Oscillating Wind Energy Conversion Systems

SERI - Monopile



Description: -

- -Oscillating Wind Energy Conversion Systems
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Notes: Airfoils, Cables, Giromill turbines, Oscillations, Power coefficient, Vanes, Wind power, Wind turbines.

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Oscillating wind energy conversion systems (Technical Report)

The objective of this work is to develop a hybrid system for monopile substructures, which are currently the prevailing type of substructure for offshore wind turbines, and more specifically to focus on the wave energy converter sub-system, which consists in an oscillating water column. The directional spectrum is deduced from directional wave buoys, SAR images or advanced spectral wind-wave models, known as third-generation models, such as WAM, WAVEWATCH III, TOMAWAC or SWAN.

Wave energy converters

Priority date The priority date is an assumption and is not a legal conclusion.

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DE19924506A1 - Oscillating tree wind power generator, converts fluctuating movement of trees caused by wind into other useful forms of energy, e. An example of an offshore OWC is the Spar Buoy, Fig.

How it works?

The system, characterized by relatively large response amplitudes, employs a construction scheme based on the high fatigue strength characteristics of a composite material. Vorrichtung zur Nutzung der grossen Bewegungsenergie im Winde schwankender Bäume dadurch gekennzeichnet, dass die dabei auftretenden zeitlich sich ändernden Luftkräfte mittels technischer Systeme in andere nutzbare Energieformen umgewandelt werden. Erfindungsgemäss kann auch die Windkraftenergie ganzer Baumgruppen einem zentralen Nutzungsaggregat oder Speicher zugefù/₄hrt werden.

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This results in significant cost savings.

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Our goal with this tech is to make it an equivalent in wind power of solar power, similar in features and costs. The vibration energy of the tree stored in this way can now be supplied to a generator 9, for example via a work machine 8.

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However quick maths involving the amount of materials and production processes tend to say we could have a lower carbon footprint compared to a regular wind turbine of the same height. Dies kann erfindungsgemäss beispielsweise durch einen kreuzgewickelten 15 Elastomerschlauch genügender Wandstärke geschehen. We are slowly scaling up the tech, our devices that work best are the smaller ones as engineering is tricky to be scaled up, but with time and help we will reach an Atlantis prototype one day.

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