



MODERNIZATION SOLAR

# Energy storage power station built on the sea





## Overview

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What is underwater energy storage?

Germany's Fraunhofer Institute for Energy Economics and Energy System Technology IEE has developed an underwater energy storage system, that transfers the principle of pumped storage power plants to the seabed.

What is seawater pumped storage?

By Dr. DF Duvenhage Seawater-pumped storage is an innovative form of hydroelectric energy storage that harnesses the power of seawater as the lower reservoir in a two-tiered energy storage system. This approach offers a compelling solution for storing and regulating electrical energy.

What are ocean energy storage systems?

Ocean energy storage systems use the natural properties of the ocean for energy storage. They are not-so-distant cousins to pumped hydro (PHS) and compressed air energy storage (CAES) systems on land. There are two main types of ocean energy storage: underwater compressed air energy storage (UCAES) and underwater pumped hydro storage (UPHS).

What is stored energy in the Sea (StEnSEA)?

There is also the Stored Energy in the Sea (StEnSEA) project that is being supported by a consortium of German companies, which is also in the process of a small-scale pilot project over the next couple of years. In an underwater compressed air energy storage (UCAES) system air at pressure is stored inside large pliable bags on the seafloor.



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The construction of pumped storage power stations among cascade reservoirs is a feasible way to expand the flexible resources of the multi-energy complementary clean energy base. ...



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## Pumped hydro energy storage systems for a sustainable energy ...

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## Advancing underwater energy storage with seabed power ...

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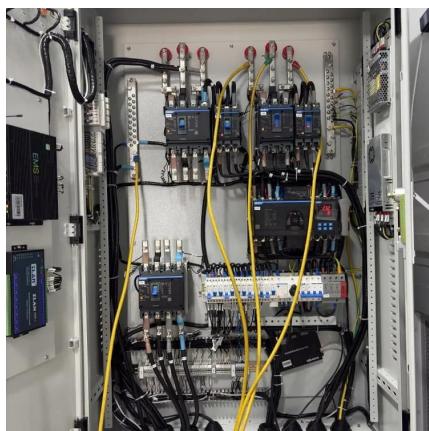
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## **StEnSea**

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