POWERCAB: MOBILE ENERGY HARVESTING PLATFORM FOR ENERGY GENERATION, CONVERSION, AND DELIVERY

Tech ID: 33676 / UC Case 2025-009-0

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Published Application	20260028098	01/29/2026	2025-009

BRIEF DESCRIPTION

Traditional offshore energy systems are stationary and rely on expensive underwater cabling to deliver power. UC Berkeley researchers have developed a more flexible solution called PowerCab, a mobile energy harvesting and delivery platform. The system features a specialized hull equipped with a sail for wind-driven propulsion and an autonomous steering system. PowerCab integrates multiple energy generation devices—which can harness power from the wind, waves, or sun—and stores that energy in an onboard storage device. A sophisticated control system uses environmental sensors to navigate the vessel toward optimal harvesting conditions or to transport stored power to coastal regions and offshore installations that need it most.

SUGGESTED USES

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Offshore Energy Delivery: Transporting stored electricity to remote islands or offshore platforms, bypassing the need for fixed infrastructure.

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Disaster Relief Power: Rapidly deploying mobile power units to coastal areas where the local energy grid has been damaged by storms.

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Maritime Infrastructure Support: Providing a persistent power source for deep-sea sensors, communication buoys, and underwater exploration drones.

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Renewable Energy Supplements: Harvesting energy in high-wind regions of the open ocean and delivering it to land-based grids during peak demand.

»

Electric Vessel Charging: Serving as a mobile "charging station" for electric-powered ships and research vessels operating in remote waters.

ADVANTAGES

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INVENTORS

» Alam, Mohammad-Reza

OTHER INFORMATION

CATEGORIZED AS

» **Energy**

» Other

» Storage/Battery

» **Environment**

» Other

» **Engineering**

» Engineering

» **Transportation**

» Other

RELATED CASES

2025-009-0

Dynamic Navigation: Unlike fixed wind farms, PowerCab can actively move to locations with the most favorable weather conditions for energy production.

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Energy-Efficient Transit: Utilizes a sail for primary propulsion, ensuring that the energy harvested isn't wasted on moving the vessel itself.

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Integrated Storage: Combines energy capture and storage in a single mobile unit, simplifying the logistics of offshore power management.

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Autonomous Operation: Sensors and automated controls allow the vessel to navigate safely and efficiently with minimal human oversight.

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Multimodal Flexibility: Can be outfitted with various generation technologies to maximize energy capture from multiple renewable sources simultaneously.

RELATED MATERIALS

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- Wave-Powered Desalination System Using A Multi-Cylinder Rotary Crankshaft Pump
- Linear/Angular Position Stabilization & Control Of An Underwater Robotic System

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