PRIMRE Abstract for UMERC 2025

Title: Diving into the Portal and Repository for Information on Marine Renewable Energy

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Abstract (500-word maximum):

Are you looking for wave energy resource characterization data or software to help you improve your device's performance? Do you want to better understand how to monitor for environmental effects of tidal turbine deployments? Are you curious how novel technologies like ocean thermal energy conversion and salinity gradient energy work? Grab your scuba gear and dive into the U.S. Department of Energy's Portal and Repository for Information on Marine Renewable Energy (PRIMRE) to find whatever you are looking for!

PRIMRE (https://primre.org) is an interconnected network of knowledge hubs that provide access to data, information, and resources intended to support the marine energy community, including researchers, developers, and students. Each knowledge hub has its own unique scope and identity: the Marine and Hydrokinetic Data Repository (MHKDR) hosts data; Tethys hosts documents and information on environmental effects; Tethys Engineering hosts technical documents; Marine Energy Projects Database hosts deployment activities; Marine Energy Software hosts software; Marine Energy Atlas hosts geospatial data; and Telesto hosts guidance, lessons learned, and best practices. Users can easily search, filter, and find content from across all seven knowledge hubs using the PRIMRE search. Additional resources include an events calendar, archived webinars, educational resources, a free use photo library, prize information, a variety of online tools, and the PRIMRE Blast and Tethys Blast newsletters.

The PRIMRE team, led by the National Renewable Energy Laboratory, Pacific Northwest National Laboratory, and Sandia National Laboratories, has taken several steps to help connect the marine energy community to the vast amounts of data, information, and resources available. For example, the PRIMRE team developed a standard metadata schema that allows PRIMRE to connect with other marine energy data systems around the world through Application Programming Interface (API) exchanges, enabling transparent data sharing and universal access. The PRIMRE team also recently launched AskPRIMRE, an AI-powered research assistant that uses a Large Language Model (LLM) trained on metadata and documents from the knowledge hubs to help users find insights and answers beyond simple keyword searches.

This presentation will highlight the main features of PRIMRE, present several use cases of its content (primarily for students and educators), and discuss ways the marine energy community can engage and contribute new content.