

FLEXIBLE ENERGY FOR MODERN GRID

In 2021, ANDRITZ and Iberdrola began commissioning the Gouvães pumped storage power plant in northern Portugal, part of the Tâmega Hydroelectric Complex. Built on the Tâmega River close to the city of Porto, Iberdrola contracted ANDRITZ in 2016 to provide the heart of this amazing hydroelectric scheme.

Portugal – The scope of supply from ANDRITZ was divided into three separate contracts and comprises the design, manufacturing, supply, installation and commissioning supervision of the complete electro- and hydro-mechanical equipment. This includes the four 220 MW reversible high-head pump turbines and motor generators, as well as the electrical power systems, which were specially developed for the Gouvães project. In addition, the contracts include the manufacturing, supply, and complete installation of the penstock with a total weight of about 12,000 tonnes of high-grade steel, as well as trash racks, radial- and roller gates and stop logs, including hydraulic equipment. This totals about 14,000 tonnes of steel to be installed across all three generation facilities of the Tâmega complex (Gouvães, Daivões and Alto Tâmega). Gouvães has a net head of about 700 m, using and pumping the water between the upper Gouvães reservoir and the Daivões reservoir below.

The high degree of operational flexibility offered by the four ANDRITZ units will provide peak-load as well as rapid-response regulating power for the region.

This is essential in a modern grid where other green energy sources, like local wind power generation, have an increasingly decisive role within the context of energy management and future generation portfolio characteristics.

“The Tâmega hydroelectric complex represents the largest hydropower project in the history of Portugal and is one of Europe’s most important energy sector initiatives of the last 25 years.”

Highly complex modern greenfield projects demand the precise management of multiple disciplines that only a company like ANDRITZ can provide in order to achieve excellence in challenging projects like Gouvães.

Over the last few years, and in the middle of the project, ANDRITZ was required to develop new concepts and modifications to fulfill changing operational



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requirements. These changes were needed in order for the project to be connected to the Portuguese national grid. Such a flexible and fast adaptation process – within the confines of an existing project development process – is only possible if the complete team responds to new challenges and because ANDRITZ has the organization to provide a worldwide network with the necessary multidisciplinary resources.

Reaching the commissioning phase of Gouvães is the result of excellent teamwork where all those directly or indirectly involved have the capacity to find solutions to daily challenges and are focused on doing so. All this, together with close interaction with our customer, allowed us to successfully drive the project through to this final phase. The first runs of unit #4 and unit #3 were successfully performed in August and September, 2021, respectively. On the basis of actual site scheduling, as originally expected, the first unit of Gouvães will provide power to the national grid within 2021. The entire 1,158 MW Tâmega Hydroelectric Complex will be finished in 2023, guaranteeing energy supplies for almost three million people.

TECHNICAL DETAILS

Gouvães:

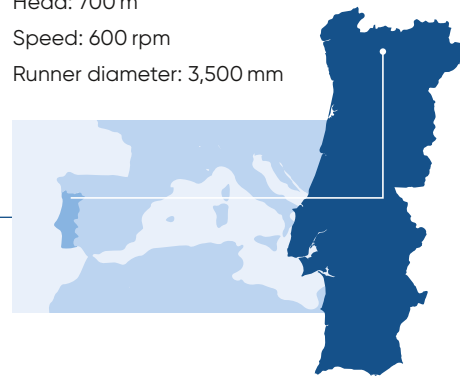
Total output: 880 MW

Scope: 4 × 220 MW Francis Pump Turbines

Head: 700 m

Speed: 600 rpm

Runner diameter: 3,500 mm



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