O 132. PUMPED-HYDRO ENERGY STORAGE: A CASE STUDY IN TURKEY

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ABSTRACT: Due to the limitations in the sources of fossil fuels as well as their environmental adverse effects, the implementation of renewable energy sources and the more efficient use of existing systems became critical to fulfill the increasing demands of our global for energy consumption. Most renewable energy systems like wind and solar cannot adjust their output to match cities fluctuating power demands. Therefore, various energy storage systems have been developed and many of them are under the investigation. Among various energy storage methods pumped-hydro storage systems has been developed rapidly over the last decades because of their capability of the large-scale energy time shift and the ability of being integrated with renewable energy. The component of system is an upper and lower reservoir connected with a pump/turbine. The technique works as pumping water from down to up during low demands on electricity and releasing back through the turbine to produce electricity during the pick hours. The aim of this study is to investigate the principles and factors affecting the alternatives for site selection. The locations and topography of dams and lakes of Turkey have been explored using Google Earth to search for suitable locations, and the locations listed and ranked by factors that affect the applicability, efficiency, sustainability, and environmental friendliness of the projects.

Keywords: Pumped Hydro Storage, Dam, lake, Energy Storage, energy, electricity