

Environmental Solution with Renewable to restore the Capacity of the Hydropower Lakes

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Abstract— The paper structured in six parts intends to present a solution designed and implemented into a hydro-energetic lake confronted with a major problem, the excessive development of the aquatic vegetation. Nowadays it has the utile volume reduced by 60% since the commissioning, due to the eutrophication. First are mentioned some specific parameters to this lake, as hydrologic, climate, physical, and chemical, responsible for this environmental problem. Due to the fact, it is part of a complex improvement of the Bistrita River; the newly developed vegetation may be transported into the other lakes from the downstream, affecting the entire zone. In the second part are structured the predominant types of vegetation developed, based on local measurements and of the collected samples. It must be underlined that this lake is realized to produce energy but also for water human supply for 4 cities and more than 200 small localities. The lake is also a RAMSAR site, protected by law, due to its ecosystem. Moreover, are presented in part three some previous solutions utilized in the last decade, which proved to be without any effect. Further, is presented the new solution, realized, and implemented, using renewable resources to collect and dry the collected vegetation. It is permanently used as the biomass resource in a power plant placed on the lakeshore. The obtained results are mentioned, as to compare the prototype efficiency after few months and after one year of utilization. Finally, some conclusions, acknowledgments, and references are scheduled.

Keywords—Renewable energy sources, Modeling, Environmental factors, Biomass, Environmentally friendly manufacturing

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