

Large hydropower plants are counted as the generation and consumption of energy from renewable resources even according to the EU regulations, but they are not considered eco-friendly facilities within the field of environmental protection because of the harmful environmental effects of dam construction. In this context, without large hydropower plants, the share of electricity from renewable resources is very small in Serbia?

For some time already, Serbia has been exposed to gross misinformation about the energy trends in Europe and the domestic obligations for harmonization with the EU plans, and incorrect information about the environmental sustainability and efficiency of using various renewable energy resources in the country have also been imposed on Serbia.

Under the influence of various interest groups (lobbies) from Serbia and Europe, the importance and efficiency of using domestic hydro potentials for generating “clean” electricity has been reduced thereby, and the use of energy resources and technologies that are not efficient in domestic conditions has been imposed, it is stated in the text

“Hydropower Stations or Windmills (1): Games about Renewable Energy in Serbia” .

The reasons for investing are multiple. Hydro potential is the most efficient of all major energy resources, hydro potential has a lot higher efficiency than all other energy resources, and particularly in comparison with other renewable energy resources, from the aspect of sustainability, hydro potential represents one of the energy resources doing little harm to the environment.

The media spreads false information about the renewable energy in Serbia, it is stated in the text.

Serbian media has become a means for distributing false information on the efficiency and character of various kinds of renewable energy, as well as about the obligations of Serbia within the sphere of its production. The campaign of misinforming the Serbian public obviously has a well-planned strategy and it reflects in the following:

- The discrediting and then complete exclusion of electricity from domestic hydropower stations as a form of clean, renewable energy; thereby, the import of foreign technology and the use of a less efficient manner of electricity generation are given the preference - which will lead to a significant increase in the price of electricity in the country (in Germany, the “green energy” addition only amounts to more than five eurocents per one kilowatt hour of consumed power).

- The equalizing of the rated capacity of planned wind generators in Serbia and their feasible generation, i.e. their realistically feasible generation on annual basis; at the global level, wind generators annually achieve an average amount of electricity that is four times smaller than their rated, i.e. full capacity; this rated, installed or nominal capacity of a wind generator (marked by 1, 2, 3 ...MW) represents its electricity generation within one hour of operation at certain wind velocities (usually 12-17 meters per second); Serbia has no locations with such wind velocities in annual continuity; (there are also windmills for

moderate wind with a somewhat bigger rotor and a smaller generator but even they require a continuous wind of certain velocity);

- The equalizing of electricity generation from windmills and hydropower plants per unit of installed capacity; according to the global average, one megawatt of installed capacity of hydropower plants generates by 55 percent more electricity than one megawatt of installed capacity of wind generators; in Serbia, this ratio would be even higher in favour of the hydropower plants - because of the powerful water courses in the country and the winds of moderate force and seasonal character;

- The refusing to state the European Community plans for renewable energy, according to which, by 2020, its member countries are obliged to achieve only 20 percent of energy from renewable resources (in general); instead, all the media state that Serbia is obliged to achieve 27 percent of renewable energy by 2020. Otherwise, Serbia achieves more than 21 percent of renewable energy in its energy mix already today.

The installed capacity of the existing hydropower plants in Serbia, which also produce energy from renewable resources, amounts to 2.831 megawatts, which represents 34% of the total installed electric power potentials in Serbia.

Already now, Serbia has three times more megawatts from renewable energy resources (from hydropower plants) than the quantity mentioned in the National Action Plan.

For better defining the domestic energy policy and the participation of renewable energy resources in it, it is necessary to determine the real costs of electricity generation from various resources - in our country and worldwide.

Today, the price of electricity from the Serbian hydropower plants is equal to the price of electricity from domestic coal-fired thermal power plants and it has become so low that, in it, there is neither a reserve for renewing the old, nor for building new plants. For now, the aged domestic hydropower plants are still working and producing the cheapest electricity in Europe - the only question is how long they will make it this way. But, for them, there are no renewable energy subsidies.

On the other hand, electricity generation from windmills and solar panels cannot survive without subsidies - almost anywhere in the world, the author stresses, whereas it seems that electricity generation from the Serbian hydropower plants can - probably because, in our country, it is not considered as energy from renewable resources.

Serbia is rich in water courses, but it is poor in powerful and permanent winds - and if we adhere to this logic, no detailed analysis on which renewable energy resource is more efficient in Serbia is necessary, because the answer is quite clear.

In the second part of the text, the author talks about the efficiency and the costs of constructing facilities. The data is stated that, worldwide, hydropower plants generate, on the average, by 55 percent more electricity annually, per unit of installed capacity, than wind generators.

Serbia still has a lot of unused hydro potential for electricity generation, so comparative analysis of costs for building wind generator and hydropower plant capacities in our country should also be made - i.e. a complete analysis of the difference in the electricity price for consumers, which comes from the integration into the power grid from these two resources. European investors are investing more and more in the construction of hydropower plants as the sources of clean, renewable energy - and particularly for the reason of their high efficiency. In comparison with other renewable energy resources, it is estimated that the efficiency of wind generators (the capacity factor) can reach almost up to 50%, of solar panels up to 20% - and that the efficiency of hydropower plants goes even up to 95%. According to the available data (Novosti, 8/12/2014 - the article "Railways and 'Đerdap' together with the Russians"), the hydropower plant "Đerdap 1" in Serbia, which, otherwise, has the installed capacity of 1025 MW, generates around five billion kilowatt-hours of electricity annually - which means that, at the annual level, it has a capacity factor of 56%. When this capacity factor of the HPP 'Đerdap 1' amounting to 56% is compared to the average capacity factor of the European wind generators amounting to 21-25% - it can be said that the hydropower plant "Đerdap 1" generates almost 2.5 times more electricity annually, per one megawatt of installed capacity, than the average generation of European windmills.

The author explains that, when the price of access routes and the power substation for wind farms is also added to the price of wind generators in Serbia (around one million euros per one MW of capacity), together with the already mentioned lower capacity factor of windmills, as well as the additional costs for inserting the more expensive, intervention electricity for the sake of grid stability - it is clear then why, in our country, the electricity from wind generators is more expensive than the electricity from hydropower plants.

Of course, wind velocity and its annual activity at an individual location for wind generators should be taken into account here, as well as the dimensions of hydropower plants, i.e. the inflow of water as well as various other local conditions for their construction.

As another important issue, the author points out at the fact that, by constructing dams for hydropower plants (with a water reservoir) on many unsecured water courses in Serbia, the consequences of floods similar to those that affected the country in the spring of 2014 could be additionally avoided, and climate changes will increase more and more.

In Serbia, the construction of hydropower plants enables a significantly higher participation of domestic economy than the one provided by the construction of import wind generators, the author concludes.