

PMC-ND

(1.08.09.13)

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



RECIPIENT: ORPC Maine, LLC

STATE: ME

PROJECT TITLE: Advanced TidGen Power System

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0001418	DE-EE0007820	GFO-0007820-004	GO7820

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.

B5.15 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 Ocean Renewable Power Company (ORPC) to design, develop, and demonstrate a commercially viable tidal power system. The project would seek to improve the hydrodynamic and fatigue performance of the turbine, as compared to existing technologies.

The proposed project is divided into three Budget Periods (BP), with a Go/No Go decision point between each BP. DOE previously completed two NEPA reviews for BP1 (GFO-0007820-001 CX A9 and B3.6, 11/29/2016; and GFO-0007820-002 CX A9 and B3.16, 10/26/2017) and one NEPA review for Tasks 8, 9 and 14 of BP2 (GFO-0007820-002 CX A9 and B3.16, 07/26/2018). This NEPA review is for the remaining BP2 tasks (Tasks 10 – 13). Budget Period 3 will be reviewed at a future date, if a 'Go' decision is reached upon completion of Budget Period 2 activities.

Tasks 10 and 11 would involve deployment and testing activities in Cobscook Bay, Maine. Testing would occur in an area offshore of Eastport and Lubec, Maine, located between Seward Neck and Goose Island. Work would be conducted utilizing an installation vessel, approximately 27 meters by 11 meters which would contain cranes, and a support vessel, a much smaller 12 by 4 meter observation boat.

Testing would include three different activities:

- 1) Installation of anchors and mooring lines,
- 2) Short-term field testing of buoyancy pod and chassis, and
- 3) Short-term field testing of a single turbine and fairing set.

Installation of two anchors would utilize a remote operated undersea vehicle, essentially a large drill rig. This vehicle would be approximately 5 meters square at the base and extend to a height of 7 meters. This vehicle would then be used to install anchors into the sea floor. Each anchor would be approximately 2.5 meters long and 0.3 meters in width. Approximately 2 meters of the length of the anchor would be embedded into the sea floor. Mooring lines would be pre-connected to each of the anchors and utilized during the subsequent tests. Anchor installation would occur over an approximate 9 day period.

A short term field test of the buoyancy pod and chassis would also be conducted. The pod and chassis would be approximately 10 meters in length. The chassis would be a metal bar type structure upon which turbines would be mounted. Above the chassis would be a buoyancy pod (a float). The chassis and pod would be connected to the anchors via chain and rope mooring systems. The chassis and pod system would be tested for approximately 3 weeks to determine load and range of motion.

Finally a short term field test of a single turbine and fairing would be conducted. The turbine and fairing would be approximately 5 meters in length and 2 meters in diameter and would be attached to the chassis. A generator would also be attached to the chassis and turbine. The turbine would be tested for approximately 35 days. During testing the turbine would rotate and the system would move off vertical based on the tides. The turbine would rotate at up to 100 RPMs, and the system would move off vertical by up to 30 degrees.

After testing all equipment would be removed and anchors would be removed or cut off. All deployment and removal would utilize the two work vessels described above. During all phases of deployment and testing ORPC would adhere to National Marine Fisheries Service (NMFS) Best Management Practices (BMPs).

Anchor deployment and testing would occur in Cobsock Bay. Twelve Endangered Species Act listed marine species could occur in the proposed project area. These are: Shortnose Sturgeon, Atlantic Sturgeon (multiple Distinct Population Segments (DPSs)), Atlantic Salmon (Gulf of Maine DPS), Green Sea Turtle (N Atlantic DPS), Kemp's Ridley Sea Turtle, Leatherback Sea Turtle, Loggerhead Sea Turtle (NW Atlantic DPS), Sei Whale, Fin Whale, North Atlantic Right Whale, Sperm Whale, and Humpback Whale. The proposed project activities would have the potential to impact these listed species. As such, DOE completed a Biological Evaluation of the proposed work and determined that the proposed activities may effect, but would not likely adversely affect (NLAA) the listed species. On June 24 2021, DOE engaged in informal consultation with the National Marine Fisheries Service and requested concurrence on that determination. On August 25, 2021 NMFS concurred with the DOE determination (concurrence received via email on that date and included a letter of concurrence dated August 11, 2021).

In Task 12 ORPC would utilize data gathered to refine system designs. In Task 13 ORPC would continue certification activities by presenting to DNV-GL comprehensive design assessment, independent loads analysis, manufacturing survey, and test plan review to be performed in accordance to requirements in DNVGL-SE-0163 and DNVGL-ST-0164. Work in these tasks would be limited to information gathering and data analysis.

Any health and safety risks associated with the activities carried out under the tasks reviewed here would be mitigated by adherence to all relevant corporate health and safety policies and protocols. These include employee training, the use of proper protective equipment, monitoring, and internal assessments, and adherence to NMFS BMPs.

NEPA PROVISION

DOE has made a conditional NEPA determination.

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

Budget Period One
Budget Period Two

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

Budget Period Three

Notes:

Water Power Technologies Office
This NEPA determination does require a tailored NEPA provision.
Review completed by Roak Parker, 08/25/2021

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: _____

 Electronically
Signed By: **Roak Parker**
NEPA Compliance Officer

Date: 8/26/2021

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: _____