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Profit-Based Optimal Operation of a Head-Dependent Hydroelectric Power Station in the Bilateral Market

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Abstract. Deregulation and liberalization of electric power industry, among other things, has created new requirements for the market participants. In this framework, a pure hydro-generation company has to operate its hydro units, throughout the operating day, trying to fulfill the market clearing schedule or a bilateral contract. In this scenario the objective is to maximize the hydroelectric power plant profit from selling energy in the spot market or by means of bilateral contracts. In this paper the optimal operation of a head-dependent hydroelectric power station in bilateral market–short-term hourly hydro resource scheduling for energy– is obtained.