

## Feasibility Conditions for Wind and Hydraulic Energy Coupling

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**Abstract :** Wind energy depends on wind strength and varies largely in time. When it is above the demand, it generates a loss while in the opposite case; energy needs are not fully satisfied. To overcome this problem specific to irregular energies, the process of pumped-storage hydroelectricity (PSH) is studied in present paper. A combination of wind turbine and pumped storage system is more predictable and is more compliant to provide electricity supply according to daily demand. PSH system is already used in several countries to accumulate electricity by pumping water during off-peak times into a storage reservoir, and to use it during peak times to produce energy. Present work discusses a feasibility study on size and financial productivity of PSH system actuated with wind turbines specific power.

**Keywords :** wind turbine, hydroelectricity, energy storage, pumped-storage hydroelectricity

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