FY 2024 Port Infrastructure Development Program

Discretionary Grant Application

Dirigo Atlantic Floating Offshore Wind Port Planning

Sears Island, Maine

TABLE OF CONTENTS

FOR BACKUP DOCUMENTATION PLEASE VISIT https://www.maine.gov/mdot/grants/pidp/

Field Name	**Guidance**
Name of Lead Applicant	Maine Department of Transportation
Is the applicant applying as a lead applicant with any joint applicants?	No
Does the applicant or joint applicant own the property where the grant-funded improvements will occur?	Yes
Is the applicant seeking funding under the small project at a small port set-aside?	No
Project Name	Dirigo Atlantic Floating Offshore Wind Port Planning Project
Project Description	*The Dirigo Atlantic Floating Offshore Wind Port Planning Project*, located on Sears Island, Maine, is a planning project to plan the first purpose-built floating offshore wind port with a turbine transportation capable barge on the East Coast to meet the growing demand for offshore wind infrastructure to meet the Administration's renewable energy goals
Is this a planning project?	Yes
Is this a project at a coastal, Great Lakes, or inland river port?	Yes, Coastal port
Is this project located in a noncontiguous State or U.S. territory?	No
Geographic Coordinates (in Latitude and Longitude format)	44.44410 -68.89244
Is this project in an urban or rural area?	Rural
Project Zip Code	04974
Is the project located in a Historically Disadvantaged Community?	Yes
Has the same project been previously submitted for a PIDP funding?	Yes, PIDP FY2023
Is the applicant applying for other Federal discretionary grant programs (managed by DOT or a separate agency) in 2024 for the same work or related scopes of work?	Yes, DOT MPDG FY2025-2026, $456 million, construction phase of the PIDP planning project
Has the applicant previously received DOT funding for the same work or related scope of work?	No
Has the applicant previously received TIGER, BUILD, RAISE, FASTLANE, INFRA, USMHP, or PIDP funding?	TIGER FY 2009; TIGER FY 2010; TIGER FY 2011; TIGER FY 2012; TIGER FY 2013; TIGER FY 2014; TIGER FY 2015; TIGER FY 2016; FASTLANE FY 2016; TIGER FY 2017; INFRA FY 2017; FASTLANE FY 2017; BUILD FY

	2018; INFRA FY 2018; BUILD FY 2019; INFRA FY 2019; BUILD FY 2020; INFRA FY 2020; INFRA FY 2021; INFRA FY 2022; RAISE FY 2022;RAISE FY 2023; PIDP FY 2023
Total Project Cost	$19,892,000
Total Federal Funding	$15,913,600
Total Non-Federal Funding	$3,978,400
Will the applicant be seeking approval to expend funds prior to grant agreement execution?	Yes
Will RRIF or TIFIA funds be used as part of the project financing?	No
Does the applicant use LOGINK or a similar logistics platform provided or sponsored by the People's Republic of China or Chinese state-affiliated entities?	No

NARRATIVE SECTION I: PROJECT DESCRIPTION

Summary

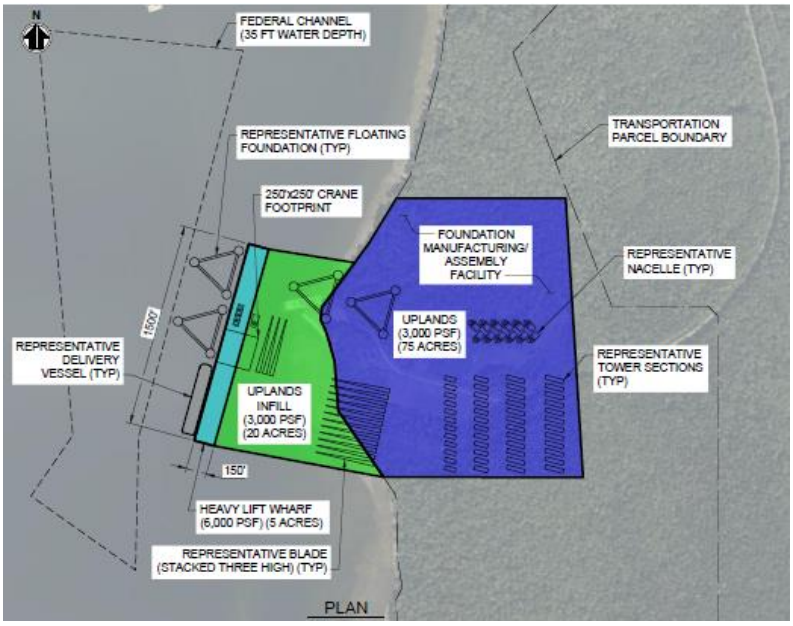
The State of Maine has set aggressive renewable energy goals that complement the Biden Administration's. The *Maine Offshore Wind Initiative ("Initiative")*, was launched in 2019 by Governor Janet Mills, included planning activities, stakeholder engagement, research and collaboration with educational institutions and non-governmental organizations - all with a goal of preserving the maritime industry and protecting the environment. Out of this *Initiative* came the development of a stakeholder-driven comprehensive plan, the *Maine Offshore Wind Roadmap ("Roadmap")*.[1] Following the recommendations of the *Roadmap*, the Maine Legislature, in line with other east coast states, mandated the procurement of three (3) gigawatts (GW) of responsibly developed offshore wind energy by 2040.[2] Consistent with these goals, the Biden Administration has established a goal of deploying 30 GW of offshore wind by 2030, an additional 15 GW of offshore wind by 2035, and a final 110 GW of offshore wind by 2050. The advancement of this planning project for a floating offshore wind port is essential to meet these and the state's renewable milestones.

The Dirigo Atlantic Floating Offshore Wind Port Planning Project, located on Sears Island, Maine, is the ideal project to move these goals forward by planning the first purpose-built floating offshore wind port with a turbine transportation capable barge on the East Coast to meet the growing demand for offshore wind infrastructure. This project will plan for the installation of floating offshore wind turbines in the leased areas in the Gulf of Maine Bureau of Ocean Energy

[1]Maine Offshore Wind Initiative, funded by the U.S. Economic Development Administration, produced the Maine Offshore Wind Roadmap February 2023 https://www.maineoffshorewind.org/roadmap/.
[2] The *Maine Energy Plan: Pathway to 2040* identifies the need for at least three GW of OSW in multiple scenarios with the goal of 100 percent clean energy by 2040. Maine has statutory authority to procure three GW of OSW power by 2040.

Management (BOEM) Wind Energy Area (WEA) by providing a staging and assembly port for floating projects. Due to the unique characteristic needs of the project, there are no other ports on the East Coast that can effectively lower the cost of floating offshore wind and expedite the production of wind energy.

In fact, good, reliable, and convenient port access purpose built for the targeted commodity is critical to developing the U.S. offshore wind supply chain. The port and barge being designed in this project will be able to accommodate the construction and delivery of floating offshore wind turbines. The project should be seen by U.S. DOT as a new-build port project located in rural Maine, to serve the energy rich Gulf of Maine. Maine is a state in need of economic development and new industry. This new port is critical because it satisfies the unique requirements of an offshore wind port such as having no aerial impediments, unrestricted deep-water access, and being located near a BOEM WEA (see figure below).[3] In fact, the basis of this project is no different from, for example, a facility like the Port of Houston that moves oil and gas. That port is conveniently located in close proximity to the energy source and has infrastructure to handle that commodity. The difference here is that the commodity the State of Maine is seeking to move is a renewable energy resource which is directly in line with the Biden Administration's goals of creating a clean energy legacy for generations of Americans to come.



The reality is without significant investment, the U.S. cannot reach its offshore wind energy goals because there is no single existing port that can move floating turbine foundations that are required to harness wind off the Atlantic Coast. New England's winds are among the strongest in U.S. waters and the depths of these waters make fixed-bottom turbines impractical. Purpose-built ports must be constructed to unlock the gigawatts of renewable energy from offshore wind that are essential to meet U.S. climate, clean energy, and economic goals.

Currently, there are 10 major crude oil ports in the U.S. with up to a total of 61 ports that import or export fuels making the U.S. the country with the greatest number of oil ports in the world. And according to the U.S. Bureau of Labor Statistics, "[t]ankers are the leading vessel type

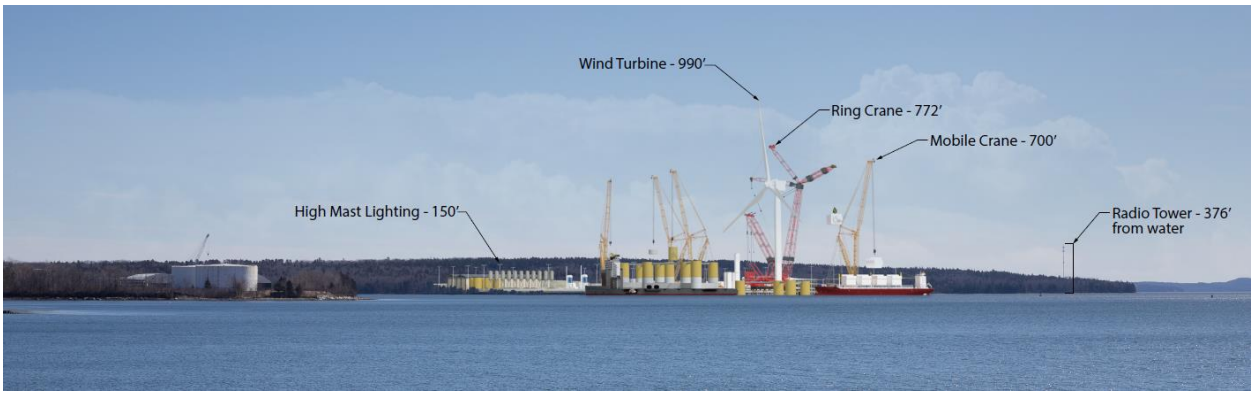
[3] Gulf of Maine Proposed Sale Notice Lease Areas, https://www.boem.gov/sites/default/files/images/GoME_PSN_LeaseAreas_Gray.png.

calling at the Nation's top tonnage ports, carrying liquid bulk commodities such as fuels that accounted for nearly 40 percent of U.S. vessel imports by tonnage in 2022."[4]

However, there are **zero** floating offshore wind ports currently operating in the U.S.[5] Without significant federal investment into specific port infrastructure that can handle this renewable energy, the goals set will be exceedingly difficult if not impossible to meet. During this time when U.S. DOT is considering funding critical renewable energy port infrastructure, crude oil exports continue to rise. In fact, U.S. crude oil exports reached a record high in 2023 at 13 percent more than the previous record high set in 2022.[6] This project aims to start the U.S., through the State of Maine, on the path to clean energy by being the first to build a fully functioning floating offshore wind port that will service one of the most productive wind areas of the Atlantic Seaboard. The construction of this port will set the U.S. on the path to being a leader in renewable energy production and use thereby reversing the upward trend of fossil fuel usage and export.

This planning project is being submitted not only due to the numerous regional and national benefits that will result from the construction of the first purpose-built floating offshore wind port in the Atlantic Ocean and the construction of a first-of-its-kind Jones Act compliant, U.S. flagged semi-submersible barge. The U.S. has a dearth of renewable energy ports, and currently no operating floating offshore wind ports. A focus has been on converting U.S. ports to clean power ports. In other words, converting the source of power from fossil fuels to renewable ones. This is important to moving the U.S. economy away from fossil fuel dependence. However, there has been less emphasis on investing in ports that can create and support a renewable energy supply. This next step in the movement toward clean energy is critical. Wind energy is abundant and can be efficiently harnessed to provide millions of households across the country with clean energy. However, this energy cannot be harnessed and will remain offshore without significant investments in new port infrastructure that can support the massive and unique infrastructure necessary to accommodate floating offshore wind turbines.

[4] Port Performance Freight Statistics, Annual Report 2024, U.S. Bureau of Transportation Statistics, https://www.bts.gov/sites/bts.dot.gov/files/2024-01/2024_Port_Performance_Report_0.pdf (last visited May 4, 2024).
[5] Zahra Ahmed, *12 Major U.S. Oil Terminals*, Marine Insights, Jan. 17, 2024, https://www.marineinsight.com/ports/major-u-s-oil-terminals/#:~:text=Corpus%20Christi%20Terminal%20%E2%80%93%20Corpus%20Christi,Europe%2C%20Asia%20and%20Latin%20America (last visited May 4, 2024).
[6] U.S. Energy Information Administration, Today in Energy, U.S. Crude Oil Exports Reached a Record in 2023, March 18, 2024, https://www.eia.gov/todayinenergy/detail.php?id=61584 (last visited May 4, 2024).



On May 1, 2024, the BOEM proposed eight lease areas for offshore wind in the Gulf of Maine with the potential to generate 15GW of floating offshore wind.[7] Further opportunity for installing floating offshore wind projects exists and is being planned for along the Atlantic Coast. Realizing the energy potential of this area will require a port capable of supporting floating offshore wind foundation assembly and launching, as well as wind turbine generator component delivery, staging and integration (see figure above for port drawing). The installation of floating offshore wind turbines requires a unique deep-water port facility that meets the extreme heavy lift capabilities and substantial uplands footprint required for deployment of offshore wind project in a cost-effective manner. These floating structures are massive and require the development of a robust domestic supply chain that has a strong backbone centered around ports. The East Coast ports that have been or are currently under development are designed to service fixed bottom wind projects. While the criteria for fixed bottom and floating offshore wind ports is similar, there are additional requirements for floating offshore wind such as: additional quay length and structural capacity, additional upland area, and no air-draft restrictions in the route to the offshore installation site. There are alternative ports; however, each has a flaw that will make implementation a significant challenge. For example, the New Jersey Wind Port has a sufficient footprint and quay length to support floating offshore wind activities; *however*, the tow distance from this port and the Maine WEA is approximately 520 nm, 400 nm further than Sears Island. And federal access channels at the Salem Offshore Wind Terminal in Massachusetts are too narrow and shallow to allow for towing of foundations and the small footprint of the Marine Commerce Terminal in New Bedford, Massachusetts will likely preclude its use. In addition, these ports will be in use supporting fixed offshore wind projects and may be unavailable to support floating wind in the Gulf of Maine.

There are three components to this PIDP planning grant project:

1) Port Development
2) Environmental Review of Port
3) Barge Development

[7] Gulf of Maine Proposed Sale Notice Lease Areas
https://www.boem.gov/sites/default/files/images/GoME_PSN_LeaseAreas_Gray.png

1) Port Development

Statement of Work

The Dirigo Atlantic Floating Offshore Wind Port Planning Project will complete the planning, design, and engineering for a port located on the western side of Sears Island, Maine. The island is state owned, and the port is in an area reserved for transportation use. The proposed port will be a specialized offshore wind port capable of importing wind turbine generation (WTG) components, fabricating/assembling the floating foundations, staging the WTG components in the upland yard, integrating the WTG components onto the floating foundation, and commissioning the fully assembled turbine units.

The Dirigo Atlantic Floating Offshore Wind Port Planning Project, spans around 100 acres, comprising upland, infill and a pile supported platform. The pile supported platform extends along the berth face of approximately 1,500 foot and will be capable of supporting 6,000 psf live loads. The area between platform and shore would be infilled with soil excavated from the uplands, and riprapped slopes would protect the sloped ends on the north and south side of the infill. The uplands will be cut to grade, providing a level surface for the terminal uplands. The upland and infill area will be capable of supporting 3,000 psf live loads. The project will also include upgrading the access road from the north end of the island to the terminal to accommodate the anticipated industrial traffic.

The Dirigo Atlantic Floating Offshore Wind Port Planning Project, upgrades the Sears Island Road (which will serve as the access road to the terminal), and will provide a new road design to serve as a dedicated access road to the terminal. The design will be based on the berth and uplands concept developed in the feasibility study and advanced during the 30 percent design.[8] The planning scope will generate construction documents including plans, specifications, opinion of probable construction costs, and construction schedule.

The statement of work will include the following tasks:

Task 1-2: Project Management, Data Collection, and Site Investigations: The planning project will consolidate the existing information and gather any additional available information on the site. For the geotechnical scope, additional exploration and laboratory testing will be

required to further advance the design.

Task 3: Basis of Design: A Basis of Design (BOD) document will be prepared for the project. The BOD will establish criteria to be used throughout the evaluation and design process, including geometric, environmental, equipment, and loading characteristics, along with a bibliography of applicable design codes, standards, and references. The BOD is a live document and will be updated at each project phase.

Task 4: Permitting: Permits required for this project will be identified, populated, and submitted. Technical information will be integrated into the various required permits. Drawing sets will be required for each of the permits in the proper format.

Task 5: Terminal Planning: The planning project will further develop this site layout developed within the 30 percent scope to meet the near-term needs of the demonstration-phase floating offshore wind facility, intermediate-term needs of the commercial-scale offshore wind facility, and the state's long-term needs considering potential use after offshore wind.

Task 7: Coastal Analysis: The planning project will perform a coastal analysis of the site that consists of establishing site environmental parameters (such as design water level, wave heights, wind and current, ice and temperature loading) environmental forces on structures, vessel berthing and mooring forces, and floating foundation berthing and mooring forces.

Task 8: Geotechnical Design: The planning project will perform the geotechnical engineering required for the design of the project. This will also include performing global stability evaluations for revetment, upland cut slopes, preparing pile capacity evaluations, designing soil surcharge program for the infill, assessing short-term and long-term settlement of the infill area, providing bearing capacity recommendations for the infill and upland areas, and preparing specifications related to geotechnical scope of work.

Task 9: Civil Design: The civil design for the project will include uplands and infill area which will be rated at an allowable uniform live load of 3,000 psf. This design consists of the estimating water capacity needs for potable water and fire protection, evaluating sizing and options for sanitary design requirements, developing site grading and drainage plans, stormwater management design, utilities and site lighting, terminal fencing and security design, layout and traffic flow of entry and exit gates of terminal as well as the design of the terminal topping surface.

Task 10: Structural Design: The planning project will perform the structural design of pile supported relieving platform to support a uniform live load of 6,000 psf. The relieving platform piles will be topped with a concrete deck, and the deck will be topped with dense graded aggregate. Design of mooring dolphins, layout and sizing mooring bollards and fendering systems is also part of this task.

Task 11: Electrical Design: The planning project will perform electrical design to include coordination with substation feed, design of high mast lighting, electrical service system and electrical line routing, switchboard and panelboard, transformers, ship-to-shore power system,

nacelle rack electrical system, WTG tower pack distribution systems. This task includes the design of telecommunication infrastructure and electrical grounding and lightning protection systems.

Task 12: Transportation: The planning project will design a new access road for the terminal, extending from the existing access gates at the north end of Sears Island to the proposed terminal. Roadway construction drawings will include the geometry of the new alignment as well as the turn lane and intersection improvements where it connects to the existing roadway alignment.

Task 13: Design Deliverables: The planning project will complete design and engineering for the port. Final design drawings will be stamped and provided including final design reports. The design documents will include drawings (geotechnical, demolition, civil, transportation, marine structure and electrical), technical specifications, Opinion of Probable Construction Costs and construction schedule.

Task 14: Workforce Development Program: The project will ensure that a program is developed to work directly with the Maine Department of Labor and other federal and state agencies, labor unions, and state and county community college and university systems by creating a program to drive local benefits to working at a wind port. The program will leverage existing agreements for workforce development but tailored specifically for the port and marine transportation network related to offshore wind.

Task 15: Community Benefit Agreement Program: The project will deliver a program to draft a community benefit agreement related to the wind port project to ensure benefit to local communities including tribes, businesses, area residents, labor unions, environmental groups, etc. MaineDOT will ensure that work is done with area stakeholders to provide community benefits such as workforce and supply chain development, infrastructure, recreation and education, transmission, childcare and health care.

2) Environmental Review

Statement of Work

MaineDOT will include the following in the environmental review for this project: (1) project development requirements defined by National Environmental Policy Act (NEPA) and the Council of Environmental Quality's (CEQ) Implementing Regulations (40 CFR 1500) and (2) preparation of complete US Army Corps of Engineers (USACE) and Maine Department of Environmental Protection (DEP) permit applications. This work will consist of an interdisciplinary approach and regular coordination with MaineDOT as well as state and federal agency partners in the development of a comprehensive environmental impact statement (EIS) and complete permit applications. The EIS and permit applications will rely on current scientific data collected for the human, social, economic, and natural environments.

Field data collection will be performed and will rely on accepted, professional sources and methodologies. Qualified professionals will complete stand-alone technical reports that characterize and qualify resources present and assess the potential for effects caused by the

construction and operation of the offshore wind port). Public and stakeholder engagement will be performed in fulfillment of NEPA, USACE, and MaineDEP permit requirements. Public, stakeholder, and agency engagement will be summarized and entered into the administrative record. The EIS will define the project, its need and purpose, and discuss alternative actions to the proposed project, including a No Action alternative. The EIS will identify MaineDOT's preferred alternative based on engineering, environmental data, and stakeholder input. The EIS will also identify appropriate mitigation measures for any adverse effects. Permit applications will be compiled according to current requirements and guidance and through coordination with MaineDOT and U.S. DOT.

3) Barge Development

Statement of Work

The float off operation will require a large semi-submersible heavy lift barge that can lift nearly 20,000 metric tons, ballast and de-ballast itself, and maintain enough stability to be safe throughout the operation. This port project will not be functional without the barge which will lower the wind turbines into the water for deployment. The U.S. DOT should consider the barge as a necessary extension of the port facility. While there are similar barges being built throughout the world, this barge will be U.S.-built and -flagged and available for domestic, Jones Act-compliant offshore wind and/or heavy-lift operations in the United States. The barge will be built to the highest standard and designed by the nation's leading experts in heavy-lift barge operations, resulting in jobs staying in America. The barge will also be built in a U.S. shipyard, which will ensure its construction is built to the highest United States Coast Guard (USCG) and International Maritime Organization (IMO) safety standards.

The design, hull size, weight, and design elevation of the pier have been finalized, and following requirements identified:

Floating Offshore Wind Foundation Design Criteria: 20,000mt; footprint 333ft x 300ft

Submersible Launch Barge Criteria: Ballast system capable of keeping the barge deck even with the pier face during loadout operations; joining or connecting structure for the barges to be able to function as a single ridged unit. The system will be designed to be field installed; buoyancy towers designed to allow the barges to be submerged for float-off operations; two independent hulls capable of functioning as independent deck barges; and steel hull – designed to ABS barge rules.

Submersible Launch Barge Development Path: To further develop the launch barge concept a feasibility study was completed. The depth of the barge must be able to accommodate loading the platform at a marine bulkhead located at 20.84' above mean lower low water. The total engineering effort can be planned into distinct phases which progressively increase in the level of technical design detail. Each project phase will conclude with the achievement of specific project milestones. The breakdown of work into these design sequences have proven successful on recent new builds for barges.

Design Sequence: The overall project design/consulting will be completed as follows: Phase 1a: Feasibility Study (determine barge major characteristics and regulatory requirements); Phase 1b: Preliminary Design (for construction budgetary pricing); Phase 2: Contract Design (for full classification design review and fixed-price shipyard bidding); Phase 3: Production Design (3D modeling of structure and piping systems for construction); and Phase 4: Contract and Construction Technical Support.

Phase 1a: Feasibility Study: This phase develops the initial barge layout principal dimensions and establishes the primary barge design characteristics. The development of the barge's midship scantlings per ABS Rules for Building and Classing Steel Barges will happen. A review of hull-girder longitudinal strength and still water bending moment based on that midbody structure will be done and a weight estimate will be created. By the end of this phase, the following deliverables will be developed and provided: Structural Midship Section Drawing; and Preliminary Steel Weight Estimate and Stability Assessment Outline Specification demonstrating the design philosophy, mission and system requirements, and regulatory notations sought.

Phase 1 Estimate: Phase 1 will be the barge design details to support shipyard budgetary pricing.

Phase 2: Contract Design: Phase 2 will build on phase 1 design to fully develop a package that will result in firm pricing from the shipyard. A detailed scope of this phase will be developed as part of phase 1 but is estimated to take between 6-10 months with a rough order of magnitude**.**

Phase 3: Production Design: Phase 3 takes the contract-based design and develops it into production-ready work packages that the yard will use to sequence its build process and provide guidance on how the shipyard works on each piece of steel, piping, and machinery that will be used to make up the vessel and the platform. This work scope is part of the contract with the shipyard and overlaps with the vessel's construction.

Phase 4: Construction Management: Phase 4 assumes that a shipyard has been selected and the vessel will move from an engineering phase to a construction phase.

Transportation Infrastructure Challenges

Port infrastructure is a major chokepoint impeding the expansion of floating offshore wind as a source of clean power. The U.S. is facing a shortage of as many as 84 offshore wind port sites needed to meet national targets.[9] Moreover, U.S. floating offshore wind port infrastructure is unique in its size, complexity, and scale. Without federal investment for projects such as this one, the lack of port infrastructure that can handle these types of renewable energy assets will constrain the ability to successfully deploy clean energy projects.[10] Infrastructure is always the basis for advancement and competition. Without building this necessary port infrastructure, the U.S. will not be able to realize the Biden Administration's aggressive goal of shifting to renewable energy in the next decade.

[9] Building a National Network of Offshore Wind Ports, Oceantic Network, Sept. 20, 2023, https://oceantic.org/building-a-national-network-of-offshore-wind-ports/ (last visited May 4, 2024).
[10] See *id.*

The Gulf of Maine is ideally suited to be the proving ground for floating offshore wind in the U.S. and lead the deployment of this technology. The seabed is too deep for fixed offshore wind and nearly two-thirds of the U.S. offshore wind potential is in waters that are too deep for fixed offshore wind.[11] Understanding and harnessing floating offshore wind technology is essential to meeting worldwide decarbonization goals, as 80 percent of the world's offshore wind resources are in waters where floating offshore wind is the best available technology.[12] This project clearly addresses the pressing challenge of a lack of port infrastructure facing this industry.[13]

Project History

In 2009, Sears Island was, by agreement, divided into two parcels: approximately 601 acres, or two-thirds of the island, was placed in a permanent conservation easement held by the Maine Coast Heritage Trust, while the remaining one-third, or approximately 330 acres, was reserved by MaineDOT for future transportation port purposes. MaineDOT has completed preliminary engineering as an extensive public stakeholder process led by MaineDOT. Maine selected 100-acre section of state-owned Sears Island its preferred site for a port facility to support the floating offshore wind industry and is moving forward with alternatives analysis and permit applications.

Applicant's authority to plan construct, own, operate, and maintain grant funded project

MaineDOT's federal grant and formula fund experience includes the successful management of numerous multimodal infrastructure projects and the associated federal requirements and regulations on discretionary grant programs from TIGER through RAISE, INFRA, and Rural Surface Transportation grants. MaineDOT will ensure the project complies with all applicable federal requirements including NEPA, Buy America provisions, ADA regulations, and civil rights requirements.

MaineDOT is intimately familiar with Buy America requirements based on extensive project grant agreements with U.S. DOT. The following chart details a sample of Buy American compliant products.

Item	**Vendor name**	**Buy American compliant? (MARAD)**
Steel Plate and structural steel	SSAB, Alabama Kloeckner Metals, Middletown CT Infra metals, Wallingford CT	Yes

[11] U.S. DEP'T. OF ENERGY, Energy Earth Shot: Floating Offshore Wind Shot: Unlocking the Power of Floating Offshore Wind Energy, https://www.energy.gov/sites/default/files/2022-09/floating-offshore-wind-shot-fact-sheet.pdf (last visited May 4, 2024).

[12] Global Wind Energy Council, Global Wind Report 2023, https://gwec.net/wp-content/uploads/2023/03/GWR-2023_interactive.pdf (last visited May 4, 2024).

[13] White House, Fact Sheet: Biden-Harris Administration Advances Offshore Wind Transmission, Strengthens Regional Supply Chain Buildout, and Drives Innovation, Sept. 21, 2023, https://www.whitehouse.gov/briefing-room/statements-releases/2023/09/21/fact-sheet-biden-harris-administration-advances-offshore-wind-transmission-strengthens-regional-supply-chain-buildout-and-drives-innovation/ (last visited May 4, 2024).

Piping: Stainless and Copper-Nickel	Tioga pipe, Eston PA & Houston Texas Chapin & Bangs Co, Bridgeport CT. FW Webb, Cranston/Warwick RI	Yes
Ballast pumping system	W&O (Multiple USA locations) Sulzer (Multiple USA locations)	US source, materials require verification
Disel generators	Milton CAT/ John Deere	Yes
Ballast control room and electrical components	Bear Electric/Bluefin Electric	US source, materials require verification
Ballast water treatment system	Optum Orn Alfa Laval Inc. Hyde Marine	Yes
Firefighting system	Fire Boy Systems Kidde: fire detection and suppression	Kidde - US source, materials require verification
Lifesaving equipment	Coast Marine Davit Switlik: Rescue boat Sea Safety	Coastal - Yes, compliant Switlik - US source, materials require verification
Anchoring and mooring system	Patterson Manufacturing Coastal	Patterson - US source, materials require verification
Towing system for tugboats to move the barge	Patterson Manufacturing Intercon (Pushing) Marque (Towing)	Patterson -US source, materials require verification

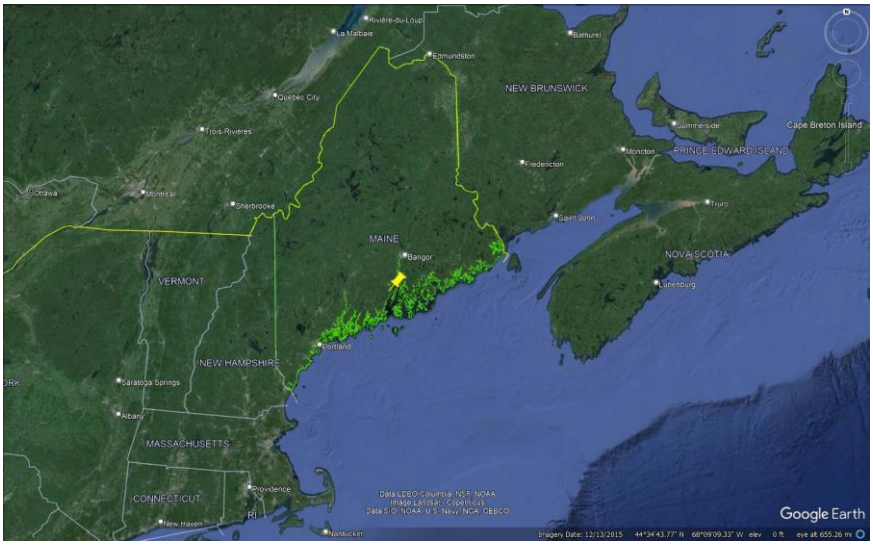
In accordance with Title VI of the Civil Rights Act of 1964 and other authorities, MaineDOT is committed to ensuring that the fundamental principles of equal opportunity are upheld in all decisions involving our employees and contractors/consultants, and to ensuring that the public-at-large is afforded access to the programs and services. To that end, no person shall be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any MaineDOT program or activity on the grounds of race, color, or national origin. MaineDOT will work with staff, contractors, and service beneficiaries to ensure the provisions of Title VI are met and the responsibilities associated with that Act.

NARRATIVE SECTION II: PROJECT LOCATION

This project is located on Sears Island, Maine, a rurally designated area located on the Atlantic Coast that is in an identified Historically Disadvantaged Community (HDC number 420.)[14] Additionally, per the Climate and Economic Justice Screening Tool (CEJST), there are two adjacent tracts identified as an Area of Persistent Poverty (470) and an HDC (9653). Searsport also ranks in the 97th percentile in transportation barriers, where residents must commute long distances to work or school.[15]

[14] For additional maps, *see* https://www.maine.gov/mdot/grants/pidp/. U.S. Bureau of Transportation Statistics, https://maps.dot.gov/BTS/GrantProjectLocationVerification/.
[15] Climate and Economic Justice Screening Tool, https://screeningtool.geoplatform.gov/en/#8.77/44.5037/-68.8562.

Sears Island is an ideal location for a port facility as there is excellent site access and it has been previously dredged to 40-feet, enough depth for the floating offshore wind industry. The Sears Island Causeway provides truck and vehicle access to Sears Island and is situated directly across from Mack Point, a bulk and liquid bulk marine cargo terminal in Searsport with connection to freight rail line CPKC.



NARRATIVE SECTION III: GRANT FUNDS, SOURCES, AND USES OF PROJECT FUNDS

The following is a budget table detailing the sources and funding.[16]

Sources of Funds	Port Infrastructure	Environmental Review	Barge Development	Total
PIDP Funds	$6,153,600	$6,400,000	$3,360,000	$15,913,600
Other Federal Funds	$0	$0	$0	$0
Non-Federal Funds	$1,538,400	$1,600,000	$840,000	$3,978,400
Total	**$7,692,000**	**$8,000,000**	**$4,200,000**	**$19,892,000**

The following is the budget to complete the design and engineering for the offshore wind port.

Task	Item	Cost
1	**Project Management**	$650,000
2	**Data Collection/Site investigation**	$15,000
3	**Basis of Design**	$145,000
4	**Permitting**	$30,000
5	**Terminal Planning**	$35,000
6	**QA/QC**	$350,000
7	**Coastal Analysis**	$510,000
8	**Geotechnical Analysis**	$480,000
9	**Civil Design**	$540,000
10	**Structural Design**	$1,050,000

[16] See funding commitment letter attached as Appendix C.

11	**Electrical Design**	$302,000
12	**Transportation**	$331,000
13	**Design deliverables**	$710,000
	Construction Subtotal	**$5,148,000**
14	OSW Workforce Development Program	**$500,000**
15	Community Benefits Agreement Program	**$125,000**
	Total Port Cost	**$5,773,000**
	Topographic Survey (VHB, Allowance)	$15,000
	Wave and Current Measurement(OCD)	$50,000
	Geotechnical Explorations(S.W.Cole)	$403,000
	Geotechnical Permitting(VHB)	$5,000
	Cathodic Protection Design(TBD)	$60,000
	Geotechnical Consultation (SGH, Allowance)	$70,000
	Subtotal	$603,000
	Subconsultant Markup @ 5%	$30,000
	Subconsultant Total	$633,000
	Expenses	$50,000
	Total Port Design Planning Cost	$7,692,000

Budget NEPA Review

The following is the budget to complete the NEPA and Permitting.

NEPA & Permitting Task/Activity	**Opinion of Probable Cost**
Agency Coordination	$500,000
Environmental Assessments/Technical Studies	$1,800,000
Public Involvement	$600,000
Mitigation Planning	$1,500,000
Permit Applications & Reviews	$2,000,000
Draft EIS	$1,300,000
Final EIS & ROD	$400,000
Total	**$8,000,000**

Barge Budget

The following is the budget to complete the design and engineering for the barge.

Barge Design Activity	**Cost**
Feasibility Study	$200,000
Preliminary Design	$200,000
Contract Design	$2,000,000
Shipyard Construction Engineering	$2,000,000

Total	**$4,200,000**

NARRATIVE SECTION IV: MERIT CRITERIA

This project addresses the Merit Criteria detailed in the grant NOFO as detailed below.

Achieving Safety, Efficiency, or Reliability Improvements

Improving and promoting safety at port facilities and throughout the maritime industry at-large is a primary purpose for any project, and a key priority of the Biden Administration. This new port construction project is no exception, and its design will mitigate known safety challenges. It is critical to ensure workforce safety to avoid workplace injuries during construction of the port as well as during assembly and delivery of the floating offshore wind turbines to the WEA. Due to the vast size of floating offshore wind components and the complexity of a heavy-lift terminal to marshal and assemble floating offshore wind turbines, detailed civil and marine engineering will be necessary to ensure the terminal will be constructed and can be operated safely. Through its design, mandatory safety training of contractors, and physical location of the port itself ensures safety at the port during construction and operations will be achieved.

A safety benefit to locating the floating offshore wind port on Sears Island is that it is located within an existing channel with established ship traffic lanes, minimizing ship handling risks a key to reducing potential accidents and injuries. This region is under the jurisdiction of the Penobscot Bay Pilots who have a long history of guiding vessels in and out of the Searsport channel safely and with minimal disruption to existing fishing and lobstering activities in the area; this is particularly important as vessel traffic increases. Considering the magnitude of the wind turbines themselves it is critical that harbor pilots are available to navigate the vessels safely through the channel.

The north/south facing direction of the proposed 1,500-foot quay at Sears Island will also provide a better berthing arrangement for vessels and floating foundations moored at the facility and create a safe and reliable environment for marine cargo operations. Predominant seasonal wind directions are important considerations because these contribute to the “fetch,” the distance the wind blows over open water and generates wave action in a marine environment.

- Interviews and public presentations from the Penobscot Bay Pilots expressed favor for the Sears Island site as being the safest alternative due to prevailing weather conditions in Penobscot Bay emphasized by extreme tide and storm damage to existing sites with vessel berths in the Port of Searsport in 2023 and 2024.
- The proposed Sears Island site provided a safer quay orientation for vessels maneuvering on and off the quay due to the orientation of the berth parallel to the prevailing winds.
- The pilots presented that it would be safer and more reliable to maneuver a ship at the Sears Island alternative because the ship would be oriented north-south, aligning the berth with the stronger prevailing winds.

The primary purpose of the 1,500-foot quay allows for three berths that will permit the separation of wind turbine port operations. The three berths will allow for the separation of

launching foundations, tower and wind turbine generator assembly, and deliveries of components by vessel. Furthermore, loading and unloading of components and materials to the terminal by ship or barge is done at one end of the quay. This separation increases safety allowing operations to work at the highest level of safety as the operations are not interacting in the same quay space. This is critical to ensuring worker safety throughout production.

Launching foundations, marshalling components, and assembly at one port location will reduce the towing and transportation distance for each floating offshore wind turbine. The nearest viable potential port in New Jersey, is roughly five times the distance to the WEA from Sears Island. The North Atlantic is known to be extremely rough in the winter months and metocean conditions will likely lead ocean towing operations to seek windows of calm weather to conduct offshore towing operations.

The port is also a short tow distance from a wet storage area with deep, unobstructed water where completed foundations can be anchored safely. The foundations can be brought to the quay at the port when the wind turbine generator is ready to be assembled. Reducing these movements will significantly reduce the risk of injury but also will reduce the handling and transit time of foundations by ocean-going tugs needed to fully deploy this renewable energy.

Furthermore, the site has a dedicated roadway. The roadway connects the island directly to U.S. Route 1 and is designed to handle truck and freight rail traffic and large loads traveling primarily through a forested area. This direct connection to Route 1 reduces the mixing of port traffic with local residential traffic and provides for safe access to and from the port. Supporting the actions identified in the National Roadway Safety Strategy, the port access road on Sears Island will be built to allow dedicated access to the port without moving through the conservation area on Sears Island. This bifurcation of the road will significantly protect vulnerable and non-motorized users by reducing port-related traffic conflicts with people enjoying the conservation areas of the island.

Work Standards

As a part of the State of Maine's promotion of offshore wind development, Governor Mills signed "An Act Regarding the Procurement of Offshore Wind Energy Resources" (L.D. 1895, P.L. 2023 Chapter 481) into law, which authorizes the procurement process of at least 3,000 MW of offshore wind installed by 2040 and also includes workforce standards for contractors and subcontractors for offshore wind power and the port. Subsection A(2) requires that contractors and subcontractors meet state requirements that prescribe mandatory safety training.[17]

The semi-submersible barge will also be a commercial asset of considerable importance to the operation and existence of the port. Building a barge that is state-of-the-art is required to make the port the leading commercial producer of floating offshore wind turbines in the world, but proper safety considerations for these delicate float on/float off operations must be paramount.

[17] Maine Legislature, Maine Revised Statutes, Title 26: Labor and Industry, Chapter 15: Preference to Maine Works and Contractors, Section 1317. Construction Safety Training Requirements for Craft Workers, https://legislature.maine.gov/legis/statutes/26/title26sec1317.html.

Construction of a barge for safely launching floating projects across the U.S. will help to address the shortfall of this equipment with U.S.-engineered and -built solutions.

Supporting Economic Vitality at the Regional or National Level

This project will generate significant national and regional economic benefits through the creation of the first purpose-built floating offshore wind port on the East Coast. The construction of this port will provide significant national benefits through leveraging existing initiatives such as the Department of Energy's *Floating Offshore Wind Shot* and the *Federal-State Offshore Wind Implementation Partnership* which includes eight other East Coast states and U.S. DOT along with multiple other federal agencies working to accelerate the offshore wind industry through multiple avenues, including port development. [18] The development benefits of the port will extend past the Gulf of Maine, enabling more robust supply chains and driving down the cost of installation of floating offshore wind.

In addition to the national benefits, there are significant regional economic benefits to Maine and the Northeast. Community-Based Organizations (CBOs), companies, and labor organizations in Maine are already preparing for the construction of the port on Sears Island and the University of Maine research array opportunity as a precursor to full commercial scale floating offshore wind development in the Gulf of Maine. Diamond Offshore Wind will be the port's first tenant and will construct the research array using floating foundation technology developed by UMaine. The Maine Community College System has partnered with Ironworkers Local 7 to develop offshore wind training at no cost to participants with support from the Governor's Energy Office's Clean Energy Partnership (CEP) Program. The Maine Community College System, Maine Maritime Academy, and the Maine Building and Construction Trades Council have Memoranda of Understanding to provide high-quality workforce opportunities with the developers of the research array project that is planned to be constructed at Sears Island.[19]

In 2020, Maine Governor Mills announced a goal of 30,000 clean energy jobs in the state by 2030, and the state is already more than halfway toward achieving that goal. Analyses for *The Maine Offshore Wind Roadmap* identified 117 key occupations essential for floating offshore wind development, requiring a range of skills and education levels from high school diplomas with apprenticeships to PhDs. The Sears Island development provides an unprecedented opportunity to expand on Maine's existing talent and generate 1,300 family-supporting jobs during port construction and 350 jobs during ongoing port operations, which will initially serve the state-led floating offshore wind research array planned in the Gulf of Maine. As Maine DOT advances the planning and construction on Sears Island, it will do so in accordance with the workforce components of P.L. 2023, Chapter 481, which provides for compensation and benefit thresholds, hiring guidelines, and apprenticeship program requirements.

---

[18] The White House, Fact Sheet: Biden Administration Launches New Federal-State Offshore Wind Partnership to Grow American-Made Clean Energy, https://www.whitehouse.gov/briefing-room/statements-releases/2022/06/23/fact-sheet-biden-administration-launches-new-federal-state-offshore-wind-partnership-to-grow-american-made-clean-energy (last visited May 4, 2024).
[19] *See* https://www.maine.gov/mdot/grants/pidp/

While there will be significant short-term benefits to the workforce in the Searsport region, once a commercial scale wind port is constructed, the Searsport project will generate long-lasting and quality jobs and workforce opportunities for Low Income/Disadvantaged Communities (LIDACs) in the area and will prepare workers for continued careers in offshore wind. Maine LD 1895 was passed into law in 2023 and was developed with input from several labor organizations, employee-owned companies, and other CBOs. This statute includes establishing standards for local hiring and workforce development and safety, including recruiting traditionally underrepresented populations and developing registered apprenticeship programs under Maine law using industry-approved training structures.[20] The proposed project will help inform Maine's future Power Purchase Agreements (PPAs) to ensure good paying jobs for Maine people, a broad distribution of economic opportunities and benefits, and meaningful stakeholder engagement.[21]

Maine has been presented with an opportunity to affect meaningful change in the state economy and environment by responsibly pursuing offshore wind development. This new industry is fully dependent upon new port and heavy-lift infrastructure, which does not currently exist in the US. The construction of the port and barge will create good paying jobs for the construction period. Post-construction of the wind port will create new high paying job opportunities that will allow families to create wealth well into the future as well as support emerging and existing businesses throughout the state. This project will be able to support a variety of different technologies and offer a state-of-the-art facility to fabricate floating foundations unlike any other facility in the world.

The development of a floating offshore wind port facility in Maine will provide a substantial economic benefit for the state. This is a once-in-a-lifetime opportunity to transform the Maine economy by introducing a new additive industry with a technology familiar to Maine and its construction industry by utilizing the UMaine VolturnUS floating offshore wind foundation; providing floating foundations for projects in the Northeast and U.S. East Coast to achieve clean energy goals and creating hundreds of good-paying and reliable maritime port jobs.[22]

Economic Impact

This project directly and in the near term will result in greater public and private investment in land use productivity as the project will use land that has been designated specifically for a port and transportation purposes. Based on similar offshore wind developments, potential lease payments that are likely to be made by offshore wind energy generation companies can be estimated. Based on four recent similar lease agreements, payments are estimated between $60,000 and $280,000 per acre per year. Therefore, over a period of 25 years, a 100-acre site is likely to generate between $125 million and $560 million in private sector contributions to the State

[20] *See* id.
[21] MaineDOT believes that the floating offshore wind industry has the potential to transform Maine into a leader in renewable energy. The 18-month-long *Maine Offshore Wind Roadmap* effort, funded by the US EDA and led by the Maine Governor's Energy Office (GEO) studied multiple areas and utilized a collaborative and inclusive process to make recommendations to the state for how to proceed with the offshore wind industry. There are currently more than 80 businesses across Maine engaged or interested in participating in the offshore wind market.
[22] *See* University of Maine, Advanced Structures & Composites Center, VolturnUS https://composites.umaine.edu/volturnus/

of Maine as a direct result of the port being constructed. While lease/contribution payments represent financial transfers, they are a good approximation for net benefits to society due to the improvement in efficiency of delivering offshore wind projects and will create a funding stream for the maintenance of the facility in a state of good repair. The barge asset will be in high demand for floating projects in the Gulf of Maine will likely be capable of providing services for offshore wind projects throughout the U.S. The U.S.-flagged, Jones Act-compliant barge will be made available on a project-by-project basis, and it is likely that more barges of similar design will be required to keep up with demand. A day rate to use the barge, which will be negotiated by MaineDOT and the operator of the barge, will be incorporated into the total cost. While float-on/float-off operations are not a novel concept, barges of this size have not been commonly used until they became a necessity for large scale oil, gas and renewable energy projects located offshore.

The project will also enhance recreational and tourism opportunities by constructing direct road access to the port site on the island which will separate access to hiking paths on the island so that there will be no interaction with the operations at the port, except for a proposed viewing area for recreators interested in viewing the port activity. This is an important aspect of the development of the project. The newly constructed road directly to the port will protect access to the other 600 acres of the island reserved for conservation.

Job Creation

The growth of the offshore wind industry offers the potential for many different occupational roles, with job opportunities across project development, manufacturing and supply chain, materials handling, stevedoring, maritime construction, vessel operations, and operations and maintenance. These workforce opportunities offer long-term, high-quality employment opportunities. Maine P.L. 2023, Chapter 481 was passed into law in 2023 and was developed with input from several labor organizations, employee-owned companies, and other CBO's and includes establishing standards for local hiring, workforce development and safety, including recruiting traditionally underrepresented populations and developing registered apprenticeship programs under Maine law using industry approved training structures.[23] Occupations that require basic and skilled trades in construction and manufacturing represent the largest employment opportunity in offshore wind. In fact, if continued investments in port facilities that can support floating offshore wind occur and capacity of offshore wind is fully realized, projections estimate the creations of 83,000 offshore wind industry jobs nationwide.

Benefit-Cost Analysis Calculations

The construction project this planning project will design has a BCR of 11.39.[24] It will reduce tugboat emissions by ensuring that the floating offshore wind turbines are assembled and deployed as close to the Maine Wind Energy Area (WEA) as possible. Each floating wind turbine will require three tugboats to haul it to the WEA. Tugboats emit a significant amount of GHG emissions including Carbon, Nitrous Oxide and Particulate Matter. Most marine

[23] See Maine L.L. 2023, Chapter 48, https://www.maine.gov/mdot/grants/pidp/.
[24] See Appendix A, BCA Calculations

transportation is powered by diesel engines, which are major sources of emissions of nitrogen oxides (NO_x), Carbon (CO2), and particulate matter (PM). Nitrogen oxide and volatile organic compounds form ground-level ozone, or smog. Ground-level ozone can trigger a variety of health problems, including aggravated asthma, reduced lung capacity, and increased likelihood of pulmonary diseases such as asthma, pneumonia, and bronchitis.[25] Transportation engines are a major source of greenhouse gas (GHG) emissions, which contribute to pollution. Emissions of nitrogen oxide, particulate matter and carbon will be reduced through this project. Tugboats produce 14,124 grams/hour of nitrogen oxide at 100 percent load and 9,450 grams/hour or nitrogen oxide at 75 percent load. The PIDP BCA Guidance values the cost of NOx reduction to be approximately $22,000 per metric ton. Therefore, the cost of not building the port thus, unnecessarily elongating the distance between the assembly port and the WEA, in nitrogen oxide emissions cost is more than $36 million over the 30 years. The cost of particulate matter reduction over the same period is more than $21 million. Carbon reduction due to this project is more than $34,000 over the course of the construction project.

Savings are also found in travel time and operating expenses for tugboat operators. On average tugboats will have 6 seamen with one captain earning $38/hour and $50/hour respectively. As noted, each floating wind turbine requires three tugboats. Each tugboat if not originating from Sears Island but rather from the next closest, capable port, will travel 520 nautical miles one way to deploy the turbine. If the turbines originate in Sears Island the tugboat will travel 110 nautical miles. Not only does this reduction in nautical miles dramatically reduce the hours at sea but reduces the fossil fuel usage. This equates to a savings of over $175 million over the course of the construction project.

This project will dramatically reduce energy emissions by displacing fossil fuel created energy with wind energy. Wind energy has a zero carbon and emissions footprint. This project will allow the production of renewable energy to power homes in Maine equating to more than $7.3 billion in savings over the course of the project. These savings account for the NOx, CO2, and SO2 not emitted in the production of wind energy. The calculations are based on the number of wind turbines deployed annually and the effects are cumulative. Unlike in other transportation projects where the positive impacts of a project are often diluted because there is not an absolute shift, the result of this port project will be a direct displacement of fossil fuels to wind energy which will build on itself year over year. As noted, GHG emissions are significantly damaging to society, and particularly damaging to the most vulnerable parts of society. The deployment of the floating offshore wind is dependent on a port that can handle the turbines. Today, there exists no such port on the East Coast of the U.S. impeding the ability to realize these savings. The investment in this project will directly impact the state of Maine and the U.S.' ability to realize these savings by proving the transportation infrastructure needed to deploy the clean energy.

Finaly, the residual value of the project is significant on the port side of the project. The port has a project life of 50 years which affords a residual value of 20 years. The residual value of the port on an annualized basis is $11.8 million for a total over the life of the asset of $236 million.

[25] *See* U.S. DEP'T. OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION, CHAPTER 2: NATIONAL FREIGHT TRANSPORTATION TRENDS AND EMISSIONS, https://www.fhwa.dot.gov/environment/air_quality/publications/effects_of_freight_movement/chapter02.cfm.

The barge project has no residual value because the life of the barge project is 30 years which matches the U.S. DOT mandatory project life for a newly built project. However, the barge does have significant scrap value calculated at $3.5 million on a NPV basis.

Leveraging Federal Funding

This project has a match of 20 percent.

Port Resilience

Maine Won't Wait, A Four-Year Plan for Climate Action ("Maine Won't Wait") details Maine's guidelines for ensuring all new build and rehabilitated port projects comply with the state's resiliency guidelines to ensure longevity of all projects regardless of sea level rise.[26] MaineDOT will ensure that the purpose-built, climate resilient port will consider any increase in sea level that may impact the utility of the port in future years.

NARRATIVE SECTION V: SELECTION CONSIDERATIONS

Climate Change and Sustainability

Maine, is unfortunately, the most heating oil-dependent state within the United States: six in ten homes are heated by oil or kerosene. Residents spend more than $4 billion a year importing fossil fuels. The State of Maine is committed to transforming the state into a clean-energy economy; in fact, the *Maine Won't Wait* provides among other goals for Maine to be 100 percent carbon neutral by 2045 and highlights the need for floating offshore wind development.[27] Advancing these goals resulted in the development of a stakeholder-driven comprehensive plan, the *Maine Offshore Wind Roadmap ("Roadmap")*. Following the recommendations of the *Roadmap*, the Maine Legislature, in line with other east coast states, recently mandated the procurement of three gigawatts of responsibly developed offshore wind energy by 2040.[28]

Within the past decade, the University of Maine (UMaine) has been pioneering research and development into a floating-hull technology center. Numerous Maine engineering, construction, and manufacturing firms are engaged in the national and global offshore wind industry. Offshore wind has the potential to diversify and boost Maine's renewable energy sources by releasing a significant amount of energy that is now locked up in the Gulf of Maine winds. Because offshore winds are the highest and most dependable in winter when regional power demand for heating peaks, offshore wind has great energy potential in states like Maine. With moderate restrictions

[26] *See* Maine Won't Wait, a Four-Year Plan for Climate Action, Maine Climate Council. p. 90 https://www.maine.gov/future/sites/maine.gov.future/files/inline-files/MaineWontWait_December2020.pdf (last visited May 9, 2024.

[27] Maine Won't Wait, Maine Climate Council, A Four-Year Plan for Climate Action, Dec. 2020, https://www.maine.gov/climateplan/sites/maine.gov.climateplan/files/inline-files/MaineWontWait_December2020_printable_12.1.20.pdf (last visited May 4, 2024).

[28] The *Maine Energy Plan: Pathway to 2040* identifies the need for at least three GW of OSW in multiple scenarios with the goal of 100 percent clean energy by 2040. Maine has statutory authority to procure 3 GW of OSW power by 2040.

on the amount of onshore renewable energy accessible, Maine would require 2.1 to 2.8 GW of offshore wind by 2050 to fulfill rising energy requirements and lessen its dependency on fossil fuels.

Develops and Deploys Solutions that Reduce Climate Change Risks

This project will create a purpose-built port that is designed to construct, assemble, and deploy floating offshore wind turbines that will help the U.S. become energy independent and reduce Maine residents' reliance on fossil fuels throughout the year. The risks created by climate change to the infrastructure network are significant. One way to address and reduce these risks is to create transportation infrastructure that will work in tandem with renewable energy assets. Without good port transportation infrastructure, renewable energy creation particularly offshore wind energy creation is not possible, and the U.S. will not be able to unlock the massive potential of wind energy.

As noted in the *National Climate Resilience Framework*, companies often struggle to move promising ideas from the research and development phase to the scaling and commercialization phase.[29] Bridging the gap that separates the "lab" and the "market" often requires dedicated support which the construction of the port and barge will provide. Specifically, the project will advance Objective 3 "Mobilize capital, investment, and innovation to advance climate resilience at scale," through two actions. First, it will support research-to-market pathways for floating offshore wind development on the East Coast and globally. The partnership with the University of Maine and Diamond Offshore Wind will drive development and implementation of innovative approaches to deploy floating offshore wind. Second, it will utilize the power of procurement. Maine, in alignment with the Memorandum of Understanding on Offshore Wind Supply Chain Collaboration involving the U.S. DOE, DOI, DOC, and DOT and nine states is utilizing the power purchase agreements to develop offshore wind and leverages energy procurement for the advancement of offshore wind development.

Renewable and Resilient Power

This project will continue to advance key stakeholder-based priorities identified in the *Maine Won't Wait* and the *Roadmap*, which included hundreds of representatives from communities, businesses, organizations, government leaders, and youth. Led by the Governor's Energy Office, the *Roadmap* identified the importance of offshore wind to help ensure an adequate and affordable clean energy supply to meet the state's renewable energy targets and generate economic growth and resiliency. The *Roadmap* underscored the importance of offshore wind energy as a powerful response to climate change and energy volatility driven by global events. Rising ocean and land temperatures threaten heritage industries of fishing, farming, and forestry. Higher sea levels endanger coastal communities, and more frequent and powerful storms damage infrastructure and public health. At the same time, Maine residents are experiencing higher energy price increases driven by unstable global markets and our over-reliance on fossil fuels.

[29] The White House, National Climate Resilience Framework, Sept. 2023, https://www.whitehouse.gov/wp-content/uploads/2023/09/National-Climate-Resilience-Framework-FINAL.pdf (last visited May 4, 2024).

There are key characteristics of offshore wind that uniquely position it to offset fossil fuel generation and impact Low Income/Disadvantaged Communities (LIDACs). Offshore wind generates the most energy during afternoon and evening high-wind periods. Offshore wind provides reliable renewable energy generation in winter seasons, a period with significant fossil fuel dependance in New England. This will become increasingly important as electric demand grows with heating electrification. Without new offshore wind generation, the region will have to increase its reliance on thermal generation. This may include the increased use of peaker plants mainly fueled by natural gas and high emission fuel oil.[30] As these systems are able to be utilized less, resultant air pollution and greenhouse gas (GHG) emissions in localized communities surrounding peaker plants will be reduced. Additionally, since offshore wind does not require a fossil fuel source, customers will benefit from more reliable pricing. Electricity generated using natural gas and oil are subject to global market price fluctuations. This volatile price risk is in turn included in the cost of energy passed down to customers in electricity rates.

Indirectly, the new floating offshore wind developed will support broader decarbonization efforts in the transportation sector. Transportation emissions disproportionately impact environmental justice communities. The availability of reliable clean energy at port locations will help the port to prepare to support decarbonization and electrification efforts directly at the port in addition to the wider communities served through the region's electric grid.

Equity and Justice40

The ***Roadmap*** identified a port facility as a priority to establishing the offshore wind industry in Maine. In early 2022, Maine assembled an *Offshore Wind Port Advisory Group (OSWPAG)* to serve as an advisor to MaineDOT, the Governor's Energy Office, and other state officials regarding the development of a wind port that will allow Maine to realize the environmental and economic benefits of the rapidly developing offshore wind market in a way that reflects community values and minimizes adverse impacts.[31] The meetings were designed to educate members about the rapidly evolving offshore wind industry; to present the most recent port design concepts at alternative locations in Searsport and Eastport; and to solicit advice on the potential impacts to the natural, social, and economic environments of the alternative locations from members.[32]

Agency Coordination

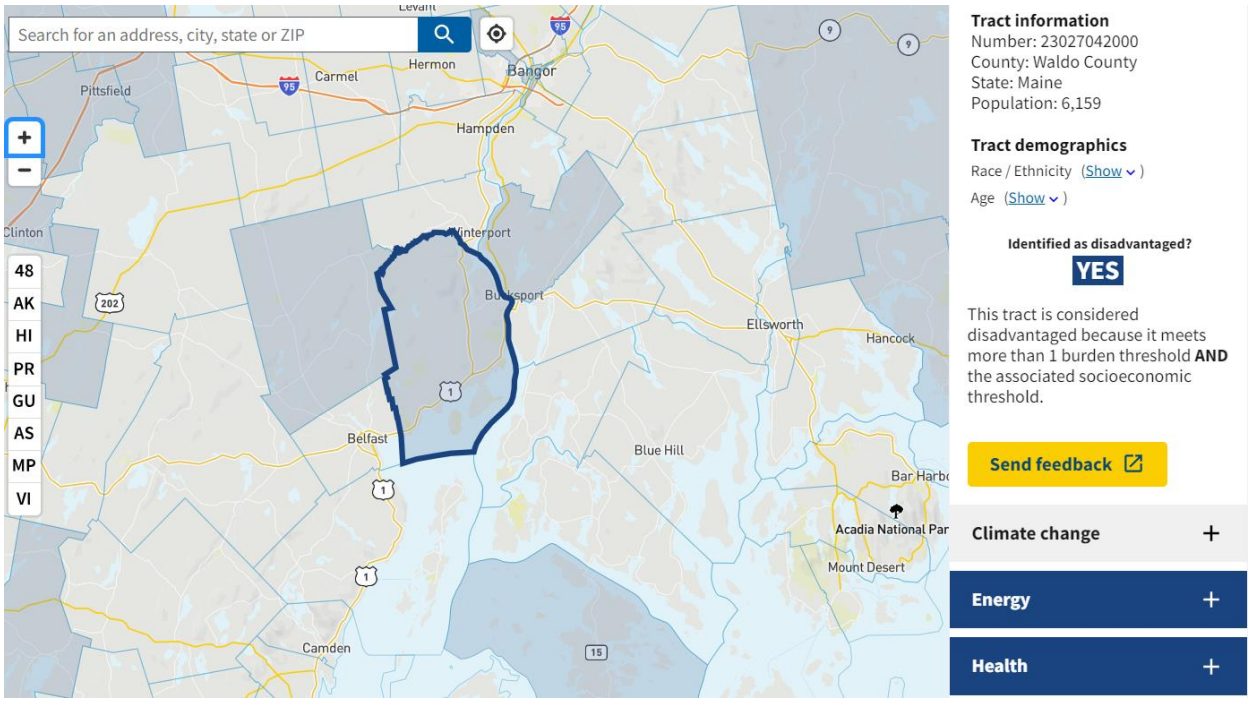
MaineDOT convened three interagency coordination meetings in 2023. The following agencies participated: Environmental Protection Agency (EPA), Maritime Administration (MARAD), US

[30] "A peaking power plant (or "peaker plant" for short) is a power plant that grid operators call on at times of particularly high electricity demand on the grid. Peaker plants supply power that is not only high in cost but also typically high in greenhouse gas emissions." Enel North America Blog, https://www.enelnorthamerica.com/insights/blogs/what-is-a-peaking-power-plant (last visited April 22, 2024).

[31] An early engagement final report was completed in July 2023, *see* Offshore Wind Port Early Engagement Final Report https://www.maine.gov/mdot/ofps/oswpag/docs/OSWPAG_Early%20Engagement_Final%20Report.pdf (last visited May 4, 2024).

Army Corps of Engineers (USACE), US Coast Guard (USCG), Maine Historic Preservation Commission (MHPC), National Marine Fisheries (NMFS), US Fish and Wildlife Service (USFWS), Federal Highway Administration (FHWA), ME Department of Marine Resources (DMR), ME Department of Environmental Protection (DEP), ME Department of Inland Fisheries and Wildlife, ME Department of Agriculture, Conservation, and Forestry (DACF), Natural Areas Program & Submerged Lands Program. The group will reconvene in 2024 to review the results of baseline data collection and resource assessments. In the meantime, MaineDOT has established bi-weekly meetings with USACE and Maine DEP to continue conversations related to permit application requirements and development of a mitigation plan. MaineDOT invited all federally recognized Tribes in Maine to participate in the project. The Penobscot Nation responded with interest.

Justice40



MaineDOT believes that the essence of equity in transportation is to ensure that all Maine residents have access to safe and reliable transportation options that support economic opportunity and quality of life regardless of a person's economic, social, ethnic, racial, age, sexual orientation, physical, mental, or geographic circumstance. These agencies are committed to providing equitable delivery of the programs and services. More specifically, this project will support economic and clean energy initiatives to bring quality jobs and affordable energy to all areas of the state regardless of economic status and region.

While there will be significant benefits to the workforce in the Searsport region, once a commercial scale wind port is constructed, the Searsport project will generate long-lasting and quality jobs and workforce opportunities for LIDACs in the area and will prepare workers for continued careers in offshore wind. Maine P.L. 2023, Chapter 481 was developed with input

from labor organizations, employee-owned companies, and other CBO's and includes establishing standards for local hiring, workforce development and safety, including recruiting traditionally underrepresented populations and developing registered apprenticeship programs under Maine law using industry approved training structures.[33] The proposed project will help inform Maine's future Power Purchase Agreements (PPAs) to ensure good paying jobs, broad distribution of economic opportunities and benefits, and meaningful stakeholder engagement.

Equity Impact Analysis

The *Roadmap* explored how Maine should approach energy markets, ports and infrastructure, manufacturing and supply chains, workforce development, socioeconomic impacts, and equity, while at the same time preserving the Gulf of Maine ecosystem, communities, and heritage industries. Maine is committed to ongoing engagement about offshore wind from all stakeholders — paying particular attention to those who may be most impacted and those who often lack access to or input on new opportunities for economic growth. The *Roadmap* includes strategies and actions that commit to an equitable pathway for Maine's offshore wind industry, calling for studies and actions to understand and avoid disproportionate impacts on priority communities. This includes detailed recommendations to address potential impacts on fishing to improve co-existence between industries and working to finalize an agreement to provide funding and assistance to the Penobscot Nation for the hiring of counsel to begin the process of developing a community benefits agreement.

The *Roadmap* also includes targeted workforce and supply chain strategies to provide opportunities for residents, including historically disadvantaged communities and those with overwhelming dependence on a single economic sector. Further, the *Roadmap's* strategies to promote cost-effective offshore wind energy speak to the importance of securing stable, affordable, renewable energy.

Workforce Development, Job Quality and Wealth Creation

The State of Maine has an opportunity to affect momentous change in the state economy and environment by responsibly pursuing floating offshore wind development. Moreover, MaineDOT has a strong commitment to advance workforce development by creating opportunities for an expected 350 to 400 workers per day, six days per week. Floating offshore wind provides an opportunity to attract new talent to Maine by expanding training programs. Maine and its partners will work to ensure disadvantaged populations and communities have access to career exploration programs, training and apprenticeship programs, post-secondary education, and career opportunities in the industry. Governor Mills has set a goal of 30,000 clean energy jobs in Maine by 2030, and the growth and development of offshore wind plays an essential role in reaching that goal. These opportunities will require increased commitment to job-specific training — an area where Maine has deep experience. Throughout the state, training and registered apprenticeship programs have helped to ensure the availability of qualified workers to

[33] *See* https://www.maine.gov/mdot/grants/pidp/.

accommodate growth and compensate for regular worker attrition.

Maine must bolster its workforce including the recruitment, training, and retention of high-priority occupations, such as construction laborers and managers, carpenters, electricians, engineers, plumbers, pipefitters, and more. Funding from the planning grant will provide workforce development investments to build a pipeline of future port workers, invest in incumbent worker upskilling, and increase diversity among port workers. Representing several of the state's top-20 most in demand occupations, as measured by annual job openings, Maine's electricians earn a median annual income of $59,010, carpenters earn a median annual income of $54,920, and supervisors of trades workers earn a median annual income of $69,030.

Strengthening pathways to these occupations presents an opportunity to create quality jobs for underrepresented communities, ensuring that they benefit from investments in developing new port infrastructure. MaineDOT has partnered closely with the Maine Department of Labor in proposing the following investments in workforce development:

Support employers' investment in upskilling and retaining existing workers through the expansion of registered apprenticeship programs and incumbent worker training resources, likely to include: (1) developing new and expanding existing registered apprenticeship programs in partnership with labor unions, industry associations, and Maine Community College system training providers. The Maine Apprenticeship Program supports over 1,500 active apprentices, of which 55% are in construction trades sectors—a program that can continue to expand with a lens toward specific port infrastructure skills needed with increased funding, and (2) expanding access short-term training and Associates degree programs such as the 1-year electrician degree program through the Maine Community System.

Develop a strong pipeline of construction trades and engineering workers needed to support port infrastructure development by investing in high-quality training programs, such as: (1) certified pre-apprenticeship programs that raise awareness of career pathways, provide experiential learning opportunities, and build a diverse pipeline. Built on robust industry and union partnerships, Maine has more than 40 successful certified pre-apprenticeships programs serving 500+ individuals, such as those offered through the Association of General Contractors, Maine AFL-CIO, and Portland Adult Education, among others, and (2) career and technical schools (CTE) and K-12 programs that build clear on-ramps among young people to construction trades and engineering careers via dual enrollment courses through the Maine Community College and University of Maine systems, summer work experiences, and work-based learning opportunities.

Bolster the representation of under-represented communities within construction careers—with an explicit focus on women to advance Governor Mill's Executive Order 7: An Order Regarding Women in Construction, through activities such as: (1) creation of specific women-in-trades training cohorts in partnership with employers, unions and industry associations, as well as cohorts for other under-represented communities such as the justice involved community in partnership with re-entry centers, and multilingual cohorts for immigrants and refugees in partnership with local Adult Education providers, and (2) supportive services such as housing, transportation, or child care, offered through the state's WIOA service providers to workers and trainees facing barriers to participation.

Inclusive Hiring Practices/Labor/ Establishing a Fund

Maine P.L. 2023, Chapter 481 requires that any floating extraterritorial wind project proposal include provisions for agreements between labor and contractors including a description of how the project will supply construction workers in all crafts needed for the project. This includes activity at the port involved with fabrication concrete or steel of floating foundations. Projects will also be required to produce a plan for consultation with federally recognized tribes, economic and community development plans, fishing community's investment plans, environmental and fisheries plans, stakeholder engagement and Diversity Equity and Inclusion plans. Maine P.L. 2023, Chapter 481 requires the Maine Public Utilities Commission to evaluate bids to provide Maine with power from offshore wind and in a cost-effective manner and to prioritize bids that protect fishing areas, provide employment and contracting opportunities to disadvantaged communities including tribes per the U.S. Climate and Economic Justice Screening Tool or the U.S. EDA criteria, and offer opportunities to certified businesses.

NARRATIVE SECTION VI: PROJECT READINESS

Technical capacity

The following is the schedule for this planning project:

Port Project Schedule

Deliverable	Submission Schedule
60% design /phase 1	**48 weeks** following notice to proceed
90% design / phase 1	**12 weeks** following receipt of Client's comments on the 60% design
100% design/phase 1	**4 weeks** following receipt of Client's comments on the 100% design
60% design/phase2	**40 weeks** following notice to proceed
90% design /phase 2	**10 weeks** following receipt of Client's comments on the 60% design
100% design/ phase 2	**3 weeks** following receipt of Client's comments on the 100% design

NEPA Review Schedule

Task No.	**NEPA & Permitting Activity**	**Timeline**
1	Environmental Assessments	Q3 2024
2	Draft Environmental Impact Statement (EIS)	Q1 2025
3	Final EIS and Record of Decision (ROD) (combined)	Q2 2026
4	USACE Permit Authorization	Q2 2026
5	Maine DEP Site Law of Development (SLODA) Authorization	Q2 2026
6	Maine DEP Natural Resources Protection Act (NRPA) Authorization	Q2 2026

Barge Schedule

Phase 1 a	Feasibility Study	3 – 4 weeks
Phase 1b	Preliminary Design	1 week

Phase 2	Contract Design	6 – 12 months
Phase 3	Production Design	18 - 28 months
	Shipyard Construction	18 – 24 months
	Delivery and Final Assembly	1 -2 months

Risk Mitigation

MaineDOT recognizes that assuring sustainability of habitats, ecosystems and transportation infrastructure can occur in concert rather than in conflict. MaineDOT will exercise reasonable stewardship over both natural resources and transportation infrastructure through its commitment to addressing aquatic organisms, wildlife habitat and fish passage in cooperation with natural resource agencies, while weighing all aspects of a proposed project. During the development of this application, numerous risks were contemplated but each has a comprehensive mitigation strategy. Coordination between the design team and the environmental team will continue as a part of this planning grant project to ensure that the project goals and community needs can be met while avoiding, minimizing, and mitigation potential environmental impacts.

National Environmental Policy Act (NEPA)

The NEPA review is part of this planning project application.

Required Federal and State Approvals & Consultations

Major state and federal regulation approvals and consultations required for the project are summarized in the tables below and will occur as part of this planning project.[34]

Agency	Federal Permit/Authorization	Activity
U.S. Army Corps of Engineers	Section 404 Clean Water Act & Section 10 Rivers & Harbors Act Permit	Impacts to waters of the U.S., wetlands
	Section 408 Permission	Work in/adjacent to Searsport Navigation Project
National Marine Fisheries Service	Marine Mammal Protection Act Authorization	Impacts to marine mammals from construction activities
	Endangered Species Act Section 7 Consultation	Effects to marine species
	Magnusen-Stevens Act	Impacts to coastal Essential Fish Habitat
U.S. Fish & Wildlife	Endangered Species Act Section 7 Consultation	Effects to terrestrial species
Maine Department of Marine Resources	Coastal Zone Management Act Concurrence	Project in coastal zone

[34] A complete list of relevant definitions and applicable state and federal regulatory framework is available at Maine Off-Shore Wind Marshalling Port Alternatives Matrix- Relevant Definitions & Regulatory Framework, https://www.maine.gov/mdot/ofps/docs/port/OSWAG%20Relevant%20Regulations%20Companion%20to%20Alternatives%20Matrix%209-28-22.pdf (last visited May 4, 2024).

Maine Historic Preservation Commission & Tribes	Section 106 of the National Historic Preservation Act	Effects to historic architectural/archaeological resources
Maine Department of Environmental Protection	Section 401 Water Quality Certification	Impacts to waters of the U.S., wetlands
	Natural Resources Protection Act Permit	Impacts to protected natural resources
	Site Location of Development Act	Development that will occupy greater than 20 acres
Maine Bureau of Parks & Lands Submerged Lands Program	Submerged Lands Lease	Structures and development below mean low water

The following environmental studies are planned as a part of this project: Marine Mammal Observation, Vernal Pool Survey, Acoustic Bat Survey, Underwater Archaeological Survey, Cultural Resources Survey, Visual Impact Assessment, Tribal Coordination, Hazardous Materials Assessment, Noise Assessment, Climate Change and Greenhouse Gas Assessment, Community Impact Assessment, Traffic Analysis, Ocean Wave Impact and Navigation Study, Regional Economic Impact Assessment, Floodplain and Sea Level Rise Considerations.

NARRATIVE SECTION VII: DETERMINATIONS

Statutory Determinations	Guidance
1. The project improves the safety, efficiency, or reliability of the movement of goods through a port or intermodal connection to the port.	Improving and promoting safety at port facilities and throughout the maritime industry at-large is a primary purpose for any project, and a key priority of the Biden Administration. This new port construction project is no exception, and its design will mitigate known safety challenges. It is critical to ensure workforce safety to avoid workplace injuries during construction of the port as well as during assembly and delivery of the floating offshore wind turbines to the WEA. Through its design, mandatory safety training of contractors, and physical location of the port itself, safety at the port during construction and operations will be achieved.
2. The project is cost effective	The Benefit Cost Ratio (BCR) on this project is 11.39 with a sensitivity analysis exhibiting a BCR of 38.42 due to the supplanting of fossil fuel created energy with wind-created energy. There are benefits that could not be captured by the Benefit Cost Analysis but nonetheless are significant benefits to the State of Maine. These

	include the immense avoided economic and societal costs that would not be realized if the port is not constructed and the state continues to rely on fossil fuels. Additionally, it is expected there will be an anticipated lease payment for the barge that will defray the barge costs. The other significant benefit this project offers is a U.S. flagged, Jones Act compliant barge that can be used up and down the eastern seaboard for emergency activity, such as clearing out the remnants of the Francis Scott Key Bridge in Maryland or moving equipment from port to port if needed in a national emergency.
3. The eligible applicant has the authority to carry out the project.	MaineDOT has the sufficient legal capacity to construct a port on Maine-owned property.
4. The eligible applicant has sufficient funding available to meet the matching requirements.	As outlined in the match commitment letter is attached as Appendix C.
5. The project will be completed without reasonable delay.	MaineDOT is at the 30-percent design level and is continuing to advance environmental and permitting processes. MaineDOT expects to file permit applications by the fall of 2024.[35] Significant public outreach has been undertaken to inform the early design specifications. MaineDOT has initiated communication with environmental agencies and interested parties. Preliminary baseline data collection to identify natural resources is substantially complete. Efforts to identify cultural and other resources potentially affected by the project are ongoing. This information will be used to avoid and minimize impacts while meeting the purpose and need of the project.
6. The project cannot be easily and efficiently completed without Federal funding or financial assistance available to the project sponsor.	Federal funding is critical to the completion of this project. MaineDOT is committed to the construction of the offshore wind port project and will use federal funding to continue designing the project.

[35] Supporting documentation available at https://www.maine.gov/mdot/grants/pidp/.