

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



RECIPIENT: Littoral Power Systems, Inc.

STATE: MA

PROJECT TITLE : XCT System for Harvesting In-Current Hydrokinetic Energy from Low-Velocity Sites

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0001837	DE-EE0008628	GFO-0008628-004	G08628

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.)

**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.

**B5.25 Small-scale renewable energy research and development and pilot projects in aquatic environments**

Small-scale renewable energy research and development projects and small-scale pilot projects located in aquatic environments. Activities would be in accordance with, where applicable, an approved spill prevention, control, and response plan, and would incorporate appropriate control technologies and best management practices. Covered actions would not occur (1) within areas of hazardous natural bottom conditions or (2) within the boundary of an established marine sanctuary or wildlife refuge, a governmentally proposed marine sanctuary or wildlife refuge, or a governmentally recognized area of high biological sensitivity, unless authorized by the agency responsible for such refuge, sanctuary, or area (or after consultation with the responsible agency, if no authorization is required). If the proposed activities would occur outside such refuge, sanctuary, or area and if the activities would have the potential to cause impacts within such refuge, sanctuary, or area, then the responsible agency shall be consulted in order to determine whether authorization is required and whether such activities would have the potential to cause significant impacts on such refuge, sanctuary, or area. Areas of high biological sensitivity include, but are not limited to, areas of known ecological importance, whale and marine mammal mating and calving/pupping areas, and fish and invertebrate spawning and nursery areas recognized as being limited or unique and vulnerable to perturbation; these areas can occur in bays, estuaries, near shore, and far offshore, and may vary seasonally. No permanent facilities or devices would be constructed or installed. Covered actions do not include drilling of resource exploration or extraction wells, use of large-scale vibratory coring techniques, or seismic activities other than passive techniques.

Rationale for determination:

The U.S. Department of Energy (DOE) is proposing to provide funding to Littoral Power Systems, Inc. (LPS) to design, fabricate, and test a turbine device for tidal energy conversion applications. Tests would include laboratory and open water tests.

DOE previously completed three NEPA Determinations (ND) (GFO-0008628, A9/B3.6, 03/22/2019; GFO-0008628-002, A9/B3.6, 07/22/2020; GFO-0008628-003, A9/B3.6, 03/25/2021), which applied to all award activities except those associated with Subtasks 8.3 and 9.2 through 9.5. The purpose of this review (GFO-0008628-004) is to review the remaining activities.

The remaining activities associated with Subtasks 8.3 and 9.2 through 9.5 would involve laboratory and open-water testing of the device and post-testing activities. Approximately two weeks of laboratory tests would occur in the existing flume at Alden Research Laboratory, LLC (ARL) (Holden, MA). Open water tests would be conducted at the Bourne Tidal Test Site (BTTS) (41.742679, -70.614454) in the Cape Cod Canal (Bourne, MA). The mounting arm at

BTTTS would be modified prior to testing of the device in order to accommodate the device and proposed tests. Modifications would include the removal of a five-foot section of the arm which would be split and affixed to separate mounting plates. The two resulting segments would be interchangeable segments to be used for tests at BTTTS. After transporting the turbine to BTTTS from ARL, tests at BTTTS would be completed over approximately ten to fifty days. Post-testing activities would include decommissioning of the turbine and analyzing data acquired during the test campaign.

All facilities at project locations are preexisting purpose-built facilities for the type of work to be conducted for this award. Award activities would involve typical hazards associated with welding and an open water deployment of an energy converter, including burns, slipping, drowning, collisions, shock, electrocution, and traumatic injury associated with operating vessels and heavy equipment. Existing corporate health, safety, and environmental policies and procedures would be followed at all facilities, including: personnel training, proper personal protective equipment (PPE), engineering controls, monitoring, and internal assessments.

DOE completed informal consultation with the National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (FWS) per Section 7 of the Endangered Species Act (ESA) to determine potential impacts on federally listed species and critical habitats. DOE received letters of concurrence (LOC) from NMFS (08/10/2022) and FWS (09/09/2022) stating their concurrence that the award activities would not likely adversely affect listed species or critical habitats.

DOE has considered potential impacts on resources, including those of an ecological, historical, cultural, and socioeconomic nature. DOE does not anticipate adverse impacts on these resources.

## NEPA PROVISION

DOE has made a final NEPA determination.

Notes:

Water Power Technologies Office (WPTO)  
NEPA review completed by Dan Cahill, 09/12/2022.

## 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.

The proposed action is categorically excluded from further NEPA review.

## SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature:



Signed By: Casey Strickland

NEPA Compliance Officer

Date: 9/12/2022

**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: \_\_\_\_\_  
Field Office Manager

Date: \_\_\_\_\_