

ENERGY FOR SUSTAINABLE DEVELOPMENT

Energy and Environment

The preservation of the competitive advantages of Bulgarian industry requires its adequate development including environmental protection measures.

Energy industry bears the heavy responsibility to provide adequate conditions for meeting the raising needs of energy for the economy. Performing this task the energy industry has to balance between the challenges of the exhaustible conventional energy resources, the big environmental damages related to their use and the obligation to provide qualitative, continuously stable energy supply at reasonable price.

Although most of the environmental protection activities require significant expenses, they are justified from an economic point of view because they minimise possible sanctions related to obligations under international environmental agreements.

The forthcoming EU accession of Bulgaria is a significant challenge for the economy of the country in relation to the fulfilment of the obligations in the field of environmental protection. Full compliance with the EU environmental requirements is vital for the successful integration of Bulgarian industry in the EU economic structures.

Bulgaria participates in the processes for combat with the global climate change by implementing the UN Framework Convention on Climate Change and the Kyoto Protocol. Under the Kyoto Protocol Bulgaria undertook the obligation to reduce the greenhouse gas emissions by 8 % within 2008-2012 compared to the baseline 1988.

Recently a range of measures have been implemented in the energy sector, which have stabilised and reduced greenhouse gas emissions. Based mainly on the market principles, the energy industry has contributed significantly to emissions reduction in the other sectors of economy. The greenhouse gas emissions in the country have reduced by 56 % and in the energy sector – by 25 %.

Improvement of energy efficiency

Bulgarian energy production depends on import of energy resources and high energy usage per GDP unit. Competitive economy can be achieved only through competitive energy industry because energy constitutes a major component of any end product of industry and services. In this relation, the successful economic integration of our country in the EU requires the reduction of the energy consumption per GDP unit, and growth in the competitiveness of all products of industry and services will be achieved through the reduction of energy expenses in its cost price.

Energy efficiency promotion in the household sector is of primary importance in view of the inefficient consumption of electricity and heat and fuels. It requires the introduction and implementation of efficient policies at national, regional and European level, aiming at rational utilization of fuels and energy, optimisation of the energy transformation process by taking into account regional and global energy markets trends.

The *Energy Efficiency Fund* has been established for financing the activities on energy efficiency improvement. The Fund finances investment projects for development of energy efficiency in compliance with the priorities set in the adopted by the Council of Ministers national long-term and short-term energy efficiency programmes.

Promotion the development of Renewable Energy Sources (RES)

Under the EU Directive 77/2001 for the promotion of electrical energy produced from renewable sources in the domestic electricity market Bulgaria has the obligation to achieve 11% share of the electricity generated from RES in gross electricity consumption by 2010.

At present, the share of the electric power from RES in the energy balance of the country is being formed mainly from water and wind energy utilization. This share equals to 13 % of the gross electric power production for the first half-year of 2005, which is about 8 % of the gross domestic consumption. During the last two years, there is a tendency of increase in the share of electric power produced from Renewable Energy Sources as a result of the friendly climate conditions and the active policy implemented in this sphere.

The first wind farms were built in 2003, which was the beginning of the usage of a new Renewable Energy Source in the country.

Due to its climate and geographic characteristics, Bulgaria has a considerable potential of RES, which in practice has not been utilized and exploited effectively.

RES are a local resource, which usage will contribute to the decrease of the country dependence on the import of energy sources and will have a positive social effect. A result of their usage is the greenhouse gas emissions reduction, which contributes to the fulfilment of the commitments under the Kyoto Protocol.

Complex, large-scale result-oriented measures at national level are necessary for the accelerated introduction of RES as well as for saving of electric power in the conditions of increasing electricity consumption. This is a condition for Bulgaria to reach the outlined indicative goal by 2010: the share of RES in the gross domestic consumption of electricity to reach 11 %. It is very important the tendency for absolute increasing of the electric power consumption to be limited not only through energy efficiency measures, but also through redirecting of the final consumers (especially the industry) to alternative fuels and energies.

A draft Programme for the development of Renewable Energy Sources for the period 2005-2015 has been elaborated in 2005. Its goal is to formulate measures and policies to promote RES usage in the energy balance of the country. This Programme is to be adopted by the Government. Its implementation requires great investments and state support and will help for the fulfilment of the national indicative goal for reaching of 11 % share.

Appropriate financial environment for attracting foreign investors and local banks is being created for achieving the goals set in the strategic documents.

The **Bulgarian Energy Efficiency and Renewable Energy Credit Line (BEERECL)** developed by the European Bank for Reconstruction and Development (EBRD) under the *Kozloduy* International Fund is being implemented at present. To date 25 projects have been

financed under the BEERECL, receiving loans worth more than €12.8 million and worth total projects value of over €25.3 million. These projects will generate annually more than 234,000 MWh of electricity and more than 198,000 MWh heat energy, over 8,000 MWh electricity savings and more than 160,900 GJ of heat energy savings, and around 164,700 tonnes of carbon emissions reductions.

There is an increased interest of the local banks to invest in such type of projects, developing programmes, conforming to their investment policy of the banks and directed to their realization.

Good practices

Tsankov kamak Hydro Power Plant is the first pilot project under the joint implementation mechanism to the Kyoto Protocol based on the Memorandum of Understanding between the Republic of Bulgaria and the Republic of Austria, signed in September 2002. Through the joint implementation of the project, Austria will purchase the CO₂ reduced emissions from Bulgaria, as a result of the Vacha River Cascade construction.

Through this project, the greenhouse gas emissions will be reduced, as well as the emissions of sulphur dioxide, nitrogen oxides and dust, which are being otherwise released from the conventional Heating Power Plants in the electric power system of the country. The estimated reduced emissions after the construction of *Tsankov Kamak* Hydro Power Plant are about 200,000 tonnes carbon dioxide annually.

Sustainable use of the geothermal resources in Bulgaria Project is another example of good practice in the area of RES development. The main objectives of the projects are identification of the main obstacles to the utilization of the national geothermal resources in Bulgaria and preliminary researches for construction of geothermal heating systems, and preparation of banking projects using the geothermal resources and leading to the reduction of greenhouse gas emissions.