



“Gheorghe Asachi” Technical University of Iasi, Romania



HYDROPOWER DEVELOPMENT OF BISTRIȚA RIVER UPSTREAM OF IZVORUL MUNTELUI LAKE

Costel Boariu*, Constantin Bofu

*Gheorghe Asachi Technical University of Iași, Faculty of Hydrotechnical Engineering, Geodesy and Environmental Engineering,
Department of Hydraulic Structures Engineering, 65 Prof.Dr.Docent D. Mangeron Str., 700050, Iasi, Romania*

Abstract

This article refers to the fourth stage of the hydropower development of Bistrița River, upstream of the Izvorul Muntelui impoundment, in the Borca-Poiana Teiului area. The original project (described in chapter 2) was altered during the execution of works. The changes which have been made are significant: a decrease of the headrace area by 32% and the location of the power plant has been changed. The magnitude of these changes might lead to the idea that either the original project or the current changes are inappropriate. This article examines the impact of these changes on the final parameters of the hydropower development and proposes solutions for the optimal completion of the works.. The energetic parameters of the developments have been calculated using the analytical method (plotting the flow duration curve and calculating the energy produced as the surface delimited by the flow duration curve, the servitude flow and the vertical axis) available when these works were designed (in the '90s) and the RETscreen program, a modern instrument. The results obtained using the two methods have almost the same values. The calculation methods are usual (known) but the result is surprising.

Key words: flow duration curve, river water power optimization

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* Author to whom all correspondence should be addressed: e-mail: costelboariu@gmail.com; Phone 0040723201840