

Developing Future Workforce for Ocean Renewable Energy Technologies and Blue Economy: Insights from an NSF Workshop

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Abstract:

With the sector projected to reach \$3 trillion by 2030, workforce development remains a major barrier to scaling wave, tidal, and offshore wind energy into commercial adoption. The NSF Educational Workshop on Developing Future Workforce for Marine Renewable Energy Technologies and the Blue Economy, hosted at the University of Michigan in Aug 2024, convened academia, industry, government agencies, and non-governmental organizations to address critical workforce gaps in marine energy and the blue economy.

This workshop identified key technical and professional competencies necessary for building a competitive, interdisciplinary workforce equipped to tackle engineering, economic, environmental, and societal challenges in marine energy. Through keynote talks, panel discussions, and interactive sessions, participants explored experiential learning strategies, curriculum innovations, and industry-academia-government collaborations to bridge skill gaps.

This presentation will summarize key findings and actionable recommendations for advancing marine energy workforce training, fostering cross-sector partnerships, and accelerating technology adoption in ocean-based renewable energy. By equipping students and professionals with essential expertise, this initiative supports U.S. leadership in offshore renewable energy and enhances the economic and environmental sustainability of the blue economy.

Keywords: Marine Renewable Energy, Blue Economy, Workforce Development, Experiential Learning, Ocean Technology

