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## New Generation

# German Consortium Plans to Harvest Wave Energy With Silicor

July 31, 2013 @ 16:45 EDT




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In Waiblingen near Stuttgart, the bosch engineer Istvan Denes works on a device designed to convert wave energy into electrical power. This proces GmbH)



Verlängert bis 24.05.2014.

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A research network made up of four companies and two universities aims to establish s January 2015, the German Federal Ministry of Education and Research is supporting th silicon for power generation), to the tune of nearly two million euros (approx. \$2.65 millio products” program. In a Bosch laboratory, a first demonstrator model is already showing

Waves are a huge potential source of energy—29,500 terawatt-hours a year, according International Energy Agency reports that some 21,500 terawatt-hours of electrical powe this reserve of renewable energy. To quote a report on ocean energy by the UN Intergov potential to deliver long-term carbon emissions reductions.” This is a view shared by the development plan.” (You can read more about the recent ocean energy advances in [our](#)

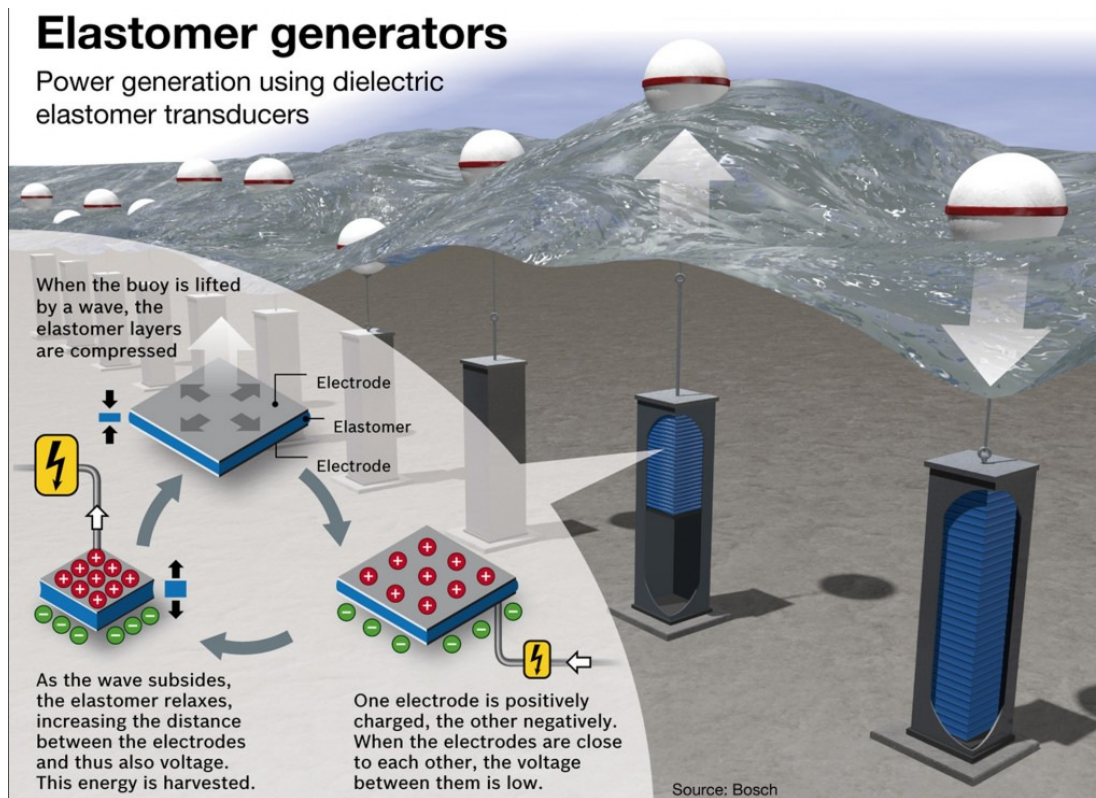
A number of expert partners have come together to exploit wave energy: Wacker Chem part of the electroactive polymer that converts mechanical energy into electrical power. subcontractor Compliant Transducer Systems. The Technical University of Darmstadt is scale model is to be tried out in the wave canal of the Technical University of Hamburg-l developed by Ingenieurbüro Brinkmeyer & Partner in Winnenden, near Stuttgart. Bosch models.

The energy converter is basically a three-ply sheet. The top and bottom layers are cond made of extremely elastic silicon, which has pronounced isolating properties. Even unde thickness.

The movement of the waves exerts a mechanical force on the converter (sheet). Initially As a result of this compression of the middle layer, the distance between the two electr external source, positively charging one of the electrodes, and negatively charging the c converter decreases. The silicon relaxes and returns to its original thickness. The distar increases. This effect leads to an increase in electrical power in the converter. The resu converted into electrical power. This power is harvested, and the cycle begins again

Technically, there are several ways in which the three-ply sheets can be compressed by ocean waves. To  simply half floats on the ocean surface, the bottom half is firmly anchored to the ocean floor. The two halves are connected t Every 3 to 10 seconds, these sheets are deformed by the movement of the waves.

“The electrical current from one individual layer is minimal, but when it is multiplied by a thousand or more, it soon ac research and advance engineering in Waiblingen near Stuttgart. In a next stage, an array of several converters will g



developed by the TU D

The first true-to-scale r  
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Power generation using dielectric elastomer transducers (Picture: Bosch)

Tags: Bosch marine energy wave power

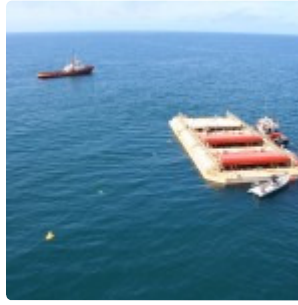
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