Report to the Governor's Energy Office

Offshore Wind Supply Chain & Workforce Opportunity Assessment

Task 4 - Strategies for Partnership Building

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1 INTRODUCTION

1.1 Overview

With an estimated project pipeline in excess of 28GW in awarded lease areas and 14 projects, equating to over 9GW in capacity, currently expected to be operational by 2026, the US offshore wind market now represents a sizeable portion of the global offshore wind market.

Maine has set out a thoughtful and bold agenda for their ambitions to realize the economic opportunities of the emerging industry along the East Coast. With multiple projects estimated for deployment in the region before the end of the decade, offshore wind presents a significant opportunity to help the state meet its greenhouse gas emission reduction mandates and goals, address the retirement of aging power plants, provide economic development opportunities for Maine businesses, and create thousands of jobs for Maine residents.

However, in order to realize this market potential, overcoming the hurdle of establishing a local and/or regional supply chain to support the industry needs to be achieved. Federal approval of the first US commercial-scale projects should, in theory, foster confidence that a sustainable and reliable pipeline of projects will come to fruition and, as such, investment in building the capabilities of the local supply chain will follow.

The current delivery model for the first commercial US offshore wind farm is built on the import of the main components from overseas. Components for early projects will be imported to local ports to be staged before being transported to the project site for installation. Some components will be taken directly to the wind farm project site, foregoing local staging. Even though the large majority of project infrastructure will be imported initially, these projects are still generating significant economic activity in the project development phases. The projects will require significant support and services from local business during their construction and installation.

However, it is recognized that this delivery model will become increasingly inefficient and detrimental to the development of a local industry. Therefore, Maine's Governors Energy Office (GEO) is supporting efforts to develop a robust local supply chain in Maine that can offer products and services across the complete development, manufacturing, installation and operations phases of the offshore wind project lifecycle.

To support this ambition, GEO has contracted the support and insights from Xodus Group in order to learn more about supply chain needs and the specific supply chain capabilities that exist in Maine. The objective is to use these deeper supply chain insights to inform future strategic state-level investments, initiatives and policies that will enable companies throughout the supply chain to make more targeted and meaningful connections that lead to fruitful partnerships.

The economic benefit which Maine can realize from offshore wind will depend to a great extent on the success of the local supply chain in winning and delivering work on offshore wind projects. While the Maine market is expected to provide opportunities for the local supply chain, there will also be a further economic benefit to Maine should local suppliers be successful in supporting projects along the entire US east coast and beyond.

In order to achieve this, a clear path must be found for Maine companies and workforce to develop further capabilities and facilities needed to be best in class, ensuring that those procuring products and services for projects in Maine, the US and overseas have good visibility of local companies and their offerings. This study aims to identify

local supply chain companies that will be able to match their capabilities to the opportunities presented by this growing industry both in Maine and in export markets.

Due to the deep-water nature of the Gulf of Maine, it is expected that floating offshore wind sites will be developed. The strong wind resource in the Gulf, deep waters close to shore, and marine industry heritage make Maine a logical place to develop a thriving floating offshore wind industry. Maine is soon to become home to the first US floating offshore wind turbine in the New England Aqua Ventus project followed by potentially the first US multi-turbine floating project in the proposed Maine Research Array. In addition, future developments and leases along the US East Coast will shift to floating foundations as the areas with attractive wind resource suitable for fixed foundations become saturated and push development into deeper water further offshore.

Floating wind is a nascent industry, but one considered to have significant potential for growth. The planned installed capacity of fixed-based offshore wind currently far exceeds floating due in part to the wind technology evolution taking place in markets where shallow water sites with good wind resource were readily available. However, these site conditions are not the standard across the globe. Offshore areas with strong winds, close to human populations with high electricity demand, are more likely to be in deeper water locations. Floating offshore wind will therefore play an increasing role in the future to meet a growing global renewable energy demand. Thus, it presents a substantial opportunity to companies that can support the sector.

1.2 Objective

The objective of this study is to identify and enhance Maine's offshore wind supply chain and workforce to maximize economic benefits to Maine from offshore wind development in the Gulf of Maine and along the US East Coast. This effort seeks to optimize Maine's supply chain and workforce to fully realize the economic opportunities of offshore wind.

Specifically, the objectives of this project are to:

- Deliver an assessment of the offshore wind supply chain opportunity for Maine to inform an action plan to enhance Maine's offshore wind supply chain position. [Performed by Xodus – reported separately]
- Deliver an assessment of the offshore wind workforce opportunity for Maine to inform an action plan to strengthen Maine's workforce to serve the offshore wind industry. [Performed by BW Research – reported separately]
- Develop strategies and plans to support existing Maine offshore wind companies, attract existing offshore wind companies to Maine; and engage Maine companies not already engaged in offshore wind. [Performed by Xodus – reported separately]
- [This Report] Develop a strategy for partnership building between Maine companies and workforce and the offshore wind industry.
- Engage with Maine working groups and relevant public stakeholders and organizations.

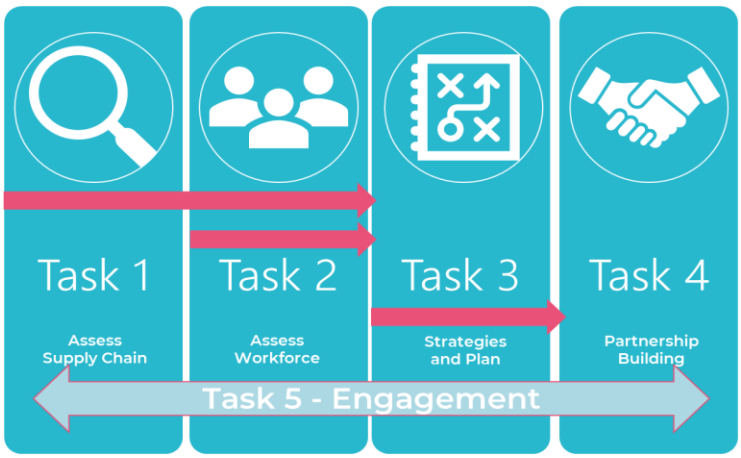

Figure 1.1 - Project Overview

2 APPROACH

Supply chain development programs are influenced by several factors, each impacting the success of a program. Costs, implementation time, number of required resources, available resources, and what infrastructure is needed, etc. all play a role in deciding what types of intervention activities will best suit a supply chain's needs. Market maturity also impacts the success of a development program, as a more mature market is better suited for interventions that require more resources, or higher-intensity activities. That means that as a supply chain develops, higher-intensity interventions can become more effective and added to existing low-intensity programs. To highlight these factors, the findings and recommendations in this report have been broken down into three groupings based on the intensity of intervention (Low, Intermediate, and High). Tools, such as the self-capability audit form found in the Task 3 report, can be used to gauge supply chain capabilities to best determine what programs are needed.

Due to the current state of the OSW industry in Maine and its existing organizational infrastructure, low and intermediate intervention activities are currently likely to have the greatest opportunity to positively impact supply chain development.

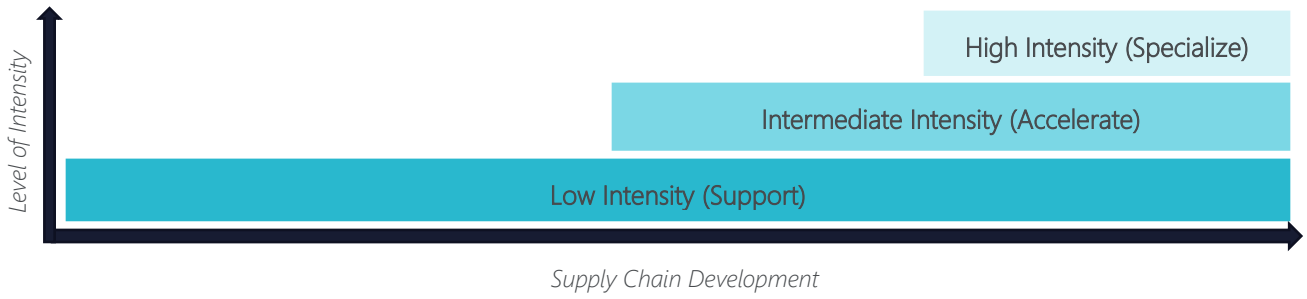

Figure 2.2 – Offshore Wind supply chain intervention activity timeline

The findings and recommendations in this report aim to build off the current work being done by several organizations in Maine working on long-term job creation and economic development, supply chain and port infrastructure investments, and renewable power to help meet the state's ambitious clean energy and climate change goals, including but not limited to:

- E2 Tech
- Iron Workers Local 7
- Maine Community College System
- Maine Composites Alliance
- Maine Department of Economic and Community Development
- Maine Department of Labor

- Maine Department of Marine Resources
- Maine Department of Transportation
- Maine Governor's Energy Office (GEO)
- Maine Governor's Office of Policy Innovation and the Future
- Maine International Trade Center
- Maine Maritime Academy
- Maine Manufacturing Extension Partnership
- Maine Renewable Energy Association
- The Business Network for Offshore Wind
- The University of Maine

3 LOW INTENSITY – SUPPORT

Through desktop research and stakeholder interviews, several low-impact interventions were identified that the state of Maine and its partners can make to assist small businesses as the state's OSW chain develops. The greatest opportunities for this low-impact space—in terms of time, money, and return on investment—include:

- Orienting small businesses around Maine's OSW supply chain,
- Connecting business owners with organizations and resources that will help them pivot or enhance their business offerings to enter the OSW chain, and
- Fostering a culture of innovation and entrepreneurship to align early-stage companies and technologies with the needs of the OSW sector.

The recommendations in this report include potential partnerships to help drive the implementation of these interventions. Due to Maine already having a strong small business support infrastructure, these recommendations could be implemented relatively quickly, although most would require some level of additional resources, whether staff time or funding. Many of these recommendations can be implemented in the short term (i.e., the initial supply chain development phase) as well as in the long term (i.e., after the sector has begun to show signs of maturity) to continue to strengthen and expand Maine's offshore wind supply chain.

3.1 Strengthen Existing Small Business Support Frameworks

Recommendation 1: Work with Maine's existing small business support network to assess small business needs and provide business technical assistance and training

Rationale:

Maine has an existing network of government offices and development organizations that assist small businesses in technical assistance and training. Their expertise in the needs of Maine businesses and broader workforce capabilities, as well as their ability to conduct effective, targeted outreach to businesses effectively position these entities to provide sector-oriented support services to the small business community. These service providers can assist businesses in a variety of ways, from the provision of basic technical advice to conducting specific OSW assessments, materials, and workshops. By providing funding and establishing connections with these core organizations and their networks, Maine can amplify existing business development initiatives as well as develop new ways to deliver information and resources required to help guide small businesses' participation in the OSW supply chain.

- Precedent: New Jersey Economic Development Authority's Offshore Wind Technical Assistance Program helps small- and medium-sized businesses assess their current capacity to supply the offshore market and develop an action plan to meet current industry standards. As of Spring 2022, NJEDA is taking the first steps to contract with an experienced offshore wind advisory and certification company to serve as the program's technical assistance (TA) provider.

Actions:

- Convene local development corporations, economic development organizations (EDOs), chambers of commerce, and other relevant organizations to support these organizations in providing targeted services to businesses interested in entering the OSW industry, including technical assistance, mentorship, and other entrepreneur support services (e.g., financial planning, accounting, legal assistance, coaching, business planning). Such an engagement would require a 6-8 week engagement with the qualifying businesses.
- Utilize the created OSW self-assessment to help businesses identify how their service offerings or areas of expertise could fit into the needs of the OSW industry. Interested businesses could use the self-assessment to determine how they currently meet the expected needs of OSW projects, and what adaptations or investments might better position them for OSW industry opportunities. This form could be made available through business development organizations as well as through the Maine Offshore Wind Initiative website. Additionally, the self-assessment process would be updated regularly to reflect the most up-to-date information and changes in the sector.
- Host small-business-oriented supply chain information sessions focused on the needs of projects in the OSW industry as well as opportunities for new or existing businesses to step in and meet those areas of need.
- Create an intensive course targeted to businesses that could fill the most needed supply chain gaps. In these courses, businesses would receive help in exploring their current capacity to supply the offshore wind market, developing an action plan to get up to current industry standards, and beginning the certification process for industry credentials.
- Work with developers and businesses to clarify the licenses, certifications, and other requirements that businesses will need to participate in the industry (for instance, the GWO Basic Safety Training). Sponsor the training of Certified Training Providers to teach businesses and workers entering the industry. Remove barriers to entry by intentionally extending outreach to Minority/Women-owned Business Enterprises (MWBEs) and subsidizing their certification and licensure.

  - Precedent: The University of Massachusetts Amherst offers an Offshore Wind Professional Certificate to professionals and graduate students seeking to up-skill and broaden their knowledge to address the needs of the offshore wind industry.
  - Precedent: The New Jersey Offshore Wind Safety Training Challenge is a 2021 grant competition run by the NJ Economic Development Authority. New Jersey-based community colleges, labor unions, non-profit or community organizations, and private training providers will submit proposals for establishing a Global Wind Organization (GWO) accredited Basic Safety and Sea Survival Training program in New Jersey.
  - Precedent: Bristol Community College's National Offshore Wind Institute (NOWI), which has campuses throughout Southeastern Massachusetts, offers basic and advanced safety and technical training programs (GWO) and two associate degree programs tailored to offshore wind, the Associate in Science and Engineering Technology and the Offshore Wind Power Technician Certificate.
  - Precedent: Kingsborough Community College, in Brooklyn NY, Maritime Technology program received $1.5 million in funding to become New York state's first certified GWO provider.
  - Precedent: Engaging with the supply chain, through the Block Island project, ahead of commercial scale procurement in RI has proven a successful catalyst for the OSW industry in the state.

- Precedent: Vineyard Wind have contracted with Maine based Ironhouse to provide commissioning management for the project thus demonstrating that projects outwith the Gulf of Maine are looking to the state for expertise and services.

Potential Partnerships:

- Eastern Maine Development Corporation: As a partner with the Maine GEO, this organization can expand its occupational training offerings to consider the needs of small businesses interested in pivoting into the OSW industry. This organization can also continue to offer its basic and advanced training for technical business skills.
- Maine International Trade Center: Utilize the Maine International Trade Center's relationships to better understand the needs of the international organizations that want to work in Maine's OSW sector.
- Maine Technology Institute: Work with the Maine Technology Institute to better understand the needs of organizations it works with and help provide opportunities to address these challenges.
- Maine Manufacturing Extension Partnership: Work with Maine MEP and its network to better understand businesses' capabilities and needs in the OSW sector.
- Maine Department of Economic and Community Development's Office of Business Development: With financial support from the Maine GEO and developers, this potential partner could host training and information sessions as well as provide strategic funding (such as grants or low-cost loans) to small businesses as they seek to pivot towards the OSW industry. With expertise from the Maine GEO, this organization could build an understanding of the supply chain needs of the OSW industry, generate resources specific to OSW, and develop OSW-specific training sessions.
- Maine's Procurement Technical Assistance Center: This organization can be engaged to help Maine's business community understand the general requirements of government contracts associated with offshore wind development, such as insurance, ownership, disclosure requirements, legal issues, and other contract features associated with public sector contracts. This group can also help businesses statewide to find, win and perform on government contracts.

Time and Resources:

The actions listed above to launch this recommendation could be fully executed within a relatively short amount of Time (8-12 months). Partnering with organizations that already operate in this space will expedite the planning process for these actions.

Recommendation 2: Build and maintain an offshore wind specific-website that can serve as a business and information hub that features a Maine-specific supply chain registry

Rationale:

Websites like the Maine Offshore Wind Initiative website already serve as an information hub, sharing news, research, and political initiatives as well as providing an entry into the Supply Chain Registry that serves the East Coast. However, the website could be improved by including additional information relevant to Maine businesses seeking to learn more about the OSW industry. There is further room for improvement by adding information to the website to assist businesses or job seekers seeking to explore professional opportunities specific to the OSW industry space. There is

also a need for an online hub that showcases opportunities and provides resources for supply chain development, not just research**.**

Actions:

Reorient this website to serve as the premier point of access for Maine small businesses to learn about the industry and opportunities, and augment the site to include information about events, jobs, and small businesses.

- Augment the landing page of the website with a calendar feature to display OSW industry events.
- Expand the capabilities of the website to include an OSW business pathways section where small businesses can learn about relevant certifications, grants, and supportive resources, while also being able to post job openings to recruit the necessary talent in the OSW space. Additionally, there could be a job pathways section for workers where job openings, certifications, degrees, and scholarships are advertised.
- Work with Maine Career and Technical Education (CTE) schools and universities to build a comprehensive list of OSW educational program tracks, scholarships, and grants which would be hosted on the website.
- Create a page dedicated to a Maine-specific supply chain registry, using data pulled from the East Coast-inclusive Supply Chain Connect Registry. Make the Maine-specific registry user-friendly and inviting, especially for small businesses looking to enter the OSW industry. Consider lowering or removing barriers to accessing the website, including providing useful information even to those who have not yet created a profile.
- Update the website to feature descriptions of the types of small businesses and services that would be desirable for projects in the OSW supply chain. This would help existing business owners identify the potential for their business to offer those services and give prospective business owners a sense of the types of businesses that could thrive in the OSW industry supply chain. Include descriptions of companies operating in environmental services and permitting sectors.

  - Precedent: Massachusetts' Offshore Wind Supply Chain Directory successfully showcases Massachusetts-based businesses and includes a filter feature that allows users to sort businesses based on a variety of factors including location. Users can also share postings directly from the site.
  - Precedent: Rhode Island Commerce's Supply Chain Directory highlights Rhode Island-based businesses and allows users to sort businesses based off by project phase, equipment, services, or any keyword.

Potential Partnerships:

- Business Network for Offshore Wind: This industry group manages the Supply Chain Registry currently in use by the Maine GEO. With guidance from the Maine GEO, the Business Network for Offshore Wind (BNOW) could tailor registry intake questions and create a filtered registry to better serve Maine's small businesses.
- Maine International Trade Center: This organization could leverage its international connections to assist in growing Maine's supply chain registry.
- Maine Manufacturing Extension Partnership: Work with Maine MEP and its network to provide awareness for the supply chain registry.
- Maine Technology Institute: Work with the Maine Technology Institute to ensure that organizations that go through its programs are aware and registered in the supply chain registry.

- Maine Renewable Energy Association (MREA): This stakeholder could reach out to its network to expand the number and types of businesses included in the OSW Supply Chain Registry. Additionally, MREA could advise in the development of materials and outreach tailored for businesses interested in entering the renewable energy industry.
- New England Ocean Cluster: With financial support from the Maine GEO, this organization could use its network and physical presence to expand the number and types of businesses included in the OSW Supply Chain Registry. This organization could provide insight into resources and materials that would be especially relevant to businesses interested in entering the "Blue Economy."

Recommendation 3: Fortify and expand small businesses' access to Registered Apprenticeship Programs

Rationale:

As the OSW industry takes shape in Maine, many local businesses will be interested in working in/or supporting the industry and will need trained labor to do so. Maine has an established Registered Apprenticeship Program (RAP) infrastructure whereby Maine businesses can connect with CTE schools to host specialist training activities that can advance the skills of their employees. There is value in bringing CTE administrators and Maine business owners together to expand participation in RAPs which can provide businesses with an increased capacity to host students.

- Precedent: Oregon's Renewable Energy Technician Registered Apprenticeship trains companies to work with apprentices and connects them with qualified applicants.
- Precedent: Combining resources between technical schools and businesses allowed a Pennsylvania registered apprenticeship program to purchase special equipment for training, which can also be used by participating companies.

Actions:

- Work with Maine's Department of Labor and CTE schools to take stock of the RAP opportunities available now and make plans to strengthen existing connections by increasing the number of positions available, providing greater subsidies for smaller companies, and providing access to specialized equipment to be used by apprenticed workers.
- Promote programs with business organizations in sectors adjacent to wind energy that involve transferable skills and experience (electricians, for example) to reach businesses not currently aware of the opportunity.
- Provide easily accessible resources and counselors to work with businesses to meet the qualification standards to be an Apprenticeship Sponsor.

Potential Partnerships

- Maine Department of Labor's Apprenticeship Program: This program can grow to include more positions at OSW-oriented companies and offer training for these companies to provide a safe, educational, and rewarding on-the-job learning environment.
- Maine Community College System: Utilize the many workforce training programs offered by Maine's network of community colleges to address OSW training needs.

- Maine Maritime Academy: Work with Maine Maritime Academy to coordinate and collaborate with on connecting maritime workers and students to apprenticeship programs.
- Iron Workers Local 7: The International Association of Bridge, Structural, Ornamental, and Reinforcing Iron Workers Local 7 is 3,600+ members that can assist in building and improving educational and training programs.

3.2 Expand Opportunities to Include Broader Range of Businesses

Recommendation 4: Expand the engagement offerings of wind industry networking events to include the interests of a variety of businesses

Rationale:
"Meet-the-Buyer" events have been very successful in connecting suppliers with purchasers in the OSW industry. To capture more businesses from a broader variety of sectors, a greater variety of event formats, topics, and audiences must be pursued. Informal, educational events provide the opportunity for small businesses at all levels of the supply chain to learn about the OSW industry, network with other stakeholders, and access materials specific to their business. Rotating through different topics or hosting different experts to speak could bring new stakeholders to the table.

- Precedent: Engaging with the supply chain, through the Block Island project, ahead of commercial scale procurement in RI has proven a successful catalyst for the OSW industry in the state.
- Precedent: Vineyard Wind have contracted with Maine based Ironhouse to provide commissioning management for the project thus demonstrating that projects outwith the Gulf of Maine are looking to the state for expertise and services.

Actions:

- Reach out to business associations, CTEs, and universities to compile a list of potential collaborators and attendees. Work with these organizations to ideate new topics that might cater to new audiences and bring small businesses from relevant sectors together.
- Host events in wind-industry relevant spaces, such as the New England Ocean Cluster Hús in Portland or the Advanced Structures and Components Center in Orono.
- Collaborate with BNOW to include speakers in their events who have expanded their business offerings to meet the needs of the OSW supply chain. Speakers can present the steps that they have taken, and answer questions from participants about best practices. Representatives from business development organizations could participate to provide resources and connections for interested participants.
- Work with offshore wind developers that are currently working in Maine to offer industry networking events to highlight opportunities in both Maine and global OSW projects.
- Work with the Maine Business Immigration Coalition and other business development organizations that specifically support communities that have experienced historic disinvestment, such as MWBEs and members of American Indian tribal members, to host events that will be accessible and useful for these communities.

Potential Partnerships:

- Business Network for Offshore Wind: In partnership with the Maine GEO, BNOW could provide access to its connections within the OSW industry, as well as expert advice for businesses hoping to enter the supply chain.
- Four Directions Development Corporation and the Coastal Enterprises, Inc.'s Women's Business Center: In partnership with the Maine GEO, these stakeholders could develop events that are particularly relevant and accessible to minority- and women-owned businesses.
- Maine International Trade Center: This organization could leverage its international connections to host and/or support OSW events.
- New England Ocean Cluster: This organization could make their Hús office building and event space available for OSW events and help develop events that are inclusive of businesses in the broader Blue Economy.
- Maine Renewable Energy Association: With funding and collaboration from the Maine GEO, the MREA could include OSW-related topics in its current roster of Renewable Energy events to expand the crossover of businesses active in other energy industries.
- University of Maine: Could help compile a list of potential collaborators and attendees for "Meet the Buyer" events. Potential help in creating new topics that might cater to new audiences and bring small businesses from relevant sectors together.
- Maine Maritime Academy: Could help compile a list of potential collaborators and attendees for "Meet the Buyer" events. Potential help in creating new topics that might cater to new audiences and bring small businesses from relevant sectors together.

Time & Resources: The actions listed above to launch this recommendation could be fully executed within a short period. Leveraging existing partnerships at Maine universities and the Hús could reduce the costs of hosting in an event space, and co-sponsorships from developers and interested businesses could subsidize the costs of hosting.

Recommendation 5: Create small business opportunities to export environmental learnings from the proposed research array

Rationale:

Environmental assessment and permitting are key first steps for the implementation of OSW infrastructure. There are existing small businesses and organizations in Maine that perform these services for OSW and other industries. Maine businesses have a great opportunity to leverage lessons learnt, data, and insights generated through the research array and export these to the wider US floating wind industry. Furthermore by providing courses, training, and OSW-specific materials for this sector, Maine GEO can ensure that Maine businesses are prepared to support a growing OSW sector and compete and/or collaborate with larger, regional operations.

Actions:

- Convene a group of small businesses to collaborate with the research array in order to gain direct floating wind experience and position the export opportunity for those businesses.
- Work with the fisheries to create additional business opportunities to support the OSW industry.

- Collaborate with Occupational Safety and Health Administration (OSHA) to offer Environmental Specialist Training, subsidize the costs of the training, and build an OSW-specific Safety Training curriculum for workers and businesses more broadly. This could be highlighted/advertised at various information hubs.
- Work with the University of Southern Maine to make its Environmental Training Courses, especially the Environmental Impact Assessment and Lab, available outside of regular work hours and at a subsidized cost for business representatives.
- Work with the Maine Department of Environmental Protection to review and streamline the permitting process for OSW-related projects and waive permitting fees where possible.

Potential Partnerships:

- Occupational Safety and Health Administration: In collaboration with the Maine GEO, the Augusta and Bangor OSHA offices could provide OSW Safety courses tailored to the businesses that operate in their districts.
- University of Southern Maine: With funding from the Maine GEO, USM could expand its environmental training courses to include more elements that are relevant to OSW, while also offering them to more students.
- Maine Department of Environmental Protection: Maine GEO could work with DEP and other agencies to reduce barriers to permitting offshore wind projects.

Time and Resources: The actions listed above to launch this recommendation could be fully executed within the first six months of initiation. Since these types of courses already exist, the time needed to begin operation would be expedited. The cost of the courses could potentially be subsidized by business development organizations or OSW developers.

Recommendation 6: Expand Maine's Green Jobs and Internships Infrastructure

Rationale:

Beyond technical and manufacturing sectors, there are business services like computer engineering and design, transportation logistics, and environmental impact analysis that will be needed to support an OSW industry in Maine. Existing or new businesses offering these services will need to train employees and hire new staff to fill OSW-supportive roles. Creating an alternative entry into the OSW workforce for non-technical labor through an internship program—similar to the RAP for technical labor—can provide businesses with skilled employees to support their work in the renewable energy industry.

- Precedent: Detroit's Green Jobs Training Program provided a comprehensive educational and skill-based entry into various renewable energy-supportive fields by providing basic-skills training followed by track-based training for further specialization.
- Precedent: The City of Boston is currently executing the Green Jobs Initiative which, with the guidance of businesses, trains workers in a variety of fields that promote sustainability but fall outside of the purview of Registered Apprenticeship programs.
- Precedent: New Jersey's Green Job Training Partnership Program, which partnered with a variety of relevant small businesses and pays half of the salary for interns and apprentices.

Actions:

- Identify small businesses interested in entering the OSW industry as well as developers to participate and potentially sponsor the program. During the registration for the Maine OSW Supply Chain Directory, provide registrants with the ability to indicate their interest in this program.
- Work with stakeholders, service providers, and companies to map out the duration and requirements of the program and consider potential tracks that could be developed immediately as well as others that could be included in the future.
- Establish a program budget that incorporates fair labor practices and competitive pay. Potentially include housing for workers as an alternative or additive subsidy.

Potential Partnerships:

- Four Directions Development Corporation: With collaboration from the Maine GEO, this stakeholder could work with its network of indigenous small business owners to establish OSW-specialized work opportunities within their business.
- New Mainers Resource Center: This stakeholder could work with employers to determine their needs for skilled and culturally diverse workers and connect them with qualified and motivated candidates.
- University of Maine: Building on its existing relationship with the Maine GEO, this stakeholder would utilize its expertise and connections to broaden the scale of the Green Internships and Jobs program and provide direction for the program's framework.

Time and Resources: The actions listed above to launch this recommendation can be executed over a longer period, potentially over the course of one to two years after initiation. Utilizing the framework of Maine Department of Labor's RAP and partnering with business development organizations could expedite the development of this recommendation. The costs of developing this program could be offset with OSW developer support.

3.3 Promote Innovation and Entrepreneurship

Recommendation 7: Host keystone events like hackathons and accelerator competitions to foster entrepreneurship, innovation, and small business development

Rationale:

Hackathons and accelerator competitions are appealing to stakeholders from varied parts of the supply chain – including CTEs, business owners, developers, and students – to induce applied research and entrepreneurship. Brief, intense, and competitive engagements bring these stakeholders together to develop their skills and propose creative solutions to some of the industry's biggest problems. Hackathons are usually open to the public, casting a broad net for anyone interested and willing to learn by doing, while Accelerator competitions require participants to develop proposals and apply before being accepted. Both formats can answer questions critical for developing industries like floating OSW and can produce technologies and businesses that spur industry innovation and entrepreneurship.

- Precedent: Hackathon: Offshore Wind Innovation Camp in Aarhus, Denmark - Attendees to this innovation workshop included a variety of professionals in the offshore wind industry (design, manufacturing, tech experts, service companies, technical and knowledge institutions). Participants were introduced to OSW developers and Tier 3 companies and worked to address some of the major challenges of the industry.
- Precedent: US Department of Energy's Office of Energy Efficiency and Renewable Energy (EERE) recently announced awards of $57 million to 53 projects by 51 American small businesses and entrepreneurs to help tackle the climate crisis through market-oriented solutions and emerging technologies.

Actions:

- Solicit funding and partnership from a potential developer or educational institution. There are many examples of these events sponsored by one key developer and potential Tier 1 or 2 companies.
- Collaborate with co-hosts to generate a central question or problem for the event, relative to where Maine is in the process of developing the supply chain. Use the question topic or proposed deliverable to activate desired stakeholders. For example, an event focused on data visualization innovation for wind energy would draw stakeholders from tech, design, and computer engineering.
- Partner with business development organizations, CTEs, universities, and professional organizations related to design, engineering, and computing to spread awareness and attract attendees with specific professional experience.
- Work with business development organizations to provide resources and support for competition teams after the event is over.

Partnerships:

- Maine Clean Energy Partnership Program: Maine GEO has launched its Clean Energy Partnership – Innovation Initiative to help fund programs that provide innovation in the clean energy space. This program can play a key role in creating events and opportunities for Maine's supply chain to expand into the OSW industry.
- Maine Technology Institute: The Maine Technology Institute offers programs for businesses in Maine to fund innovation technology and ideas and can be utilized for OSW-specific technology.
- The Roux Institute's Techstars Accelerator: Utilizing its existing expertise in developing Accelerator programs, this stakeholder could sponsor the participation of entrepreneurs interested in innovation around floating OSW.
- University of Maine's America East Hackathon: With subject matter guidance from the Maine GEO, this stakeholder could focus their America East Hackathon on developing innovative hardware or software to support OSW.
- US Department of Energy's Office of Energy Efficiency and Renewable Energy Small Business Program: With collaboration with the Maine GEO, this stakeholder could support and contract with small businesses that are created from these events.

Time and Resources: The actions listed above to launch this recommendation could be executed within a longer period, over the course of six months to one year after initiation. Registration fees and corporate sponsorships could offset the costs of the Hackathon and Accelerator actions. Partnerships with organizations that have experience running these types of events, for example, Maine universities or Techstars, could speed up the planning and staffing of the events and programs.

Recommendation 8: Plan for community investment programs as part of the OSW industry in Maine

Rationale:

Businesses outside of the direct supply chain for OSW will be interested in OSW development and its relationship to climate change and environmental health. Additionally, OSW developers will be interested in forming community benefits agreements to ensure the long-term success of their projects. Cultivating and maintaining strong relationships with Maine's fishing community and other ocean users will play a critical role in ensuring successful OSW development. In building their OSW infrastructure, states like New Jersey have partnered with developers to establish targeted community investment programs to create the infrastructure necessary to support small business entry into OSW-related fields and intentionally include MWBEs. The development of community-based programs will support MWBEs as they reconfigure or adapt their businesses to participate in the developing industries of offshore wind and coastal resiliency. In the long term, OSW developers operating in Maine would contribute substantially to these programs, but in the meantime, the Maine GEO can take initial steps to ensure that the infrastructure is in place to support small businesses and impacted communities.

- Precedent: As part of the Ocean Wind Project off the coast of New Jersey, Ørsted has committed $15 million to the Ocean Wind Pro-NJ Grantor Trust a trust focused on providing support for small, women-owned, and minority-owned businesses to reconfigure or adapt their businesses to participate in developing offshore wind and coastal resiliency industries.
- Precedent: The Massachusetts Fisheries Working Group on Offshore Wind Energy provides a critically important forum for maintaining a dialogue with key stakeholders, getting their feedback and guidance, and identifying issues and concerns.

Actions:

- Work with environmental groups to establish targeted areas for coastal resilience and conservation as well as to incorporate environmental priorities into the foundation of the program.
- Collaborate with MWBE-focused development organizations to identify what businesses would potentially benefit from this program, as well as the barriers to entry they might face.
- Develop a diverse board of relevant environmentalists, business owners, and coastal residents to oversee the development of the program.
- Engage local financial institutions to support funding for the program, as appropriate.

Partnerships:

- Coastal Enterprises, Inc.'s Women's Business Center and Four Directions Development Corporation: Leveraging their experience working with Indigenous-owned businesses and MWBEs, these stakeholders could provide expertise for the development of the community investment program as well as provide direct business support and technical assistance.

- Southern Maine Conservation Collaborative and Maine Coast Heritage Trust: With collaboration from the Maine GEO, these stakeholders could advise on appropriate community projects along the coast that this program could support.
- Maine Community Resilience Program: Work with the Governor's Office of Policy Innovation and the Future's Community Resilience Partnership to continue support to municipal, tribal governments, and unorganized territories.
- Maine Land Trust Network: This stakeholder could provide guidance on ownership structures for coastal improvement projects that benefit generations of Mainers to come.
- The First National Bank and Keybank Foundation: These stakeholders have demonstrated interest in financially supporting environmental projects. With collaboration from the Maine GEO, these organizations could support the program or distribute funding.

Time and Resources: The actions listed above to launch this recommendation could be executed within a longer period, potentially over the course of six months to one year after initiation. Funds to support this recommendation can be raised in partnership with larger industry players like developers, while a partnership with business development companies and environmental organizations could provide the expertise needed to expedite the development of the program.

4 INTERMEDIATE INTENSITY – ACCELERATE

With the offshore wind market continuing to mature both regionally and nationally, the GEO and other state agencies may want to consider creating additional programs that are of higher degrees of intervention for Maine companies with more established capabilities in the OSW sector. These longer-term programs can assist in ensuring that small to mid-size companies are ready to bid for work in the OSW sector, providing them with more hands-on programs.

Drawing from lessons learned in the UK market, the Offshore Renewable Energy (ORE) Catapult's Fit for Offshore Renewables (F4OR) program offers good insight into how to design a successful intermediate-intervention level program.

4.1 Fit For Offshore Renewables

About F4OR

The F4OR program is led by the ORE Catapult, a research center that is a part of the UK's Catapult Network – a group of nine publicly and privately funded non-profit technology hubs that span over 40 locations across the UK. The ORE Catapult focuses specifically on offshore renewable energy, with a primary focus on offshore wind, working with industry to facilitate innovation and collaboration in the sector.

Drawing inspiration from the successful "Fit 4 Nuclear" program, the F4OR is a 12 to 18-month-long service that assists companies in the UK supply chain to get ready to bid for work in the offshore renewable sector. The program was designed with considerable input from senior representatives of the offshore industry, which was done to ensure that when a company completes the F4OR program, they are ready to meet the needs of their potential customers. This means that by the time the program is complete, participating companies will have strong industry knowledge and respective business management practices in place.

The selection process for F4OR is highly competitive. Due to the higher degree of intervention of F4OR, companies must designate significant resources to be chosen to participate. Successful applicants must meet a minimum business excellence self-assessed score, must be above a certain size (turnover >£1m and headcount of >10 employees), and must be committed to making commercial headway in the offshore renewable sector. F4OR is now comprised of 74 businesses from all over the UK.

Program Success

Participating companies are evaluated at the start and end of the F4OR process. On average, business excellence scores increased by 14%, and sector-specific improvements by 26%. Also, while completing the program, companies typically see overall growth in their business with reported increases of 23% in income and 13% in employment growth.

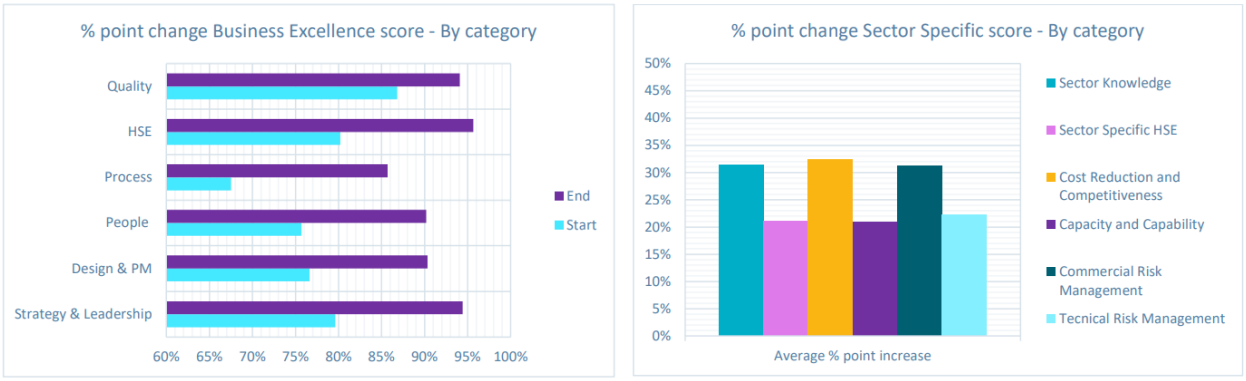

Figure 4.1 - Fit for Offshore Renewables supply chain development program results

Intermediate-Intensity Intervention in Maine

Intermediate-level intervention activities provide the most benefit for local supply chains when the respective industry has begun to mature. For Maine's OSW sector, this would occur when several companies and organizations have become more aware of the opportunities in OSW. This maturation will likely occur as low-intensity programs are implemented, and the New England OSW projects are further developed.

To replicate a program similar to the F4OR initiative, the Maine GEO would have to decide how to manage a program of this nature. Maine has many existing organizations that, with assistance, could facilitate a program like this such as the Foster Center for Innovation, the Maine Technology Institute, and the Department of Economic & Community Development, amongst others.

Once the organizational body is in place, it would have to work closely with the OSW industry to develop a rigorous program geared to fulfilling sector needs. RWE and Diamond Offshore Wind could be leaders in this initiative, due to their current relationship with the Maine OSW sector.

5 HIGH INTENSITY – SPECIALIZE

Once Maine's OSW begins to mature considerably (there are multiple organizations of varying sizes with some degree of offshore wind experience), the Maine GEO and other state agencies may want to consider high-intensity intervention programs. These initiatives are intended to enhance larger organizations' ability to specialize in the OSW sector.

Due to the degree of sector maturity that would be required to fully realize the benefits of interventions of this intensity, there are a limited number of examples of OSW programs that focus on this type of engagement. The Sharing in Growth (SiG) pilot program, part of the UK Offshore Wind Growth Partnership (OWGP), offers a good example of how a high- intensity activity can be created, implemented, and what objectives it should have.

5.1 Sharing in Growth (SiG)

About SiG

The SiG program is a part of the OWGP strategy for long-term business transformation aimed to facilitate supply chain growth. The SiG program is a 6 to 9-month high-intensity intervention activity which aims to support increased productivity and growth of supply chain companies in the UK offshore wind sector. SiG will work with successful applicants to complete a diagnostic assessment to create the focus areas for the initial intervention activities. SiG will then work with the participating company at all levels to implement the intervention activities. These assessments will be delivered through over 100 OSW specialists and coaches and are fully funded by OWGP (for a value of ~£150k).

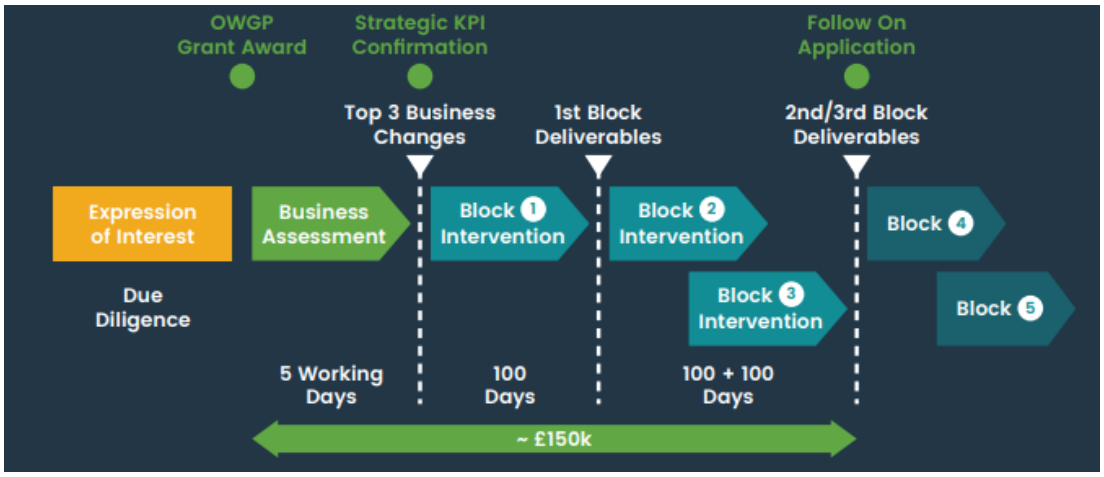

Figure 5.1 - Typical Sharing in Growth supply chain development process

SiG is targeting companies that are looking to compete at a national and international level and who are willing to commit to an innovative program that can develop significant growth. To be eligible for participation in the SiG

program, companies must be able to demonstrate several pieces of criteria, ranging from having senior leadership commitment to being able to demonstrate existing capability in the offshore wind sector.

High-Intensity Intervention in Maine

Similar to intermediate-intensity intervention programs, the need to implement higher-intensity initiatives in Maine would only exist once the supply chain has further matured. For high-intensity programs, this will likely occur when multiple New England OSW projects have been completed and lease auctions in the Gulf of Maine have begun.

If Maine were to replicate a program similar to SiG, it would likely be facilitated by the same organization that ultimately oversaw the intermediate-intensity activities. Utilizing that organizational body, it would have to work closely with the OSW industry to develop a rigorous program geared to fulfilling sector needs. Since these types of programs would be created with a much deeper supply chain ecosystem available, Maine would have access to a much larger range of companies and organizations to support program design and facilitation.