

By applying the regressive approach to energy generation forecast, a clearer image is gained about the potentials of the new energy generation locations and solutions in the forthcoming operation period.

Small hydropower plants energy generation depends exclusively on available flow and water amounts in different periods of the year. In addition to the legal obligations for biological minimum, energy generation is limited to a minimum discharge during turbine management. Energy generation in small hydro power plants, based on the average monthly flows during the year, for a period of 40 years, has been analyzed by the authors Valentino Stojkovski and Zvonimir Kostic in their paper on the XXXI International conference "Energy 2015".

Within analyzing the generation model that is useful for the future operation of small hydropower plants, regressive approach was used, taking into account the exploitation period of ten, fifteen and twenty years. Based on comparative data, minimum and maximum energy generation can be defined, which is implemented under in situ conditions and excluding the profit, by analysis based on the average monthly discharge for a period of 40 years. By applying the regressive approach to energy generation forecast, a clearer image is gained about the potentials of the new energy generation locations and solutions in the forthcoming operation period.

Small hydro power plants electricity generation depends on natural (exact flow duration), legal (biological minimum flow and the assumption of the environment) and technical (related to the pipe system and turbine definition) parameters. For calculation of the average annual energy generation all conditions are included: flow duration curve per month for the period 1961 - 2000, biological minimum curve is calculated as 10% of the mean flow of the location, management based on pipeline hydraulic characteristics, turbine efficiency is defined by its characteristics, generators and transformers efficiency are taken as constant parameters. Technical parameters are taken from the "Zrnovska" small hydropower plant.

Including all analyses of generation forecasts on a monthly and annual level for the last 40 years, it has been observed that following items must be taken into account during calculations: availability of a series of hydrological information for possible locations for a longer period, the inclusion of turbine flow restrictions due the understanding of the generation from small hydropower plants, specific entry restriction must be led to reduction of the average annual generation of small hydropower plants, definition of average monthly diagrams for total generation for the period based on which the generation is anticipated for the forthcoming period, possible locations for the construction of small hydropower plants are obtained based on data of the existing old hydro power plants, transmits Serbia-energy.eu