

Buoyant Energy

Hydraulischer Offshore Energiespeicher

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Energy storage and energy regulation becomes increasingly important in electrical networks with a growing share of renewable energies with fluctuating generator characteristic. Currently, the storage of electrical energy in the power grid occurs almost exclusively with proven pumped storage power stations (PSW) for decades. A completely new approach is hydraulic, offshore floating systems for the conversion and storage of electrical energy (principle "Buoyant Energy"). The core idea is a kind of "floating pumped storage power plant".

With this principle, water is moved back and forth between a floating body (e.g. concrete) and the surrounding lake or ocean, depending on energy requirement (surplus electricity / electricity demand). The electrical energy is stored completely in the form of potential energy. UIBK has filed a patent for the idea in DE, EP and US, all three cases are still pending in grant good prospects.

The fundamental energy storage approach is simple, scalable and can be used for various fields of application (customizable capacity, performance, reaction time, etc.). The variety of embodiments allows a possible combination with renewable energy sources (RES) or with floating infrastructure. Existing technologies offer themselves as basis for accelerated development. However, ensuring the floating stability in wind and waves requires comprehensive scientific research and intensive development work. The exploratory project/scoping study should clarify whether Buoyant Energy principle is technically feasible and economically viable and which application fields promise the greatest chance of success. The system is paving the way for the deployment of the PSW expertise (Austrian core competence) in the future context of a renewable power supply. Buoyant Energy recommends itself as a sustainable, lowmaintenance and longlasting storage method with high efficiency in the future "Electrical Energy Storage Mix"

