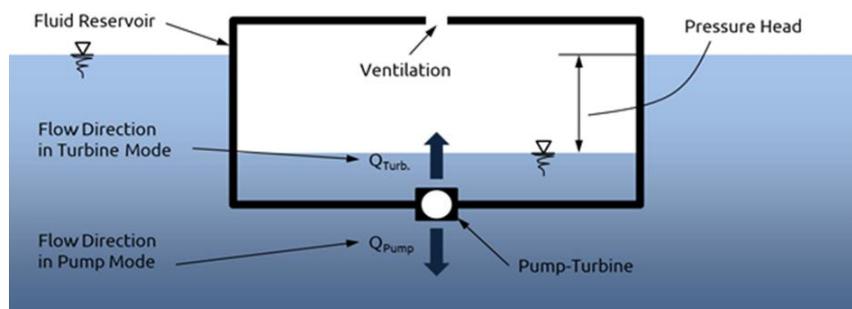


Title: Floating Hydraulic Energy Storage System for the Maritime Renewable Energy Sector

Inventors from the University of Innsbruck, Unit of Hydraulic Engineering present a new approach for a floating hydraulic energy storage system for offshore storage of electric energy. “Buoyant Energy” allows storing electric energy in lakes and oceans, next to offshore-wind turbines. An important contribution to the integration of volatile, renewable energies could be achieved. The transfer of well-known pump-storage principle into a challenging, highly dynamic environment requires important fundamental research and development activities based on their core competencies. In collaboration with the university transfer centre the group would like a) to generally establish international connections to scientific groups, organisations and entrepreneurs in the maritime sector to discuss, to exchange best practices and to develop common projects. And b) to specifically establish contacts to project partners in FP7 projects (e.g. MARINA PLATFORM; TROPOS; MERMAID; H2OCEAN, ORECCA....) or with other early-stage projects in the relevant sector.

Description

The importance of electric energy storage and controlling in power grids constantly raises due to the increase in fluctuating renewable energy sources. A stable energy system is at risk with increasing imbalances (shortage or excess periods) between energy supply and demand. Since storing electricity relies on conventional pumped storage power plants new technologies are sought-after, but the ones under development have drawbacks, e.g. high technology costs, topographical requirements, environmental sustainability or lack of efficiency. The proposed floating energy storage system is a decentralized novel approach based on well-established technologies of pumped-storage hydropower plants.



In contrast to storage plants with an upper and a lower reservoir “Buoyant Energy” uses a smaller reservoir (buoyant platform) located within a larger reservoir / large water body. The energy is purely stored by the potential energy of the mass of the floating device. Water is moved from one reservoir to the other by means of pumps and turbines: to store energy, water from the smaller reservoir is pumped into the larger reservoir (the smaller reservoir raises); to release energy, the structure is lowered and the inflow into the smaller reservoir powers a turbine. “Buoyant Energy” does not rely on topographical conditions, utilizes the ocean, is positioned close to off-shore power plants (wind, wave, tidal) and contributes with its storage solution to the integration of volatile renewable energies producers. On top this system could be integrated into the design of multi-use platforms.

Related key words: maritime renewable energy (MER), multi-use platforms (MUP), energy storage, wave energy, tidal energy, off-shore wind systems, service platforms, floating devices, deep-water

For a **long description**, further details and IPR issues: www.buoyant-energy.com/english/home.html

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