



Facility Reference Document

The Testing Expertise and Access for Marine Energy Research (TEAMER™) program, sponsored by the U.S. Department of Energy (DOE) and directed by the Pacific Ocean Energy Trust (POET), will accelerate that process through 2-3 annual open funding calls over each of the next three years to support developers seeking access to the nation's best facilities and expertise. Over this time, TEAMER plans to distribute approximately \$9 million through the periodic competitive opportunities (known as Requests for Technical Support, RFTSs) to support marine renewable energy (MRE) testing and development projects.

TEAMER goals are to provide:

- Access to testing infrastructure: provide device developers with access to a wide range of pre-certified facilities at minimal cost and allow for a much faster and more streamlined integration of physical testing and validation into the design process.
- Access to world-class expertise: pair technology companies with the nation's leading marine energy experts, providing assistance in the design and execution of tests and understanding the implication of results for future design iterations.
- Consistent testing protocols: implement consistent testing protocols for use in the facility network and create a repository of marine energy performance data that will serve the industry as a whole.

The TEAMER Facility Network consists of the top tier of marine energy testing and expertise facilities in the United States. All facilities listed on the TEAMER website have been approved by the TEAMER Technical Board and are able to provide testing or expertise to TEAMER applicants.

Facilities are classified into five categories:

- Numerical Modeling and Expertise
- Laboratory and Bench Testing
- Tank, Flume, Tunnel and Basin Testing
- Expertise
- Open Water Testing and Expertise

Roles and Responsibilities of TEAMER Facilities

1. Provide the TEAMER Network Director with facility information and capabilities. This information will be available on the TEAMER website and will help TEAMER applicants to identify which facility best suits their technical assistance objectives.
2. Consult with potential TEAMER applicants prior to their application for assistance. This is a required step for TEAMER applicants to ensure their technical objectives can be met at their chosen facility.
3. Complete a Letter of Response. Upon receiving applications, the TEAMER Network Director will request a Letter of Response from facility Points of Contact. Letters of Response must be completed by the Facility Point of Contact listed on the TEAMER website. If another facility staff is involved in the project, it is still required that the POC from the website has signed off on the project. The letter, which is provided to facilities as a template:
 - Ensures the facility has consulted with the applicant
 - Verifies the requested assistance is within the capabilities of the facility
 - Confirms the facility has the availability to complete the test within the RFTS period; and
 - Provides an estimated budget to the Network Director. If an applicant's RFTS is accepted, a formal budget is provided with the Test Plan.
4. Work with the applicant to complete the TEAMER Test Plan. Upon an applicant's RFTS being accepted, it is the responsibility of the facility to coordinate with the TSR to complete the Test Plan. The facility will submit the Test Plan for review. Testing or expertise may not begin until Test Plans have been reviewed and approved by the TEAMER Technical Board and NEPA approval granted. Revisions to the Test Plan may be required and will be sent to the facility when available.
5. Provide requested testing or expertise to applicant as described in the Test Plan.
6. Review applicant's Post Access Report to verify its content. Upon completion of requested assistance, the applicant is required to submit a Post Access Report highlighting the key findings of their RFTS. We request facilities provide the TEAMER Network Director with a letter verifying the report is accurate to the best of their knowledge.
7. Complete a TEAMER RFTS Survey

RFTS Budgets and Timelines

TEAMER funding goes directly to the facilities to provide access to testing and expertise. This means no funding, aside from travel stipends, goes to the applicant. As such, we do not require the applicant to provide estimates for any costs they may incur as part of the supported work.

Requests must fall within these limits:

- Numerical Modeling and Analysis – up to \$200k
- Laboratory and Bench Testing – up to \$200k
- Tank, Tunnel, Flume and Basin – up to \$200k
- Expertise – up to \$200k
- Open Water – up to \$400k

Facility Points of Contact should keep these figures in mind as they are consulting with applicants. Experience to date suggests that applications with multiple phases and types of activity push budgets beyond this proposed guidance. As one of the goals of TEAMER is to support as many RFTS's as possible, limiting the scopes to focus on specific testing needs that fall within these ranges will help achieve that goal. We realize this may not always be possible and we reserve the right to support exceptional projects outside these ranges and provide this guidance to help steer towards successful applications.

RFTS support periods for testing and expertise are up to 9 months from the approval of the Test Plan. All support should begin within 3 months of approval.

Project Scope and Allowable Activities

TEAMER support is designed to provide timely and efficient access to marine energy developers and researchers based upon their current technical needs. The TEAMER Network is available to provide testing support and expertise to test and validate technologies with the goal of making critical breakthroughs in the MRE sector. Project scopes are recommended to focus on specific technical objectives that are clearly defined in the application. Applications should clearly demonstrate how the RFTS will achieve the objective.

TEAMER support is available for a wide range of allowable activities to marine energy developers. For purposes of TEAMER, the term “marine renewable energy” means energy derived from—

- waves, tides, and currents in oceans, estuaries, and tidal areas
- free flowing water in rivers, lakes, streams, and man-made channels
- differentials in salinity and pressure gradients
- differentials in water temperature, including ocean thermal energy conversion

The term “marine renewable energy” does not include energy from any source that uses a dam, diversionary structure, or impoundment for electric power purposes

TEAMER support is not available for offshore wind technologies, however may be available for testing for components (i.e., mooring, anchors, etc.) that could be used as cross-cutting components for marine energy and offshore wind energy.

Technologies with Powering the Blue Economy applications, including Power at Sea and Resilient Coastal Communities, may apply for TEAMER support provided that marine renewable energy is integral to the support requested (e.g., general support to test an osmotic membrane that produces fresh water from seawater would be out of scope, but evaluating the durability of such a membrane under expected pressure cycles from a wave energy converter would be). Questions about the appropriateness of a potential application can be posed to the TEAMER Director at any time by emailing TEAMER@pacificoceanenergy.org.

TEAMER Agreement Process

National Laboratories (Labs) are funded through their Annual Operating Plan (AOP) with the Department of Energy (DOE). Labs will execute a CRADA agreement with the applicant prior to providing assistance activities.

Non-lab facilities, such as universities and private testing or expertise organizations, will enter an agreement, the TEAMER Master Facility Network Agreement, with the Network Director, Pacific Ocean Energy Trust. POET will provide the agreement which ensures the facility, serving as a sub-contractor to POET, agrees to the flow down requirements of their agreement with the DOE. The agreement also covers Intellectual Property requirements of TEAMER. As specific RFTS's are awarded, the agreement will be updated with specifics to that project and to include a budget for the RFTS.

Facilities are permitted, but not required, to have separate agreements (Joint Work Statements, NDA's, etc.) with the applicant if necessary to provide access to their facilities. This step is up to the facility to require or not and does not involve the Network Director.

How to Stay Up to Date

Sign up for email updates at, www.teamer-us.org. The TEAMER Network Director sends regular program updates via email blasts. More specific and targeted emails are also sent to specific groups, such as the Facility Network Points of Contact.

Follow TEAMER on social media:

- Facebook: @TEAMERprogram
- Twitter: @teamer_us

- Instagram: @teamer_us
- LinkedIn: TEAMER - Testing Expertise and Access for Marine Energy Research

The Network Director can also be reached directly at, TEAMER@pacificoceanenergy.org or by calling (503) 224-1966.

Definitions

Applicant – a marine energy developer or researcher who is apply for TEAMER support.

Technical Support Recipient (TSR) – a marine energy developer or researcher who is receiving support. The transition from applicant to TSR occurs upon acceptance of the application by the TEAMER Network Director.

Facility – name of the institution providing support to the TSR. Labs and capabilities are specific to an institution. (e.g. Facility – Stevens Institute, Lab – Davidson Laboratory)