



The Ocean Grazer storage system has a 70 to 80 per cent efficiency rate | Photo source [Ocean Grazer](#)

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AN ENERGY STORAGE SYSTEM AT THE BOTTOM OF THE SEA

 AGRICULTURE & ENERGY

The new system can store energy from renewable sources using a mechanism similar to a hydroelectric dam

Spotted: Dutch startup Ocean Grazer, a spin-off of the University of Groningen, has designed a battery that can be installed on the ocean floor near offshore renewable energy plants, acting as an energy storage device. The system functions in a similar way to a hydroelectric dam. Ocean Grazer claims that it will provide an almost infinitely-scalable storage capacity on a gigawatt hours scale.

The device uses a concrete reservoir buried in the seabed which holds millions of litres of fresh water. A system of pumps and turbines runs from the reservoir to a flexible bladder. Excess electricity generated by renewable plants is used to pump water from the reservoir into the bladder. Then, when the energy is needed, the water is squeezed back into the reservoir, driven by the pressure of the seawater above it. As the water moves, it spins turbines which generate electricity that can then be fed back into the grid.

Ocean Grazer claims the system has a 70 to 80 per cent efficiency rate, and can run an unlimited number of cycles over its estimated lifespan of 20 years or more. The company also claims the device can be scalable by simply adding more storage reservoirs and bladders. Each reservoir has a capacity of 10 megawatt-hours.

According to an Ocean Grazer press release, the company has already acquired an angel investor and is moving at a rapid pace, adding, “The ambition is to capture 10-15 percent of the market globally. To realise and accommodate this growth, Ocean Grazer has developed a strategy to develop their patented technology with local partners around the globe. To build the Ocean Battery on site and create local jobs to stimulate the local economy.”

The Ocean Battery is not the only project hoping to store excess wind energy under the ocean. Start-up Subhydro and researchers at MIT have both suggested similar ideas. In the meantime, innovative battery storage projects are growing. Springwise has covered a number of these, including a [luxury resort](#) in Saudi Arabia that uses 100 per cent renewable energy, backed up by a 1gigawatt battery, and a [hydrogen fuel cell](#) system designed for use in private homes.

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Takeaway:

A major issue for renewable energy generation is the need for a storage system efficient enough to store large amounts of energy for times when the sun is not shining or the wind is not blowing. The lack of storage capacity will need to be overcome if power generation from offshore wind is going to hit a target of 1200 gigawatts by 2050. While the Ocean Battery is not the only storage option, it offers a number of advantages—such as scalability— and could be a big part of the solution.