Renewable energy storage portugal

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Endesa Generaci?n Portugal, part of Enel Group, has been award the connection rights to develop a renewable energy project combining solar, wind, green hydrogen and a 168.6MW battery energy storage system (BESS) to replace the country’s last coal power station.

Endesa has been awarded connection rights of 224 MVA to install 365MWp of solar energy, 264MW of wind energy, with integrated BESS of 168.6MW. The project in the Abrantes region will also include a 500kW electrolyser which will produce green hydrogen.

The project, the winning applicant in a tender to convert a coal power plant in the parish of Pego, will require a total investment of EUR600 million (US$660 million). The investment is not subject to external financial aid as it is economically sustainable, the press release said.

The BESS will inject the stored renewable energy into the Public Service Electricity Grid (RESP) in, it added, a “dynamic and optimised way, reducing energy losses and optimising its use.”

The green hydrogen electrolyser will manage the surpluses that exceed the BESS’ storage capabilities. Portugal"s deputy minister and secretary of state for energy Jo?o Galamba, a regular speaker at events produced by Energy-storage.news‘ parent company Solar Media, has made the case for green hydrogen in the past.

However, the 500kW electrolyser appears relatively small in comparison with other renewables generation-plus-storage developments like the Horizeo project in France which will have a 10MW electrolyser. Though it should be said that that project, launched by Multinational utility Engie and renewables developer Neoen, has a much smaller BESS at 40MW.

The 628MW Pego coal power plant was the last in the country and stopped producing electricity with coal in November last year, marking the end of Portugal’s era of coal use. Endesa says it has formulated a training plan which can accommodate more than 2,000 people. The plant was managed by a joint venture between Endesa and Trustenergy (itself a joint venture between another energy giant Engie and Japanese conglomerate Marubeni).

Enel Green Power is Enel’s main renewable energy subsidiary – the largest renewable energy group in the world, it claims – and has been busy in Spain recently, ordering both vanadium redox flow and iron flow batteries for customer sites.

Portugal is meanwhile also one of the few countries in Europe with large pumped hydro projects coming online soon, too, with a 880MW plant in the north set to be fully operational in the middle of 2022.

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The 230-tonne metal cylinder emits a roaring hum as it spins at 600 revolutions per minute, driving a pump buried underground that brings new meaning to the idea of pushing water up a hill.

Far from the analogy of an impossible task, it is the core of a Portuguese power plant aiming to show that pumping water 7km up a mountain can be an essential -- and commercially viable -- part of an energy system led by renewable power.Built by Spanish company Iberdrola at a cost of EUR1.5bn, the facility in a rocky river valley in northern Portugal is known as a pumped storage plant.

But insiders have another name for the reservoir at the top of the mountain. It is a "water battery" -- rudimentary in concept, intricately engineered and a highly effective way of storing energy.The T?mega plant takes excess electricity from the grid, mostly generated by wind and solar power, and uses it to pump water from a lower reservoir to an upper one.