

## SUSTAINABLE DEVELOPMENT STRATEGIES OF THE ENERGY SECTOR IN THE REPUBLIC OF MOLDOVA.

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The energy sector of the Republic of Moldova, similar to many other countries, is a strategic branch, representing one of the main sectors of the national economy. The macroeconomic stability of the country, as well as the security of its energy, depends on the level of development of the energy sector. This includes thermal energy, electrical energy and the gas sector.

Specific to Moldova is the absence of its own energy resources. About 94% of the total consumption of energy resources in the country is from energy imports. The diminution of energy dependence represents a key goal of energy security and to achieve this goal a diversification of import resources has to be ensured. An important contribution to the increase of energy security of the Republic could be brought about by the exploitation of its own energy resources. For instance, a greater utilization of Renewable Energy Sources (RES) like wind, solar energy, river hydraulic sources and the use of biomass are important. In addition, greater implementation of the use of energy efficiency measures throughout all sectors of the economy is necessary.

At the World Summit on Sustainable Development, which took place in Johannesburg in September 2002, the Republic of Moldova presented a National Strategy for Sustainable Development. The “National Strategy of the Republic of Moldova in the 21 century” reaffirms the commitment to sustainable development and represents the first complex and long-term programme for the social-economic development of the Country based on new principles:

- Development of a market economy with a social focus, based on private and public property and engaged in free competition which implies the creation of a competitive economic system and adequate to the principles, standards, tools and institutions of developed countries.
- Creation of an open civil society based on democracy, decentralization of the public system and support to the civil society
- Development focus on the improvement of the quality of life and investment in human capital
- Promotion of a new security concept – economic, social, agricultural and environmental.

The strategy of the Sustainable Development of Energy Sector of the Republic of Moldova up to the year 2020 is based on the increase of energy efficiency and the implementation of renewable energy sources. The main objectives of this focus are the following:

- Restructure the power sector, complete the privatization of enterprises and create a competitive power market, aligned to the European standards and norms
- Increase power efficiency through the promotion of a consistent policy of energy conservation, including the use of regenerating resources
- Ensure power security in the country through meeting the power and power resources demands in the required quantity.

Implementation of these objectives is planned to be carried out via the following activities:

- Power efficiency of output, transport, distribution and power supply
- Renovation and increase in the competitive capacities for the production of electric power, evidence of modern transport network, systems and equipment
- Increase the power efficiency of consumers, train consumers in energy conservation at all levels
- Diversify the import sources of energy resources

The following energy generating power sources exist in the country: CHP-1 and CHP-2 Chisinau, CHP Balti and TPP Moldavian in Dnestrovsc town, and two hydroelectric power plants (Dubasari and Costesti). The installed capacity of the country's power stations constitutes about 3,000 MW, but only about 1,600 MW are used. The available capacity of hydroelectric power plants constitutes 30 MW. The total thermal energy production capacity is about 1,300 Gcal/h. The cities of Chisinau and Balti have developed centralized heating systems. The national gas supply system contains about 4,400 km of pipelines (including, 1,700 km of high-pressure pipelines) and 165 distribution stations. Gas is supplied to only 25% of the total number of locations within the country.

The Republic of Moldova's energy strategy contains specific information regarding energy sector development over a 10 year period (2000-2010) in the context of the strategic objectives of relaunching the national economy. In the next 10 years, it is expected that gas consumption will increase 1.5 times for a 24.5% growth of oil products consumption and more than doubling (2.3 times) electricity consumption as compared to the year 2000. In analyzing these greater need requirements, we believe that of the Republic of Moldova's conditions, the most important energy source is the meteorological one. The conditions are favorable in almost any area outside the rural and urban locations.

As a result of some specific calculations, there could also be prospective locations marked as particularly favorable areas on the map. These can be some high hills oriented towards the prevalent wind direction and territories on the shore of large water basins. The biomass generators in the Republic, used in energy goals are linked to forests, agriculture, the animal sector, food industry and waste from the residential sector. The potential and the quantitative distribution of the biomass comes from the agricultural sector, as one of the most important sectors of the Republic.

The measures of environmental protection, especially those regarding the increase of energy efficiency and replacing the classical system of fossil fuel generating energy with others, based on the utilization of RES, could contribute efficiently to GHG emissions reduction in the energy sector. Fossil fuel generates about 70% of the total GHG emissions in the country. By the year 2010, according to the provisions of the Energy Strategy of the Republic of Moldova, the share of the Renewable Energy Sources in the total consumption of energy will be around 10%. At the moment this share, depending on the year, amounts to 4-6%. By the year 2010, if this occurs, total electrical energy and fuel consumption will produce about 6.5 mil tons of conventional fuel (tcc), 650,000 tcc, which will be covered by RES. This will be the benefit to the environment brought about by the implementation of the use of alternative energy resources. In 2002, a comprehensive study was conducted in the Republic for the Energy Sector regarding technology needs and GHG reduction opportunities (Technology Needs and Development Priorities, 2002, 175 pages). This study can be accessed at the web-site [http://www.undp.md/publications/doc/Report\\_new\\_1.pdf](http://www.undp.md/publications/doc/Report_new_1.pdf). At that site one can find information regarding the current situation and technology needs for all the sectors in order to realize their sustainable development.