

Maine Offshore Wind Research Consortium 2023 Annual Report

Submitted to the Maine Legislature's Joint Standing Committee on Energy,
Utilities and Technology

Pursuant to Public Law 2021, Chapter 407

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GOVERNOR'S
Energy Office

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Acronyms

BOEM	Bureau of Ocean Energy Management
Consortium	Maine Offshore Wind Research Consortium
DMR	Maine Department of Marine Resources
GEO	Governor's Energy Office
GW	Gigawatt
LMA1	Lobster Management Area 1
MDIFW	Maine Department of Inland Fish and Wildlife
NCCOS	National Centers for Coastal Ocean Science
NEPA	National Environmental Policy Act
NOAA	National Oceanic and Atmospheric Administration
RFP	Request for Proposals
WEA	Wind Energy Area

Purpose

Pursuant to PL 2021, Chapter 407 Sections 2.3.3 and 3.4 (LD 1619), this report summarizes the activities of the Maine Offshore Wind Research Consortium and the Research Consortium fund over the course of 2023. The law established the Consortium to coordinate, support, and arrange for the conduct of research on offshore wind power projects and inform responsible development in the Gulf of Maine. This report includes an introduction to state and federal activities related to offshore wind, the establishment of the Research Consortium, the Consortium's progress and opportunities for the state, and the status of the Research Consortium Fund.

Background and Introduction

Recognizing the critical threat of climate change, Governor Janet Mills has committed Maine to an ambitious set of policies to reduce Maine's greenhouse gas emissions, transition to renewable energy, and grow the state's clean energy economy. The state has established statutory greenhouse gas reduction requirements of 45% below 1990 levels by 2030 and 80% by 2050, as well as a requirement for carbon neutrality by 2045. Maine has also established a Renewable Portfolio Standard requiring 80% of electricity used in the state be generated by renewable sources by 2030. Earlier this year, recognizing the progress made to date and the key role of clean energy in controlling costs for consumers and reducing fossil fuel dependence, Governor Mills announced a new accelerated goal of 100% clean energy by 2040.

Maine and the New England region's climate and clean energy statutory requirements will necessitate substantial new renewable energy resources in the coming decades, both onshore and offshore in the Gulf of Maine. Offshore wind presents a generational economic and energy opportunity for Maine. As an abundant source of clean and renewable energy, offshore wind has the potential to reduce Maine's over-reliance on fossil fuels to lower energy costs and volatility, and to curb emissions to protect our state's environment for future generations. The Wind Energy Needs Assessment, a technical study conducted as part of the Maine Offshore Wind Roadmap, identified the need for 3 gigawatts (GW) of offshore wind to meet the state's growing energy needs while meeting our statutory climate and clean energy requirements.

In July 2023, the Governor signed PL 2023 Chapter 481 (LD 1895), "An Act Regarding the Procurement of Energy from Offshore Wind Resources", which authorizes the procurement of up to 3 GW of offshore wind energy from the Gulf of Maine, ensures industry opportunity for all Maine workers and employers, allows for critical port development, and protects critical lobstering areas from development.

Federal Context and Activity

The U.S. Bureau of Ocean Energy Management (BOEM), an agency within the U.S. Department of the Interior, has authority to lease areas of the Outer Continental Shelf, in federal waters beyond 3 miles from shore, for offshore energy development. In 2019, BOEM created the Gulf of Maine Regional Renewable Energy Task Force, to advise BOEM on commercial leasing and

development of offshore wind in the Gulf of Maine. The Governor’s Energy Office (GEO), along with other State agencies and officials, represents the State on the Task Force and has submitted comments informed by the priorities laid out in the Maine Offshore Wind Roadmap.

In 2021, the Biden Administration announced a federal target of installing 30 GW of offshore wind energy by 2030. Later that year, the Biden Administration announced a plan to hold an offshore wind auction in the federal waters of the Gulf of Maine in late 2024. In October 2023, BOEM published the Draft Wind Energy Area (WEA) for the Gulf of Maine and commenced a 30-day public comment period that included public meetings targeted towards fisheries, environmental non-governmental organizations, shipping and commercial maritime, and the general public to solicit feedback. BOEM collaborated with the National Oceanic and Atmospheric Administration’s (NOAA) National Centers for Coastal Ocean Science (NCCOS) to use an ocean planning model that seeks to identify and minimize conflict and sought ocean users’ input to identify the Draft WEA. The Draft WEA excludes all of Lobster Management Area 1 (LMA1), which the Governor reiterated support for in [comments to BOEM](#). For more information, please see BOEM’s website: <https://www.boem.gov/renewable-energy/state-activities/maine/gulf-maine>.

	2023					2024				2025
	July/August	September	October	November	December	Q1	Q2	Q3	Q4	
ME OSW Research Consortium	Develop draft projects	Prioritize/Draft RFP		RFP Issued	Proposals Reviewed	Contracting /Project Start				Initial Project Results
BOEM Commercial	Spatial Model Runs	Developing Draft WEAs	Draft WEAs Published			WEAs Designated			Lease Auction	Final Leases Established
BOEM Research Lease	Draft EA			Spatial Analysis/Lease Negotiations		Lease awarded		Site Assessments/Research Activities Plan		

Figure 1: Estimated timeline of Gulf of Maine offshore wind activities including the Maine Offshore Wind Research Consortium (MEOSWRC) RFP, the BOEM commercial lease process, and the BOEM/State of Maine Research Lease process.

State Activity

In 2019, Governor Mills launched the Maine Offshore Wind Initiative, which focuses on how to best responsibly advance offshore wind in a manner that minimizes impacts to the Gulf of Maine and existing users while strategically taking advantage of the significant economic opportunity that offshore wind holds for the state and region. A key part of advancing offshore wind is recognizing the importance of Maine’s fishing industry in terms of economic output and community and cultural benefits, all of which must be thoughtfully considered with input from the fishing industry and the public. Under the Initiative, the State has pursued a multi-pronged approach to support research, increase our understanding of the impacts as well as the opportunities that the growing industry can provide. Through the BOEM Task Force and other stakeholder engagement opportunities, the State identified a number of research and data gaps, and pursuant to PL 2021, Chapter 407 Sections 2.3.3 and 3.4 (LD 1619), the GEO

established the Research Consortium and its Advisory Board to fund and prioritize research gaps of key interest to Maine ocean users and stakeholders.

The State's 10-year Economic Development Strategy identified offshore wind for its significant potential to grow and diversify the State's economy and create good paying jobs. Since 2014, around \$17 billion has been announced or invested in the U.S. offshore wind energy industry according to the Oceanic Network, formally the Business Network for Offshore Wind, and in a Fact Sheet, the federal government estimated a \$109 billion revenue opportunity across the offshore wind supply chain this decade. Maine is well positioned to benefit from this investment, with nearly 80 Maine firms already engaged or positioned to engage in the offshore wind industry to provide permitting, products, surveying, engineering, maritime operations, and other services.

[Maine Offshore Wind Roadmap](#)

To realize the economic, energy, and climate benefits from offshore wind while protecting the environment and existing ocean users, an 18-month stakeholder engagement process kicked off in 2021 that resulted in the Maine Offshore Wind Roadmap, an effort that was supported by a \$2.166 million grant from the U.S. Economic Development Administration. The robust public process was led by a 24-person advisory committee with members from State agencies and energy, economic, fisheries, wildlife, science, and environmental leaders in Maine. The advisory committee was supported by four expert working groups on energy, economy, fisheries, and wildlife. Together, nearly 80 public sessions were held to develop the Roadmap, which was published in February 2023. Objectives of the Roadmap are organized around five key topics – supporting economic growth and resiliency, harnessing renewable energy, advancing Maine-based innovation, supporting Maine's seafood industry, and protecting the Gulf of Maine's ecosystem. The establishment of the Research Consortium and its resulting research is key to numerous objectives and strategies laid out the Roadmap, notably Objective C- Advance Maine-Based Innovation to Compete in the Emerging National and Global Offshore Wind Industry, Objective D- Support Maine's Vital and Thriving Seafood Industries and Coastal Communities, and Objective E- Protect the Environment, Wildlife, & Fisheries Ecosystem in the Gulf of Maine.

[Maine Offshore Wind Research Array](#)

Given the deeper water depths of the Gulf of Maine, floating offshore wind (as opposed to fixed bottom foundation) technology will likely be required. While advancing rapidly worldwide, floating technology is nascent with limited development worldwide. With offshore wind energy representing a significant opportunity for Maine's energy and economic future, the State is pursuing a small-scale research project in federal waters, about 40 miles off Portland, which would have no more than 12 turbines in a proposed 15.2 square-mile area. The research array will provide important information to help Maine maximize the economic opportunities from offshore wind while also helping to understand ways to reduce impacts to the fishing industry and the environment.

In October 2021, the GEO submitted an application to BOEM for a research lease for the project after extensive outreach to inform the siting of the proposed array as well as a detailed research framework that outlines key research priorities. In January 2023, BOEM announced its “Determination of No Competitive Interest” for the research lease, meaning BOEM reviewed the two complete submissions they received in response to their “Research Lease on the [OCS] in the Gulf of Maine, Request for Competitive Interest (RFCI)” and, upon their review of the whole record, determined that any interest in the research lease area is not competitive and that the Bureau will move forward to process Maine’s research application. In May 2023, BOEM announced the publication of the Gulf of Maine’s Notice of Intent to prepare an Environmental Assessment. The Draft Environmental Assessment was published in July 2023, and BOEM has continued to work to advance the research lease request and the National Environmental Policy Act (NEPA) review process. The research array will provide important information about how to minimize impacts and increase benefits to the State of Maine.

Establishment of Maine Offshore Wind Research Consortium and Preliminary Research Questions Regarding Offshore Wind Energy Development

As part of Maine’s commitment to responsible offshore wind, Governor Mills, with bipartisan support of the Legislature, established the Maine Offshore Wind Research Consortium in 2021 to better understand the impacts and opportunities of floating offshore wind projects in the Gulf of Maine. Maine is in a unique position to grow the Consortium into a flagship program on the national and international stage as it brings a diverse group of ocean users and stakeholders together to build a collective understanding to then collaboratively pursue high-priority research.

The statute directs the GEO to serve as the coordinating agency and outlines an advisory board with representation from fisheries interests, state agencies, and other stakeholders.

The Advisory Board is responsible for establishing a research strategy that at a minimum includes the following themes:

- Opportunities and challenges caused by the deployment of floating offshore wind projects to the existing uses of the Gulf of Maine;
- Methods to avoid and minimize the impact of floating offshore wind projects on ecosystems and existing uses of the Gulf of Maine; and
- Ways to realize cost efficiencies in the commercialization of floating offshore wind projects.

After holding open nominations, the GEO identified the initial board members in 2022 for the Research Consortium pursuant to PL 2021, Chapter 407, Section 2 (LD 1619). The Advisory Board includes representation from the commercial and recreational fishing industries, research scientists with relevant expertise, coastal community leaders, Maine-based

environmental groups, marine wildlife researchers, commercial offshore wind industry experts, and state agencies. The Advisory Board solicits input from state and federal agencies, stakeholders, and other ocean experts to inform research priorities and to align with related regional and national efforts. A Steering Committee comprised of the GEO, Maine Department of Marine Resources (DMR), Maine Department of Inland Fish and Wildlife (MDIFW), and two Advisory Board Co-Chairs elected by their peers (one for fisheries, one for non-fisheries) provide oversight to the Consortium. Terry Alexander, F/V Jocka, and Alison Bates, Colby College currently serve as the Co-Chairs.

The Maine Offshore Wind Research Consortium collaborates with other states and regional and national science and research partners, including the National Offshore Wind Research and Development Consortium, and the Regional Wildlife Science Collaborative, of which the GEO is a member.

The offshore wind procurement law also expanded the Consortium Advisory Board to include the Commissioner of MDIFW, or the commissioner's designee; at least one individual who is a member of one of the federally recognized Indian tribes in this State; two individuals with expertise in marine wildlife and habitats; and at least one individual with experience in commercial offshore wind power development. Since the enactment of the law, the GEO has taken steps to invite and encourage collaboration with all the statutorily directed parties, in addition to the Consortium's broad and inclusive engagement efforts. The law also allows for the Consortium's fund be used to support conservation actions and projects that support species and habitats impacted by offshore wind power development in addition to the existing research strategy.

[Research Consortium Advisory Board Members](#)

The following are current Advisory Board members.

Commercial and recreational harvesting interests

- Patrice McCarron, Maine Lobstermen's Association
- Jack Cunningham, Maine Lobstering Union Local 207
- Ben Martens, Maine Coast Fishermen's Association
- Terry Alexander*, F/V Jocka 22
- Mary Beth Tooley, O'Hara Corporation
- Chris Weiner, F/V Elizabeth Ames, American Bluefin Tuna Association
- Bob Humphrey, Sport-Ventures

*Advisory Board Co-Chair

Scientists from private and public research institutions, including multiple scientists with marine wildlife and habitat expertise

- Alison Bates*, Colby College
- Damian Brady, University of Maine
- Wing Goodale, Biodiversity Research Institute
- Nick Record, Bigelow Laboratory for Ocean Sciences
- Graham Sherwood, Gulf of Maine Research Institute
- Sean Todd, College of the Atlantic
- Anthony Viselli, University of Maine
- Gayle Zydlewski, Maine Sea Grant

*Advisory Board Co-Chair

Offshore wind industry experience

- Dave Cowan, Diamond Offshore Wind
- Wojciech Wiechowski, RWE Renewables
- Laura Morse, Invenergy
- Walt Musial, National Renewable Energy Laboratory

Coastal community representatives

- Bill Needelman, Portland Waterfront Coordinator

Maine-based environmental groups

- Jocelyn Runnebaum, The Nature Conservancy Maine
- Sarah Haggerty, Maine Audubon

State agencies

- Carl Wilson, Maine Department of Marine Resources
- John Perry, Maine Department of Inland Fish and Wildlife
- Stephanie Watson, Governor’s Energy Office

At-large

- Daniel Salerno, Fisheries Scientist, Limington, Maine

Tribes

- The GEO Director, Dan Burgess, sent formal invitations to all five tribal communities in Maine to join the Advisory Board. The GEO sent follow-up invitations to the Tribal Historic Preservation Officers and Natural Resource Officers in each tribe. Discussions with Maine’s tribal leaders regarding their participation are ongoing.

Research Consortium Planning and Governance

In February 2022, the GEO published a Request for Proposals (RFP) for independent, science-based consulting services to help plan and engage stakeholders to help design the Consortium's governance structure. The awarded bidders (Carbon Trust Advisory and Maine-based SAMBAS Consulting LLC), were contracted to provide these services, serve as advisors and meeting facilitators, and act as interim program manager through 2023. In December 2023, the GEO executed a Cooperative Agreement with the University of Maine's Sea Grant Program to serve as the Consortium's program manager and provide research expertise. The Carbon Trust Advisory and SAMBAS Consulting will provide support as Sea Grant transitions into the program manager role beginning in 2024 as well as limited expert and advisory capacity.

Process to Identify Research Questions for the Research Strategy

In 2023, the Advisory Board met in February, April, June, September, and November. All Advisory Board meetings are open to the public and provide a virtual attendance option. Meeting materials and summaries are publicly available on the Offshore Wind Meetings Archive.¹

- The agenda for the February meeting included: reviewing the goals, governance structure, and roles and responsibilities of the Research Consortium and Advisory Board, sharing updates about Maine's and regional collaborators' efforts to date on offshore wind research that included presentations from BOEM, DMR, the Responsible Offshore Science Alliance (ROSA), and the National Offshore Wind Research and Development Consortium (NOWRDC), reviewing and providing feedback on the research prioritization process, and identifying potential research topics for the Research Strategy.
- In April, the Advisory Board refined the Consortium's governance documents, heard from the Regional Wildlife Science Collaborative for Offshore Wind (RWSC) about their mission, Science Plan, upcoming Research Fund, and recent accomplishments, and worked to refine four broad research topics that had emerged during the February meeting (reduce co-use conflicts, impact on wildlife, socioeconomic impacts and community benefit, and technology development).
- The June Advisory Board meeting involved BOEM presenting an update on the Gulf of Maine commercial leasing process, and further prioritizing research topics. Advisory Board members completed a pre-meeting survey to pare down the list of 13 potential research topics to five prioritized topics and Advisory Board members worked together during the meeting to identify specific research questions for each of the five topics. Carbon Trust completed due diligence to ensure priority topics were not already being researched by other entities and to make sure the Consortium's research on any of the topics would be additive and provide the most value to Maine.

¹ <https://www.maine.gov/energy/initiatives/offshorewind/meetings-archive>

- The September meeting included updates on the marine surveying efforts associated with the [Maine Offshore Wind Research Array](#), the current status of the BOEM commercial lease process, a budget update, and an overview of the state procurement process. The Advisory Board continued the process of creating the Research Strategy (see Appendix A). The Advisory Board discussed and finalized which topics to move forward with in the first RFP. The Advisory Board considered urgency of need, data gaps and reducing uncertainty, achievability, and leveraging existing resources and data as they voted on their top priorities.
- The November meeting included updates from the GEO on the current status of the RFP (published November 8), program management updates for 2024, and the State’s comments on BOEM’s Draft WEA. The Advisory Board heard collaborator updates, including from the Responsible Offshore Development Alliance (RODA), RWSC, ROSA, NOWRDC, and the Gulf of Maine Research Institute (GMRI). Carbon Trust and two members of a delegation from the United Kingdom (UK) presented on UK offshore wind activities and potential avenues for collaboration with the Consortium. The Consortium’s progress to date was reviewed and discussions were had about the next phase of the Consortium’s efforts to meet the requirements of PL 2023 Chapter 481 (LD 1895), and how to implement the research strategy through 2024, including funding future RFPs in spring 2024 that work towards the Research Strategy.

Additional information on the Maine Offshore Wind Research Consortium is available on the GEO website [here](#).

First Round of Research Questions

On November 8, 2023, the GEO published the [first Request for Proposals](#)² that makes \$400,000 in funding available on behalf of the Consortium. The two high-priority topics from the Research Strategy identified by the Advisory Board are important to inform the planning and preconstruction phase of offshore wind development in the Gulf of Maine and are as follows:

- Exploring approaches to fisheries coexistence with floating offshore wind (max \$250,000); and
- Inventorying baseline data on socioeconomics of Maine fishing communities to help assess potential positive and negative impacts of floating offshore wind in the Gulf of Maine (max \$150,000).

The first topic aims to define what co-existence could look between the fisheries and floating offshore wind industries in the Gulf of Maine by engaging with ocean users and stakeholders to explore understandings, considerations, and definitions for marine co-existence.

² Search for RFP #202310220

Project type	Objective
Desk based and stakeholder engagement (interviews/surveys)	To set out the barriers to best practices for co-existence design for floating wind farms, with a focus on identifying and promoting technology-based solutions for co-existence.
Urgency of need	It will establish the minimum requirements administratively (regulatory), legally, technically, economically, and environmentally) to enable co-existence between floating offshore wind and the fishing industry in the Gulf of Maine.
The information collated in this project could help influence future project design. Relevant to near-term decision making as layout considerations need to be made a long time in advance of construction.	The project will explore how different offshore wind technologies could facilitate co-existence and assess the safety, commercial and cost considerations of different co-existence practices. Specific questions to explore include:
Utility of data	
This will be useful for both the Gulf of Maine and other windfarms.	<ul style="list-style-type: none"> • Baselining questions: What are the existing regulations, policies and/or guidelines for co-existence in the Gulf of Maine? What are the legal considerations for co-existence? Are there any regulatory or legal barriers to co-existence between fisheries and floating offshore wind? What needs to be considered from a project insurance perspective (e.g. buffer zone)? Are there other case studies where co-existence (e.g. co-use taking place on federally owned and leased site) has been employed, and if so, what was the process for facilitating co-existence, which decision-makers and stakeholders were involved, and what could be employed in the Gulf of Maine? • Technology, design, layout solutions: Are there any floating technology options, layout and/or standards on how arrays are designed to better accommodate current ocean uses (i.e. fishing and shipping) or future co-location (e.g. aquaculture)? • Collaboration and training: What collaboration and training for existing marine users (e.g. fisheries) and offshore wind technicians would be needed to implement successful co-existence?

Figure 2: Summary of Topic 1- Approaches to co-existence design of floating offshore wind farm layouts.

The second topic is intended to create a foundation to better understand the potential positive and negative impacts of offshore wind development within BOEM’s Draft WEA on fishing communities in Maine by creating an inventory of existing data and produce recommendations on what additional socioeconomic data collection is required to help assess potential impacts.

Project type	Objective
Desk based	This project aims to create an inventory of existing data and produce recommendations on what additional socioeconomic data collection is required on the impact of floating offshore wind development on the Maine fisheries sector. A critical analysis of socioeconomic methodologies will support future data collection (outside of this scope).
Urgency of need	Specific questions to explore include:
High relevance to other marine users (fishing communities) Socio-economic impact assessments will be conducted for individual offshore wind projects. This project will support the development of a socio-economic baseline for assessments appropriate and relevant to Maine.	<ul style="list-style-type: none"> • What data exists and what are the relevant socio-economic data gaps? • What are existing methods/frameworks for socio-economic impact assessments for fisheries and related port communities? What do these assessments entail, what data is required, what are any drawbacks, limitations, and what are the intended outputs? • How could these methods/frameworks be modified to capture potential impacts of floating offshore wind on fisheries (e.g. on fishing access to harvest areas, displacement of fishing effort into other areas already fished, transit times, cumulative impacts of multiple projects, and broader impacts on fishing ports communities)? • What data gaps will prevent us from understanding the potential impact of offshore wind development on fishing communities? What is the best method for collecting these data? For example, the extent to which surveys, participatory mapping, attitudinal interviews, open-ended oral history interviewing techniques would be useful. How best to analyze the data.
Utility of data	
There is existing research on scale and nature of Maine’s fisheries sector and there is a qualitative overview of the potential impacts of offshore wind development on this sector.	

Figure 3: Summary of Topic 2- Assessment and inventory development of socioeconomic data and methodologies related to the potential impacts from floating offshore wind on Maine fisheries in the Gulf of Maine.

The Advisory Board also identified a third research priority – collecting baseline data on benthic habitats in key areas of the Gulf of Maine. The Steering Committee decided the most cost-effective approach to collecting this high priority data is to leverage the existing resources of

the DMR and provide collaborative research opportunities with Maine fishermen through the Maine Coastal Mapping Initiative. The state will publish a competitive RFP for commercial fishing vessel support and begin benthic mapping work in spring 2024.

The Advisory Board decided to hold off on action to investigate an additional two research topics, one about assessing and minimizing wildlife risks with a focus on birds and bats and the other on understanding the risk of secondary entanglement. The Advisory Board decided it would be more resource efficient to wait until federal lease areas have been defined to narrow the area of focus of bird and bat surveys. Additionally, there are already resources being dedicated to the study of marine mammals, thus the Advisory Board will wait to review those results before pursuing independent research regarding secondary entanglement.

An RFP Review Panel will evaluate the fisheries co-existence and socioeconomic baseline inventory proposals according to the state procurement process in December 2023/January 2024 and the GEO intends to make awards in early 2024.

Research Consortium Funding

The GEO has received three, one-time allocations, each in the amount of \$1,000,000 in General Funds for FYs 2021-2022, 2022-2023, and 2023-2024, respectively, a total of \$3,000,000. The GEO is efficiently and cost-effectively deploying these funds to advance the objectives of the Consortium. To date, \$2,486,418 of these funds have been allocated or obligated to establish the Consortium with public input; to provide program management; for public education, engagement, and communications activities; and to fund research as identified by the Research Strategy. The biennial budget includes an additional \$1,000,000 that will be available to the Research Consortium at the start of the next fiscal year (July 1, 2024) and the Advisory Board is actively planning for how those funds will be spent.

As described above, the GEO published a competitive RFP for \$400,000 on November 8, 2023 for two initial priority research topics on behalf of the Consortium, which will be awarded in the first quarter of 2024. With approval from the Steering Committee, the GEO has executed an MOU with DMR to collect baseline data on benthic habitats in key areas of the Gulf of Maine, a high priority in the Consortium's Research Strategy. The most cost-effective approach to collecting this data is to leverage the existing resources of the DMR and provide collaborative research opportunities with Maine fishermen through the Maine Coastal Mapping Initiative. The State plans to publish a competitive RFP for commercial fishing vessel support and begin benthic mapping work in spring 2024.

Table 1: Tables summarizing revenue, expenses and obligations, and remaining Research Consortium funds.

Revenue	Fiscal Year 2021-2022	Fiscal Year 2022-2023	Fiscal Year 2023-24	Total
General Fund (one-time allocations)	\$1,000,000	\$1,000,000	\$1,000,000	\$3,000,000

Expenses and Obligations to Date	Total
Research and Programmatic Support	\$2,486,418

Remaining Funds	Total
Anticipated expenditures include: public education, engagement, and communications; a Spring 2024 RFP.	\$ 513,581

Under PL 2021 Chapter 407 (LD 1619), the Legislature established a non-lapsing Other Special Revenue account to support the Research Consortium. The purpose of this fund is to collect funds from external sources to advance the Research Strategy. To date, no revenue or expenses are associated with this Other Special Revenue account. The Consortium plans to actively utilize this fund with leveraged monies in the future.

Ongoing funds, likely from a variety of sources, will be needed hereafter to address operations and the remaining research priorities identified by the Advisory Board and Steering Committee, as well as future priorities to be determined to support the responsible advancement of offshore wind in the state. The state continues to identify opportunities to leverage funding from external sources (federal, private) toward shared research priorities.

In Summary, to date the GEO has received \$3,000,000 in General Funds, has allocated or obligated \$2,486,418, and has \$513,581 remaining. The GEO and Consortium Advisory Board intend to spend the remaining \$513,581 on a second RFP in FY2023-2024 to primarily advance the Research Strategy (Appendix A) as well as on public education, engagement, and communications and are planning for additional funds to be provided in the biennial budget in July 2024. Additional funds from a variety of sources will be needed to further the research priorities of the Consortium and the GEO will continue to seek federal funding and explore opportunities to leverage state funding.

Appendix A: Research Strategy

Over the course of the year, the Research Consortium Advisory Board developed a research strategy that aligns with the following themes from PL 2021 Ch 407 (LD 1619):

- A. Opportunities and challenges caused by the deployment of floating offshore wind power projects to the existing uses of the Gulf of Maine;
- B. Methods to avoid and minimize the impact of floating offshore wind power projects on ecosystems and existing uses of the Gulf of Maine; and
- C. Ways to realize cost efficiencies in the commercialization of floating offshore wind power projects.

The research strategy includes the following top five prioritized research projects supporting the themes above. The top three topics are being addressed through the first round RFP and the MOU with DMR and subsequent topics will be addressed in future RFPs and through other funding opportunities and partnerships.

1. Approaches to co-existence design of floating offshore wind farms
2. Assessment and inventory development of socioeconomic data and methodologies related to the potential impacts from floating offshore wind on Maine's fisheries sector in the Gulf of Maine
3. Collect baseline data of benthic habitats by conducting a multi-beam sensor survey
4. Understanding the risk of secondary entanglement
5. Assessing and minimizing wildlife risks with a focus on which bird/bat species are most at risk in the Gulf of Maine and effective ways to monitor/mitigate

The following is a full list of research strategy topics identified by the Advisory Board, some of which are represented above in the refined, prioritized list, and others may be explored further in the coming year:

- Collection of baseline data to inform siting and understanding of the impact of commercial and recreational fisheries and ecosystems currently and historically happening in areas where arrays and transmission are proposed or sited
- Investigate interactions of floating offshore wind at various stages (i.e. site assessment, construction, and operations and maintenance) in regards to developing an interdisciplinary understanding of change and impact over time and space on Gulf of Maine species (baseline data and site assessment to better understand species composition, distribution, and cumulative effects)
- Technology assessment/methods to reduce co-use conflicts
- Develop technologies to monitor and minimize impacts to wildlife
- Socio-economic impacts of offshore wind industry development on Maine coastal communities

- Examine potential sensory stressors (sound, vibration, EMF) on wildlife from OSW transmission infrastructure, including pre-deployment, construction and operations, and how they can be avoided or minimized
- Methods to integrate and advance wildlife deterrent and ecological monitoring technology with floating offshore wind projects to minimize impacts
- Consider methods to optimize integration of renewable energy into the grids
- Necessary preparation for Maine’s supply chain and workforce to support floating offshore wind
- Assess shoreside infrastructure and other requirements to advance industrialization of the floating supply chain
- Explore advancements in mooring and anchoring concepts for floating foundations
- Autonomous systems and validation of new technology
- Floating wind operations and maintenance approaches to reduce costs, improve safety, and increase efficiency