

## **GRID VALUE PROPOSITION OF MARINE HYDROKINETIC ENERGY**

DANIELLE PREZIUSO, JAN ALAM, REBECCA O'NEIL, SAPTARSHI BHATTACHARYA, AND SUMITRRA GANGULI

<sup>1</sup>*Danielle Preziuso, Pacific Northwest National Laboratory, 902 Battelle Boulevard, Richland, WA 99354,  
danielle.preziuso@pnnl.gov*

<sup>2</sup>*Jan Alam, Pacific Northwest National Laboratory, 902 Battelle Boulevard, Richland, WA 99354,  
jan.alam@pnnl.gov*

<sup>3</sup>*Rebecca O'Neil, Pacific Northwest National Laboratory, 620 SW Fifth Avenue, Suite 810, Portland, OR, 97204,  
rebecca.oneil@pnnl.gov*

<sup>4</sup>*Saptarshi Bhattacharya, Pacific Northwest National Laboratory, 902 Battelle Boulevard, Richland, WA 99354,  
saptarshi.bhattacharya@pnnl.gov*

<sup>5</sup>*Sumitrra Ganguli, Pacific Northwest National Laboratory, 902 Battelle Boulevard, Richland, WA 99354,  
sumitrra.ganguli@pnnl.gov*

Marine hydrokinetic (MHK) energy systems, including ocean wave, tidal range, tidal current, and ocean current resources, have the potential to provide a suite of benefits to the electric grid when developed at scale. Emerging service taxonomies like those developed for energy storage systems, however, are inappropriate for capturing the value that MHK technologies can supply. The MHK sector can make contributions to the nation's resource mix beyond providing energy on a pure kWh basis and avoiding greenhouse gas emissions. This affords an opportunity to evaluate the unique value proposition that MHK resources can provide the grid by identifying, defining, and measuring the impact that the systems generate over time, over space, and through special applications. With better predictability, favorable seasonal trends, locational advantages, and enhanced capabilities through adding energy storage, likely benefits of MHK could include avoided system investments, avoided land use, enhanced portfolio effects, dispatch capabilities, microgrid suitability, increased resiliency, enabled services, enhanced power quality, and technology companionship. The benefits generated correspond to characteristics of MHK energy systems and their periodicity. This poster previews a new project – “Grid Value Proposition of MHK” – that will describe the competitive attributes of MHK resources; build rigor around how these benefits are defined and quantified; and ultimately establish performance benchmarks and associated metrics to gauge the distance between them. Noting the range of MHK device types in existence and development, the project goal is to develop device-agnostic results in order to capture value created across the entire industry.

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