

U.S. DEPARTMENT OF ENERGY
OFFICE OF ENERGY EFFICIENCY AND RENEWABLE ENERGY
NEPA DETERMINATION



RECIPIENT: Pacific Ocean Energy Trust

STATE: OR

PROJECT TITLE: Network Director for the TEAMER Program

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0002012	DE-EE0008895	GFO-0008895-030	G08895

Based on my review of the information concerning the proposed action, as NEPA Compliance Officer (authorized under DOE Policy 451.1), I have made the following determination:

CX, EA, EIS APPENDIX AND NUMBER:

Description:

A9 Information gathering, analysis, and dissemination	Information gathering (including, but not limited to, literature surveys, inventories, site visits, and audits), data analysis (including, but not limited to, computer modeling), document preparation (including, but not limited to, conceptual design, feasibility studies, and analytical energy supply and demand studies), and information dissemination (including, but not limited to, document publication and distribution, and classroom training and informational programs), but not including site characterization or environmental monitoring. (See also B3.1 of appendix B to this subpart.)
A11 Technical advice and assistance to organizations	Technical advice and planning assistance to international, national, state, and local organizations.
B3.6 Small-scale research and development, laboratory operations, and pilot projects	Siting, construction, modification, operation, and decommissioning of facilities for smallscale research and development projects; conventional laboratory operations (such as preparation of chemical standards and sample analysis); and small-scale pilot projects (generally less than 2 years) frequently conducted to verify a concept before demonstration actions, provided that construction or modification would be within or contiguous to a previously disturbed or developed area (where active utilities and currently used roads are readily accessible). Not included in this category are demonstration actions, meaning actions that are undertaken at a scale to show whether a technology would be viable on a larger scale and suitable for commercial deployment.
B5.15 Small-scale renewable energy research and development and pilot projects	Small-scale renewable energy research and development projects and small-scale pilot projects, provided that the projects are located within a previously disturbed or developed area. Covered actions would be in accordance with applicable requirements (such as local land use and zoning requirements) in the proposed project area and would incorporate appropriate control technologies and best management practices.

Rationale for determination:

The U.S. Department of Energy (DOE) is proposing to provide funding to the Pacific Ocean Energy Trust (POET) to administer the Testing and Access for Marine Energy Research (TEAMER) program. POET would collaborate with a Technical Board (TB) which would include representatives from DOE, DOE National Laboratories, and National Marine Renewable Energy Centers. The primary objective of TEAMER is to provide marine energy (ME) technology developers access to a network of facilities within the U.S. which provide testing and modeling assistance for ME technologies. Developers would apply for assistance through a competitive process.

DOE previously completed NEPA reviews which apply to all tasks. However, under Subtask 3.3.1, POET would conduct periodic rounds of funding, specifically identifying facilities offering assistance for which developers could apply. Applications would be reviewed and selected by POET and the TB. Prior to releasing funds to support any selected application, each application would be subject to NEPA review. Applications would include scope of work, where work would be completed, and who would be responsible for completing work (including assistance provided by TEAMER facilities.)

For this review, POET has identified 11 Technical Support Recipients (TSRs) to receive support through the TEAMER program:

1. Alliance for Sustainable Energy (ASE)

For this project, ASE would receive technical assistance from the University of Massachusetts, Amherst. Support activities would include generating an open-source dataset related to added-mass effect of marine turbines using wave-basin data. A series of forced oscillation experiments for selected airfoil sections would be conducted. Data would be made publicly available after project completion.

2. CalWave Power Technologies, Inc. (CalWave)

For this project, Calwave would receive technical assistance from the American Bureau of Shipping (ABS). Support activities would include continuation of the New Technology Qualification (NTQ) process for prototype validation. The review would include engineering design documentation, numerical modelling, multiple rounds of wave tank testing and power take-off (PTO) bench testing, anchoring and mooring design, and creation of operations/logistics planning documents.

3. CalWave

For this project, CalWave would receive technical assistance from the University of Maine. Support activities would include conducting a 10-day wave tank testing campaign. A 1:20 scale device model would be used to approximate final design for a system to be deployed at PacWave South. The dataset generated would be used to validate load and performance estimates and serve as a final tank testing comparison for future operations at PacWave South.

4. Columbia Power Technologies, Inc. (C-Power)

For this project, C-Power would receive technical assistance from Cardinal Engineering (CE). Support activities would include investigating best design practices to integrate a novel segmented, direct drive permanent magnet generator into a utility-scale wave power system. CE would be responsible for structural analysis and design optimization, identifying, implementing, and documenting design practices to achieve successful integration, and assessing the structural mass and manufacturing cost impacts on affected structures.

5. Cornell University (CU)

For this project, CU would receive technical assistance from Oregon State University (OSU). Support activities would include testing a wave energy converter (WEC) array. CU has multiple scaled prototypes of heaving point absorbers and oscillating surge WECs. OSU would use their directional wave basin to test these prototypes in varying array configurations. Wake effects, body motion, and benefits of heterogeneous arrays would be analyzed.

6. Equinox Ocean Turbines (EOT)

For this project, EOT would receive technical assistance from the National Renewable Energy Laboratory (NREL). Support activities would include modeling optimization of a two-stage turbine design. Existing models can give estimates of performance, but do not capture the complex interactions between the main rotor and tip turbines. NREL would modify and tune available mid-fidelity modeling tools like OpenFAST to create a modeling approach that captures interactions between the two turbine stages.

7. Neowave Energy (NE)

For this project, NE would receive technical assistance from a WEC-Sim facility. Support activities would include development of a reliable and accurate numerical wave-to-wire model of a point absorber WEC designed by NE. The WEC-Sim facility would conduct an initial assessment of existing work done by NE, build an initial WEC-Sim model including only linear dynamics, implement advanced PTO dynamics and a feedback control system, analyze results, and complete a final report and tech transfer.

8. North Carolina State University (NCSU)

For this project, NCSU would receive technical assistance from the Navy Surface Warfare Center Carderock Division (NSWCCD). Support activities would include testing prototype tethered coaxial turbines in the NSWCCD deep water tow basin to demonstrate control of the turbine's operation to maximize power output.

9. Tide Mill Institute (TMI)

For this project, TMI would receive technical assistance from the Pacific Northwest National Laboratory (PNNL). Support activities would include an evaluation of tidal instream resources along the Maine coast that are suitable for community scale tidal power generation. PNNL would compile all data necessary for model grid development, setup, and validation, develop a high-resolution 3D tidal hydrodynamic model for the coast of Maine, conduct model simulations and validation, conduct tidal energy extraction simulations for hypothetical tidal turbine farms, perform model results analysis, make recommendations for pilot study sites, and produce reports to make data available to the public.

10. University of Alaska Fairbanks (UAF)

For this project, UAF would receive technical assistance from ETA International, Inc. Support activities would include performing long duration axial and torsional stress testing on a torsional cable test article provided by UAF. The data collected would provide insight on the evolution of torsional cable stiffness over accumulated cycles and enable validation of cable structural models.

11. Water Bros Desalination, LLC (WBD)

For this project, WBD would receive technical assistance from Oregon State University (OSU). Support activities would include validation of hydrodynamic and energy conversion models and simulations with high-accuracy data collection through wave tank testing. OSU would implement testing, including preparing the wave basin, set-up,

survey, and calibration of instrumentation, assisting with the design and instrumentation plan and the test plan, deployment of devices, running prescribed wave conditions, recording measured data, performing data post-processing, and uploading and backup of data.

All TSRs would receive support from one or more facilities within the TEAMER facility network. Prior to admitting a new facility into the network, the facility and its capabilities would be reviewed by POET and the TB. All selections of additional facilities, facility capabilities (i.e., type of support offered,) activities, and TSRs would be subject to additional NEPA review.

DOE has considered the scale, duration, and nature of proposed activities to determine potential impacts on resources, including those of an ecological, historical, cultural, and socioeconomic nature. DOE does not anticipate impacts on these resources which would be considered significant or require DOE to consult with other agencies or stakeholders.

Any work proposed to be conducted at a federal facility may be subject to additional NEPA review by the cognizant federal official and must meet the applicable health and safety requirements of the facility.

NEPA PROVISION

DOE has made a conditional NEPA determination.

The NEPA Determination applies to the following Topic Areas, Budget Periods, and/or tasks:

All tasks are approved; however, selection of additional facilities, new activities, and Technical Support Recipients (TSRs) are subject to additional NEPA review.

The following TSRs are approved to receive technical support for activities proposed in the applications that were part of this review:

1. Alliance for Sustainable Energy
2. CalWave Power Technologies, Inc.
3. CalWave Power Technologies, Inc.
4. Columbia Power Technologies, Inc.
5. Cornell University
6. Equinox Ocean Turbines
7. Neowave Energy
8. North Carolina State University
9. Tide Mill Institute
10. University of Alaska Fairbanks
11. Water Bros Desalination, LLC

The NEPA Determination does not apply to the following Topic Area, Budget Periods, and/or tasks:

Selections of additional facilities, new activities, and TSRs. Such additions are subject to additional NEPA review. All technical support activities must be completed by pre-approved facilities and must be the type of work which a signed NEPA Determination applies to.

Notes:

Water Power Technologies Office (WPTO)
NEPA review completed by Melissa Parker, 07/17/24

FOR CATEGORICAL EXCLUSION DETERMINATIONS

The proposed action (or the part of the proposal defined in the Rationale above) fits within a class of actions that is listed in Appendix A or B to 10 CFR Part 1021, Subpart D. To fit within the classes of actions listed in 10 CFR Part 1021, Subpart D, Appendix B, a proposal must be one that would not: (1) threaten a violation of applicable statutory, regulatory, or permit requirements for environment, safety, and health, or similar requirements of DOE or Executive Orders; (2) require siting and construction or major expansion of waste storage, disposal, recovery, or treatment facilities (including incinerators), but the proposal may include categorically excluded waste storage, disposal, recovery, or treatment actions or facilities; (3) disturb hazardous substances, pollutants, contaminants, or CERCLA-excluded petroleum and natural gas products that preexist in the environment such that there would be uncontrolled or unpermitted releases; (4) have the potential to cause significant impacts on environmentally sensitive resources, including, but not limited to, those listed in paragraph B(4) of 10 CFR Part 1021, Subpart D, Appendix B; (5)

involve genetically engineered organisms, synthetic biology, governmentally designated noxious weeds, or invasive species, unless the proposed activity would be contained or confined in a manner designed and operated to prevent unauthorized release into the environment and conducted in accordance with applicable requirements, such as those listed in paragraph B(5) of 10 CFR Part 1021, Subpart D, Appendix B.

There are no extraordinary circumstances related to the proposed action that may affect the significance of the environmental effects of the proposal.

The proposed action has not been segmented to meet the definition of a categorical exclusion. This proposal is not connected to other actions with potentially significant impacts (40 CFR 1508.25(a)(1)), is not related to other actions with individually insignificant but cumulatively significant impacts (40 CFR 1508.27(b)(7)), and is not precluded by 40 CFR 1506.1 or 10 CFR 1021.211 concerning limitations on actions during preparation of an environmental impact statement.

A portion of the proposed action is categorically excluded from further NEPA review. The NEPA Provision identifies Topic Areas, Budget Periods, tasks, and/or subtasks that are subject to additional NEPA review.

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature:  _____ Date: 7/18/2024
NEPA Compliance Officer

FIELD OFFICE MANAGER DETERMINATION

- Field Office Manager review not required
- Field Office Manager review required

BASED ON MY REVIEW I CONCUR WITH THE DETERMINATION OF THE NCO :

Field Office Manager's Signature: _____ Date: _____
Field Office Manager