



The new system uses the power of ocean waves to capture free energy for desalination | Photo source Resolute Marine

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A NEW DESALINATION METHOD USES WAVE-POWERED TECHNOLOGY

 AGRICULTURE & ENERGY

The new method addresses the reliance of desalination systems on the main electricity grid

97% of Earth's water is found in the sea and contains salt. As the world faces increasing water scarcity, desalination has long been touted as a way to derive vital fresh water from the world's oceans. But existing reverse-osmosis technology requires a connection to the main electricity grid. Procuring energy in this way is expensive, and creates additional demand for fossil-fuel-derived energy. Moreover, this option is not available for more inaccessible regions that are among the most exposed to water scarcity.

There is therefore a need to develop desalination systems that capture energy from green sources separate from the main electricity grid. In response to this challenge, participants in the [EU-funded H2020 W2O project](#) have invented a method to desalinate water through wave-powered technology, proving that a system run on renewable and off-the-grid energy is possible. The new system—called Wave₂O™—uses a Wave Energy Converter (WEC) placed on the seafloor. This sways with the motion of the waves, providing a source of free energy.

In the [words](#) of Olivier Ceberio, Chief Operating Officer of Irish company Resolute Marine, who coordinated the project, “This technology delivers free energy from a consistent and inexhaustible renewable energy source: ocean waves.”

A further benefit of the Wave₂O system is that it can be installed swiftly and operated completely off-grid, processing large volumes of fresh water relatively inexpensively.

Following the initial project, Resolute Marine is now focusing its efforts on developing projects in Cape Verde. In a recent interview for a [report](#) produced by the International Energy Agency and Ocean Energy Systems, CEO Bill Staby explained that scarcity is particularly acute in this island nation. 85% of the country's water comes from dirty and noisy diesel-powered desalination plants, while water shortages create stressful living conditions for the population.

At Springwise we have seen several innovations concerned with desalination, such as a [desalination pump](#) inspired by the mangrove. We have also seen prior examples of desalination systems that utilise renewable energy sources, such as [solar power](#).

Written By: Katrina Lane

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Website: resolutemarine.com

Contact: resolutemarine.com/contact-us

Takeaway:

Two-thirds of the world's population lack access to clean water for at least one month per year. Moreover, it is estimated that by 2025, around 1.8 billion people will be majorly affected by water scarcity. While desalination has been around for over half a century, common desalination methods face obstacles to scalability. Harnessing renewable energy sources, such as wave power, further helps to overcome the challenges of energy consumption inherent in desalination technology.