GOVERNOR'S Energy Office

SAMBAS Consulting LLC

Advisory Board

Maine Offshore Wind Research Consortium

Spotlight on Floating Offshore Wind Substructure Technology & Currently Funded Research

April 3, 2024

A Few Guidelines for Today

Advisory Board Members

- Practice common rules-of-the road: Please raise your hand, share the floor and respect differences of opinion.
- Please use video (if you can) and use hand-raise function (*9 on phone). We'll try to be sure we pause periodically to make sure you can participate fully but shout out if you need to or put ideas in the Chat.

Observers

- Thank you for joining, we are glad you are here. We'll answer Advisory Board questions first but try to make sure we leave time for additional questions as well.
- Please keep video off and so we can focus discussion on the Advisory Board members.
- *Mute unless speaking please (*6 on phone to unmute)*

Meeting Objectives

- Provide insight into Gulf of Maine-relevant floating offshore wind substructure technology
- Consider the decision-making process developers undertake when choosing technology
- Provide an overview of projects awarded through Research Consortium RFP#1

Meeting Agenda

2:00	**Welcome & Introductions** – *Terry Alexander, Co-Chair; Katy Bland, Maine Sea Grant*
2:05	**Presentation: Floating Offshore Wind Substructure Technology –** *Walt Musial, National Renewable Energy Laboratory*
2:45	**Q&A on Floating Offshore Wind Substructure Technology**
3:15	**Project Overview (RFP#1 Topic: Exploring Co-existence) -** *Environmental Resources Management, Gulf of Maine Research Institute*
3:35	**Project Overview (RFP#1 Topic: Socioeconomic Data Inventory) -** *Karp Strategies, Colby College*
3:55	**Wrap Up and Next Steps**
4:00	**Adjourn**

Exploring approaches to fisheries' coexistence with floating offshore wind

PRESENTED TO: ME OFFSHORE WIND RESEARCH CONSORTIUM

PRESENTED BY: ERM AND GMRI

Sustainability is our business

Introduction

Sustainability is our business

Sustainability is our business

We are the world's largest pure play sustainability consultancy

Founded in 1971, we are the largest advisory firm in the world focusing solely on sustainability, offering unparalleled depth and breadth of expertise.

We shape a sustainable future with the world's leading organizations

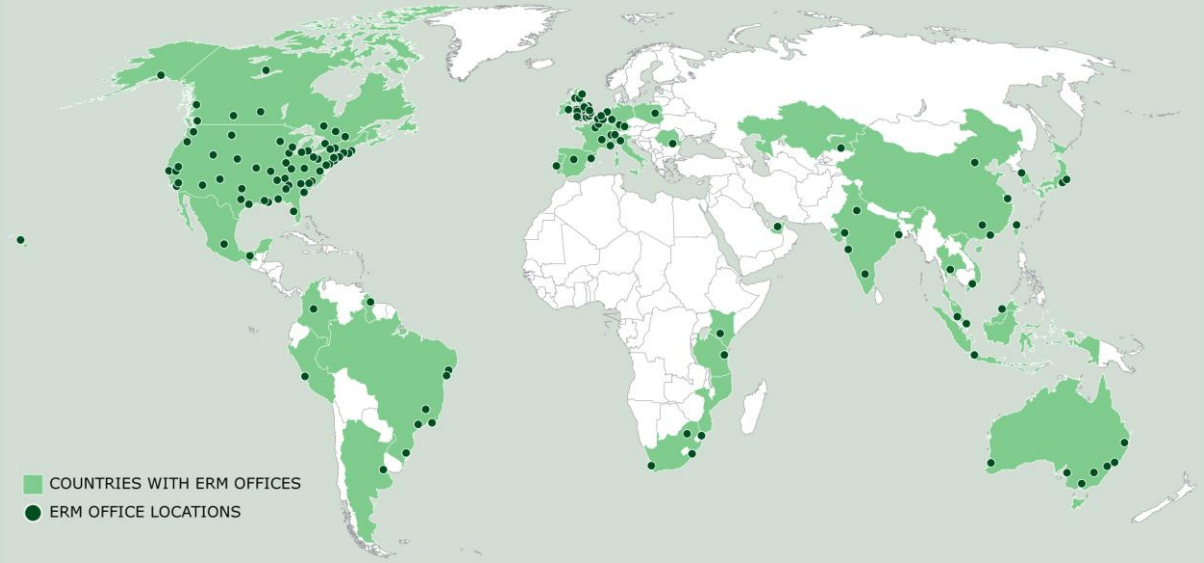
Our purpose guides everything we do. We create a better future by helping the world's biggest brands address today's sustainability imperatives.

We are the recognized market leader in sustainability services

Numerous industry benchmarks attest to our market leadership and the majority of our work is sole-sourced, reflecting trusted partnerships we build with our clients.

ERM OVERVIEW

8000+ Professionals	40 Countries & territories	**Climate change consulting Leader** Verdantix Green Quadrant 2023
150+ Offices	50+ Years of experience	#1 Sustainability service provider – HFS 2022

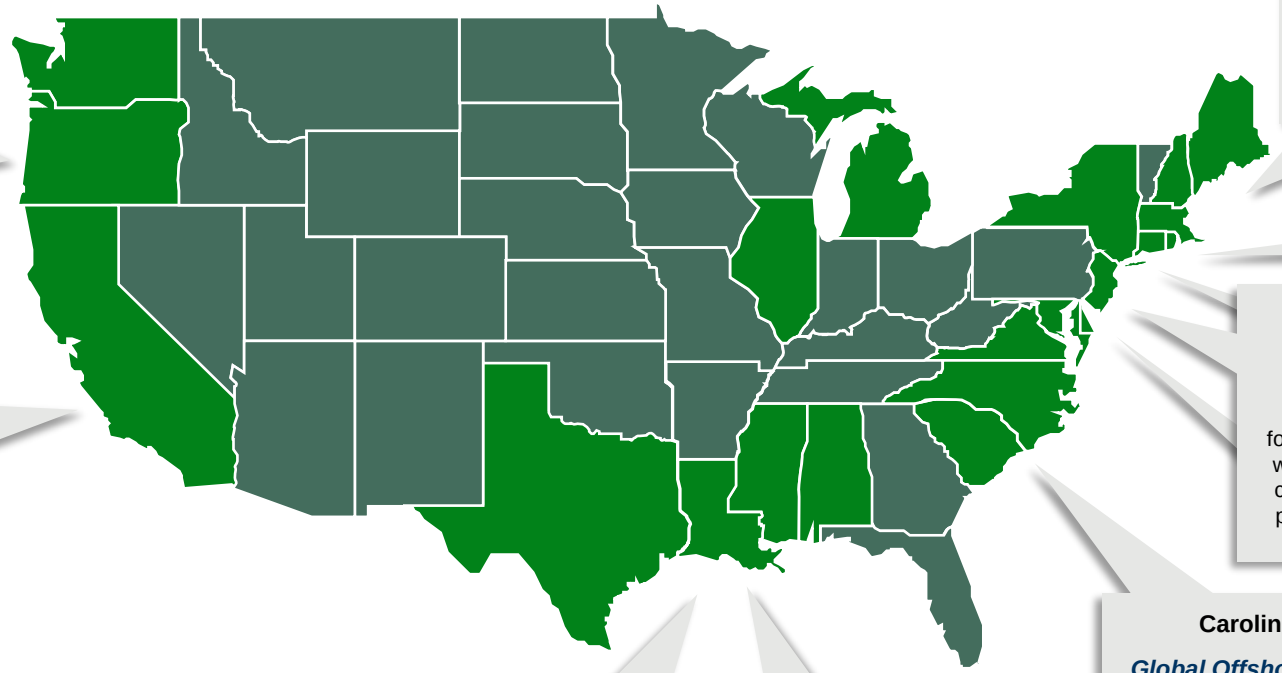


We partner with…

70%
of Fortune 100

55%
of Fortune 500

Representative OSW Experience in U.S.



Pacific Northwest

Global Offshore Energy Developer

Demand and market assessment of electricity and alternative offtake markets for West Coast entirety of West Coast.

California

Successful CA OSW Lease Winner

Extensive site characterization, risk and LCOE analysis/ranking, and market assessments to inform strategy and participation in the 2022 floating wind lease auction.

Gulf of Maine

Global Floating Wind Developer

Strategy analysis for Gulf of Maine including feasibility study, cost analysis, site characteristic analysis and offtake scenario modelling.

Massachusetts

VINEYARD WIND 1

ERM developed the EIS for Vineyard Wind 1 as BOEM's third-party NEPA contractor; also acts as developer's environmental compliance partner.

New Jersey

Regional Utility

Lease auction price forecasting, projections of winning OREC bids, and cable routing analysis in prep for New York Bight auction.

New York

NEW YORK STATE OF OPPORTUNITY. NYSERDA

Involved in development of NYS OSW Master Plan as technical consultants and section leads. Also created the Supply Chain database and supplier matchmaking forums.

Carolinas

Global Offshore Wind Developer

In-depth regional market analysis and utility assessment for route to market / offtake mechanism evaluation.

Central Atlantic

Global Offshore Energy Developer

Site characterization and in-depth route to market assessment informing market entry strategy.

Gulf of Mexico

Global Offshore Wind Developer

Site characterization and in-depth route to market assessment informing market entry strategy.

Gulf of Mexico

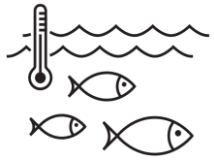
Global Offshore Wind Developer

GIS constraint analysis and recommendations on blocks to nominate in response to the RFI. Follow-up engagement analyzed RFI responses to map and understand competitive interest.

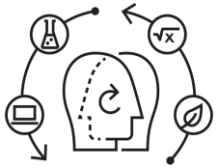
Offshore Wind Experience

Gulf of Maine Research Institute

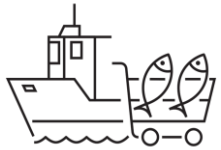
Core Capacities



Science



Education

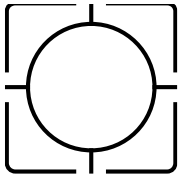


Community

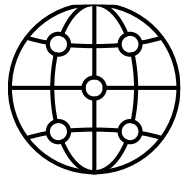
Ventures

Climate Center

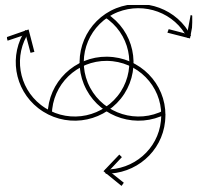
Our Principles



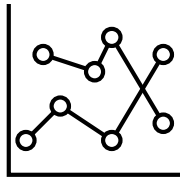
Locally Focused



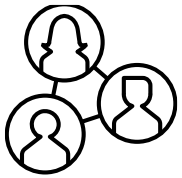
Globally Relevant



Interdisciplinary



Independent and Objective

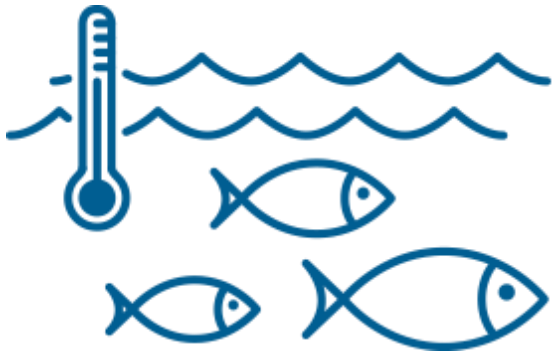


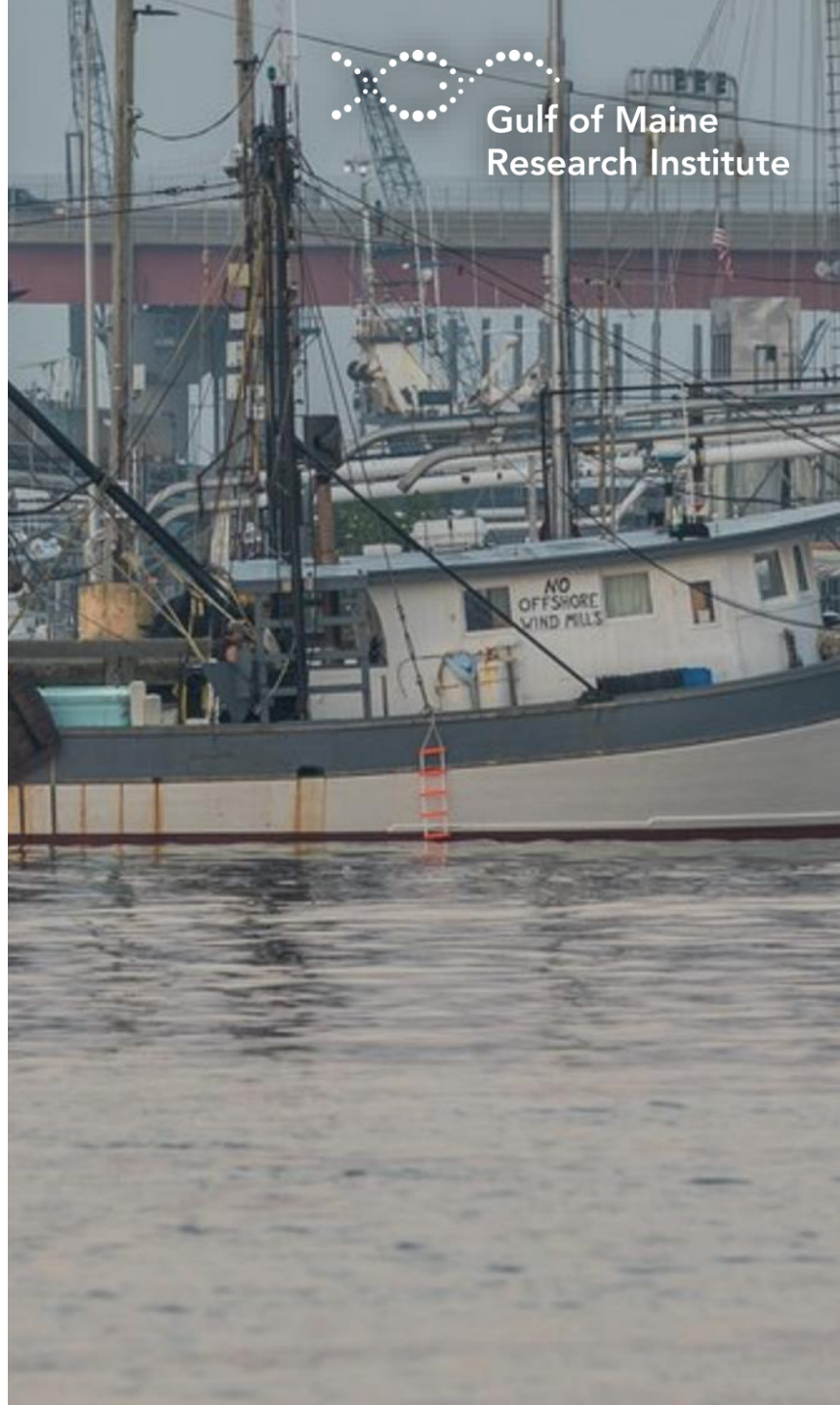
Inclusive and Collaborative

GMRI: Our Vision for Offshore Wind

A **community-centered** and **science-based approach** to floating offshore wind development in the Gulf of Maine reduces our carbon emissions, ensures a healthy ocean ecosystem, and generates economic prosperity across both the traditional seafood industry and the surrounding blue economy.

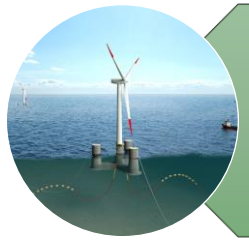
To achieve this ambitious vision, we will use our **science, engagement**, and **solutions** framework to ensure that offshore wind is on a path to being a true climate solution.





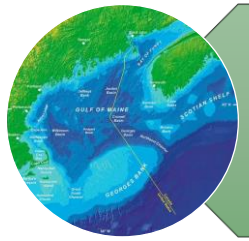
Scope of Work

Objectives



1. The study will contribute to filling key data gaps that are not being addressed elsewhere.

2. The research will build on existing resources and data for greater efficiency and immediacy of results.



3. The Project will allow the State to make sensible predictions for other regions/species/ applications/scales.

4. The Project will provide collaborative research opportunities with community members.

Project Tasks

Kickoff

Regulatory, Legal Requirement

Evaluate FOW Technology

Initial Guidelines

Report and Presentation

Define Coexistence

TASK 2 – DEFINE COEXISTENCE

EXPLORE EXISTING UNDERSTANDINGS

• Review and catalog existing relevant knowledge obtained through facilitation of BOEM stakeholder engagement meetings, port visits, virtual meetings, and phone calls with the fishing industry.

• Conduct desktop scoping regarding existing understandings, considerations, and definitions for coexistence.

• Conduct high-level socio-economic scans to supplement/test existing understandings of fisheries stakeholders.

• Coordinate with GEO on planned exploration approach and priority stakeholders (including those marginalized/vulnerable).

• Interview fishing stakeholders to further inform existing understandings of co-existence and research questions in three phases throughout project.

• Engage with agencies such as BOEM, NOAA, NMFS, and others identified through our initial research, to identify any existing definitions to ensure future alignment with federal policy.

TASK 2 – DEFINE COEXISTENCE

REFINE RESEARCH QUESTIONS AND APPROACH

- Fishermen and stakeholder input
- Collaboration with GEO
- Collaboration with the Maine Offshore Wind Research Consortium Advisory Board

Refine research questions

Identify likely scenarios to test for reaction

TASK 2 – DEFINE COEXISTENCE

IMPLEMENT ENGAGEMENT AND RESEARCH PLANS

To implement engagement and research, we will complete the following:

- Characterize current fishing operations (i.e., gear, locations, priority species, seasonality, vessels used, effort, and other relevant factors) through key informant interviews and the results of desktop research.
- Phase 1: engagement to test existing understandings and identify further research questions among fisheries stakeholders,
- Phase 2: engagement to understand interactions between the FOW technology scenarios specific to the various gear types used in the Gulf of Maine, and
- Phase 3: engagement to test draft guidelines with fishing stakeholders to consider their feedback, reactions, and opportunities for further research.

TASK 3 – REGULATORY, LEGAL, AND OTHER PROJECT REQUIREMENTS

- Review of existing knowledge relevant to FOW and global performance analyses to identify the consequences of the development of FOW on the fishing industry.
- Compile best industry practices and existing global regulations and standards to help regulators understand the potential impacts for the defined project locations and the FOW sites.
- Support identification of current best practices regarding the coexistence and sustainable fishery operation around FOW sites.
- Use European, Asian, and Australian regulations as example regulatory regimes because several offshore projects have been consented or approved using specific standards.
- Review other relevant standards for the floating offshore oil and gas industry (e.g., API RP 2T 2010), Bureau of Safety and Environmental Enforcement (BSEE), BOEM comprehensive studies, and other international regulations. We will seek NMFS and BSEE's input of the current approach and the motivation for seeking a review and alternative standards in the development area.
- Examine appropriate approaches to coexistence of industries in the region.
- Identify the technical challenges and critical parameters needed to effectively manage potential co-use conflicts to advise decision-makers on how these standards can be applied and implemented, and what site-specific analysis would be recommended.

TASK 4 – EVALUATE FOW TECHNOLOGY TO DETERMINE COMPATIBILITY

DESKTOP FISHERIES ASSESSMENT

• Key methods and gear types used to land the top 10 species by weight and/or value., differentiate between mobile (towed) gear and static gear (pots/nets).

• Commercial value of the top 10 species landed. Where possible, this will include landed value and added value following onshore processing/selling (for some species, the processed value is much greater again than landed value).

• Key target species – the top 10 species landed by weight/value will be identified and listed, along with a concise overview of any spatial/temporal trends associated with the fisheries targeting them (i.e., are any species seasonally targeted and/or specific to certain locations).

• Vessel types/sizes targeting the key fisheries in the Gulf of Maine and will comment on the overall fleet size. Commentary on fleet size will include details of whether the fleet has reduced or increased in size over the last 10 to 15 years and likely future trends (i.e., likelihood it will continue to increase/decrease in size).

TASK 4 – EVALUATE FOW TECHNOLOGY TO DETERMINE COMPATIBILITY

FOW TECHNOLOGY REVIEW

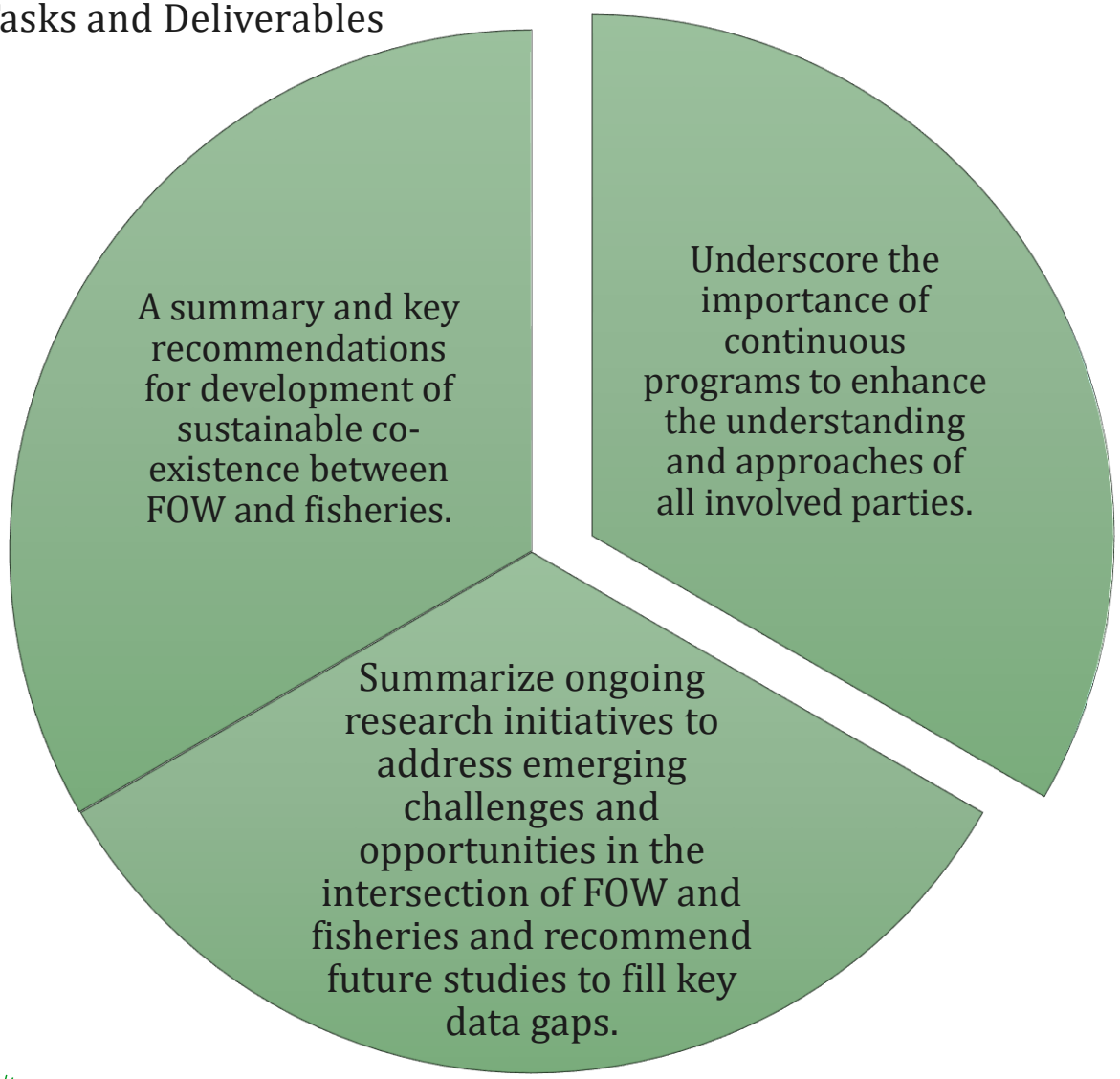
The Project Team will assess the compatibility of FOW technologies, layouts and/or designs in development against existing and future fisheries practices and equipment.

- The type of foundation: platform, mooring, and anchorage;
- The type of material considered for the concept construction;
- The technology readiness of the design (i.e., maturity of technology in preparation for commercial development); and
- The recorded activity/visibility of each concept in view of future commercial projects.

https://i.pinimg.com/originals/88/f2/40/88f240264594843c1360121c8aaca0cb.png

TASK 5 – PROVIDE INITIAL GUIDELINES

Tasks and Deliverables



TASK 6 – SUMMARY REPORT AND PRESENTATION

Final Deliverables

- Due Dec. 31st

Final presentation

- Due January 31st 2025

Final report

Thank you

Alice Sandzen

Partner in Charge

Alice.Sandzen@erm.com

Tayebeh Tajalli Bakhsh, PhD

Technical Lead, Ocean Engineer

Tayebeh.TajalliBakhsh@erm.com

Questions and Discussion

Informing Responsible Offshore Wind Development in the Gulf of Maine

Socioeconomic Data Inventory

Presentation to the Maine Offshore Wind Research Consortium | April 3rd, 2024

Maine Governor's Energy Office (GEO)
with Karp Strategies and Colby College

KARP STRATEGIES
URBAN PLANNING ADVISORS

BACKGROUND

A year ago, Maine released the **Maine Offshore Wind Roadmap**, which lays out a plan to responsibly advance offshore wind.

The State established the **Maine Offshore Wind Research Consortium** and funded **initial research projects** intended to further understand the benefits of OSW while preserving Maine's vibrant maritime heritage and fishing industry.

One of the high priority research projects is **an Inventory of baseline data on socioeconomics of Maine fishing communities.**

Before the Consortium and GEO dedicates more time and resources for further studies, it is critical that we understand **what data currently exists,** where are **gaps in our collective research**, and what are **best practices** for this socioeconomic impact analysis.

PROJECT OVERVIEW

Project Team

Lead: Maine Governor's Energy Office (GEO)

Consultants: Karp Strategies and Colby College

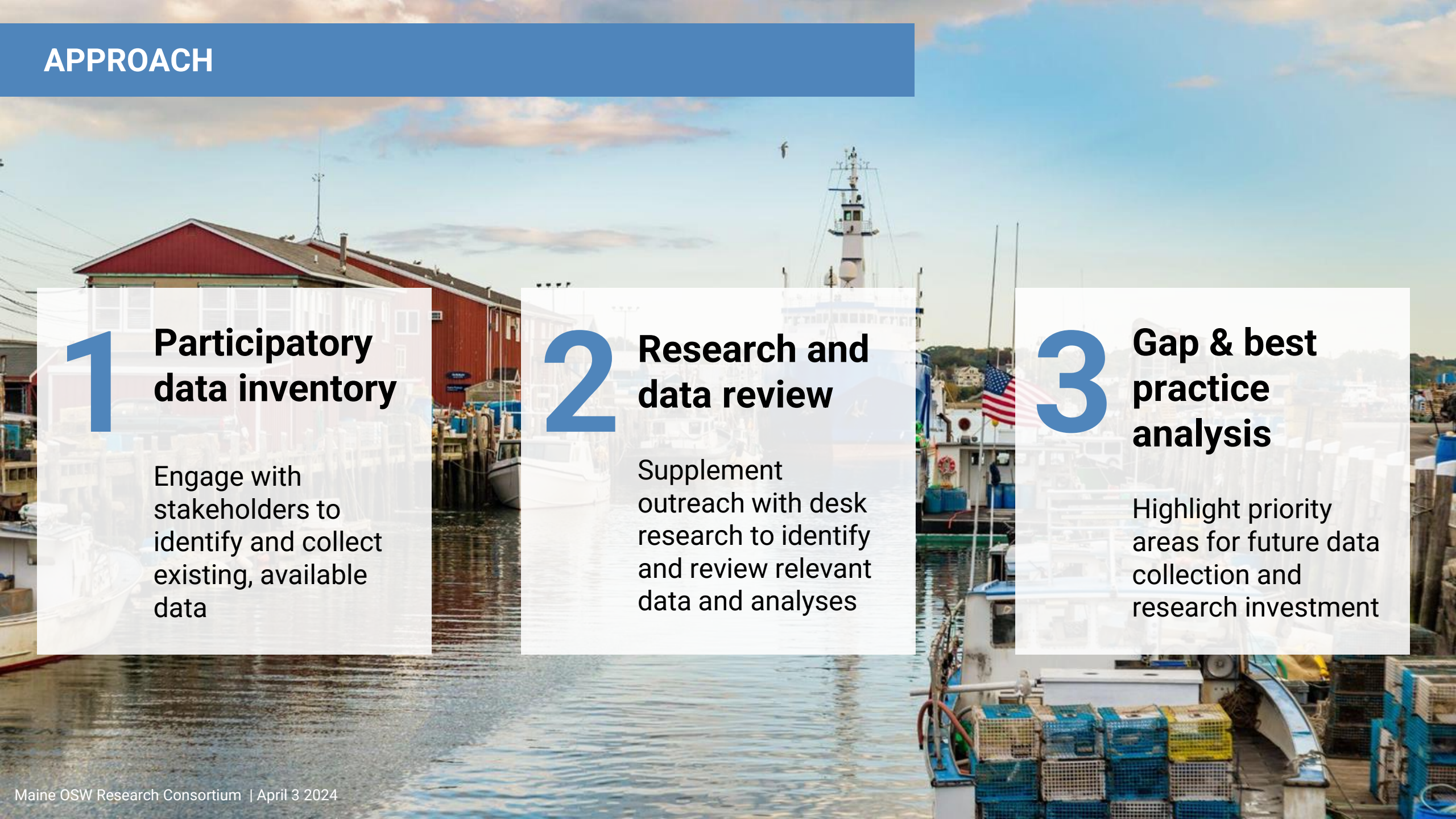
Timeline

February 2024 – July 2024

Project Objectives

- Create a **comprehensive inventory of existing socioeconomic data** (jobs, industry data, supply chain) around fishing communities and the potential impacts of OSW
- Identify gaps in data and best practices in order to develop **recommendations on where and how GEO should prioritize future studies**

APPROACH



1 Participatory data inventory

Engage with stakeholders to identify and collect existing, available data

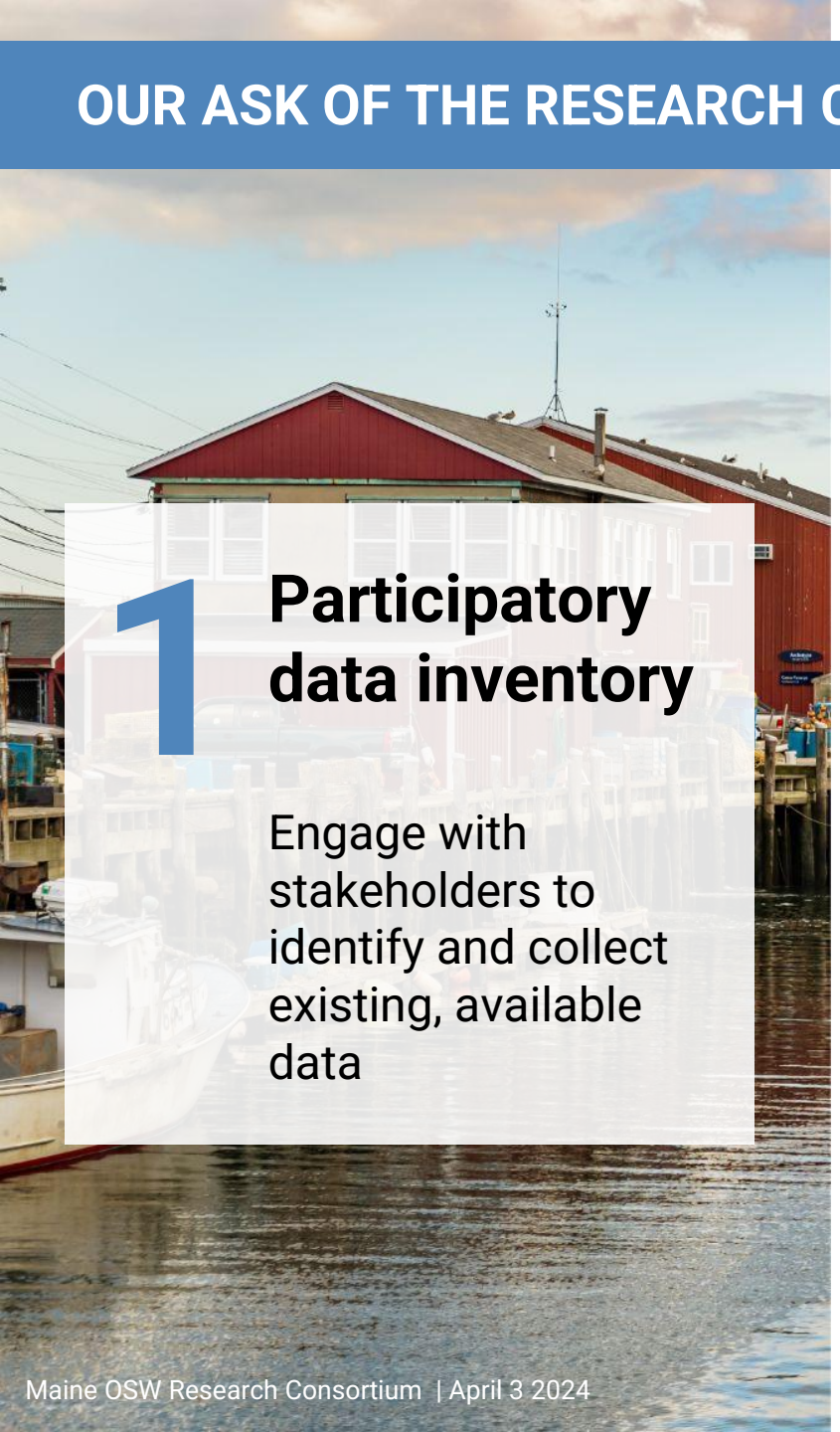
2 Research and data review

Supplement outreach with desk research to identify and review relevant data and analyses

3 Gap & best practice analysis

Highlight priority areas for future data collection and research investment

OUR ASK OF THE RESEARCH CONSORTIUM



1 Participatory data inventory

Engage with stakeholders to identify and collect existing, available data

We are asking for input from the Research Consortium to help our team **identify existing data and research** in order to establish this foundational shared knowledge and data inventory

WHAT WE ARE LOOKING FOR

What socioeconomic data is relevant to our study?

Any information that measures the qualities or well-being of Maine's fishing population and businesses.

- Social: Age, race/ethnicity, gender, language spoken, etc.
- Economic: Income, housing burden, poverty levels, etc.
- Workforce: Education attainment, unemployment, occupation, etc.
- Business: Number of employees, annual revenue, business location, etc.

Where can this data be found?

- Prior planning studies led by the state or industry stakeholders
- Academic research
- OSW project specific study or impact analysis
- Fishing industry or related industry analysis
- Studies on housing, education, health, or other topic area
- Community-led advocacy efforts
- Business membership organizations (Chambers of Commerce, merchant groups)

SURVEY LINK & NEXT STEPS

Are you aware of any data or research that might be relevant to Maine fishing communities?

- We are holding 10 minutes at the end of this meeting to complete a short survey
- We welcome any and all recommendations!
- The Consultant Team will be staying on after the meeting to answer any questions or discuss potential data leads
- After this, the Consultant Team will follow up to have more detailed conversations regarding data leads

Thank you!

Please direct any questions to:

Alison Bates, Colby College
awbates@colby.edu

Annie White, Karp Strategies
annie@karpstrategies.com

NEXT STEPS

Reminders:

- AB Membership Recruitment (Deadline April 5)
- Next meeting: May 6 in Orono (hybrid)

Next steps in Prioritization Process

- April 3 – May 6:
  - Further refine Research Question 1-pagers
  - Send to AB in advance of May 6
- May 6 (AB meeting): Recommend Research Questions to move into RFP

GOVERNOR'S Energy Office | Sea Grant MAINE | CARBON TRUST | SAMBAS Consulting LLC

Contact

Program manager: Katy Bland – katy@neracoos.org

GEO contact: Stephanie Watson - Stephanie.Watson@maine.gov

Program advisor: Laura Singer - laura@SAMBASconsulting.com

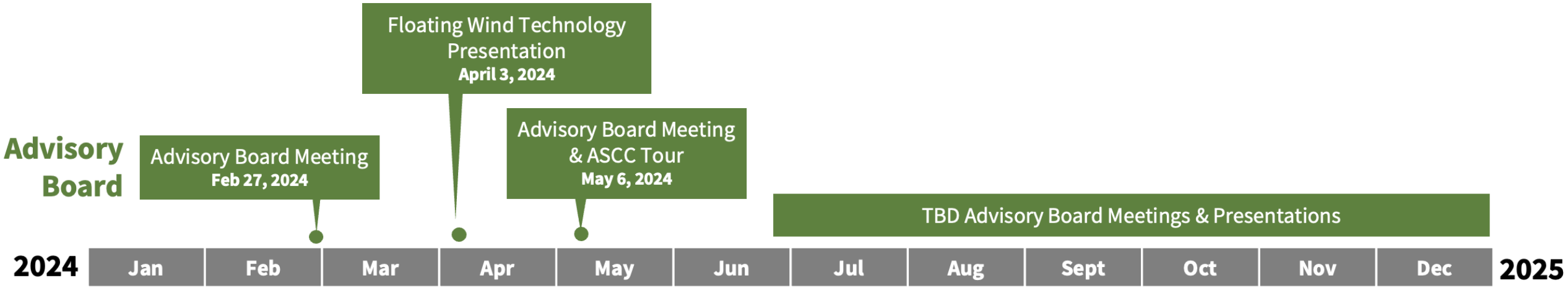
Program advisor: Olivia Burke – Olivia.i.burke@carbontrust.com

https://www.maine.gov/energy/initiatives/offshorewind/researchconsortium

Research Consortium Anticipated Timeline for 2024

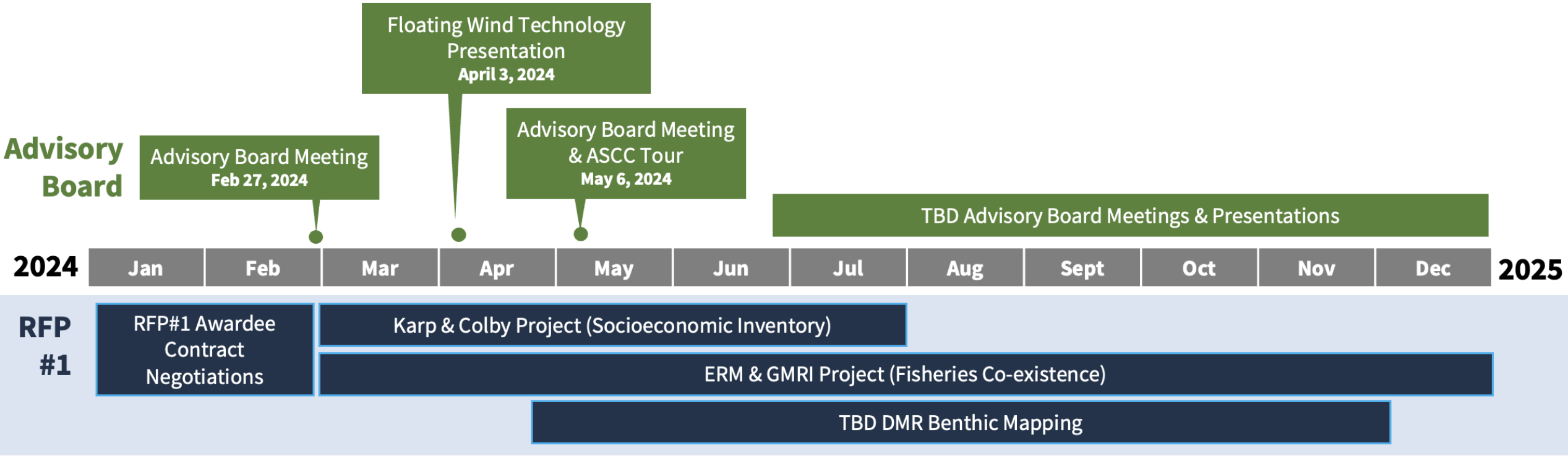
2024 Proposed Research Consortium Timeline

Timeline Updated February 26, 2024



2024 Proposed Research Consortium Timeline

Timeline Updated February 26, 2024



2024 Proposed Research Consortium Timeline

Timeline Updated February 26, 2024