

Pumped storage hydropower plant

Operation

The existing reservoir of Campolattaro will be used as the lower basin while the above natural one, called Monte Alto, will serve as the second reservoir. During the generation phase, water will be taken, through a pipe, from Monte Alto basin to the underground power plant where electricity is produced thanks to reversible machines working as turbines. Vice versa, during the storage phase, water is brought up through underground pressure tunnels from Campolattaro reservoir to Monte Alto basin through reversible machines working as pumps.

Water supply

Campolattaro reservoir has an exploitable volume of 109 millions m³, whose 7 millions m³ (the size of Monte Alto basin) can be moved, in a closed cycle, in order to generate electricity. A 30 l/s water consume is foreseen just to restore the system losses.



Electric connection

The plant will be connected to the National Electric Grid through “Benevento II - Foggia” line, presently under construction. The project has a strategic value for the Italian electric system and, specifically, for the Southern part of it, being it in increasingly need of regulation activity as a consequence of the strong development of variable sources power plants.

Strategic value of the project

- capability to accumulate large amount of energy and to make it available when required (energy storage)
- Strong synergy with renewable power generation, especially variable sources power
- flexible use, capability to rapidly respond to the electrical system requirements (electrical system balancing)
- reduced environmental impact during operation (negligible water consumption, no air emissions)

In August 2014 Campania Region acknowledged that the use of Campolattaro Dam for energy uses represents a “strategic aim” of regional and subregional energy policies, in order to meet to targets concerning renewable energy development and electric system regulation (Regional Law n.16 of 07/08/2014).

Main project data outlook

Diversion intake flow rate	30 l/s
Hydraulic capacity of Monte Alto basin	7,0 Mm ³
Maximum generation power	572 MW
Maximum pumping power	630 MW
Average net generation drop	500 m
Pumping system prevalence	540 m
Total length of galleries (penstock - hydraulic galleries - access galleries)	12.200 m
Construction time	5 anni
Estimated capex	600 M€

General planimetry of the plant

