



**Maryland
Energy
Administration**



Maryland Energy Administration

Maryland Offshore Wind Program Portfolio

Fiscal Year 2024 Annual Report

January 21, 2025

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Executive Summary

The Maryland Energy Administration (MEA) has been investing in offshore wind supply chain and workforce development since 2013 when the Maryland Offshore Wind Energy Act was signed. This legislation established a framework for offshore wind projects and set initial targets for renewable energy production. Maryland's offshore wind initiatives are funded through two primary channels: the Offshore Wind Business Development Fund (OSWBDF) and the Offshore Wind Development Fund (OSWDF). Since 2013, these funds have allocated over \$55 million to various grant programs, research initiatives, and educational projects aimed at advancing Maryland's offshore wind sector.

The state's commitment to offshore wind has evolved over time. In 2019, the Clean Energy Jobs Act increased Maryland's Renewable Portfolio Standard (RPS) to 50% by 2030 and expanded the offshore wind carve-out. Currently, Maryland has set an ambitious target of 8.5 GW of offshore wind capacity.

For Fiscal Year 2024, the OSWBDF allocated \$5 million to two key programs: the Education and Workforce Program (ED & WF) and the Supply Chain Investment Program (SCIP). The fund received 25 applications across both programs, resulting in 13 awarded projects totaling \$5,530,252 in disbursements.

Concurrently, the OSWDF, with a \$3 million budget, supported research and educational initiatives. Significant allocations included \$1 million to Johns Hopkins University's Ralph O'Donnell Sustainable Energy Institute (ROSEI) for an Offshore Wind Center of Excellence and \$600,000 to the National Renewable Energy Laboratory for a regional supply chain and workforce readiness assessment. Ongoing projects funded by the OSWDF include NOWRDC Joint Industry Project studies and Department of Natural Resources task orders.

The MEA targets funding under the OSW Programs holistically to leverage the strengths of Maryland government organizations, nonprofits, academic institutions, and industry to best meet the state's 8.5 GW offshore wind goal. The strategy aligns with Maryland's position as an emerging East Coast manufacturing hub for the offshore wind industry, capitalizing on assets such as Baltimore's deepwater port and its growing skilled workforce.

Financial Overview

Funding for MEA's offshore wind supply chain and workforce development initiatives comes from the Maryland Offshore Wind Business Development Fund (OSWBDF) and the Strategic Energy Investment Fund (SEIF).

OSWBDF

The Maryland Offshore Wind Business Development Fund (OSWBDF) is established by §9-20C-03 of the State Government Article, Annotated Code of Maryland¹. The OSWBDF is designed to support and promote the growth of the offshore wind industry in Maryland. Developers are required to deposit \$6 million into the OSWBDF over the course of three years as a requirement of an offtake agreement with the State of Maryland under the Maryland Public Service Commission's Offshore Wind Renewable Energy Credit (OREC) Program. Those funds are then used by MEA to provide financial assistance and support to emerging businesses and educational opportunities to promote the development of a skilled and capable workforce.

Purpose and Goals

The primary objectives of the Maryland Offshore Wind Business Development Fund are to:

- Provide financial assistance to emerging businesses in Maryland to participate in the state, regional, and domestic offshore wind supply chain and workforce;

¹ Chapter 43, 2013 Acts of Maryland.

- Support the development of offshore wind projects off the coast of Maryland by assisting with the development of a robust supply chain and workforce;
- Promote Maryland as an East Coast manufacturing, staging, and logistics hub for the offshore wind industry; and
- Create jobs and stimulate economic activity in the state's manufacturing and maritime sectors.

OSWDF

The Maryland Offshore Wind Development Fund is a financial initiative of MEA that comes from the greater Strategic Energy Investment Fund (SEIF)². The SEIF was established for MEA to implement the state's Strategic Energy Investment Program.

Funded through the SEIF, the OSWDF is used for research and educational initiatives that extend outside of the financial incentive offerings under the OSWBDF.

Purpose and Goals

The Primary objectives of the OSWDF are to:

- Provide financial assistance to research entities targeting lowering the cost of offshore wind energy, increasing reliability, and advancing technology;
- Support the development of a robust and ready offshore wind supply chain and workforce in the state and greater region by understanding the current industry gaps in the state; and
- Encourage the research and development of innovative technologies that promote sustainable offshore wind development that targets the 3 areas of sustainability: social, environmental, and economic.

Program Overviews

The MEA offshore wind programs are broken down into those funded under the OSWBDF and those funded under the OSWDF. Collectively, the programs funded sixteen new offshore wind specific projects for a total of \$5,707,741.00 in investments into Maryland offshore wind industry.

² §9-20B-05, *State Government Article, Annotated Code of Maryland*.

OSW ED & WF

AOI 1 Industry Education

AOI 1 Industry Education is a competitive grant program that supports Maryland's growing offshore wind industry by providing funds to nonprofit organizations, government agencies, and academic institutions for the purposes of developing offshore wind educational curriculum for the general public. The program provides up to 75 percent of the total project costs, or \$500,000, whichever is lower. Proposed projects must provide relevant in-state offshore wind education to Marylanders that increases public understanding of the industry and its workforce opportunities.

AOI 2 Workforce Training

AOI 2 Workforce Training is a competitive grant program that supports Maryland's growing offshore wind industry. It provides funds to workforce training centers across the state to ramp up their offshore wind relevant training capabilities and provide a career pipeline to Maryland residents. The program provides up to 75 percent of the total project costs, or \$500,000, whichever is lower. Proposed projects must provide relevant in-state offshore wind certification training opportunities for Marylanders that will provide them with an understanding of the industry and related workforce opportunities.

OSW SCIP

AOI 1 Market Entry Planning

AOI 1 Market Entry Planning is a noncompetitive grant program that supports new or existing businesses considering the offshore wind industry by helping offset the costs associated with hiring a consultant to provide market entry planning support. The program offers up to \$25,000 in individual grants to obtain business consultancy services specific to entering the offshore wind industry.

AOI 2 Capital Expenditures

AOI 2 Capital Expenditures is a non-competitive grant program that supports Maryland's emerging businesses, including minority owned emerging businesses, entering into the U.S. offshore wind industry by offsetting their capital expenditure investments. This program provides up to 50 percent of total project costs, or \$400,000, whichever is lower. Proposed projects must provide goods and services to the offshore wind industry in Maryland, with the intent to serve the larger U.S. offshore wind market and related industries.

AOI 3 Industry Events

AOI 3 Industry Events is a non-competitive grant program that supports Maryland's emerging businesses offset costs associated with attending offshore wind and marine technology event

attendance. This program provides a single one time grant award up to \$5,000 per awardee per program Fiscal Year.

Project Overviews

Maryland Offshore Wind Education & Workforce Program

AOI 1 Industry Education

University of Maryland College Park College Park, MD

Awarded \$192,635.00

Project Description

The University of Maryland College Park was awarded \$192,635.00 in funding to collaborate with Prince George's County Schools and Maryland KidWind to develop a set of high quality K12 Wind Energy Curricula to integrate into Maryland elementary, middle and high school STEM classrooms as well as design a set of corresponding teacher education materials to train Maryland K12 teachers on renewable energy and the offshore wind workforce needs and opportunities in our region. The project's secondary goals are to identify and understand how the incorporation of programs like KidWind support students' interest in pursuing careers in the wind energy workforce and K12 educators' understanding of wind energy and the workforce needs and opportunities. Through grant funding, UMD will serve between 300-500 students in the program's curriculum and provide all teachers of the following school districts: AACPS, MCPS, HCPSS, BCS, and PGCS with free K-12 KidWind training over the 2 year project life.

AOI 2 Workforce Training

Chesapeake College Wye Mills, MD

Awarded \$167,870.00

Project Description

Chesapeake College was awarded \$167,870.00 to establish a ladder-style program that will develop offshore wind related curriculum at the school, divided into those related to the marine trades and those related to welding. The program then connects graduates with obtaining careers in the field by developing and implementing a career employment program specific to offshore wind. The college has already taken steps to engage in the offshore wind industry as a sub-awardee of the Maryland Department of Labor's Maryland Works for Wind Economic Development Authority (EDA) grant award. The college serves Caroline, Dorchester, Kent,

Queen's Anne, and Talbot Counties, and an average of 5,200 students per fiscal year. Through grant funding, Chesapeake College will enroll up to 291 students in the offshore wind program over the 3 year project life.

***Fund for Educational Excellence
Baltimore, MD***

Awarded \$433,809.00

Project Description

The Fund for Educational Excellence (FFEE), a fiscal sponsor to Baltimore City Public Schools (City Schools), was awarded \$433,809.00 to expand and scale up their offshore wind related Career Technical Education program. City Schools will use their grant funds to expand the program to six additional schools within their jurisdiction. They will also create eight CTE pathways; and provide training to 16 teachers, broad based education to 600 students during the school year, and certification based education to 40 students through their Youthworks summer program each year of the Program for a total of 2 years. Additionally, there will be a targeted group of CTE students, identified by instructors, who will have the opportunity to gain credentials either during the school year or summer Youthwork sessions to obtain their certifications in CPR, OSHA 10, OSHA 30, Introductory and Intermediate Welding, and Driver's Education. Through this project, City Schools will also expand their manufacturing education capabilities by purchasing and installing manufacturing equipment and simulators at all six schools to allow for hands-on experience in complimentary CTE pathways.

***Maritime Institute of Technical & Graduate Studies
Lithicum Heights, MD***

Awarded \$500,000.00

Project Description

The Maritime Institute of Technical & Graduate Studies (MITAGS) was awarded \$500,000.00 in funding to expand its simulation facilities to support mariner training for the offshore wind and maritime industry. Through this project, MITAGS will be able to install offshore wind propulsion and maneuvering systems such as dynamic positioning and virtual reality on a second full-mission bridge simulator. Through funding provided by MEA in previous program fiscal years, MITAGS has created a simulation facility, equipped with virtual reality, to provide mariners with training that previously could only be done in the water. MITAGS has been successful with previous MEA program funding and has also passed its curriculum audit to become a certified Global Wind Organization (GWO) Basic Technical Training (BTT) training provider, the only accredited training recognized globally by the offshore wind industry. Through this program, MITAGS intends to develop the second simulator, then implement this simulator through certification training to expand their maritime offshore wind training program. Through grant funding, MITAGS will provide this simulation training to up to 200 students over the 2 year grant period.

***Wor-Wic Community College
Salisbury, MD***

Awarded \$493,427.00

Project Description

Wor-Wic Community College was awarded \$493,427.00 in funding to enhance and sustain their Powerline Worker Pre-Apprenticeship Training. The PWPA training Program provides individuals with the education needed to work in the energy transmission industry. Through this project, Wor-Wic Community College will partner with the Choptank Electric Cooperative and the VA-MD-DE Association of Electric Cooperatives to establish a pipeline between the college and a career in energy transmission. The college has already taken steps to engage in the offshore wind industry through partnerships with Arcon Training Center in the implementation of their 2015 grant, participation in the Maryland Department of Labor's EARN grant program to offer welding, machining, and metal fabrication training, partnering with the Maryland Department of Labor as a subawardee of the Maryland Works for Wind EDA grant, and opening its Guerrieri Technology Center in April 2023 to support skilled trades needed for offshore wind and adjacent industries. The college serves Worcester, Wicomico, and Somerset counties and an average of 7,000 students per year. Through this Project, Wor-Wic will enroll up to sixty (60) students in the Program; the first twenty through the first year Pilot, and the remaining forty (40) through the second year enhanced program.

***Jane Addams Resource Corporation – Baltimore
Baltimore, MD***

Awarded \$450,000.00

Project Description

The Jane Addams Resource Center – Baltimore (JARC-BLT) was awarded \$450,000.00 to train entry level welders and CNC machinists to create a pipeline for jobs within Maryland's offshore wind industry. JARC is a nonprofit organization that provides free technical skills training, support services, and work readiness skills to unemployed, underemployed, and returning citizens, to prepare individuals for successful placement in the manufacturing and construction sectors. Through these projects, JARC-BLT is able to train 45 individuals, at no cost and provide them with the wrap-around services, such as resume writing and interview preparation needed to move into a career in the manufacturing sector of the offshore wind industry. JARC-BLT is a previous grantee of MEA and has demonstrated success with their previous grant implementation, training over individuals through their grant awards.

Maryland Offshore Wind Supply Chain Investment Program

AOI 1 Market Entry Planning

***Arcon Training Center
Wicomico County***

Awarded \$25,000.00

Project Description

Arcon Training Center (Arcon), a workforce training center expanding their capabilities to include Global Wind Organization (GWO) training, located in Wicomico County, Maryland, was awarded a \$25,000 one-time grant to develop an offshore wind market entry plan in partnership with Green Ducklings, a consulting firm specializing in the offshore wind market.

Skip & Scrap Welding LLC
Baltimore County

Awarded \$25,000.00

Project Description

Skip & Scrap Welding LLC (Skip & Scrap), a welding company located in Baltimore County, Maryland, was awarded a \$25,000 one-time grant to develop an offshore wind market entry plan in partnership with Green Ducklings, a consulting firm specializing in the offshore wind market.

AOI 2 Capital Expenditures

Mighty Waves Energy Inc
Montgomery County

Awarded \$400,000.00

Project Description

Mighty Waves Energy Inc (MWE) is a research and development company located in Montgomery County, Maryland. They were awarded \$400,000 in grant funding for the purpose of constructing a 50 kW offshore wind floating demonstration platform. This project serves as Stage 3 of a multiyear research effort into their floating platform design at the United States Naval Academy, located in Annapolis, Maryland. MWE has been in partnership with the National Renewable Energy Laboratory and the Office of Naval Research on the development of this floating platform design throughout this research effort. The project has the potential to lower the cost of offshore wind platform design, thereby lowering the capital cost of a floating offshore wind project. Not only does the project hold the potential to further the industry, it has the potential to provide businesses the opportunities to engage in the supply chain as it continues its development, furthering Maryland as an offshore wind hub on the East Coast. MWE received letters of support from the Maritime Applied Physics Corporation, Gibbs & Cox, and Allen Integrated Solutions for the development of their project and has strong partnerships with the Department of Defense (DoD). Floating offshore wind installations in deep water will be essential to meet the United States' goal of 30 GW by 2030, and to date there are only a few known installations globally.

AOI 3 Industry Events

Mighty Waves Energy
Montgomery County

Awarded \$5,000

Project Description

Mighty Waves Energy Inc, an engineering firm for renewable energy platforms business located in Montgomery County Maryland, was awarded a \$5,000 one-time grant to attend the 2024 Offshore Wind International Partnering Forum, located in New Orleans, Louisiana.

**Arcon Training Center
Wicomico County**

Awarded \$5,000

Project Description

Arcon Training Center (Arcon), a workforce training center located in Wicomico County, was awarded a \$5,000 one-time grant to attend the 2024 American Clean Power Operations, Maintenance, & Safety Conference from February 21-23, 2024 in San Diego California. The organization is Global Wind Organization certified, able to provide Basic Technical Training (BTT) and Basic Safety Training (BST).

**nTech Solutions
Columbia, MD**

Awarded \$5,000

Project Description

nTech Solutions, a Columbia Maryland based for profit workforce training center, was awarded a \$5,000 one-time grant to attend the Oceantic Network's Offshore Wind International Partnering Forum from April 22-25 2024, in New Orleans, Louisiana. The organization provides offshore wind-specific education and training certifications, and by participating in the 2024 IPF, nTech hopes to engage with stakeholders ranging from policymakers to developers to understand the needs of the industry and understand how to train individuals in a timing that corresponds to the industry's needs.

**IWNL Energy
Baltimore, MD**

Awarded \$5,000

Project Description

IWNL Energy, a Baltimore based for profit workforce training center, requested \$5,000 in funding to attend the Oceantic Network's Offshore Wind International Partnering Forum from April 22-25 2024 located in New Orleans, Louisiana. The organization provides both training and consulting services for organizations and individuals looking to enter the renewable energy sector. By attending IPF, IWNL hopes to learn more about the regulatory frameworks of the industry, and global market trends to adapt their services to most benefit their customers.

Maryland Offshore Wind Development Fund Projects

Academic Center for Reliability & Resilience of Offshore Wind (ARROW)

Johns Hopkins University

Baltimore, Maryland

Awarded \$1,000,000.00

Project Description

The MEA has awarded Johns Hopkins University a \$1,000,000 grant to implement an offshore wind center of excellence in Baltimore in partnership with Morgan State University, and eleven other state universities involved in this effort. The ARROW Project is a collaboration between universities, state partners, and industry to develop an educational ecosystem that will support the growing offshore wind workforce and supply chain in the United States. This project has been awarded funding by the US Department of Energy, and MEA serves as a partner providing financial support to both Johns Hopkins and Morgan State.

National Offshore Wind Research and Development Consortium (NOWRDC)

MEA is a member of the NOWRDC. NOWRDC is a nonprofit organization, established in 2018 when the New York State Energy Research and Development Authority (NYSERDA) was awarded \$18.5 million from the U.S. Department of Energy (DOE) to administer a public-private partnership focused on advancing offshore wind technology in the United States. NYSERDA contributed matching funds. The Consortium supports cost-effective and responsible development of offshore wind to maximize economic benefits to the United States. States participating in NOWRDC include: Virginia, Delaware, North Carolina, New York, New Jersey, Maine, Massachusetts, and Connecticut.

SMART-POWER Regional Gaps Analysis

Awarded \$600,000.00

Project Description

Maryland has awarded the National Renewable Energy Laboratory and NOWRDC a \$600,000 grant to develop a gaps analysis of the Mid-Atlantic's workforce and supply chain, in a joint effort between the states of Maryland, Virginia, Delaware, and North Carolina. The study examines current manufacturing and port capabilities, current offshore wind educational opportunities, and provides a deep dive into the workforce and supply chain readiness of the Mid-Atlantic as offshore wind projects move into construction and operation. The study is intended to conclude by the end of 2025.

Joint Industry Partnership Interarray Wake Effects

Awarded \$200,000

Project Description

Under the greater partnership with NOWRDC, MEA has collaborated with state and industry partners to develop a study that examines the effects of inter-array wakes on offshore wind capacity factors. The project aims to recommend criteria for future lease area siting based on high-fidelity data and create new tools that can quantify the impacts of potential new leases on current project areas. Current participants include the Department of Energy (DOE), the Bureau of Ocean Energy Management (BOEM), the Bureau of Safety and Environmental Enforcement (BSEE), Shell Energy, RWE, and TotalEnergies. The project has been ongoing since October 2023 and is expected to conclude in September 2025.

Long-Term Availability and Bankability of Offshore Wind Through Hurricane Risk Assessment and Mitigation
Awarded \$200,000

Project Description

Also under the NOWRDC partnership, MEA has partnered with Northeastern University, Johns Hopkins, the University of Massachusetts at Amherst, the University of Colorado, Clemson University, and Tufts University, New Jersey and Massachusetts to develop a study examining the effects of hurricanes on offshore wind turbines and develop mitigation strategies to minimize effects. The study has been ongoing since 2022 and is expected to conclude at the end of 2024.

Overall Impact

The MEA's offshore wind programmatic offerings have created a comprehensive ecosystem to support the industry's continued growth in Maryland. By investing in education, workforce training, business development, and research, these programs help to build a strong foundation for a skilled workforce and robust supply chain. The diverse range of funded projects represents a holistic approach to industry development, addressing various aspects from K-12 education to specialized technical training and business support. MEA funded programs in Fiscal Year 2024 that will provide broad-based offshore wind education to over 2,000 K-12 students, teacher training to over 20 teachers within five school districts, and provide offshore wind certification and degree education and opportunities to over 700 Marylanders. Through the Maryland Supply Chain Investment Program, MEA has been able to support five (5) businesses as they develop their strategy to engage in the offshore wind industry, and one research initiative to develop innovative mooring technologies for floating offshore wind. MEA has invested in three research projects that target lowering the cost of offshore wind development using innovative strategies. The investments into projects that are focused on lowering the cost of energy not only support the growing industry, but provide economic sustainability. MEA has supported the development of a Maryland-specific offshore wind center of excellence led by JHU and Morgan state, providing offshore wind degree education to 500 students over a five year agreement.

While the full economic impact in terms of job creation and industry growth as a result of the programmatic offerings may take time to materialize, the substantial financial investment and engagement in the academic community has been a strategic method of engaging the next generation of the Maryland workforce in clean energy job opportunities. Overall, MEA facilitated the development of an offshore wind educational network within the state, providing educational opportunities to over 3,000 students through FY24 alone.