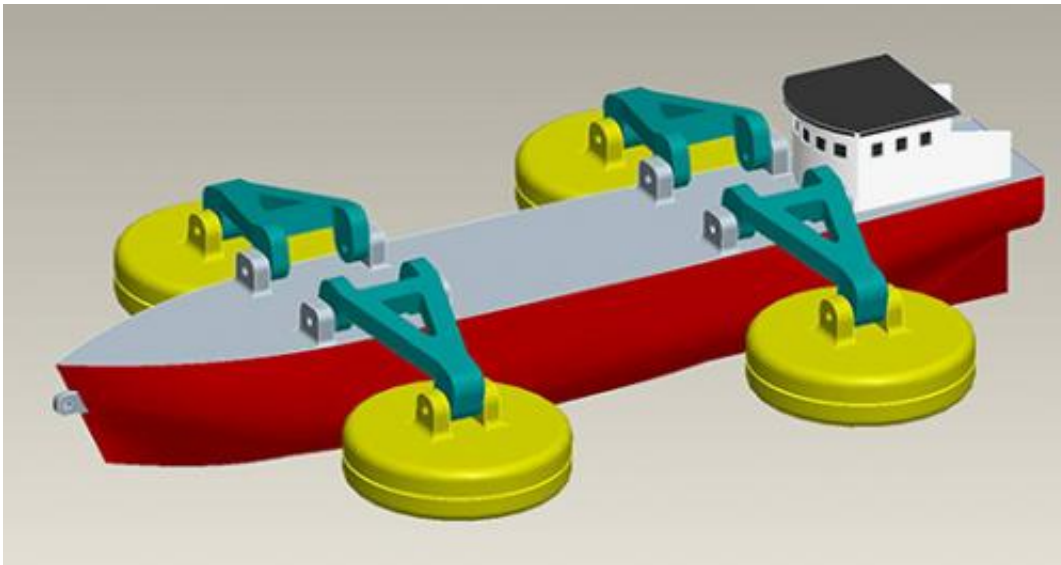


Cheaper and cleaner electricity from wave-powered ships (w/ video)

July 20 2011, by Deborah Braconnier



(PhysOrg.com) -- At the Clean Technology 2011 Conference and Expo in Boston, Andre Sharon presented a new concept of using ships equipped with a wave-power system to harvest energy and deliver it back to a power grid on shore.

Traditional wave-power systems are permanently located out in the middle of the ocean and send power back to the [energy grid](#) via undersea cables which typically cost \$500,000 per kilometer. This new concept would eliminate the need for these costly cables and greatly reduce the

cost.

The proposed ship would be 50 meters long and is designed to harvest the [wave energy](#) through a system of buoys hanging from pivoting arms on the side of the ship. The [buoys](#) would bob up and down with the movement of the waves and cause the pivoting arms to drive a generator and create one megawatt of electrical power an hour. The power will be stored in an on-board battery with a capacity of 20 megawatts. The ship will be required to be out at sea for at least 20 hours in order to provide a full charge.

Unlike fixed wave-power devices that must be built to withstand high waves and severe storms, these ships would be able to return to shore if conditions at sea were to become extreme. Sharon says this system could be constructed on already existing ships to further reduce costs.

Sharon, from Boston University and the Fraunhofer Center for Manufacturing Innovation, used 3D printing to create a prototype and demonstrated it in a wave tank. Current wave-power systems can generate electricity at a cost of between \$0.30 and \$0.65 per kWh, but Sharon calculates that the wave-power ships would be able to generate power for \$0.15 per kWh which is comparable to offshore wind energy and cheaper than solar power.

More information: [Project page](#)

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