

5. QUESTIONNAIREの回答

II. Question to rational use of energy:

1. National economic development plan:

A radical reform of economy is being carried out in Bulgaria since November, 1989, and particularly since the end of 1990. The reform aims to cancel the planned management of economy and the appropriate structures and the introduction of modern market mechanisms for developing the economy. A financial /monetary/ reform is going in the country, an accelerated privatization of lands and of the capital funds is being under preparation. The reform of economy is carried out in the difficult conditions of an enormous national debt, the COMECON desintegration. This is a system to which the Bulgarian economy is strongly attached. Supplementary serious difficulties were created with the Gulf crisis, because Iraq has considerable financial debts towards Bulgaria.

In these conditions the efforts of the Government of Bulgaria are directed to a systematic carrying out of the reform avoiding a catastrophic reduction of the GNP and a hyperinflation.

2. Energy policy:

Bulgaria is a country which has no considerable reserves of energy resources. The known reserves of oil and natural gas are very small and the production of oil and gas is rather symbolical. Bulgarian hydro potential is not big and only 40 % of it is utilized. Big investments are needed in order to increase this percentage. More significant are the reserves of low grade lignites with a calorific value of 1300-1400 ccal/kg and a high content of sulphur /up to 3,5 %/. There are some reserves of brown coal. More than 80 % of the coal reserves could be utilized only for energy generation /electricity/

For that reason Bulgaria is obliged to import about 70 % of the primary energy resources. During the last 15 years after the first oil crisis, electricity generation on the basis of indigenous coal and nuclear power was increased. In the early 1970's Bulgaria began utilizing natural gas only for industrial needs. After Chernobyl accident a serious nonacceptance of the public opinion has blocked the development of the nuclear sector. Increased environment requirements create difficulties to the energy production based on indigenous coal burning. SO₂ emissions reduction requires big investments both for the existing power plants and the new ones under construction which will burn indigenous coal. Parallel to the nocive emissions, the extension of lignites production carried out mainly in open cast mines, affects considerably agriculture lands, too.

Having in view these circumstances and in the conditions of an economic stagnation, it is very difficult to develop and to implement an uniform state policy in the field of energy. It is obvious that further development of economy will impose an appropriate consumption development. The energy policy main orientation is towards development of less energy consuming industries. This restructuring requires a longer period of time. A basic analysis of the energy balance is carried out in order to optimize it in the conditions of a new structure of the economy. Appropriate economical regulators, including a new

pricing policy for the energy sector, will be developed afterwards. For the moment the basic energy resources prices /with the exception of natural gas prices/ are fixed by the State.

3. Energy conservation policy

Since 1977 the Ministry of Energy, now called Committee of Energy, has been charged by the Council of Ministers to develop and carry out the energy conservation policy. The State Inspection for Energy Control is the basic body of the Committee of Energy which assumes the task to put into practice the policy of the rational use of energy. By Government decree of 1984 have been approved Rules for the energy control. These Rules regulate the activities, rights and duties of the State Inspection for Energy Control. Within the Committee of Energy was established since April 1st, 1991, a Department for energy consumption effectiveness which is responsible for the development of the state policy in the field of the energy conservation in the market economy conditions.

4. Energy conservation office in the Government

The basic activities of the State Inspection for Energy Control consists in systematic audits of the energy resources use in industrial enterprises. On the basis of these audits they submit recommendations and prescriptions aiming the energy consumption effectiveness increase and the reduction and the liquidation of fuels and energy losses. Every year some 700 enterprises are audited. In its actual structure the State energy control inspection was established in 1977, its total staff includes 105 persons /6 persons in the Central office of the Committee of Energy and 99 persons in 7 Regional inspections covering the whole territory of Bulgaria.

Besides concrete audits carried out in industrial enterprises, the Inspection organizes and ensures the management of national and sectorial programs for the rational use of energy resources and carries out the control of their execution. Three programs at a national level have been developed in this field since 1977. Their execution could lead to reach the level of the energy consumption effectiveness of the European countries with market economy. Unfortunately, these programs were not fully executed due to two main reasons:

- a/ low energy prices in Bulgaria;
- b/ in the conditions of a centralized investments distribution, necessary financial means were not allocated for implementing the programs, particularly for implementing new energy saving technologies.

5. Growth national product

Year	1985	1986	1987	1988	1989
GNP in million levs, current prices	75160	80188	84674	87516	90528
GNP in mln.levs Prices of 1985	75160	79219	83127	84931	84555

Remarks:-The difference between line 1 and line 2 is due to the inflation

- Due to lack of unic and real exchange rate dollar/lev, the GNP is not given in US \$.

6. Primary energy resources by kinds:

Name of kinds	Year	1985	1986	1987	1988	1989
1. Coal 1000 t	Production	30852	35205	36819	34168	34298
	Import	8015	7242	7122	6586	6240
	Consumption	38567	42119	44518	39939	41313
2. Oil and other li- quid fuels /1000 t/	Production	105	93	85	76	73
	Import	14759	14890	14549	14159	14191
	Consumption	13423	13156	12886	11451	12556
3. Natural gas /1000 m ³ /	Production	20482	17138	13293	11017	9308
	Import	5455489	5679810	6072302	6251363	6832361
	Consumption	5518554	5557374	5928843	6410730	6365469
4. Others /1000 tce/	Production	413	464	438	422	382
	Import	616	425	288	204	127
	Consumption	851	830	783	620	498
5. El. Power /1000 kWh/	Production					
	Consumption	5959	4571	4672	4450	4937
6. Nuclear /1000 tce/	Production					
	Consumption	5029	4623	4763	6139	5579
7. Hydro-Power /1000 tce/	Production					
	Consumption	275	286	310	319	1031

4.

TOTAL /1000 tce/	Production	13741	14763	13409	15498	15542
	Import	35217	34614	34409,2	33428	33710
	Consumption	45641	45674	46477	45680	45991
El. Power /1000 MWh/	Production	41632	41820	43470	45039	44331
	Import	5959	4571	4672	4450	4937
	Consumption	45936	45792	47818	49185	48720

7. Final Energy Consumption by fields /1000 tce/

	Year	1985	1986	1987	1988	1989
1. Agriculture		1562	1551	1605	1658	1800
2. Industry		20800	20698	21116	20227	19696
3. Transportation		2508	2451	2657	2164	2630
4. Residence/Commerce		8295	8199	8623	8631	8709
5. Power Generation		10369	10660	10863	11087	10087
TOTAL		33165	32879	34001	32680	32835

8. Energy Price

	Year	1985	1986	1987	1988	1989	1990
1. Coal, lv/t		13,5	12,9	13,2	13,2	13,0	12,6
2. Oil, lv/t		126,5	126,5	158,0	158,0	158,0	300,0
3. Natural Gas, lv/1000m ³		80,0	80,0	143,0	112,4	112,4	112,4
4. El. Power lv/MWh		34,0	52,2	52,6	52,4	52,5	51,6

9. Situation of Industries

Fields	Number of Factory			Shipping price /mln. lvs/	Energy Consumption	
	Large	Medium Small			Fuel /1000 tce/	Power /MWh/
1. Food, Beverage, Tobacc.	103	721		11500	1479	1521
2. Wood, Wooden Goods	18	37		1430	338	419
3. Paper, Printing, Public.	13	19		810	458	665
4. Textile, Leather	74	326		3540	349	839
5. Chemical, Oil, Rubber, Plastics, Non Metal	39	20		7940	6589	6017
6. Ceramics, Glass	8	-		390	520	424
7. Steel	3	3		1540	2674	2980
8. Machinery, Metal Goods	177	88		9580	804	2212
9. Others	299	2790		17770	6485	6733
TOTAL	734	4004		54500	19696	21810

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