

Offshore Wind Energy Workforce Development Best Practices Resource

Table of Contents

- [Development Best Practices](#)
 - [Introduction](#)
 - [Best Practices](#)
 - [Awareness and Outreach](#)
 - [Reducing Barriers](#)
 - [Collaboration](#)
 - [Transparency](#)
 - [Standardized Actions](#)
 - [Works Cited](#)
 - [Publication Information](#)
 - [Offshore Wind Workforce Safety Standards & Training Resource](#)

By Caitlyn Clark, Brinn McDowell, Bailey Pons, Jeremy Stefek at the National Renewable Energy Laboratory for the U.S. Department of Energy Wind Energy Technologies Office

NREL/FS-5000-87098

Introduction

The offshore wind energy industry is set to grow significantly in the next decade, increasing the demand of workers needed to reach deployment goals. The Biden administration's goal is for the United States to reach 30 gigawatts (GW) of offshore wind by 2030^[1], and clean energy workforce incentives, like those in the Inflation Reduction Act, have been put into law. Between these two major efforts, the pressure to develop a sustainable domestic labor force to support the U.S. offshore wind energy industry has never been greater.

The Third Annual Offshore Wind Workforce Summit was hosted in Maryland on March 28, 2023, by the Business Network for Offshore Wind (BNOW) and the National Renewable Energy Laboratory (NREL), and sponsored by Total Energies. Approximately 250 participants were separated into breakout sessions across 27 tables to explore best practices surrounding key challenges facing the development of an available and properly trained offshore wind energy workforce. The attendees were asked three questions in their breakout sessions, and note sheets were collected for transcription and synthesis by the team at NREL. The questions asked were:

- What are the best practices in collaboration that state governments, federal government, industry, host communities, and other stakeholders are able to implement that can facilitate workforce development that creates a diverse and equitable pipeline?
- What are some best practices in collaborations among unions, manufacturers, and colleges?
- What stakeholders need to be at the table to make sure that communities in areas around ports and/or manufacturing facilities are included in the workforce pipeline for both short- and long-term jobs at these locations?

NREL and BNOW conducted a follow-on survey to incorporate any additional feedback after the Summit, which received responses across key takeaway themes from 27 participants. In the following pages we report the results from the breakout groups and follow-on survey on best practices.

[Return to top](#)

Best Practices

Five major themes began to emerge where alignment of best practices could occur:

- Awareness and outreach: Expose community members to the career and economic development opportunities associated with offshore wind.
- Reducing Barriers: Ensure that supportive programs and employment policies are in place to allow for all interested people to become qualified and enter the offshore wind industry.
- Collaboration: Create a common platform for stakeholders to align strategies, share ideas, and form partnerships to help support offshore wind workforce development needs.
- Transparency: Improve shared insights and information amongst stakeholder groups to help ensure effective actions are developed.
- Standardized Actions: Standardize training requirements and data reporting platforms to help sustainably create a workforce that is properly trained under a common understanding of the standards needed to be successful and safe in the offshore wind industry.

Awareness and Outreach

Building awareness of the opportunities that offshore wind can bring to an individual and community through education and outreach was identified by the discussion groups as an action that is vital to building a workforce capable of meeting offshore wind deployment demands. Early and innovative recruitment techniques could expose community members of all ages to an evolving industry that requires various skills and levels of expertise. This effort could help attract more people to offshore wind training programs and industry jobs.

Best Practices/Solutions

To build awareness of the employment and training opportunities offered by the offshore wind industry, various actions, such as the ones listed below, could be taken by stakeholders.

- Adopt recruitment and teaching techniques to meet people where they are at, such as using platforms like smartphone apps, social media advertising, and virtual reality to attract the next generation of professionals into the offshore wind industry.
- Build partnerships with economic development organizations, local industry organizations, CBOs, government, labor unions, and school groups and educators that are key to getting information to communities and developing the local workforce.
- Convene—through community-based organizations and industry sector partnerships—committees, boards, and coalitions to develop in-person outreach events. Such events could include supplier days with local suppliers, industry panels, career events, and onsite interviews to build awareness of job opportunities that offshore wind can provide to a community.
- Host, in collaboration with education and training institutions and industry sectors, wind industry career outreach events, such as career days, hosting guest speakers, and mock interviews at the universities, community colleges, or trade schools.
- Arrange events and learning opportunities focused on K-12 engagement and develop wind and renewable energy-related curriculum to increase early and ongoing exposure to opportunities in the offshore wind industry.
- Share career maps (e.g. available jobs, certification and training requirements, various career pathways, timelines, current industry member experiences, etc.) with students and jobseekers. This communication can raise awareness and show the routes to offshore wind jobs, especially the career opportunities for tradespeople and young professionals in their local communities.

Reducing Barriers

The need to limit employment barriers was a common theme among discussion groups. Various types of workers will need individualized support for entry into the offshore wind industry. Identification and reduction of employment barriers—especially for those who identify as a returning citizen, an early-to-mid career professional, or a part of another historically underrepresented group in the labor force—was noted as an important step to adequately develop a workforce that can meet offshore wind deployment goals.

Best Practices/Solutions

Stakeholder groups could develop innovative workforce programs aimed at increasing employment opportunities for all workers. This could ensure offshore wind does not repeat historical inequities. Some of the best practices actions are listed below.

- Provide wrap-around services, such as childcare and transportation, to workers who would benefit the most from these services.
- Build upon models that reduce the time from training to employment, such as [Washington's Integrated Basic Education and Skills Training Program \(I-BEST\)](#), which provides hands-on job training alongside basic skills training.
- Demystify labor unions' structures and policies with developers and subcontractors to encourage more engagement.
- Consider historical inequities when evaluating workers who have criminal justice involvement.
- Use direct funding from the state and federal governments to support developing training facilities, training programs, and train-the-trainer models.

Collaboration

Discussion groups recognized that developing effective workforce pathways will require collaboration between various stakeholder groups. Early and ongoing partnership between all levels of government, academia, labor unions, and industry was noted as a necessary measure to ensure that key information about the offshore wind industry is disseminated to the appropriate decision makers. Incentivizing coordinated venues for collaboration could develop workforce training programs that productively prepares the workforce to meet the demands of industry, and ultimately lead to the successful deployment of offshore wind.

Best Practices/Solutions

Key actions, such as the ones listed below, could be taken to help promote collaboration between industry members and advance essential offshore wind employment pathways.

- Foster communication between industry voices, labor unions, education institutions, and community-based organizations through common platforms coordinated by federal, state, and local governments.
- Convene stakeholder groups at a regional level to connect local community colleges and union programs with industry members who are developing projects. Local community college and union programs represent diverse communities and are often more closely aligned with the communities they educate and train.
- Motivate training providers, community-based organizations, and employers—through state and federal incentives—to develop workforce pathways that effectively reduce barriers that hinder entry into the offshore wind industry.
- Incentivize coordination rather than competition between states by setting unified expectations and developing transparent workforce requirements at the regional level.
- Partner with key stakeholders—including community-based organizations, labor, manufacturers, and states—to leverage resources and hire from underrepresented talent pools to effectively engage and connect with target workforce audiences.
- Foster more partnerships with Tier II and III suppliers to facilitate collaboration and receive ongoing information concerning job training providers within specific regions.

Transparency

Improving transparency among all stakeholder groups emerged as an important theme, especially as it relates to collaboration and standardizing actions. One way to improve transparency is to track employment, diversity metrics, and training pathways to show the benefits that the offshore wind energy industry is building in states and communities over time. Industry and training providers are two groups that can improve the tracking of outcomes from commitments. However, states and communities have a responsibility to ensure that transparent requirements are built upon collaborations rather than competition.

Best Practices/ Solutions

- Develop a national data collection system to track employment and apprenticeship pipelines.
- Standardize industry reporting requirements to show how initiatives are meeting commitments to employ a domestic and diverse workforce.
- Track workforce development programs (e.g., training programs, grant opportunities, and state and regional initiatives) to allow stakeholders groups to reduce redundancy and improve coordination.
- Increase communication lines with developers to make their needs clearer and more transparent.

Standardized Actions

The need to standardize offshore wind job roles and credentials has been a common theme in offshore wind workforce development. Various offshore wind occupational maps use different language to describe similar roles, ultimately leading to confusion around clear pathways into the offshore wind industry. Additionally, many groups seek to understand what qualifications are required so they can effectively train workers. This standardization would involve understanding the skillset, education, certification, and qualification requirements that are needed to better align training programs with industry requirements.

Best Practices/Solutions

Standardization requires consensus building through an independent coordinating group. Some potential best practices to keep in mind across different areas for standardization include:

- Reach consensus on a list that conveys all of the recommended or required education, experience, soft skills, hard skills, certifications, and qualifications for all levels and types of workers.
- Develop an understanding of the certifications and credentials needed for tradespeople to support offshore wind installation, manufacturing, and operations. Then share those credentials with labor unions across states to unify training requirements for apprenticeship programs and within high school and pre-apprenticeship curriculums.
- Utilize stackable credentials, a system where individuals can earn and accumulate multiple certifications over time, to build up a qualified workforce gradually.
- Create standardized curricula across the K-12 education space that spans renewables, energy, the blue economy, skill-based manufacturing, and project-based learning.
- Formulate a standard list of missing areas across data sets, including employment of the industry, demographics, and capacity of training programs.
- Collect and analyze diversity, equity, and inclusion (DEI) metrics on the existing workforce to assess the equity and inclusivity of existing programs.
- Incorporate DEI practices into organizational systems through predefined processes for contracting, hiring, recruiting, and collaborating, which promotes DEI and the continued DEI education of employees.

[Return to top](#)

Works Cited

[1]The White House. "FACT SHEET: Biden Administration Jumpstarts Offshore Wind Energy Projects to Create Jobs." The White House. Last modified March 29, 2021.

<https://www.whitehouse.gov/briefing-room/statements-releases/2021/03/29/fact-sheet-biden-administration-jumpstarts-offshore-wind-energy-projects-to-create-jobs/>.

Publication Information

Publication Information

DOE/GO-102023-6075

This work was authored by the National Renewable Energy Laboratory, operated by Alliance for Sustainable Energy, LLC, for the U.S. Department of Energy (DOE) under Contract No. DE-AC36-08GO28308. Funding provided by U.S. Department of Energy Office of Wind Energy Technology Office. The views expressed in the article do not necessarily represent the views of the DOE or the U.S. Government. The U.S. Government retains and the publisher, by accepting the article for publication, acknowledges that the U.S. Government retains a nonexclusive, paid-up, irrevocable, worldwide license to publish or reproduce the published form of this work, or allow others to do so, for U.S. Government purposes.

This factsheet was sponsored by DOE WETO and created by NREL to identify best practices for workforce development within the offshore wind industry within offshore wind industry. If you would like to get involved in the Offshore Wind Workforce Network or feel your organization is misrepresented or not included in this factsheet, please contact us at [✉ WindWorkforce@nrel.gov](mailto:WindWorkforce@nrel.gov).

[Return to top](#)

WINDEXchange is a resource of the U.S. Department of Energy's Wind Energy Technologies Office.

[Contact Us\(/contact-us/\)](#) | [Wind Energy Technologies Office](#)

(<https://energy.gov/eere/wind/wind-energy-technologies-office>) | [Office of Energy Efficiency & Renewable Energy\(https://energy.gov/eere\)](#) | [Privacy\(https://energy.gov/about-us/web-policies/privacy\)](https://energy.gov/about-us/web-policies/privacy)