

With the support of international financial institutions in the framework of an increase in “energy independence” of the country, the Macedonian government has joined a project to build a series of small hydro power plants, mainly in the west of the country, which it intends to submit in concession to private companies. But given the environmental damage and political tensions caused by the project, as well as the modest results in the production of energy, the logic behind the project seems questionable.

The information that the Macedonian Ministry of Environment and Physical Planning has signed a contract with Hydrogen Energy Group Concession for water use and construction of two small hydro power plants on the River Zervnica in western Macedonia, has passed almost unnoticed by the public.

The construction of these hydro power plants will cost 2.5 million euros, and their power will be 1239 kW. Construction and concession of small hydro power plants are part of a government project announced in 2006, include the construction of 400 small hydro power plants which could reduce the import of electricity.

So far Gov signed 70 agreements on the construction of small hydro power plants, mostly in the western part of country, and built just eight. Problems with which investors have complained, are poor information about the hydrological condition of watercourses, land ownership and the distance from roads and electricity network.

But the bigger problem of the lack of information on infrastructure is the government's plan to build hydropower plants on the site Boskov most and Lukovo polje located on the territory of the National Park “Mavrovo” which is the oldest national park in Macedonia and covers an area of 73,088 hectares. This national park was declared in 1949 and is one of the oldest national parks in Europe, located in the northwestern part of the country and covers the mountain Korab, Desat, Sar Planina, Bistra and Krčin. Biodiversity with the disposal of more than 1000 different species of plants, home of the Balkan lynx, species that is threatened and more than 60 endemic plant species.

Building of HPP Boskov most was supposed to start in early 2014, and funding was supposed to be provided by the European Bank for Reconstruction and Development (EBRD) in the amount of 65 million euros while the rest paid by the World Bank and AD ELEM, the company that manages power plants in the country. Gov stopped the project under pressure from environmental organizations who have collected over 100 thousand signatures that this project is a danger for the environment, with the explanation that environment assessment needs to be done further as well as the basic feasibility studies. Its realization would mean the irreversible destruction of rare flora and fauna, which is located on the territory of the park opposite the insignificant contribution in the field of meeting the

electricity needs in Macedonia.

#### Better alternatives

In terms of construction of HPP Lukovo polje problem is greater because the territory needed for this hydroelectric power plant project lies also on the territory of Albania (Lukovo polje is located on the border between Macedonia and Albania). Albanian authorities strictly prohibited construction without their permission, while financing and feasibility studies should be realized by the World Bank. An additional problem is that the government's projects violated

the Law on nature which prohibits the construction of such projects. At the same time, this hydroelectric power plant would produce electricity accounted for only 2% of the electricity needs of the entire country and in general will not make great progress in reducing the use of fossil fuels and environmental pollution. Construction is expected to cost 62 million euros of which 50 million should come from World Bank in the form of a loan and the rest will directly pay AD

#### ELEM.

Government campaigns and project for 400 small hydro power plants is based on research conducted nearly 30 years ago by a group of experts headed by Professor of Mechanical Engineering in Skopje, Predrag Popovski. But this research was only the analysis of the potential of small hydropower plants in the country and the assessment of hydropower potential which estimated at 1,100 gigawatt hours of electricity. To proceed with the construction of profitable small

hydro power plants new analysis is needed specifically on hydropower potential, geographical position, terrain and other characteristics which are different from place to place. On the other side of Macedonia, which has 260 sunny days a year, offers a cheaper ecological energy from solar panels that will not endanger the flora and fauna as plant it can.