the field of geological exploration and production of underground resources is implemented mainly by the Ministry of Environment and Waters in the legal framework of several laws the leading documents being the Underground Resources Act (URA, state Gazette, No 23 of 12.03.1999). In 1995-1999, in parallel to the new URA, several strategies on the metallic and non-metallic ores, decorative rocks were developed, as well as national program for development of ore production. But only in 2000 a thorough document known to the public as "Strategy for development of geological exploration activity and protection of subsurface to 2010" was elaborated and adopted by the Council of Ministers Ordinance No 519 of 03.07.2001. The approved strategy is based on common efforts by a team of distinguished experts led by Prof. Dr. Christo Dabovski (Sofia, October 1999) supplemented with the views and recommendations additionally introduced prior to its approval by the Council of Ministers. The principles laid down in the documents with respect to the leading role of the market rules in the geological exploration, production and processing activities in the framework of the recent international requirements for protection of the environment and the subsurface were perceived positively. They were also successfully projected in the legislative regulation of the public relations (URA and the elaborated draft for amendments thereto) and indicated successful initial implementation. We will only point out that by 8 April 2002 the Ministry of Environment and Waters (MEW) registered and issued certificates for 26 discoveries.

Particularly encouraging is the applied participation of RAMCO to assess the petroleum-bearing potential of the East Balkan tectonic zone. It is also intended to re-arrange blocks in the offshore Black Sea aiming to attract strategic investors. It will be correct, however, to mention the negative trends of dramatic reduction of prospecting and exploration activities. This fact as well as the main reasons behind it are well known to the public. The authors expect that following the standstill as a result of the gradual imposition of the market principles in the sector, it will mark a rise in the GEA substantiated by the company interests of the legal entities holding permits for prospecting and exploration or concession rights to produce. At

this stage, however, a greater portion of the financing for GEA comes from the state budget with the MEW being the primary organization in distributing the funds. For 2002 the state budget subsidy for projects in the field of regional geology, underground resources and waters amounts to 1 562 569 BGL. The sum is distributed among the directorates as follows: Directorate on Subsurface and Underground Resources – 1 277 466 BGL and Directorate on Waters – 285 103 BGL. The internal distribution of the funds by departments and divisions is shown in Table 2.

Table 2. Distribution of the state budget subsidy for 2002 by research programs and projects in the field of geology and underground resources (web-site of MEW)

Directorate	Division	Department	Programs	Tasks	Total Sum
			(in number)	(Projects)	(in BGL)
			• • •		85 000
		National			284 297
	Geology and	GeoFund and	2	11	
Subsurface and	Exploration	GeoInformation			
Underground	Permits	Geology	4	7	607 815
Resources	Protection of the				
	Subsurface,				
	Appraisal		3	8	300 354
	and Balance of				
	Reserves				
Waters	Utilization of				
	Waters			4	285 103
				TOTAL:	1 562 569

According to the strategy for development of the national policy in the field of geology, underground resources and waters the key financial resources are oriented towards implementation of a broad range of tasks of regional character mainly. The available funding, however, is rather insufficient which resulted in the current status of a number of spheres in the underground resources and regional geology sector. This will have negative impact on the plans of the country to adequately participate in potential cross-border projects (e.g. appraisal of the opportunities to utilize the resources of gashydrates in the offshore Black Sea). The attitude to have mainly commercial companies involved in prospecting and exploration is acceptable since the "transitional" type of economies are not in a position to secure large amounts of financing. In the opinion of the authors it would be expedient to invest even more rigorously in regional studies and more specifically in studying the deep structure of certain areas of the territory of the country. This type of investment is assessed as potentially redeemable because such results are highly informative and sought by the companies, therefore, they are a marketable product. The areas may cover the economic zone of the offshore, parts of south-west Bulgaria, completion of the seismic projects for the S Bulgaria section and others.

At present no state budget financing is provided for new coal prospects. This position is also estimated as a substantiation of the term of strategic planning (2005-2010). The authors consider as an essential task in the geological exploration for fossil fuels the attraction of strategic investors and perfect compilation of the privatization contracts along with precise negotiation of the exploratory and appraisal operations, including effective post-privatization control on the commitments taken.

The experts in the field of geology quite often discuss the issue on the institutional consummation in supporting the GEA and the production of underground resources. Without getting in too much details we will mention that in our opinion it is more weighty to clearly define the competencies and the institutions charged with the implementation thereof. According to URA (Article 7) MEW is the institution that is to develop and propose to the Council of Ministers the state policy and strategy in the field of prospecting, exploration and production of underground resources and protection of the subsurface. This way MEW appears to be a regulatory, coordinating, supervisory and information state body and to solve the following two key issues:

- development of the legislative documents on the procedure and conditions to acquire rights to prospect, explore and produce underground resources; this is a function of a state regulatory body, independent at maximum settled by law;
- management of regional scientific and applied studies to acquire more complete notion of the underground resources of the country and to compile and maintain a national data base of the composition and the studies of field geophysical surveys and well logs.

At the same time it is expected the Ministry to achieve the following political goals in the most favourable for the society way:

To provide the society and the economy of the country with sufficient in type and quality information;

- European and global integration in the field of geology, expansion and protection of Bulgarian interests worldwide;
- To stimulate the private initiative in prospecting, exploration and production of underground resources and to attract foreign investment in this sector;
- To utilize and protect the subsurface as a non-renewable resource.

The complete realization of these goals will be achieved by the implementation of 16 long-term programs. The Ministry of Environment and Waters will introduce for the first time in Bulgaria, starting from 2003, program- and goal-oriented budgeting instead of the mere compilation of the annual budget as practiced until now. This will allow the implementation of all programs, as concentrated in one body, to be secured with the required human and financial resources. Currently the work on some parameters of the budget to 2005 is ongoing. Thus the National geological survey of Bulgaria (a directorate within MEW) will dispose of the necessary resources to carry out its intrinsic functions. Of enormous significance to the country is that Bulgaria became an associated member to EuroGeoSurvey, first among the "new democracies in Europe".

CONCLUSION

The views of the authors presented here are far from exhausting the issues of the coal industry and the geological exploration activity. It is envisaged that in the dynamic environment of the economic life of the country the market principles will be more strongly imposed to stimulate the expected growth of production. The growth will be inevitably attended by increased demand for energy resources and raw materials. And our efforts will be worth if we have even partially contributed towards achieving this goal.

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