

THE COAL SECTOR IN BULGARIA

ANALYSIS OF ITS STATUS AND DEVELOPMENT

Sofia, May 2012

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State of the Bulgarian Energy Sector

Electricity

Gross **production** of electricity in 2010 is 46.7 TWh, which is 8.5% higher than the production in 2009. The commercial **export** of electricity is 18.2% of the gross production. The structure of electricity production is dominated by thermal power plants using coal, followed by the nuclear power plant "Kozloduy". Electricity produced from wind in 2010 is 681.4 GWh, which has grown almost 3 times compared to 2009 and represents 12.1% of gross electricity production from RES. Electricity from RES covers 14.7% of gross domestic electricity consumption in the country. The share of local energy input for electricity generation in 2010 is 85.8%, while that of import - 14.2% (nuclear energy is recognized as a local energy source).

Final **consumption** of electricity in the country in 2010 amounts to 28.3 TWh, which is the level of 2009. Industrial and public sector take 62.6% of the final consumption of electricity and residential - 37.4%. Sales of electricity in 2010 to users connected to the transmission network, which benefited from the right for choice of provider are 4.4 TWh.

Heat Energy

In 2010 15.1 TWh heat energy is **generated** from cogeneration plants, factory plants and NPP, which is 0.05% more than in 2009 (for factory plants - increase is by 0.9% and for nuclear power - a decrease of 2.5% and heating companies - a decrease of 0.8%). The largest share of input fuels for heat production are gaseous fuels (48.7%), followed by imported coal - 30.6%, local coal - 18.3%, nuclear energy- 2.1%, liquid fuels - 0.2% and biofuels - 0.1%. The share of imported energy input for heat production is 79.5%, and of local - 20.5% (nuclear energy is recognized as a local energy source). The structure of production of heat energy is dominated by factory power plants - 51.0%, followed by heating companies - 47.3% and NPP "Kozloduy" - 1.7%.

The realized heat energy in 2010 amounts to 11.7 TWh, which is 8.1% less compared to 2009. In the structure of consumption of thermal energy the largest is the share is of industrial and commercial users - 59.0%, followed by households - 35.3 % and budget organizations - 5.7%. Compared to 2009, consumption of heat from industrial and commercial customers has decreased by 12.2%, from budget users has decreased by 2.2% and from households the decrease is by 1.3%. The heat energy produced by factory plants is used for technological needs of plants themselves and by external users mainly from industry.

The final consumption of heat energy produced by CHPP and NPP are mainly households. The distribution of the realized heat energy to end users is as follows: households - 75.1%, budget - 12.2% and industrial and commercial users - 12.7%.

Local Coal

Lignite coal is the main and most important local fossil fuel used as energy sources. The largest reserves of lignite in the country exist in the East-Maritza Coal Basin (close to the town of Stara Zagora).

The reserves of coal in Bulgaria are little over 2 billion tons, as the approximate share of the stocks in use is 86%. The country is dominated by stocks of lignite - 91%, the majority of the studied deposits are with geological and mining-technical conditions that allow open pit mining.

According to preliminary data for 2011 more than 35 million tons of coal were extracted, including lignite, black and brown. In the subbranch there are 6 operating mines, extracting brown coal - "Bobov Dol", "Oranovo", "Cherno More", "Otkrit Vagledobiv", "Fundamental", "Vitren", 4 for lignite - "Maritza Iztok", "Chukurovo", "Beli Breg", "Stanyantsi" and 1 for black coal - "Balkan 2000".

Basic local resource is the lignite coal in East-Maritza Coal Basin. It was formed in the Cenozoic during the Tertiary. The earliest evidence for the presence of coal in this region gives the French explorer Auguste Viquesnel (1847). Twenty-two years later, the Austrian geologist Ferdinand von Hohshteter gives a description of the coal deposit and makes the second (after Ami Boué) geological map of Bulgaria, as part of the Ottoman Empire.

In the East-Maritza basin operates the state enterprise Mini Maritza Iztok, which processes three open pits - "Trojanovo 1", "Trojanovo North" and "Trojanovo-3", which supply with coal three thermal plants for electricity generation and a briquette factory for briquettes production and provides resources for the next 50 years. In 2011 the company extracted 32 million tons of lignite.

The coal **production** for 2010 amounted to 29.4 million tons, which is 8.2 percent more than in 2009.

The structure of the extracted coal is dominated by lignite - 92.4%, followed by brown - 7.5% and black coal - 0.1%.

The total production of lignite is 27.2 million tons and their main producer is "Maritza Iztok" Mines which holds a share of 96.0%. Other producers of lignite mines are "Beli Breg" (1.5%), "Stanyantsi" (1.4%) and "Chukurovo" (1.1%).

The total production of brown coal is 2.2 million tons, produced mainly from the Bobov Dol (0.88 million tons) and Pernik (1.04 million tons) basins. The total production of black coal is insignificant (0.017 million tons) and is realized by "Balkan 2000" EAD.

Description of coal-fired power plants

Installed capacity of the condensing power plants of black coal in Bulgaria is 1460 MW in total. They are concentrated in TPP "Varna" (6 blocks of 210 MW) and TPP "Rousse Iztok" (2 blocks of 110 MW).

Installed capacity of the combined power plants (heat and electricity) of black coal is 500 MW and are concentrated in TPP "Rousse Iztok", TPP "Deven" JSC, TPP "Svilosa" JSC and TPP "Vidachim" JSC.

All these plants are designed for coal from Donets mine basin. Due to its depletion and recent amendments on the world coal market now plants are supplied with coal from different

suppliers.

The construction of new facilities based on black and brown coal is not envisioned.

The **consumption** of coal is mainly to generate electricity and heat - 97.3%, as well as for the manufacture of briquettes (1.8%), for own consumption and other consumers (0.5%) and for heating needs of households (0.4%).

Importance of the Coal Sector for Bulgaria

Mining industry is important to economic stability and energy independence of the country. The sector contributes 5% of GDP and provides 30 000 jobs, and through related industries - 120 000.

In March 2011 as a result of the amendment to the Law on the Underground Natural Resources (LUNR) a single body for overall management of underground natural resources was established and it is governed by the Ministry of Economy and Energy. In accordance with the EU Raw Materials Initiative and in accordance with Art. 7, Para. 2 of LUNR, Ministry of Economy and Energy initiated development of a National Strategy for the mining industry development, which is expected to be adopted by the Council of Ministers in 2012.

In Bulgaria's mining industry labor productivity is higher than average productivity for other industries.

In the industry, more than 300 companies and organizations develop active business in the field of exploration, extraction and processing of underground natural resources and related activities and services.

In 2010 the total production of the mining of resources in Bulgaria amounted to almost 80 million tons. Estimated per capita there are 11 tons. According to this index Bulgaria comes under the definition of a "mining country", with an index above the worldwide average. Bulgaria ranks third in copper and fourth in gold mining in Europe, which shows the leading role of the country in the European mining.

The draft National Strategy for the mining industry provides development of the mining industry and has the following objectives:

• Economic objectives

1. Stability of legislation - establishing clear, stable and predictable conditions and regulatory policies to facilitate investment, measures to prevent illegal extracting.
2. Recognition of the crucial role of investment in the mining sector for economic development.
3. Competitiveness - to promote fair competition, establishing clear and transparent rules for granting rights.
4. Encouraging mining companies to streamline their operations.
5. Development of efficient technologies to ensure the streamlined extraction and optimal use of non-renewable natural resources. Promoting increased extraction of useful components and

reducing losses in the extraction and processing. Promoting comprehensive utilization of underground natural resources and mining waste resulting from the extraction and processing.

6. Encouraging the development of manufacture of products with higher added value in the technological chain after extracting and processing of underground natural resources. Increasing exports of end products based on natural resources.

7. Application of methods of prospecting for technologies for extracting and processing providing cost-effective exploitation of deposits with a low content of useful component.

- **Environmental objectives**

8. Protecting the environment through optimal preservation of the ecological integrity of areas where there are mining activities and implementation of technologies that reduce waste generation from the mining industry and its utilization.

9. Protecting the earth, through utilization of underground natural resources at every stage - exploration, mining and primary processing.

10. Environmental restoration and improvement of ecological situation around old and derelict sites from the mining and primary processing of underground natural resources.

11. Encouraging of the mining waste management through processing and volume reducing of those permanently stored.

- **Social goals**

12. Sustainable development of the regions where mining industry is concentrated during and after the exploitation of the deposits.

13. Promoting and creating safe workplaces, fair and decent wage in the mining industry.

14. Maintenance of information, education and communication programs and respect the rights of local communities.

15. Qualification and training of personnel for the mining industry.

An important point that is rarely mentioned and discussed and the negative effect of which is not taken into account is the theme of quality and working conditions. Provision must be strictly adhered to all requirements for safety, set in the Bulgarian legislation and European directives. This should be supervised by the competent authorities and if violations have been ascertained appropriate administrative sanctions, fines and, if necessary, liability should be undertaken.

In the coal sector a realization of an investment amounting to 120 million levs to improve the effectiveness of Units 1 to 8 in the Maritza Iztok 2 is provided. This investment would be tantamount to establishing a new unit with an installed capacity of 104 MW.

The point of view of the **Climate coalition** is that one of the main activities in the coal sector

should be increasing of energy efficiency and introduction of environmentally friendly activities and measures in the operating at the time plants rather than building new facilities. Air cleanness and in particular emissions of dust and sulfur dioxide (SO₂) are the two most serious problems because they have a significant impact on the environment and human health. Poor quality of the Maritza Iztok coal makes compulsory the installation of desulphurization plants and ESPs with the latest technology along with improved water treatment facilities and improved landfilling of solid waste to help meet the requirements of the European and Bulgarian legislation on environmental protection and population health.

Bulgaria has the negative example of blocks 5-6 of Maritza Iztok 2, working for 5 years after Bulgaria's accession to the EU without FGD facilities. The regional environmental inspectorate of Stara Zagora constantly fines "Maritza Iztok 2" JSC for working without FGD installation, although it is obliged to completely stop them from work.

Impact of the coal sector on climate change and participation in the European Greenhouse Gas Emissions Trading Scheme from 2013

The analysis of GHG emissions by sector resources leads to the conclusion that the main potential for savings is concentrated in the production of electricity and heat from coal, because this production is responsible for 90% of greenhouse gases emitted. In turn, about 70% of total emissions from electricity generation (without factory plants) are due to the three large power plants burning local lignite - TPP "AES Galabovo" TPP "Maritza Iztok 2" TPP "Enel Maritza Iztok - 3". That is why they are being highlighted because their potential to reduce emissions by 2020 largely determines the trend of changing emissions for the sector as a whole.

In the beginning of 2013 the third eight-year period of the European trading scheme for greenhouse gas emissions starts. Fixed national emission ceilings are removed, introducing an overall EU-wide ceiling decreasing linearly each year until 2020, in accordance with the target of 21% reduction from 2005 levels. Allocation of free allowances is carried out by Member States based on transitional rules for harmonized free allocation of emission allowances pursuant to EU-wide Article 10a of Directive 2003/87/EC.

The basic principle for allocation is that free allowances will be determined based on the previously approved product performance for the whole EU, not based on historical total emissions for each installation as it was during the period 2008 - 2012. Indicators represent a threshold value of the quantity of free allowances that an installation can obtain per unit of output. Significantly increases the share of allowances that Member States will auction. The "polluter pays" principle remains. Installations' obligation to return annually a quantity of allowances equal to their verified greenhouse gas emissions in the previous year remains.

A free allocation of allowances to electricity producers is not provided they will be obliged to purchase all their allowances after 2013. For countries with electricity sectors characterized by a high dependence on one kind of fossil fuels or insufficient level of connectivity to European electricity system, derogation from this rule is made. Ten Member States, including Bulgaria, can apply for that exemption.

Allowances that Member States do not allocate free of charge, will be offered at auctions organized in accordance with Regulation (EC) № 1031/2010 of 12 November 2010 on timing, administration and other aspects of auctioning of allowances for greenhouse gas emissions pursuant to Directive 2003/87/EC of the European Parliament and of the Council establishing a scheme for greenhouse gas emission allowances trading within the Community and purchased in the auction prices achieved.

Bulgaria will participate with the other Member States in a common auction platform, which is to be created.

Each Member State shall receive annually an amount of allowances for auction offering. Quantities of allowances are not allocated proportionally, but by redistributive mechanism directing additional quantities to Member States with lower GDP than the EU average, including Bulgaria. The revenue from auctions will be collected in the national budgets of Member States, which will annually provide relatively higher incomes for poorer countries. No less than 50% of these revenues should be used to combat climate change, including the promotion of renewable energy, introduction of clean coal technology (carbon capture and storage of CO₂) and mitigation of social consequences of increased energy costs.

It is in the revenue distribution that we will insist to have participation and control, and we will want more exactly to be specified what to combat climate change means. In our opinion technology to capture and store CO₂ (CCS) is extremely unsuitable and expensive for Bulgaria.

In order to mitigate the negative economic effects of the implementation of the Energy and Climate Package in accordance with the purpose of solidarity, the Member States with lower than average GDP per capita, such as Bulgaria, received reduced national targets and some compensation at the expense of other EU countries. Adequacy and timeliness of political decisions and measures will determine the price that Bulgarian business and citizens will have to pay for the transition to low carbon energy.

Coal-fired plants and environment. Civil initiatives against air pollution

The last report of the European Environment Agency shows that the levels of sulfur dioxide in 2009 were exceeded in only two EU countries - Romania and Bulgaria. Because of its excess content in some municipalities, including Pernik and Galabovo, there is a criminal procedure against the country that has long passed the pre-trial phase and the European Commission is to decide whether and when it will be submitted to the court. State "Maritza-Iztok 2" has long lingered the construction of desulphurization equipment of units 5 and 6. TPP "Svilosa" in Svishtov also does not yet have a desulphurization, as last year the company complained that the delay is due to lack of funding. The plant was switched to imported coal with low sulfur content, and to date it is not working.

TPPs without desulphurization:

- "Varna" - period of construction of the facility - 2014
- "Maritza 3", Dimitrovgrad - will run until the permitted 20,000 hours

- TPP "Republika" to "DHC Pernik" – are going to be build,
- "Bobov dol" Bobov Dol - are going to be build,
- TPP "Svilosa", Svishtov – there is no specified period of construction

The data from the Ministry of Environment and Water shows that in municipalities with developed coal industry the contribution to fine dust and pollution is very high -Galabovo (31%), Radnevo (42%)

In the period between 2004 and 2006 in Stara Zagora air pollution was very often felt. Despite numerous reports and complaints of citizens government never gave them accurate and competent information. Therefore, the townspeople do not believe in the institutions responsible for monitoring air quality. Versions are that the pollution either comes from Maritza Iztok or from the nearby military site where military equipment is being destroyed.

A civic group "For clean air over Stara Zagora" was established in January 2010 after another strong gassing in city in December 2009, when schools and kindergartens remain closed for two days. "The position of the group is that we do not believe the official statistics," said Penka Georgieva, one of the active participants. In the autumn of 2011 a group of residents of Stara Zagora fell into an absurd situation wanting the fine yellowish substance that occurs from time to time during the typical for the city yellow rain, to be examined. From the laboratory, however, asked them to collect at least 50 grams of yellow powder in order to carry out the survey.

Derogation

The derogation allows for transitional free allowances allocation for modernization of electricity generation (2013-2020).

Description: Member States may give a transitional free allocation to installations for electricity production in operation by 31 December 2008 or to installations for electricity production for which the investment process was physically initiated by the same date.

Under Directive 2009/29/EO full auctioning should be the rule from 2013 onwards for the power sector, taking into account its ability to pass on the increased cost of CO₂.

Article 10c allows some Member States, meeting certain criteria, to move smoothly to full auctioning of allowances for the power sector. The criteria to be met by Member States and the principles of transitional free allocation of allowances under Art. 10c of Directive 2009/29/EC are described later in this Report.

Conditions to be met by Member States for benefitting from derogation are provided in Article 10c of Directive 2009/29/EC.

According to Art. 10c (1) Member States may give a transitional free allocation to installations for electricity production provided that one of the following conditions is met:

- in 2007, the national electricity network was not directly or indirectly connected to the network interconnected system operated by the Union for the Coordination of Transmission of Electricity (UCTE);
- in 2007, the national electricity network was only directly or indirectly connected to the network operated by UCTE through a single line with a capacity of less than 400 MW; or
- in 2006, more than 30 % of electricity was produced from a single fossil fuel, and the GDP per capita at market price did not exceed 50 % of the average GDP per capita at market price of the Community.

Bulgaria meets the third condition. According to the National Statistics Institute, the structure of the electricity produced by the types of fuels / energy in 2006-2008 is as follows:

	2006	2007	2008
	%		
Total electricity	100,0	100,0	100,0
from nuclear energy	42,52	33,82	35,00
from hydropower	9,99	7,47	7,28
from wind energy	0,04	0,11	0,27
from fuels	47,45	58,60	57,45
including			
from coal and fuels from coal	41,90	51,88	51,56
from liquid fuels	0,83	1,31	0,62
from natural gas	4,71	5,40	5,24
from waste	0,02	0,01	0,04

Determination of the total quantity of allowances that can be transitionally allocated according to Art. 10c nationally

In 2013 the total transitional free allocation shall not exceed 70% of the annual average verified emissions in 2007 (for Bulgaria) from electricity generators for the amount corresponding to the gross final national consumption of the Member State.

According to Art. 10c (2) the amount of free transitional allowances should decrease gradually from 70% **in 2013** to 0% **in 2020**. Directive 2009/29/EC does not require this reduction to take place linearly, but MS should identify intermediate steps in a manner clearly indicating that the transition from 70% to 0% **will be** done within a maximum 7 years.

Based on calculations for Bulgaria and the calculated ratio between GFNC2007 and TGEP2007, actually it turns out that in 2013 the country may allocate no more than 53.02 percent of the verified emissions for electricity generation in 2007.

Investments to be made should stimulate clean energy production.

List of investments will be approved (eventually):

- Modernizing the generation of electricity
- Diversification of energy mix
- Reduction of emissions of greenhouse gases through the modernization of installations using coal
- Renewable energy sources
- Replacement of old polluting technologies with less polluting
- Capture and storage of carbon

Smart grids will carry two-way power, i.e. are able not only to supply homes with electricity, but also to take those generated by homes and offices (e.g. photovoltaic) electricity. They will also perform intelligent distribution of consumption and peak load in different time zones). Plants which have derogation under Art. 10c are plants that generate electricity and can be grouped into three groups:

Smart grids will carry two-way power, i.e. they are able not only to supply homes with electricity, but also to take this generated by homes and offices (e.g. from photovoltaic systems) electricity. They will also perform smart distribution of consumption and peak load in different time zones). Installations which have derogation under Art. 10c are the installations that generate electricity and can be grouped into three groups:

1. Installations producing only electricity;
2. Installations for the combined heat and power production - CHPP;
3. Installations producing electricity (and heat) and performing other activities as in Annex 1 of Directive 2009/29/EC.

Allowances by derogation will be granted only to installations for electricity generation - these are installations falling under category 1 (electricity generators producing electricity exclusively) or cogeneration installations (category 2) for which further assessment from MS is made to avoid allocation over the necessary (installations producing heat, including CHP, receive free allowances in accordance with the Transitional rules for harmonized free allocation for the 2013-2020 period under Art. 10a of Directive 2009/29/EC).

The organizations united in the "Climate Action Coalition - Bulgaria" believe that the application for free allocation of emission allowances, despite the declared goals to gradually increase the price of electricity will not help the transition towards a low carbon economy. Therefore the cost of this transition will simply be shifted in time and the necessary investments in energy efficiency and energy mix diversification with renewable energy sources will not happen in time for achieving the goals adopted by the Energy and Climate Package.

Free allowances will be made available to TPP, which will generate additional revenue. No preconditions for energy savings will be established.

Funds from the emission allowances auctioning may be used intentionally to energy efficiency and clean technologies.

If Bulgaria provides free allowances to companies, it will lose revenue from the European Emissions Trading Scheme (EETS), which could be invested in improving energy efficiency and green technologies.

The decision to request derogations is political. The choice to make is whether to give priority to electricity generation companies or to take the opportunity to raise funds to improve energy efficiency in public sector and other activities that would actually reduce carbon intensity. This is an opportunity both to reduce Bulgaria's dependence on fossil fuels and thereby save money. Improving energy efficiency is the cheapest option for saving emissions.

Companies for electricity generation have sufficient allowances from the previous trading period.

Our alternative energy scenarios clearly show that the path to a sustainable energy system is decentralization. Free allocation of allowances favors certain companies, giving them the opportunity to invest in themselves and actually distorts competition.

In both the acceptance and rejection of the proposed exemptions from Brussels a close monitoring in future investments is needed, whether they be taken by energy companies or by the state. It should include a broad representation of NGOs.

Guidelines for state aid in the context of the Greenhouse gas emission allowance trading scheme after 2012

Special and temporary measures (flexibility mechanisms) provided in Directive 2009/29/EC to reduce the burden of its implementation, include state aid under Article 107, paragraph 1 of the Treaty on European Union (TFEU), for which Member States are obliged to inform the Commission and which implementation can not begin before being approved by the EC. Since the provisions introduced by the Directive will be applied from 1 January 2013, state aid is not considered necessary before this date. Appropriate measures may be allowed only for expenses incurred after January 1, 2013, except aid for transitional allocating of allowances to modernize the electricity generation sector, which under certain conditions may include investments made after June 25, 2009 and included in the national plan.

Eligible measures according to the State Aid Guidelines

- Help for businesses in sectors exposed to significant risk of "carbon leakage" due to the transfer of expenditure for emission allowances in electricity prices (aid for indirect costs of emissions) - the purpose of aid is to avoid an increase in global emissions of greenhouse gases due to outsourcing of production outside the EU in the absence of a binding international agreement on climate change. However, such assistance may have a negative impact on the effectiveness of the ETS and lead to significant distortions of competition in the domestic market, especially when companies in same sector receive different treatment in other Member States.

To avoid these negative impacts, the maximum amount of aid will be calculated using a formula that guarantees its proportionality and maintaining incentives for switching to low carbon electricity generation.

Moreover, even in its maximum amount the eligible aid will not fully offset the indirect costs of emissions in electricity prices will decline over time - 85% of eligible costs in 2013, 2014 and 2015, 80% of eligible costs in 2016, 2017 and 2018, and 75% of eligible costs in 2019 and 2020.

- Investment aid for highly efficient power plants, including new power plants that are ready for capture and storage of CO₂ - the aid intensity will vary (between 15% and 5%) as contributing to environmental protection and emissions reduction of the new power plant compared with the most advanced technologies. Eligible costs will be limited to the total cost of investment in equipment and land that are absolutely necessary to build the new plant.

- Support for transitional free allocation of allowances for modernization of electricity generation- derogations from the principle of full auctioning of allowances in electricity generation sector are subjected to rigorous scrutiny by the Commission since with the granting of free allowances Member States give a selective advantage to energy producers competing with those in other Member States, which may affect trade in the internal market and distort the principles of fair competition. Eligible costs under this type of assistance are limited to the annual investment costs listed in the national investment plan, which correspond to the market value of free allocations. The aid must not exceed 100% of eligible costs.

- Help to exclude small installations and hospitals from the ETS – it is permitted provided that the excluded installations are subject to the measures leading to emission reductions equivalent to what would be realized within the ETS.

Bulgaria is one of the countries which developed its plan for derogation, introduced it to the European Commission and is expecting approval. Unfortunately a prior public discussion was not conducted so that we could evaluate the effectiveness of the proposed investments, as well as their admissibility as "green".

Energy sector policies to reduce greenhouse gas emissions

- Use less energy, i.e. improving energy efficiency in production and consumption of energy;
- Use of cleaner energy, i.e. improving the energy mix by increasing the share of low-carbon energy;
- Rapid technological progress in transition to a low carbon economy

Given the stabilizing role of local coal as resource for electricity generation the state announced it will support financially and institutionally construction of power plants with technologies for capture and storage of carbon dioxide through the schemes and mechanisms adopted at European level, and under balanced policy between environmental legislation and the promotion of local energy resources.

According to most of our experts this technology is harmful to the environment, inadequate in terms of the geological structure in Bulgaria and expensive to implement in our country.

The technology for carbon capture and storage (CCS) is an expensive experiment that diverts attention from real solutions. It also diverts significant resources, as it is justifying investments in new coal-fired plants and outdated technologies. There is no reason based on this expensive experiment to talk about "clean coal technologies".

To achieve sustainable development without painful economic consequences for our country, however, it is necessary to consider of the following major steps in the short and medium term:

(1) In the state budget will flow additional revenue from the auctioning of allowances. At least 50% of these revenues should be invested in environmental projects to reduce greenhouse gas emissions by developing renewable energy sources, energy efficiency and the introduction of so-called "smart grids", measures to avoid deforestation and increase afforestation and reforestation, encourage a shift towards types of transport with lower emissions and public transport and others.

In our opinion, a mechanism for transparency and public control over the investment of these funds should be established in order to have certainty that they will really be put into environmental projects. So far the government has not proposed such a mechanism.

(2) In order to fully exploit the rights for trading granted to Bulgaria, efforts to prepare and establish effective mechanisms should be made, including through participation in a single Community-wide platform for auctioning of emission allowances so that revenue can utilize the rights granted to the state.

Improving the use of local energy resources

- Developing by the end of 2011 and adopting a Program of effective use of indigenous energy resources, including consideration of options for sustainable and environmentally soundly soil use and management in protecting their ecological functions and degradation prevention, as well as recultivation of already degraded soils and reduction and / or decreasing the degradation to the riskless levels for environment and human health.
- Updating the legal framework to ensure unified management of underground natural resources.
- Standardization of procedures and documents granting rights for prospecting, exploration and extracting of underground natural resources.

Projects for new power plants

1) The latest development is that the expert feasibility analysis regarding the construction of new blocks (9 and 10) on the Maritza-Iztok 2 site, commissioned by the government, is ready. The analysis, presented to the Bulgarian Energy Holding (BEH), recommends the construction of blocks 9 and 10, of 225 MW each. An alternative option is also proposed - to construct one larger block of 450 MW, as apparently its effectiveness would be 6% higher. The price forecast given by the expert is around 400 million euro. The environmental impact assessment for the site, on which the new installations are to be placed, is ready, and the necessary infrastructure is already in place. The management of Maritza-Iztok 2 Thermal power plant (TPP) has submitted to the BEH and the Minister of Economy its proposal on how the new managing companies are to be constituted/founded. The 400 million euro necessary for building the new coal capacities will most probably be provided by means of a bank loan and own funds of the TPP. There is the option that the project might be realised through a selection of strategic investors who would buy part of the shares of the new joint-stock company.

One of the arguments in favour of constructing the new blocks is that they would make up for the mistake made with the selling of TPP 1 (AES) and TPP 3 (ENEL-Countour Global), which currently sell their electricity at twice the price of the state-owned TPP 2.

2) The plan is to begin modernisation of all generators in blocks 1 to 8 at TPP Maritza-Iztok 2, also including modernisation of blocks 5 and 7. This investment amounts to some 60 million euro, resulting in 104 MW more energy yield without increasing the costs of the TPP. The return on investment for this project is 65-70% according to government experts. The funds are to be provided by the international Kozloduy fund. We expect official confirmation of this information.

CONCLUSIONS

Rational utilization of existing potential of local energy resources in an economically efficient manner with use of modern high-efficient and low-emission solutions: energy efficiency, increasing the share of renewable energies, gradually reducing the share of coal is an element which could have significant contribution, not only on the achievement of environmentally sound energy, but also a positive effect on the establishment of sustainable development at local and regional level.

Republic of Bulgaria has developed a plan for distribution of emissions of enterprises for the next period of the Kyoto Protocol, taking advantage of the derogation mechanism. The plan is submitted for approval by the European Commission.

From the viewpoint of environmental protection and mitigation of climate change the use of the derogation will have a negative effect. The possibility the effect to be zero or slightly positive is only if funds received from the derogation are used for implementation of green projects in the field of energy efficiency and renewable energy sources. Republic of Bulgaria has developed and adopted a National Plan for investment over the period 2013 – 2020 and decided to join the mechanism of derogation. In return, each plant included in the National investment plan for the period 2013 - 2020 will have to implement projects with a value equal to the allocated free allowances for EE and RES. In the event that this condition is realized, the participation of Bulgaria in the derogation mechanism is absolutely justified and will increase the quality of the three main parameters of sustainable development: social, economic and environmental.

But it is also important to note that if this condition is not met, the impact on environment and climate will be completely negative.

Currently there is no access to information on specific projects for "green" investments of coal industry companies included in the proposal of the Bulgarian government for derogation. This leads us to abstain to support the proposal. We want transparency and public access to the specific investment intentions in order to make an independent assessment of whether derogation would have a positive effect on the environment, public health, and not least on the trend of a gradual transition towards a low carbon economy.

The state should specifically monitor the quality of renovation that companies will realize. How this control will be exercised is a subject that very vaguely and indefinitely underlie in the request for derogation to the Commission. There is no schedule in which year the income from allowances will be invested. Strict monitoring of energy efficient measures which are being taken is crucial to achieving the objectives of reducing carbon intensity.

As already highlighted in the analysis the main activities in the coal sector should be aimed at increasing the energy efficiency of the sector and introduction of environmentally friendly activities and measures in the operating at the time plants rather than building new facilities.

All requirements for occupational safety set in the Bulgarian legislation and European directives must be strictly adhered. This should be supervised by the competent authorities and if violations are registered, appropriate administrative sanctions to be imposed, fines and, if necessary liability.

Finally, companies operating in the mining industry should have all statutory and necessary permits for their operations and to comply with the standards for air quality and other environmental parameters and directives of the EU in order not to lead to situations like the case of "Brikel". Failure to comply with necessary requirements the operations should automatically be stopped and appropriate sanctions to the owners should be imposed. Re-

launch activities would be possible only after fulfilling all legal requirements and submission of all necessary documents for the operation by the owner of the company.

Bulgarian industry for energy production from coal is facing serious difficulties caused by aging power plants, the increasing competitiveness of renewable energy, environmental legislation on air quality and pressure from civil society organizations against coal.

Not to be ignored is the fact that most EU countries tend to reduce the share of energy from coal.

We believe that after a thorough analysis of costs and benefits Bulgaria should also change its energy policy towards gradually reducing the share of energy production from coal in its energy mix. This task is entirely feasible in view of the existing reserve for energy efficiency increase and the potential for developing energy from renewable energy sources.

References:

Bulletin of the energy situation in Ministry of economy, energy and tourism

Bulletin of the National Electric Company

National Action Plan for the allocation of ETS of greenhouse gases 2008-2012

National Action Plan on Climate Change

First National Action Plan on Energy Efficiency 2008-2010

Second National Action Plan on Energy Efficiency 2011-2013

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