PURDUE INNOVATES | Office of Technology Commercialization

A New Design for Deploying the Hydrokinetic Turbine to Harvest the Riverine Energy Energy

Low-cost, self-sustaining river energy converter enabling hydroelectricity without heavy infrastructure.

Researchers at Purdue University have developed a cost-effective way to deploy and retrieve a river current-energy converter to and from its working site. This is usually done by using crane boats or a ballast system but the I&OM costs of this method are significant. The advantages of this new design are that it is cost effective and can be implemented to existing systems. It is also a self-sustaining system removing the need for additional machines.

Advantages:

- Cost of maintenance, operation and installation costs will decrease.

- Does not need any additional machinery and is self-sustainable.

- Can be applied to existing systems

Potential Applications:

- It can be used to harness hydro electricity for developing countries wanting to invest in hydroelectricity.

Technology Validation:

- Testing the new design and seeing an improvement in efficiency.

TRL: 2

Intellectual Property:

Provisional-Gov. Funding, 2021-01-13, United States

Utility-Gov. Funding, 2022-01-10, United States

Technology ID

2021-CHEN-69212

Category

Energy & Power Systems/Power Generation

Authors

Jun Chen

Charles Jensen

Haiyan H Zhang

Further information

Matt Halladay

MRHalladay@prf.org

View online

CON-Gov. Funding, 2024-02-22, United States

Keywords: river current energy converter,low cost hydroelectricity,renewable energy hydropower,deployable energy systems,self sustaining hydro device,hydrokinetic energy capture,developing country energy systems,portable hydroelectric converter,low maintenance hydropower,harnessing river currents