

Sail to Success



Your Guide To
Offshore Wind
Career Opportunities
In New York State

**Farmingdale
State College**
State University of New York

UB | University at Buffalo
The Center for Industrial
Effectiveness

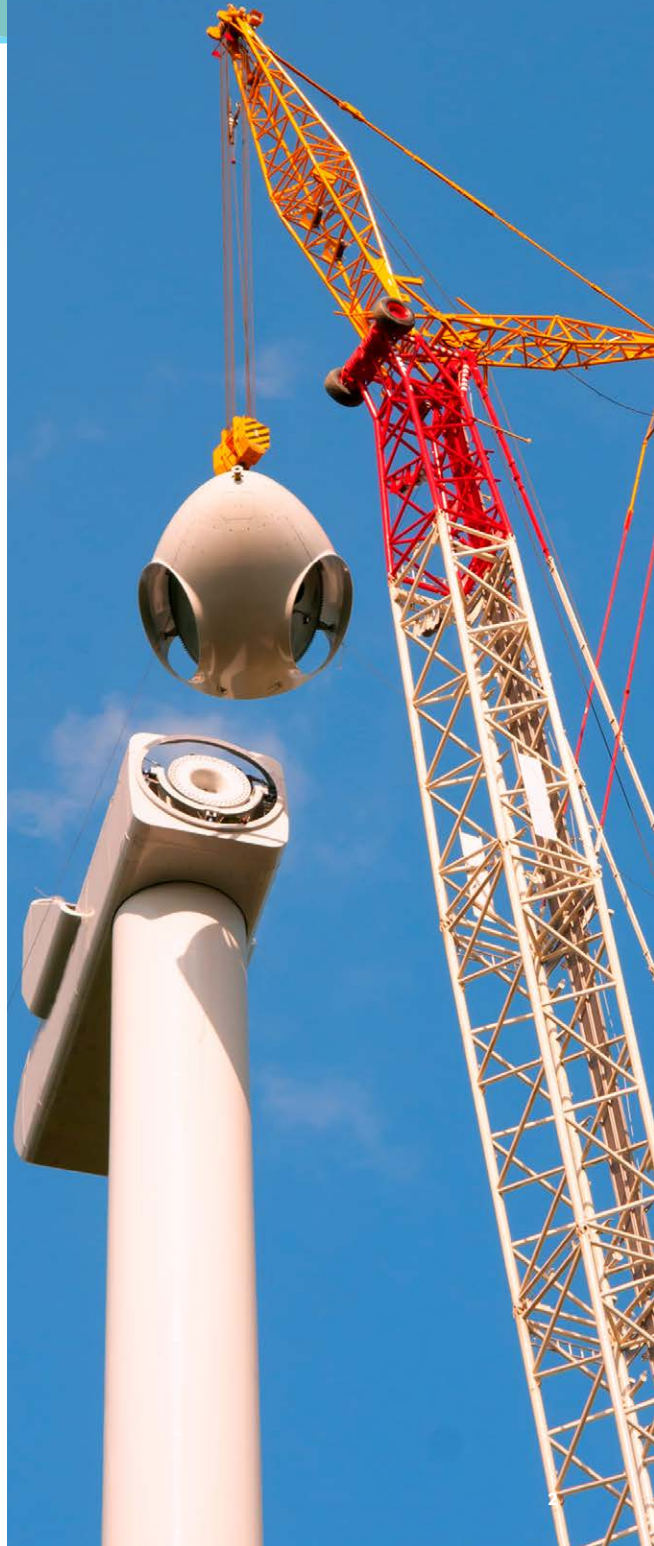
A ALFRED STATE
COLLEGE OF TECHNOLOGY
STATE UNIVERSITY OF NEW YORK

Table of Contents

Background & Introduction	3
Offshore Wind Projects	6
Offshore Wind Farm Timeline	6
Active Offshore Wind Projects in New York	7
Project Map	9
Offshore Wind Career Opportunities	10
Job Spectrum	10
High Demand Careers	11
Occupations and Training Requirements	12
Wind Career Map	14
Developing Portable Skills	15
Training and Skill Building	16
Training Programs Across New York	16
Renewable Energy: Fundamentals and Job Opportunities	17
Program Spotlights	18
Additional Career Exploration Resources	19

Acknowledgements

This report was prepared by the University at Buffalo Center for Industrial Effectiveness in collaboration with Farmingdale State College and Alfred State College. Funding was provided by the Offshore Wind Training Institute. The project team would like to thank local experts from the SUNY Clean Energy Consortium and NYSERDA whose prior work provided data and insights to inform this guide.



Background & Introduction

Welcome!

New York State (NYS) is on the cusp of tremendous growth in the offshore wind industry. Recently, significant investments have been made in offshore wind projects and the supply chain that serves them. This has created **new opportunities** for anyone interested in this exciting field!

This guide is designed to help New Yorkers understand these opportunities and the education and training programs that will prepare them for offshore wind employment.

In this guide, you will find:

- » An overview of New York's active offshore wind projects
- » A timeline explaining the phases of an offshore wind development project
- » Types of jobs associated with each phase
- » Educational requirements for various occupations
- » Training programs available across the state

Wind Power & Sustainability

Across the globe, significant transformations are taking place in the ways we generate electricity. As the impact of climate change intensifies globally, our focus shifts away from reliance on fossil fuels and towards renewable energy sources such as wind power.

A part of this transition involves offshore wind energy, where wind turbines are strategically positioned in large bodies of water to generate electricity. Whether on land or offshore, wind power represents a clean, sustainable solution, and is becoming increasingly important in our efforts to reduce carbon emissions and move towards a sustainable environment.

DID YOU KNOW?

NYS is set to develop 9,000 megawatts of offshore energy by 2035. That's enough to power 6 million homes!



New York's Clean Energy Goals

New York's Climate Leadership and Community Protection Act (CLCPA) is leading the way in renewable energy, particularly through competitive offshore wind projects. Governor Hochul's announcement on October 24, 2023, revealed the provisional awarding of three projects, totaling 4,032 Megawatts (MW) and capable of powering two million homes.

These projects, including Attentive Energy One, Community Offshore Wind, and Excelsior Wind, signify New York's commitment to clean energy and job creation, with an anticipated \$15 billion in in-state spending and over 4,200 well-paying jobs. A significant \$3.4 billion is designated for disadvantaged communities, in line with CLCPA environmental justice goals. There are investments in Minority and Women Owned Businesses (MWBs), Service-

Disabled Veteran Owned Businesses (SDVOBs), and over \$85 million for wildlife and fisheries research, showcasing a comprehensive approach. The projects not only reduce harmful pollutants to provide significant public health benefits, but also involve substantial combined public and private investments in manufacturing facilities. These efforts, coordinated and supported by the New York State Energy Research and Development Authority (NYSERDA), promise a cleaner, economically strong, and socially fair future for New York.

Whether you are an individual seeking entry into the wind industry, a business owner, or part of the supply chain, numerous opportunities await. This rapidly expanding sector is actively seeking driven individuals eager to transition their careers or improve their businesses. Join this thriving industry and be part of the movement towards renewable energy!



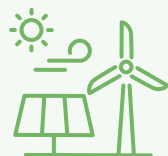
UNIVERSITY AT BUFFALO | DOUGLAS LEVERIE

“It's critical that we continue the transition to create an affordable clean energy future that benefits all New Yorkers.”

NYS Governor
Kathy Hochul



at least
35%
of benefits directed to disadvantaged communities



70%
of the state's electricity will be generated by renewable energy by 2030



100%
of electricity will be zero emissions by 2040

How You Come In: Your Guide To Offshore Wind Career Paths

This guidebook was designed as a resource to help individuals in Western New York better understand and access the exciting job opportunities that come with offshore wind energy developments. Whether you are a passionate individual beginning your career, interested in shifting industries, or an offshore wind professional, this guide is for you.

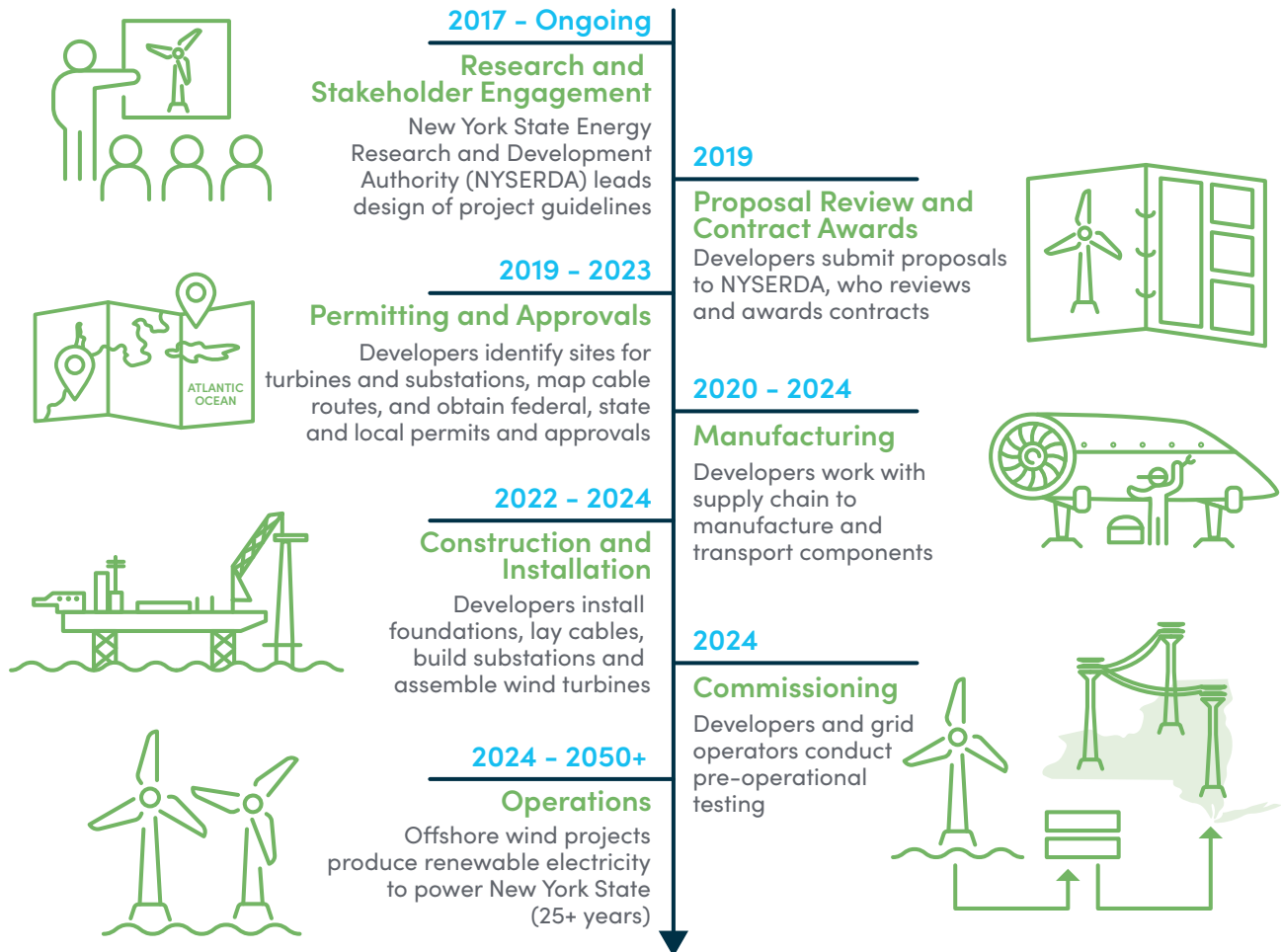
In the pages that follow, we will break down the world of offshore wind jobs in simple terms. We will explore the kinds of jobs available, the skills you might need, and how to get the training required. We will also introduce you to the employers hiring throughout Western New York and beyond, so that you know where to look for opportunities. Your path to a rewarding career in the growing offshore wind sector begins here, and we hope you can contribute to creating a more sustainable environment.



Offshore Wind Projects

Offshore Wind Farm Timeline

Offshore wind development projects take years to move from project planning through commissioning, requiring different segments of the workforce to support each project phase. This example timeline offers a glimpse of project phases with dates corresponding to the first NYSERDA project awards.



Retrieved from [NYSERDA](#), March 19, 2024

What Offshore Wind Projects Are Happening in New York?

South Fork Wind Farm

In March 2024, Governor Kathy Hochul announced that the South Fork Wind Farm became the first utility-scale wind farm operating in America. Generating energy to power more than 70,000 homes, the 130-megawatt project is positioned off the eastern coast of Long Island. With the support of a contract from the Long Island Power Authority (LIPA) in 2017, the South Fork Wind Farm is now delivering clean power to Long Island and the Rockaways, helping the state achieve its climate goals.

Community Offshore Wind

The Community Offshore Wind project is a joint venture of RWE and National Grid Ventures, which was awarded a 1.3-gigawatt (GW) offtake contract in the state's third offshore wind solicitation. The project aims to deliver clean energy to over 500,000 U.S. households, reduce New York's electricity-related carbon emissions by up to 5%, and contribute \$3.3 billion in economic benefits, creating over 800 jobs and investing \$530 million in disadvantaged communities. The project delivers power through underwater transmission lines to a new converter station in Brooklyn, NY.

The Sunrise Wind Project

The Sunrise Wind project, situated over 30 miles off the eastern coast of Long Island, is strategically positioned for optimal impact. With the support of

New York's electricity grid, the project will connect at the Holbrook Substation in central Long Island. Taking a comprehensive approach, key components for foundations will be fabricated in the Capital Region, emphasizing local involvement. Additionally, there are plans to establish a regional operations and maintenance hub in Port Jefferson, NY, further solidifying Sunrise Wind's commitment to sustainable energy development and community engagement.

Beacon Wind

The Beacon Wind project is positioned more than 60 miles to the east of Montauk Point and marks a significant milestone as the inaugural offshore wind project in the United States to employ High Voltage Direct Current (HVDC) transmission technology. The project is linked to New York's electricity grid via the Astoria Substation in Queens. The initiative will establish a dedicated operations and maintenance base in Sunset Park, Brooklyn, showing its commitment to sustainable energy development in the region.

Empire Wind 1

Empire Wind 1 is strategically located close to important places. It's about 14 miles away from Jones Beach State Park. To connect to New York's electricity grid, it will use the Gowanus Substation in Brooklyn. Additionally, the project will set up a base in Sunset Park, Brooklyn, for operations and maintenance. This base will play a crucial role in keeping Empire Wind 1 running smoothly and providing clean energy to the area.

Excelsior Wind

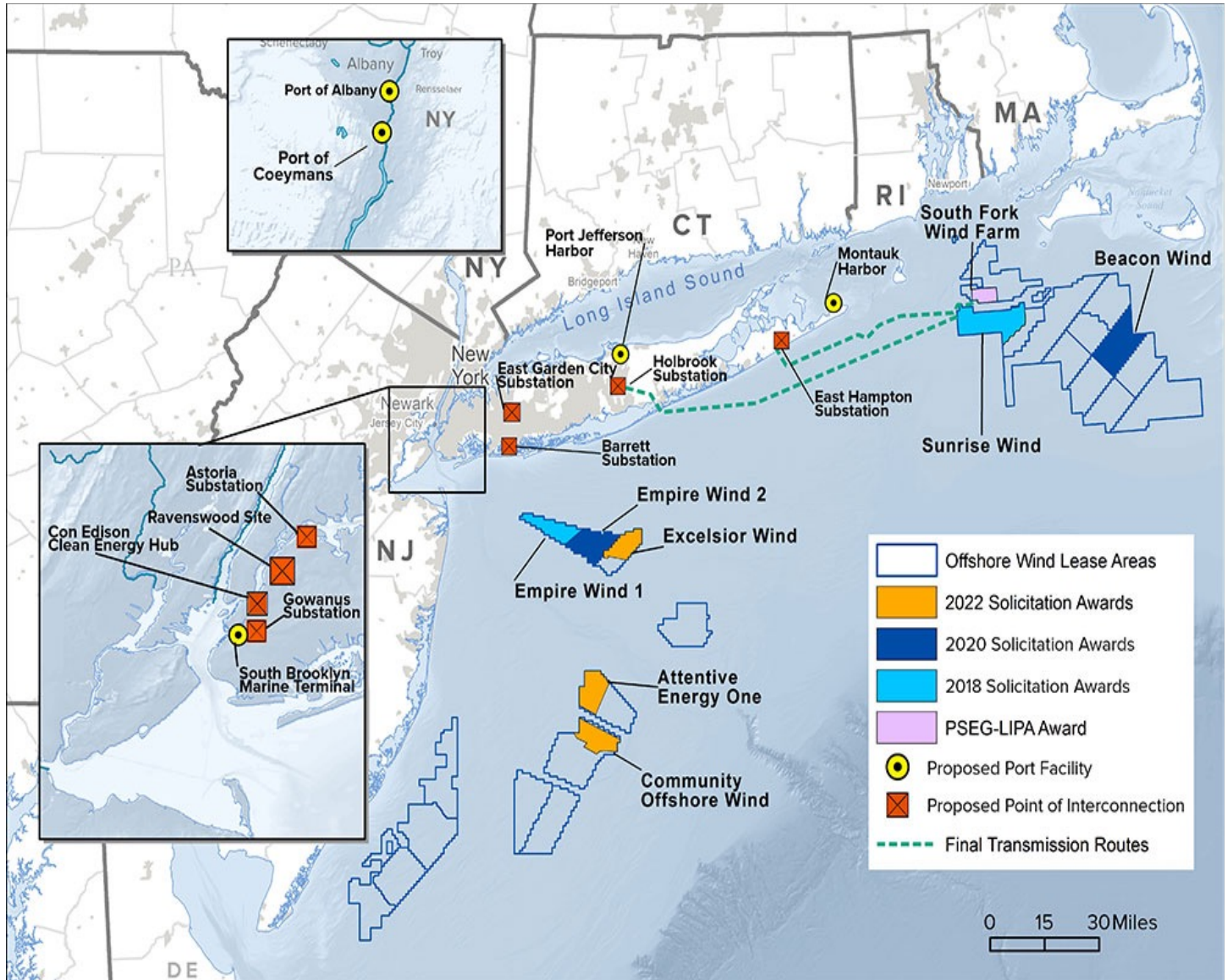
The Vineyard Offshore Excelsior Wind project is set to contribute over 1,300 MW of clean electrical capacity, sufficient to power 700,000 homes and reduce carbon pollution by 1.1 million tons annually, equivalent to removing nearly 225,000 cars from the roads. The initiative aims to secure New York's prominence in the offshore wind industry. It will bring substantial economic benefits, including job creation, workforce development, and opportunities for local businesses, with a focus on benefitting disadvantaged communities.

Attentive Energy One

The Attentive Energy One project selected by NYSERDA in the third offshore wind solicitation round, is a 1.4 GW wind farm owned by Total Energies, Rise Light & Power, and Corio Generation. The project will be located 50 miles off the coast of New York and is aiming to provide clean energy to support the needs of 700,000 American homes. Environmental benefits include an annual reduction of one million tonnes of carbon emissions, and approximately \$25.6 billion in economic advantages. The project is expected to create 2,600 occupations and result in \$10 billion in utility bill savings for ratepayers during its initial 25 years of operation. The project plans to deliver power through underwater transmission lines to a new converter station at the Ravenswood Generating Station site.



The following map developed by NYSERDA pinpoints the location of New York's active offshore wind projects as of March 2024, including port facilities and points of interconnection.



Retrieved from [NYSERDA](#), March 19, 2024

Offshore Wind Career Opportunities

Job Spectrum

The offshore wind energy job spectrum refers to the various types of job opportunities and roles that are associated with the offshore wind energy industry. This spectrum encompasses a wide range of professions, skills, and expertise required to plan, develop, construct, operate, and maintain offshore wind farms. This section provides a small sample of the more than 100 careers related to the offshore wind industry. Learn more about high-demand jobs in [NYSERDA's New York State Offshore Wind Workforce Skills Analysis, 2022](#).

Research & Development (R&D) in Engineering



Electrical Engineers	Health & Safety Engineers
Environmental Engineers	Industrial Engineers
Civil Engineers	Mechanical Engineers
Aerospace Engineers	Materials Engineers

General Manufacturing



Welders, Cutters, Solderers, & Blazers	Industrial Production Managers
Team Assemblers	Computer-Controlled Machine Tool Operators
Inspectors, Testers, Sorters, Samplers, & Weighers	Machinists

Management & Supervisors



Site/Plant Manager/ Operator	Commercial Finance Manager
Senior Project Manager	Construction Project Managers
Quality Manager	

Scientists



Atmospheric & Space Scientists	Zoologist & Wildlife Biologists
Geoscientists (except hydrologists & geographers)	Environmental Scientists & Specialists

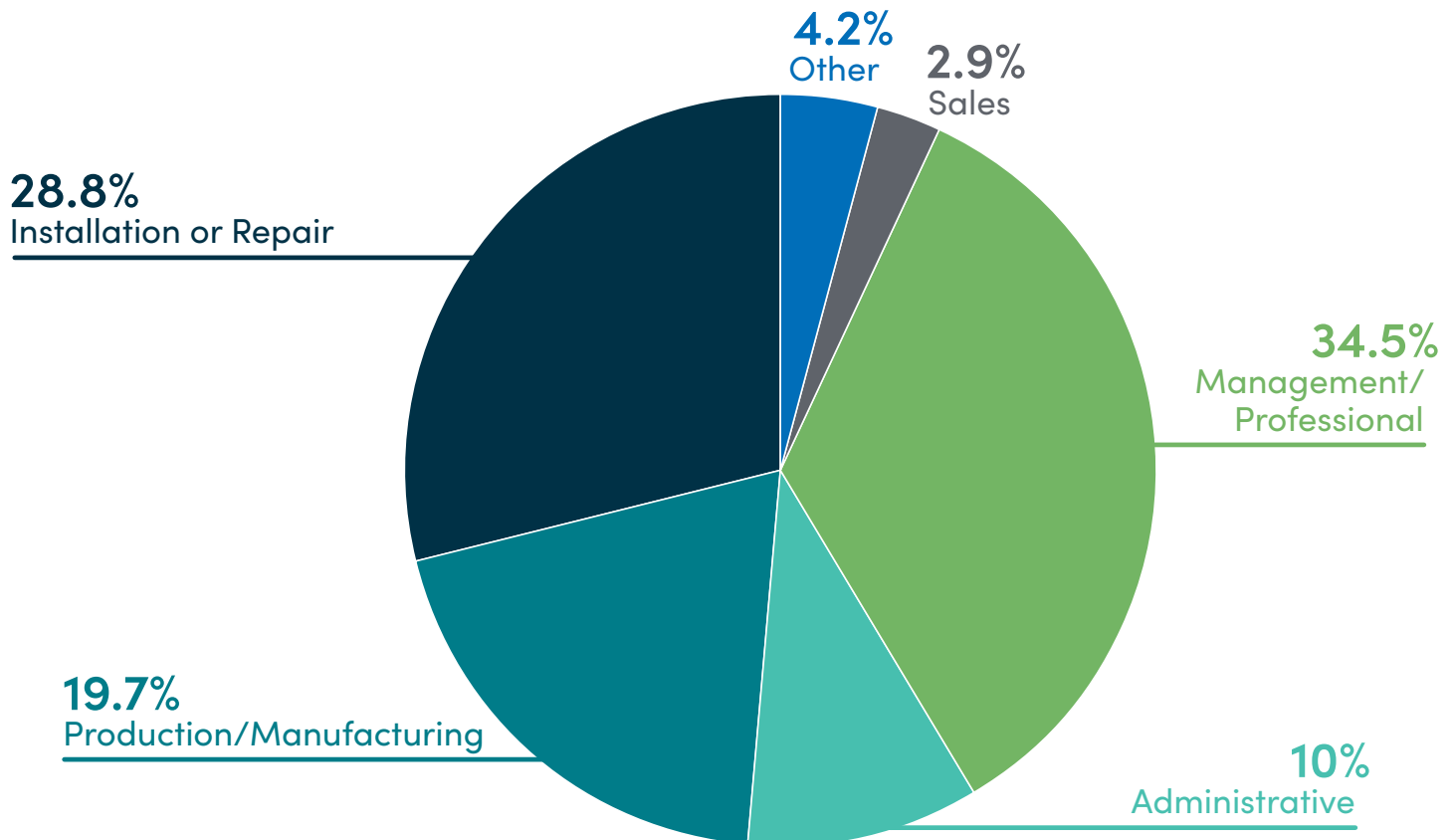
Construction



Operating Engineers	Electricians
Construction Laborers	Crane & Tower Operations
Equipment Operators	

High Demand Career Opportunities in NYS

High-demand positions in NY's offshore wind industry include those in management/professional services, and installation/repair. The most severe labor shortages identified in a 2022 study were among plant and system operators, hoist and winch operators, continuous mining machine operators, and wind turbine service technicians.



For additional information, refer to the [NYSERDA report New York State Offshore Wind Workforce Gap Analysis, 2022](#)

Occupations and Training Requirements

The offshore wind industry requires personnel skilled at a wide range of tasks. Many of these occupations also require certifications, such as OSHA-10, OSHA 30, or the Global Wind Organization (GWO) Certifications. Learn more about certifications through [NYSERDA's Offshore Wind Workforce Skills Analysis](#).



Entry-Level Occupations

POSITION	REQUIRED TRAINING
Construction Laborer & Freight, Stock, and Material Mover	Apprenticeship/ Postsecondary Training
Helper - Installation, Maintenance, and Repair Worker	HS Diploma/ Equivalency
Plant & System Operator	Apprenticeship / Postsecondary Training
Commercial Site Supervisor	Bachelor's Degree
Hoist & Winch Machine Operator	Apprenticeship / Postsecondary Training
Wind Technician Apprentice	High School (HS) Diploma / Equivalency or Associate's
Wind Turbine Technician	Technical Certificate / Associate's
Electrical Inspector, Offshore Wind	HS Diploma / Equivalency
Wind Turbine Call Support Technician	HS Diploma / Technical Degree
Experienced Wind Traveling Technician	Associate's Degree
Computer Numerically Controlled Tool Programmer	Apprenticeship / Postsecondary Training
Energy Analyst	Bachelor's Degree

Mid-Level Occupations

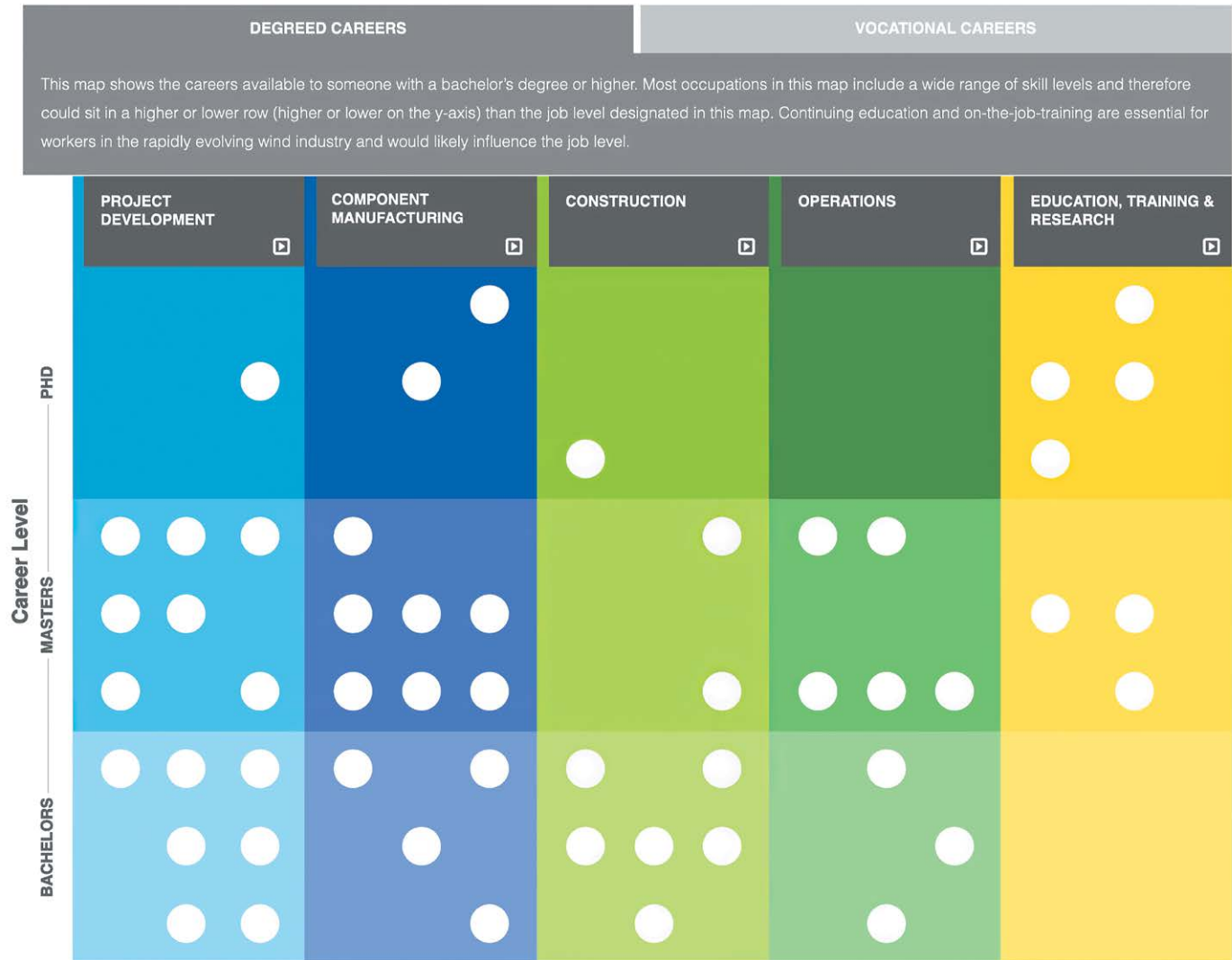
POSITION	REQUIRED TRAINING
Turbine Engineer	Bachelor's Degree
Environmental Consultant	Bachelor's Degree
Offshore Development Manager	Bachelor's / Master's Degree
Offshore Wind Technician Advisory Lead	Master's Degree
Assistant Director, Offshore Wind	Bachelor's Degree
Offshore Wind Project Manager	Bachelor's Degree
Supplier Diversity & Local Content Manager	Master's Degree
Project Engineer, Offshore Electrical Engineering	Bachelor's Degree
Wind Turbine Blade Inspector	Bachelor's Degree
Project Development Director	Bachelor's Degree
Lead Services Specialist	Technical / Bachelor's Degree
Construction Offshore	Bachelor's Degree
Construction Pre-Installation Manager – Offshore Wind	Bachelor's Degree
Graduate Development Program, Associate Engineer	Bachelor's Degree

Senior-Level Occupations

POSITION	REQUIRED TRAINING
Senior Director – Offshore Procurement	Bachelor's Degree
Senior Project Manager	Bachelor's / Master's Degree
Renewable Energy Researcher / Scientist	Bachelor's Degree
Chief Sustainability Officer	Bachelor's / Master's Degree
Senior Wind Resource Analyst	Master's Degree
Head of Electrical Studies (HVDC / Offshore Wind)	Bachelor's Degree
Senior Project Manager, Offshore Wind	Bachelor's Degree
Manager, Environmental Compliance & Strategy (Construction Focus)	Bachelor's Degree or Higher
Aerospace Engineer	Bachelor's Degree
Atmospheric Scientist	Bachelor's Degree
Research Engineer	Bachelor's, Master's, or PhD
Senior Research Analyst	Master's Degree/PhD

Department of Energy Wind Career Map

The Department of Energy provides a career mapping tool which serves as an informative resource, offering insights into the diverse range of job opportunities within the wind energy sector. It provides detailed descriptions of various wind industry occupations and outlines the educational and training requirements for pursuing a career in this field.

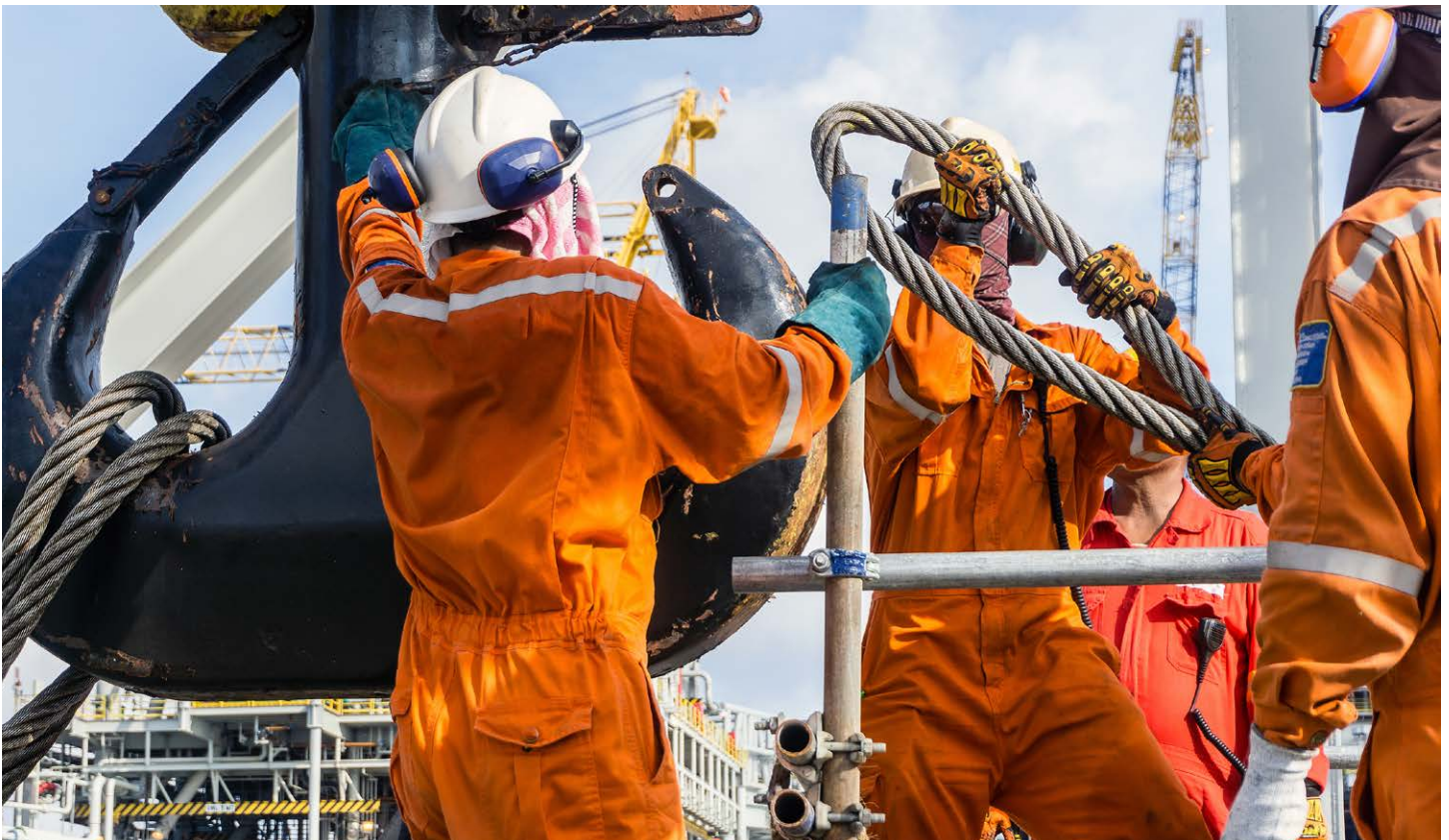
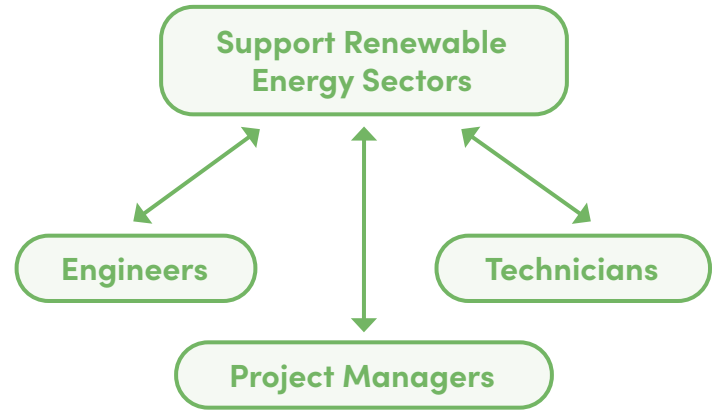


For more information, please visit energy.gov

Developing Portable Skills

As you consider renewable energy career pathways, keep in mind that many skills that apply to one sector are transferrable to others. For example, engineers, project managers, and technicians are needed to support all renewable energy sectors.

Many of the certifications needed for one occupation are also transferable to others. Visit NYSERDA's Offshore Wind Workforce Skills Analysis to view a list of adjacent occupations and relevant certifications.



Training and Skill Building

Discover Training Programs Across New York

The SUNY Clean Energy Consortium is comprised of community colleges, technical schools, and universities, focused on preparing students for successful careers within many renewable energy industry segments.

Gain the skills needed to enter the clean energy industry by visiting the Consortium's website to learn about training programs ranging from certificates of completion to degrees.

A sample of programs is shown in the following table. Full details including descriptions, entry requirements, and registration information can be accessed via [the Consortium's program page](#).



SUNY Clean Energy Consortium Sample Program Listing

INSTITUTION	CERTIFICATE	ASSOCIATES	BACHELORS	MASTERS
Alfred State College		⚡	⚡	
Farmingdale State College	⚡	⚡	⚡	
Buffalo State University		⚡	⚡	⚡
University at Buffalo	⚡		⚡	⚡
SUNY Erie Community College	⚡	⚡		
SUNY Herkimer		⚡		
SUNY Polytechnic			⚡	⚡
SUNY Oswego			⚡	
SUNY Canton	⚡	⚡	⚡	



Renewable Energy: Fundamentals and Job Opportunities

This online, asynchronous course introduces clean energy career opportunities and explores the complexities and nuances of different renewable energy solutions.

Learners will gain a foundational understanding of clean energy market segments including wind, sustainability, green building, solar, and nanotechnology.

The course's culminating experience provides learners with a personalized career roadmap documenting the training needed to secure their ideal renewable energy career, with a focus on SUNY programs.



ENROLL TODAY!

A limited number of free seats are available to NYS residents. Complete a short survey to save your spot.



Brought to you by



In collaboration with



Program Spotlights

University at Buffalo, Center for Industrial Effectiveness (UB TCIE)

As the professional development and industry outreach arm for the University at Buffalo School of Engineering and Applied Sciences, UB TCIE invites you to acquire new skills that will help you stand out from other job applicants. [Visit the UB TCIE course catalog to explore professional education programs.](#)

Farmingdale State College (FSC)

FSC is home to the Renewable Energy and Sustainability Center (RESC), which is dedicated to raising awareness about emerging renewable energy resources and sustainable technologies through applied research and workforce training. Situated within Farmingdale's School of Engineering Technology (SET), the RESC extends its training programs to cover various technology and manufacturing domains to address Long Island's workforce requirements. [Learn more about FSC's RESC.](#)

Alfred State College (ASC)

Alfred State is pioneering sustainability in academic and co-curricular programs to prepare graduates to succeed in fast-growing sectors of the economy such as renewable energy, green building, hybrid and electric vehicles, and sustainable agriculture. ASC's Center for Renewable Energy will educate the workforce to design, implement, and operate green building and renewable energy technologies. [Learn more about ASC's sustainability initiatives and programming.](#)



Additional Career Exploration Resources

NYSERDA: Offshore Wind Workforce Development

Learn more about offshore wind career pathways and training opportunities on the [Offshore Wind Training website](#) presented by NYSERDA. Resources include career pathway maps, a statewide training program map, and funding notifications. Or, read career stories and advice on [NYSERDA's Roadtrip Nation website](#).

Department of Labor

Find career fairs, search the New York State job bank, and explore apprenticeships through the [NYS Department of Labor website](#).

Additional resources are provided to help job seekers prepare resumes and cover letters, including samples and templates.

Interested in other Coursera courses beyond the Renewable Energy Fundamentals program? The New York State Department of Labor provides unemployed and underemployed New Yorkers with [free access to Coursera's vast library of professional development courses](#).





SCAN ME

Sail to Success

Your Guide To Offshore
Wind Career Opportunities
In New York State

Phone (716) 645-8844 | tcieinfo@buffalo.edu | www.buffalo.edu/tcie

**Farmingdale
State College**
State University of New York

UB | University at Buffalo
The Center for Industrial
Effectiveness

A | **ALFRED STATE**
COLLEGE OF TECHNOLOGY
STATE UNIVERSITY OF NEW YORK