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von

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# From fossil to renewable energy resources

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# The need for giant energy storage

The change from fossil to renewable energy resources requires concepts for sustainable energy supply. The sun delivers such energy in form of sunlight in huge amounts much more than mankind consumes. This energy can be utilized by solar panels and windmills (On- and offshore). Since this energy production is not timed with the consumption of users one needs huge storage systems for the renewable energy. Large hydropower systems (HS) are the most efficient storage systems for short time periods up to a week. These HSs need two water reservoirs in different altitudes (upper and lower one) creating a large pressure difference at the turbine.
A new concept of hydropower systems is presented here which utilizes the high water pressure on ocean beds or the floor of deep lakes. The existing ocean or lake presents the upper reservoir and man made huge concrete cavities on the bottom of the ocean or lake present the lower one. This storage concept was recently successfully tested in the STENSEA (SToring ENergy at SEA) project and can be very efficiently utilized also in switched-off brown coal mines enabling the so-called "Energie-Wende" in Germany.
(https://www.iee.fraunhofer.de/de/projekte/suche/laufende/stensea-storing-energy-at-sea.html)

Donnerstag, 21. November 2019, 16:30 Uhr

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