Request for Information

Testing and Validation Assets for Ocean Renewable Energy

RFI OSW-2023-09

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Updated: January 11, 2024, February 2, 2024

Changes made to RFI:

The due date for this RFI has been updated from January 26, 2024, to February 2, 2024.

The due date for this RFI has been updated from February 2, 2024, to **February 9, 202**4.

1. INTRODUCTION

Purpose of this Request for Information. Through this Request for Information ("RFI"), the Massachusetts Clean Energy Technology Center ("MassCEC") seeks input and information related to existing and future needs and gaps pertaining to ocean renewable energy ("ORE")[1] testing and validation assets and sites. Stakeholders have identified high value in accessing offshore ocean testing site(s) and assets to support validation and performance testing of new technologies. To inform potential efforts to advance such resources, MassCEC requests direct input from interested parties and other stakeholders on the following:

- **Offshore and other sites/assets testing use cases**. What specific uses will different groups of stakeholders have for testing and validation assets and sites, and for which use cases will access to offshore/marine environments be important? Examples include validation of early-stage technology, performance testing of more advanced technology, provision of testing services to other organizations, academic or contract research, or some combination.
- **Specific testing needs.** Types of tests stakeholders plan to perform, their duration and frequency.

[1] ORE refers to a set of electricity generation technologies that currently includes fixed-bottom offshore wind, floating offshore wind, tidal, and wave energy.

- **Required natural conditions in ocean environment.** Water depths, wind and wave regimes, bottom types, and other current conditions.
- **Required test and validation asset features.** Equipment needs, platform design characteristics, bottom types, and location relative to facilities and ports.
- **Commercial aspects.** What facilities and services are stakeholders currently using for marine or open-water testing, if any, and under what commercial arrangements? What additional value would stakeholders derive from a purpose-designed and newly designated "pre-permitted" offshore testing and validation site? Are they willing to pay for use of the assets?

MassCEC will use information obtained through this RFI to inform decisions and actions on the feasibility, scope, siting/spatial planning, and permitting processes for potential offshore energy testing and validation resources. Elements to be considered include stated need and value proposition, range of use cases, desired site characteristics for potential locations and/or platforms for entities seeking to verify the performance of new technologies in offshore operating conditions. This information will also support related MassCEC effort to promote cataloguing and improve the visibility and networking of testing assets to help entrepreneurs and researchers access existing testing assets and service offerings.

2. WHO SHOULD RESPOND?

MassCEC is seeking information from the following types of entities:

- Ocean energy and offshore wind original equipment manufacturers ("OEMs"), Tier 1 suppliers, and others with direct business enterprises in the ocean energy sector;
- Start-up and small businesses in the ocean energy and offshore wind industry;
- Offshore wind and ocean energy developers;
- Academic and research institutions;
- Owners and operators of ORE testing and product validation assets and facilities;
- Owners and operators of existing port facilities with interest in serving an offshore testing and validation platform;
- Infrastructure investment firms, green/blue bond managers, and other persons or entities who have an interest or expertise in investing in offshore testing and validation platforms or projects; and
- Other interested parties.

Parties who desire to maintain the confidentiality of information included in their submission should clearly identify such information as "confidential". Refer to Section 6 for full notice of public disclosure.

3. BACKGROUND AND CONTEXT

For more than a decade, MassCEC has helped lead the responsible development of ocean energy and offshore wind for the Commonwealth. Advancing these industries is one of MassCEC's core focus areas, with ongoing efforts to reduce project risk, increase market confidence, and support economic development and job opportunities in Massachusetts. Examples of these efforts include initiatives to train a local and regional workforce to support the offshore wind industry, advance the growth of a mature supply chain, and support port infrastructure development.

MassCEC recently completed a business case and feasibility assessment for programs and facilities to advance the development of ORE industries in the Commonwealth. The study conducted by MassCEC's consultants, DNV Energy Insights, included interviews conducted with representatives of over thirty (30) stakeholder organizations, that identified the need for and high-value proposition of two (2) important elements in advancing the marine and science technology cluster: an ORE Innovation Center in the New Bedford area to provide business and supply chain development support services to technology startups in ORE industries, and access to offshore testing and validation assets and location(s) to support technology validation and performance testing. MassCEC has directed resources to the advancement of these projects.

As detailed in the attached prospectus (Attachment A), MassCEC is currently advancing the initial stages for the development of the ORE Innovation Center. Given the challenges and costs associated with developing offshore testing site(s) and other assets, MassCEC is seeking to better understand the testing and validation needs of interested parties and limitations or gaps in the current "market" to meet those needs. MassCEC is providing this RFI to interested parties and other stakeholders seeking input on the priority of functions to be served, testing and validation needs, design, location, and willingness to pay for use.

Through this RFI, MassCEC will also collect information on existing testing and product validation facilities currently in use by academic and research institutions, nonprofit organizations, and businesses in Massachusetts and the surrounding region. MassCEC will utilize this information to support efforts to improve access to such assets and service offerings.

4. INFORMATION REQUESTED

To economize on respondents' time, the questions below are organized so that items that do not correspond to your organization's use cases can be skipped. Responses should be submitted using the attached questionnaire (Attachment B).

IMPORTANT NOTE: The questions below are provided in an attached Word document format to facilitate responses. Please enter information for each application section and question and return a PDF version to: offshorewind@massec.com. See Section 5 below.

Response Part A. Please answer the questions in Response Part A if your organization is likely to have the following use cases for the ORE testing and validation assets and site(s).

- **Testing:** Testing technology developed or purchased by **your** organization

- **Funded Research:** Conducting research including grant or contract-funded academic and/or industry research with other companies and entities
- **Joint Industry Projects:** Conducting research for joint industry projects in a consortium with other companies and entities

Response Part B. Please answer the questions in Response Part B if your organization is likely to have the following use case for the test assets and site.

- The sale or provision of testing services or assets to other organizations

➢ If your organization is likely to use the test platform for purposes listed in both Response Parts A and B, please answer both.

Response Part C. Response Part C applies to all stakeholders. **ALL RESPONDENTS SHOULD PLEASE ANSWER THE QUESTIONS IN PART C.**

RESPONSE PART A. Answer for use cases involving testing activities for your company or organization

1. What types of equipment, systems, or processes will your company or organization need to test?
2. What types of testing and validation activities will your company or organization conduct on the equipment described above?
3. For what purposes will your company or organization use results of those tests and validation activities?
4. Is accreditation of the test facility required for your purposes?
    a. **IF YES**: To what standard is your company or organization held?
5. What types of equipment are necessary to run those tests?
6. What pieces of equipment would your company or organization typically provide for use in the testing campaign?
7. How frequently would your company or organization run the tests?
8. How long is a typical testing campaign or validation cycle?
9. What is your company or organization doing now to test and validate your company's, organization's, or vendor's equipment?

IF YOUR COMPANY OR ORGANIZATION IS CURRENTLY TESTING EQUIPMENT OR PROCESSES OR ACTIVELY PLANNING FOR SUCH TESTS, **PLEASE RESPOND TO THE FOLLOWING QUESTIONS**:

10. In what facilities is the testing being performed? Location?
11. Who is running the testing and validation process (e.g., your own staff, an outside contractor, testing center staff)?
12. Is the facility accredited?

a. **IF YES:** To which standards?

13. How much does your company or organization pay for these testing and validation services in a typical year?
14. In the past two years, have you experienced difficulties in meeting your company's testing and product validation needs due to any of the following reasons: [Please indicate YES or NO at the end of items a – c below.]
    a. Appropriate testing facilities were not available in the timeframe required.
    b. Appropriate testing facilities were available, but not accessible due to transportation and other locational issues.
    c. Appropriate testing facilities were available, but the facility fees were too high.
15. **[IF YOU ANSWERED YES TO 14a, 14b, OR 14c:]** What types of equipment or processes were you seeking to test?
16. How would access to an offshore testing and validation site(s) improve your company's or organization's prospects for success in achieving your broader mission and business goals?

Response Part B. Answer for use cases involving sale or provision of testing services to other organizations

1. What types of organizations will purchase or otherwise use the testing services your organization would provide using the offshore test platform?
2. What types of testing and validation services will your company or organization offer?
3. What types of equipment is required to provide your company or organization's testing and validation services?
4. Is your company or organization currently offering these testing and validation services?
5. How long does a typical test and validation campaign run? What is the frequency of testing offered?
6. How would access to an offshore testing and validation site improve your company's or organization's testing and validation services?

IF YOUR COMPANY OR ORGANIZATION IS CURRENTLY OFFERING THESE TESTING AND VALIDATION SERVICES, **PLEASE RESPOND TO THE FOLLOWING QUESTIONS**:

7. In what facilities is the testing or validation being performed? Location?
8. Who is running the testing and validation process (e.g., your own staff, an outside contractor, testing center staff)
    a. Is the facility accredited?
        i. **IF YES:** To which standards?

b. How much does your company or organization charge for these testing and validation services in a typical year? Please be as specific as possible, including fixed fee or price per test, set up fees, etc.

Response Part C. Platform characteristics, location, and willingness to pay (answer for all use cases)

This RFI is also seeking information on potential locations, desired characteristics, and willingness to pay for potential testing site(s) and assets in state waters. MassCEC has defined the following base-level characteristics:

- Location in state waters (preferred) or, if not feasible or adequate, in federal waters, that would be available to qualified entities to deploy and/or operate technologies for the purposes of testing, calibrating and validating in representative environments
- Need to avoid and minimize any potential adverse effects on existing resources and uses
- Access and proximity to existing port infrastructure

1. Based on your company's or organization's functional testing and validation requirements, what asset and site characteristics are necessary for ORE testing and validation?
2. Are there any unique natural conditions required for testing such as depth, current, or wind?
3. Does your company or organization prefer a specific port from which to access the testing and validation assets? Why is it a preferred port's geographic location?
    a. Are there specific port characteristics and assets that are required? (i.e., berth space, depth, laydown, cranes or lifts etc.)
4. Is there an optimal or desired distance from shore for your intended uses?
5. Are anchors and moorings needed (either at the asset location or in the vicinity) for the range of use cases under consideration?
    a. **IF YES:** For what specific purposes and at what locations?
    b. **IF YES:** How many anchors and/or moorings are needed?
    c. **IF YES:** What size, scale, and materials are needed?
6. Would a barge that could be moored at the site or stand-alone buoys/moorings add value for the range of use cases under consideration?
    a. **IF YES:** For what specific purposes?
7. What provisions for on-site power generation and supply would be useful? Would connection to onshore electric transmission or distribution grid add value for the range of use cases under consideration?

8. What on-site reference data collection would be useful, e.g., wind, wave, current, oceanographic conditions?
9. Would a LIDAR buoy or similar measurement device be useful?
    a. **IF YES:** For what specific applications?
10. Are there testing and validation site or asset attributes that have not been mentioned in this RFI that would significantly affect its value to your organization or to MassCEC's broader mission to support the development of ORE industries in the Commonwealth?
    a. **IF YES:** Please list those attributes.
11. Would your company or organization be willing to pay to use an offshore testing and validation site assuming it included the features you require for your testing needs?
    a. **IF YES**: Would your organization need to raise funds from external sources, such as government research grants, to pay for use of the testing site?
    b. **IF YES**: Based on your experience, what would you expect to pay for access to the offshore testing and validation site for a typical test or testing campaign?
    C. **IF NO,** why not?

5. HOW TO RESPOND TO THIS RFI

Please submit an electronic file of your RFI response in PDF format by **Friday, February 9, 2024 at 4:00pm** to offshorewind@masscec.com with the subject line: ***Testing and Validation Assets for Ocean Renewable Energy.***

6. NOTICE OF PUBLIC DISCLOSURE

As a public entity, MassCEC is subject to Massachusetts' Public Records Law, codified at Chapter 66 of the Massachusetts General Laws ("Public Records Law"), pursuant to which any documentary material, data, or other information submitted to MassCEC is presumed to be public records subject to disclosure unless any such information falls under the limited exemption at Massachusetts General Laws Chapter 23J, Section 2(k) or any other applicable exemption thereunder.

For purposes of the Public Records Law, "public records" include all books, papers, maps, photographs, recorded tapes, financial statements, statistical tabulations, or other documentary materials or data, regardless of physical form or characteristics, made or received by MassCEC.

In line with Public Records Law requirements, MassCEC generally considers the following types of information as confidential:

- Trade secrets; and
- Sensitive commercial or financial information regarding a company that if made public would compromise the company's competitive position in the market.

Parties who desire to maintain the confidentiality of information of this type included in their submission should clearly identify such information as "confidential". MassCEC will seek to treat such information as confidential, but reserves the right, exercisable in its sole discretion, to determine whether any information provided to MassCEC comes within the limited exceptions described above. If confidential information is submitted as part of the application and not clearly marked as confidential, such information may be made publicly available by MassCEC without further notice to the Applicant.

7. NO OBLIGATION

This RFI does not commit MassCEC to (a) issue any subsequent Request for Proposals or other solicitations, (b) award any funds or pay any costs incurred in preparing a response, or (c) procure or contract for any services or products. MassCEC will, in its sole discretion, determine what, if any, next steps might be taken. MassCEC reserves the right to cancel or modify this RFI in part or in its entirety at any time.