



# Wind Council Report

## Recommendations Issued Pursuant to Executive Order No. 79

Report Issued on April 22, 2020

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## EXECUTIVE SUMMARY

On August 16, 2019, Governor Murphy issued Executive Order No. 79 to establish the Wind Council, a cross-governmental coordinating effort to develop a plan for creating the Wind Innovation and New Development (WIND) Institute, which will serve as a center for education, research, innovation, and workforce training related to the development of offshore wind in New Jersey and the Northeast and Mid-Atlantic region.

To inform its recommendations, the Wind Council assessed the state of the offshore wind industry in New Jersey, conducted a gap analysis of workforce assets in New Jersey, and facilitated discussions with a range of stakeholder groups, including offshore wind industry members, organized labor, four-year colleges and universities, community colleges, vocational technical schools and comprehensive high schools, and commercial fisheries.

The data and insight gathered throughout this effort reveals a strong need for an entity that will play a coordinating role within the Northeast and Mid-Atlantic's offshore wind industry that catalyzes workforce development and research, innovation, and thought leadership efforts. Addressing pressing workforce development needs and fostering local research, innovation, and thought leadership will require collaboration across organizations. The Wind Council believes that the WIND Institute will be instrumental in organizing and developing solutions that engage all stakeholder groups to further New Jersey's leadership in offshore wind.

The Wind Council recommends the following for the creation of the WIND Institute:

- The WIND Institute be established as an independent authority with a corollary non-profit;
- The WIND Institute have an advisory board that enables all stakeholder groups, including industry, organized labor, academia, and other interested parties to guide its activities;
- The WIND Institute coordinate and galvanize cross-organizational efforts by acting as a centralized hub for offshore wind workforce development;
- The WIND Institute champion research, innovation, and thought leadership that unlocks market potential;
- The WIND Institute leverage a combination of state funding, federal funding, and, where appropriate and feasible, philanthropic funding to ensure sustained and adequate support; and
- The WIND Institute have a dedicated physical presence to support in-person collaboration and act as a hub of activity for the region's industry.

The Wind Council recognizes that near-term action is needed to coordinate workforce development and research and innovation efforts in New Jersey. While the WIND Institute is being stood up, the Wind Council agencies will work together to address the industry's short-term needs. Recommendations for 2020 include beginning to address workforce training and safety certification and launching an industry-sponsored innovation challenge to begin addressing novel offshore wind development needs.

## OVERVIEW OF WIND COUNCIL'S WORK

In April 2019, Governor Murphy established the Wind Council (Council) to develop a plan for the creation of the WIND Institute (Institute). The Council is a cross-governmental coordinating effort that includes the Chief Policy Advisor to the Governor, the Chief Counsel to the Governor, the Secretary of Higher Education, the Chief Executive Officer of the Economic Development Authority, the President of the Board of Public Utilities, the Commissioner of Education, the Commissioner of Environmental Protection, and the Commissioner of Labor and Workforce Development, or their respective designees.

### Key Activities

To inform its recommendations for the creation of the Institute, the Council gathered information and ideas from a wide range of stakeholders and sources. Specific actions the Council took to assess the current state of the offshore wind industry in New Jersey and identify opportunities for growth included:

- Conducting a gap analysis of workforce assets in New Jersey in partnership with State agencies, including the Office of the Secretary of Higher Education, Department of Labor and Workforce Development, and Economic Development Authority;
- Examining other markets that have built a robust offshore wind industry, particularly European markets including the United Kingdom, Denmark, and Germany;
- Facilitating discussions with a range of stakeholder groups, including offshore wind developers, offshore wind supply chain corporations, organized labor, universities, community colleges, vocational technical schools and comprehensive high schools, and commercial fisheries;
- Conducting an overview of current academic research occurring in the State to support offshore wind and how to best continue to foster this research both for industry and academia; and
- Gathering data from industry on anticipated hiring needs, including skills, credentials, and demand.

### Summary of Workforce Analysis: Our Approach

To understand existing strengths that New Jersey can leverage to prepare its workforce for offshore wind and to identify additional workforce development solutions that are required to fully equip workers with the necessary skills, licensure, and safety credentials for offshore wind, the Council performed a workforce gap analysis.

The Council facilitated discussions with a wide range of industry stakeholders, including developers and other offshore wind supply chain corporations, to gather information and data on their expected workforce requirements. This information was augmented with publicly available data on industry workforce needs, including the National Renewable Energy Laboratory's Jobs and Economic Development Impacts (JEDI) Wind model, to estimate the demands for the workforce and economic development impacts. Armed with an understanding of workforce requirements for offshore wind, the Council then collaborated with State agencies to identify existing workforce development assets (e.g., training, certifications, etc.) within New Jersey that can be harnessed to prepare New Jersey workers for offshore wind.

By comparing the workforce that will be required to meet New Jersey's offshore wind goals with what currently exists in the State, both in terms of workers and supporting workforce development assets, the Council was able to identify gaps that can be addressed to reinforce New Jersey's position as a leader in offshore wind workforce development.

### Overview of New Jersey's Offshore Wind Workforce Strengths

New Jersey's workforce is well-positioned to support the region's burgeoning offshore wind industry and become an integral part of the economic growth that offshore wind will generate in years to come. With a highly skilled, diverse workforce and one of the nation's best public education systems, New Jersey has the talent and workforce development infrastructure needed to excel in offshore wind.

A wide range of workers with diverse skills is needed to support the growth of the region's offshore wind industry over the long-term. Employment needs will evolve throughout the different phases of developing and operating wind farms. In the initial two- to three-year planning and development phase of a given project, engineers will create the site design plan, scientists will survey the seabed and local environmental conditions, attorneys and permitting specialists will secure the necessary approvals, and financial managers will oversee project financing. This is followed by a construction and installation phase during which engineers, wind turbine technicians, and trade workers will install components of the wind farm in the ocean over a period of several years. Utility workers will also install undersea cables and water transportation workers will shuttle workers and components between ports and the wind farm. Once the wind farm becomes operational, technicians will conduct regular maintenance of the turbines and, along with administrative staff, manage the wind farm during its 20+ year lifetime. To meet the 7,500 MW offshore wind goal by 2035, New Jersey has proposed a solicitation schedule in which six projects will likely commence approximately every two years, meaning that multiple projects will be cycling through these phases in the coming years and create a steady stream of employment opportunities. Additionally, as the supply chain matures in New Jersey, an increasing number of manufacturing jobs will be required. While most of the manufacturing of components will occur abroad in the short-term, more of this activity will take place in New Jersey as the regional industry develops in order for the industry to achieve efficiencies. It will take a multi-year industry-wide effort for the New Jersey and Northeast supply chains to develop the required capabilities, quality, and throughput to support large-scale manufacturing localization for the offshore wind industry.

New Jersey workers have skills that are foundational for much of the work within offshore wind. With more than 180,000 trade workers in New Jersey and increasing numbers of employees entering the trades, New Jersey has a pool of skilled workers ready to build and operate wind farms. For instance, New Jersey experienced employment growth of 13.8 percent for Structural Iron and Steel Workers, 9.3 percent for Electricians, and 7.0 percent for Crane/Tower Operators in the 4-year period ending in 2018. New Jersey also has a strong network of professional service providers such as legal, health, and safety engineering experts who will play a key role in standing up an offshore wind industry in the State. Many of these workers may require some additional training to acquire industry-specific knowledge, experience, and credentials, but New Jersey is well-prepared for rapid offshore wind industry growth.

One major advantage is New Jersey's robust workforce development assets that can easily be harnessed to prepare students and workers for work on offshore wind projects:

- Our community colleges provide students with valuable mechanical and electrical skills that are foundational for many of the jobs in offshore wind. As an example, New Jersey already has 15 Associates programs for electrical and electronic engineering technicians and seven Associates programs for mechanical engineering technicians producing hundreds of graduates each year;
- Our vocational technical schools and comprehensive high schools provide students with valuable mechanical, electric, hydraulics, and welding skills. Currently, there are 24 career and technical education (CTE) programs for electrical engineers and 22 programs for mechanical engineers, industrial engineers, and health and safety engineers;
- Our labor unions have state-of-the-art training facilities and experienced faculty. For example, North East Carpenters have a new state-of-the-art facility in Hammonton and the Local 825 operating engineer training facility in South Brunswick, adjacent to Lake Tarnofsky, holds virtually all heavy equipment; and
- Our universities produce hundreds of highly educated civil engineers, electrical and electronics engineers, and mechanical engineers with Masters degrees each year, helping students build advanced engineering skills that can be leveraged in offshore wind.

In the past, offshore wind has not been a dedicated focus of training and educational programming in the State, but our institutions are already equipping students with knowledge and capabilities that are foundational to work in offshore wind and are well positioned to provide any additional training workers will need to support this new industry.

We are already mobilizing New Jersey’s skilled workforce and robust workforce development infrastructure to prepare for offshore wind. For example, the Department of Education is developing a Wind Energy Comprehensive Technical Education program to launch in 2021 and the Economic Development Authority is building a program that will educate local businesses and their workers on the industry. These efforts and others like them will efficiently and effectively empower workers to enter and support the offshore wind industry.

### Priority Short-Term Workforce Needs

While New Jersey starts from a position of strength relative to other states, it is important that we act quickly to provide opportunities for workers to obtain offshore wind-specific knowledge, skills, and qualifications. High-priority workforce development gaps that must be addressed in the short-term include:

- **Establish a wind turbine technician occupation in New Jersey** – Wind turbine technicians are critical for industry growth and are in demand across the country. For each project, an individual original equipment manufacturer (OEM) requires dozens of wind turbine technicians to support installation and provide efficient turbine maintenance throughout the lifetime of the wind farm. New Jersey will need to train qualified wind turbine technicians to achieve Governor Murphy’s goal of producing 7,500 MW by 2035. New Jersey currently has no specific program for training wind turbine technicians and postsecondary institutions should work with industry to determine the best way to fill this industry need—whether through the modification of existing programs or creating new industry-recognized credentials.
- **Expand the pipeline of trade workers with the skills and qualifications required for offshore wind** – As New Jersey’s offshore wind industry matures and the local supply chain becomes more established, demand will continue to increase for trade workers with industry-specific skill sets and qualifications. To ensure New Jerseyans benefit from these new opportunities, the Institute must work with local trade organizations, secondary education institutions, and community colleges to help workers gain these specialized skills and qualifications.
- **Introduce a Global Wind Organization (GWO) Safety Certification** – Working in the offshore wind industry requires workers on turbines, including wind turbine technicians, to complete the GWO’s safety training. New Jersey does not provide GWO training, so we must establish a certification program and ensure that we have the required training facilities.

This is a preliminary list of priority projects. As New Jersey’s offshore wind industry grows and our local supply chain becomes more robust, we will need to continuously monitor the industry’s evolving needs and address workforce development gaps as they arise.

To do this, New Jersey needs an entity to coordinate efforts and deliver holistic solutions that work for the whole offshore wind industry and all relevant stakeholders. The Wind Council believes the WIND Institute should serve this crucial role.

### Overview of New Jersey’s Offshore Wind Research and Innovation Capacity

New Jersey has a strong foundation of research and innovation capabilities that can be harnessed as the offshore wind industry matures. According to Research with New Jersey, there are more than 100 faculty across Montclair State University, New Jersey Institute of Technology, Princeton University, Rowan University, and Rutgers University conducting research on topics related to power systems and engineering, electric power, composite materials and structure, fluid mechanics, and fluid dynamics – all of which are important to offshore wind. New Jersey has significant expertise in climatology and ocean observation that can be leveraged to provide industry with rich insights. As an example, the Rutgers Center for Ocean Observing Leadership has been conducting wind resource assessment modeling since 2011. New Jersey research institutions are also advancing cutting-edge research in emerging fields, ranging from cybersecurity to big data to unmanned vehicles that can intersect with and have implications for the offshore wind industry of the future. New Jersey has a strong history of bringing together researchers and industry to drive innovation, and it will build on this foundation to further research and innovation for offshore wind.

# RECOMMENDATIONS FOR THE CREATION OF THE WIND INSTITUTE

## STRUCTURE RECOMMENDATIONS

To determine the WIND Institute's structure, the Wind Council first considered the vision for the Institute as laid out in the Stronger and Fairer New Jersey Economic Report, which states that the Institute will be the coordinator and connector to "resources, including workforce training, research and development, and capital investments." To achieve this, the Council recommends that the Institute adopt a mission with two main pillars, the first being "Workforce Training and Development" and the second, "Research and Innovation."

When deliberating the structure of the Institute, the Council assessed a number of needs for the structure to accommodate. These considerations include that the Institute should have the ability to do the following:

- liaise with a variety of governmental and non-governmental actors, including State and Federal Agencies, public and private higher education institutions, industry, labor, and fisheries and environmental groups, to support offshore wind supply chain and construction;
- engage industry to understand ongoing and evolving workforce training and development and research and development needs;
- engage organized labor to continue to ensure that skills and safety trainings in New Jersey align with industry needs, including facilitating training opportunities where needed;
- coordinate and establish relationships between New Jersey academic institutions and institutions in Europe with offshore wind training expertise, both public and private;
- accept a variety of funding sources, from both public and private entities, and have grantmaking powers;
- support and promote New Jersey's offshore wind research and innovation capacity; and
- protect proprietary research confidentiality.

Additionally, the Institute should exist as a physical space with dedicated staff, should be designed to act swiftly and nimbly, be long-lasting and have the ability to evolve and flex over time.

Given these requirements, the Council recommends that the Institute be created as a legislatively-established independent authority with a corollary non-profit.

## FUNCTION RECOMMENDATIONS

### SUMMARY

The Wind Council recommends the following overarching role for the WIND Institute:

**The WIND Institute coordinates and galvanizes cross-organizational workforce and innovation efforts to position New Jersey as a leader in offshore wind.**

To accomplish this mission, the Council proposes two key objectives to guide the Institute's work:

#### Objective 1:

Act as a centralized hub for offshore wind workforce development

- A. Collating and communicating workforce needs
- B. Brokering stakeholder relationships
- C. Catalyzing certification, program development, and on-the-job training opportunities
- D. Coordinating industry pathways
- E. Offering training and support facilities development as needed

#### Objective 2:

Champion research and innovation that unlocks market potential

- A. Promoting industry-driven research and innovation
- B. Cultivating thought leadership to support industry development in the region

As New Jersey's offshore wind industry matures its needs will shift. These objectives will guide the WIND Institute as it evolves to remain relevant and deliver value to all stakeholders.

## FUNCTION RECOMMENDATIONS

### OBJECTIVE 1: ACT AS A CENTRALIZED HUB FOR OFFSHORE WIND WORKFORCE DEVELOPMENT

The Wind Council recommends that the WIND Institute act as a coordinator across stakeholder groups and State agencies to support the development and delivery of programs and facilities that empower New Jerseyans and other regional workers to participate in the offshore wind industry.

As New Jersey's offshore wind industry grows, stakeholders from industry to academia are beginning to craft new workforce development programs aimed at addressing the industry's needs. To ensure efforts are complementary and to avoid redundancy, the Council recommends that the Institute coordinate and organize workforce development efforts to rapidly address the wind industry's short-term workforce needs and prepare New Jersey's workforce to meaningfully participate in the industry over time.

The recommended key Institute activities supporting this objective include:

#### A. Collating and communicating workforce needs

The Institute should collaborate with industry and labor stakeholders to monitor hiring needs and develop strategies to address workforce gaps. The Council recommends the following specific initiatives to support this activity:

- I. Regularly gathering data on industry's anticipated hiring to identify potential workforce gaps and communicate these needs to workforce development partners.

Workforce development partners, including academia and labor unions, need full visibility into industry's anticipated hiring needs, including the skills required and expected demand. The Institute should support workforce development by serving as the central resource for comprehensive, up-to-date information on offshore wind workforce needs.

- II. Convening stakeholders to proactively identify and address emerging workforce gaps.

Due to the offshore wind industry's complexity, rapidly addressing workforce gaps will require mobilizing multiple stakeholder groups. The Institute is well-suited to convene diverse stakeholders and to coordinate workforce development efforts to rapidly respond to gaps in New Jersey's existing programs.

- III. Developing a strategy to recruit New Jersey students into offshore wind jobs.

New Jersey academic institutions produce thousands of graduates from varying disciplines from mechanical engineering and electrical engineering programs to human resources, business, and law. These students graduate equipped with skills that are foundational for high-skilled, high-paying jobs in offshore wind. The Institute will coordinate with industry stakeholders and academic institutions to create a pipeline of highly-trained New Jersey college graduates into offshore wind jobs. The Institute can build awareness of career options for graduates, create opportunities for students to develop offshore wind-specific knowledge and skills, and establish pathways into the industry.

#### B. Brokering stakeholder relationships

The Council recommends that the Institute act as a bridge between industry and workforce development partners (e.g., secondary institutions, colleges and universities, and labor unions) in New Jersey and across the Northeast and Mid-Atlantic regions to foster connections with partners who are prepared to meet specific workforce needs. The Council recommends that the specific initiatives supporting this activity include:

- I. Liaising with other states and institutions in the Northeast and Mid-Atlantic to develop and deliver regional workforce solutions.

Industry stakeholders view workforce needs within a broader regional context and they are eager for the Institute to complement efforts in neighboring states to achieve efficiencies and maximize impact. To this end, the Institute should collaborate with government and nonprofit organizations across the Northeast and Mid-Atlantic to deliver holistic, regional workforce development solutions.

II. **Coordinating with State Agencies to create an inventory of academic programs and training programs and providers so that industry stakeholders can more efficiently find workforce development partners.**

It is difficult for industry stakeholders to assess which New Jersey-based training providers are best able to support their specific workforce development needs. The Institute should address this information gap by drawing on State data to provide insight into programs, courses, and certifications and facilitating connections between industry stakeholders and potential workforce development partners.

III. **Coordinating and engaging with workforce development partners on how to best support the offshore wind industry.**

Workforce development organizations are eager to engage the offshore wind industry but do not always have a clear view of how best to establish that partnership. The Institute can equip workforce development organizations with the knowledge they need to effectively partner with the offshore wind industry.

IV. **Coordinating with State agencies to identify cross-sector programs and initiatives that can be harnessed for offshore wind.**

The Institute can identify existing workforce development programs and assets that could be harnessed to support the offshore wind industry.

**C. Catalyzing certification, program development, and on-the-job training opportunities**

The Institute will organize and, where necessary, fund safety certification and training programs that provide the foundation for offshore wind industry growth. The Council recommends the following specific initiatives to support this activity:

I. **Organizing and funding the development of a Global Wind Organization (GWO) safety certification program.**

Industry requires that much of the offshore wind workforce have a safety certification from the Global Wind Organization (GWO). The Institute should work across stakeholder groups to bring a program to New Jersey.

II. **Working with academic institutions and industry to design and implement initiatives to establish a pipeline of qualified instructors.**

New Jersey does not have enough community college and vocational technical school instructors with the necessary qualifications to train a trade workforce to support New Jersey's offshore wind supply chain. The Institute should work with industry and community colleges, vocational technical schools, and comprehensive high schools to explore innovative strategies for recruiting qualified educators.

III. **Collaborating with industry and labor unions to identify additional safety certification programs that can support industry growth over the long term.**

As New Jersey's offshore wind industry matures and the supply chain becomes more robust, new jobs requiring different certifications and qualifications will come to the State. The Institute should coordinate with industry stakeholders and labor unions to identify emerging training needs and create opportunities for New Jersey workers to achieve the necessary skills and certifications.

- IV. Exploring future opportunities to help coordinate the development of wind-relevant certification and degree programs at New Jersey institutions.

The Institute should explore opportunities to support advanced offshore wind education to create new career opportunities for New Jersey students and position New Jersey as a hub for next generation knowledge and skills.

#### **D. Coordinating industry pathways**

The Institute will help to design and execute initiatives that create pathways into offshore wind for New Jersey students and workers. The Council recommends the following specific initiatives to support this activity:

- I. Collaborating with the Department of Labor and Workforce Development, the Office of the Secretary of Higher Education, the Department of Education, vocational technical and comprehensive high schools, and community colleges to design and implement innovative skills-based training models that create pathways to good careers in offshore wind.

New Jersey will need a robust pipeline of technical and trade workers to meet Governor Murphy's 7,500 MW target. To establish this pipeline, the Institute should work with vocational technical schools, comprehensive high schools, and community colleges to build awareness of offshore wind career opportunities and create pathways into the industry.

- II. Partnering with the Department of Labor and Workforce Development's Office of Apprenticeship to establish an offshore wind apprenticeship that provides hands-on experiences for New Jersey workers.

Apprenticeships are a well-established route into the offshore wind industry. The Institute should coordinate the development of an offshore wind apprenticeship program that puts workers on the path to employment in offshore wind.

- III. Collaborating with organized labor to introduce and/or expand certification programs.

While New Jersey has a strong trade workforce, many workers do not have the specific certifications that are required for offshore wind. The Institute should work with organized labor to create opportunities for New Jersey trade workers to obtain the certifications required to participate in the offshore wind industry.

- IV. Creating pathways into surveying and scientific monitoring roles.

New Jersey has a strong reputation for expertise in surveying and scientific monitoring, including a robust on-water presence through its academia and commercial and recreational fisheries communities. The Institute should harness this strength to support local hiring by connecting professionals in these fields with job opportunities in offshore wind.

- V. Creating novel partnerships to support pathways to employment in the offshore wind industry.

The Institute should forge strategic partnerships among educational institutions, organized labor, and industry to develop innovative, cross-organizational solutions to gaps in New Jersey's offshore wind workforce development infrastructure.

#### **E. Provide gap funding for requisite facilities**

The Council recommends that the Institute strategically fill financing gaps for workforce development facilities and equipment that will support New Jersey's offshore wind industry.

Specific recommended initiatives supporting this activity may include:

I. Providing gap funding for the development of Global Wind Organization (GWO) safety training facilities.

Industry-mandated safety training requires highly-specialized facilities and equipment. The Institute should coordinate and help fund the development of local training facilities, either as stand-alone facilities or as additions to existing training centers.

II. Providing gap funding to increase New Jersey's capacity to train welders.

As New Jersey's offshore wind industry matures, demand will increase rapidly for welders with advanced, specialized skills. The Institute should provide financial support for programs that increase New Jersey's capacity to train welders so that community colleges, vocational technical schools, and comprehensive high schools will have the resources they need to invest in new equipment and facilities while ensuring affordability for students from varied socioeconomic backgrounds.

## FUNCTION RECOMMENDATIONS

### OBJECTIVE 2: CHAMPION RESEARCH AND INNOVATION THAT UNLOCKS MARKET POTENTIAL

The Wind Council recommends that the WIND Institute champion research and innovation that unlocks offshore wind market potential by advancing research efforts and fostering thought leadership among regional experts and institutions.

In order to make New Jersey a hub of offshore wind advancement for years to come, we will need to establish a strong industry presence early and work proactively to capture product research and development. There are steps that the Institute can take in the near-term to enable New Jersey academics, research institutions, and entrepreneurs to be at the cutting-edge of offshore wind innovation. In addition, the Institute can help facilitate policy research on critical industry topics and convene industry and regional stakeholders to solicit a broad range of perspectives on industry development.

The recommended key Institute activities supporting this pillar include:

#### A. Promoting industry-driven research and innovation

The Institute should collaborate with industry to identify challenges that impact the region's offshore wind market (e.g., transmission, ports, wake analysis, etc.), and then coordinate research and innovation efforts to address these challenges.

Specific recommended initiatives supporting this activity include:

##### I. Representing New Jersey on national research platforms.

The National Offshore Wind Research and Development Consortium is widely recognized as the premier offshore wind research organization in the country. The Institute should investigate working with this Consortium and other research organizations on research projects.

##### II. Coordinating and funding industry-driven challenges.

The Institute should work with industry stakeholders to identify problems impacting the market and coordinate innovation challenges that encourage New Jersey-based research institutions and entrepreneurs to find innovative solutions to these problems. Early challenge topics could include transmission, ports, local wind atlas, and wake analysis.

##### III. Providing visibility into local research activity.

New Jersey institutions are conducting research relevant to offshore wind, but many industry leaders are not aware. The Institute should increase awareness of New Jersey's contributions to this growing field by maintaining a database of relevant research activity and connecting industry stakeholders with relevant researchers and experts.

##### IV. Supporting next-generation research at New Jersey academic institutions.

New Jersey universities are already pursuing research in emerging technologies that have significant potential for offshore wind, such as cybersecurity, unmanned vehicles, and big data. The Institute should put out calls for proposals for research to enable New Jersey to continue to advance the future of the industry.

##### V. Supporting research on potential local industry impacts.

Stakeholders across New Jersey have questions about how the burgeoning offshore wind industry will impact the local natural resources and economy. The Institute should support research on potential local impacts and publicize these findings to educate and engage stakeholders on how offshore wind growth could affect New Jersey and opportunities to minimize and mitigate any impacts.

VI. Exploring opportunities to encourage future research facilities and demonstration projects.

As the industry matures and research in New Jersey advances, new opportunities will arise. The Institute can ensure New Jersey remains a thought leader in offshore wind by building up our research infrastructure.

**B. Cultivating thought leadership**

The Institute should foster thought leadership among local experts and provide platforms for convening stakeholders to share innovative thinking. The Council recommends the following specific initiatives to support this activity:

I. Promoting and publicizing research at industry, regional, and local levels, including providing funding.

To help establish New Jersey as a hub for offshore wind thought leadership, the Institute should publicize studies and opinion pieces by established experts on critical topics impacting the industry.

II. Convening and facilitating technical conferences.

The Institute should bring together industry stakeholders to disseminate cutting-edge research and discuss crucial issues impacting the offshore wind industry.

III. Supporting local and regional dialogues about critical industry development topics.

Offshore wind impacts a wide range of people and organizations. The Institute should convene discussions with these groups around critical topics.

## FUNDING RECOMMENDATIONS

The Wind Council recommends several funding mechanisms to ensure the WIND Institute's longevity:

- **State Funding** – The Council recommends the Institute receive direct funding from the State, both to signal to stakeholders the State's continued investment in offshore wind training and development and to create a reliable funding stream over years.
- **Federal Sources** – The Council recommends that the Institute be prepared to seek federal grants, especially those from the US Department of Commerce and the US Department of Energy that support offshore wind development. Additionally, the Institute should assess how to leverage US Department of Interior Bureau of Ocean Energy Management (BOEM) auction proceeds for New Jersey's benefit.
- **Additional External Sources** – Where appropriate and feasible, the Council recommends that the Institute apply for grants and solicit donations from organizations to support the Institute's mission through the corollary nonprofit.

## LOCATION RECOMMENDATIONS

The Wind Council recommends that the WIND Institute have a dedicated physical presence that will foster collaboration with stakeholders. To facilitate access, the Council recommends that this physical presence consist of a main headquarters and at least one satellite location.

Based on the results of the Council's needs assessment and stakeholder feedback, the Council recommends the following considerations when determining the Institute's location:

- **Near the Offshore Wind Industry** – The Council recommends the location be near current or planned offshore wind activity.
- **Accessible and Supportive of Regional Collaboration** – The Council recommends the location accommodate easy travel options for both in-state and out-of-state stakeholders to encourage frequent, ongoing collaboration.
- **Allows for Creation of Special Purpose Facilities** – The Council recommends ensuring that the location has the flexibility to build special purpose facilities on site or nearby, allowing for the Institute to grow to accommodate changing workforce development needs.
- **Demonstrates Independence** – The Council recommends that the Institute be based in a standalone, neutral place, rather than within a larger institution. This will signal that all stakeholders are equally welcome and encourage diverse populations to engage with the Institute.
- **Signals Innovation** – The Council recommends that the location incorporate innovative design elements that embody New Jersey's innovative spirit.
- **Leverages Underutilized Assets** – The Council suggests that the location determination process take into consideration repurposing underutilized assets.

## IMPLEMENTATION PLAN

If Governor Murphy accepts the Wind Council's recommendations for the creation of the WIND Institute, the Administration will seek legislation establishing an independent authority with a corollary non-profit to function as the WIND Institute.

While this process is ongoing, the Council recommends immediate action to address the industry's short-term needs. Offshore wind is already taking off in the Northeast with stakeholder groups, including industry, making decisions today that will determine the American industry's trajectory for years to come. To ensure New Jersey emerges as a leader in this growing industry, we need to coordinate across state government, industry, labor, and academia to lay a cohesive groundwork for workforce development and research, innovation, and thought leadership in the state.

While the Institute is being established, the Wind Council agencies will work together to address immediate workforce development needs, spark early research and innovation activity, and set up the Institute for long-term success.

2020 actions may include:

- **Develop and launch a New Jersey Offshore Wind Workforce seminar** – The EDA can develop a seminar that will provide local stakeholder groups, including labor unions, comprehensive high schools, vocational technical schools, colleges, and universities insight into the State's plan for offshore wind and details around industry jobs, including expected job numbers, timing, skills, and required credentials.
- **Stand up a workforce development working group** – The EDA can organize a workforce development working group with representatives from State agencies and stakeholders across academia and labor unions to begin designing and implementing workforce solutions for offshore wind in New Jersey.
- **Seek proposals addressing workforce safety certification and training**– The EDA can seek proposals from private, public, and academic stakeholders to address two urgent workforce needs:
  1. Establishing a best-in-class Global Wind Organization (GWO) safety certification program and facility in New Jersey that will provide workers with the credentials they need to work offshore; and
  2. Coordinating the development of a state-wide wind turbine technician training program that will equip New Jersey students and workers with the skills and credentials they need to excel in these roles.
- **Run an industry-sponsored innovation challenge** – The EDA can work with industry stakeholders to identify a topic that is critical to developing New Jersey's offshore wind industry in the coming years, such as ports, transmission, or wake management. The EDA, in collaboration with the other Wind Council agencies, can then fund an innovation challenge around this topic that engages New Jersey-based research institutions and entrepreneurs to identify and develop a solution.
- **Develop a WIND Institute headquarters** – The EDA will evaluate headquarters locations, select a site, and begin developing the WIND Institute headquarters.
- **Hire a Director to help stand up the WIND Institute** – The EDA will hire a Director to execute on the Wind Council's strategic vision for the WIND Institute and manage prioritized short-term initiatives in 2020.