

PMC-ND
(1.08.09.13)

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



RECIPIENT: Atargis Energy Corporation

STATE: CO

**PROJECT
TITLE:** Cycloidal Wave Energy Converter

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0001837	DE-EE0008626	GFO-0008626-001	

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.

Rationale for determination:

The U.S. Department of Energy (DOE) is proposing to provide funding to Atargis Energy Corporation (Atargis) to design, develop, and test a novel wave energy converter (WEC). Computer modeling would be performed to simulate performance of the device. A scaled model would also be developed and subjected to wave tank testing. The testing would seek to verify simulation modeling and expected conditions in the open ocean. The project would be completed over two Budget Periods (BPs), with a Go/No-Go Decision Point in between each BP.

This NEPA applies to BP1 activities. BP2 activities involve wave tank testing at a location that has not yet been selected by the Recipient. Selection of the testing location would be performed as part of BP1. Because BP2 tasks are not fully defined, there is not enough information available to meaningfully complete NEPA review on these activities. Accordingly, BP2 tasks are restricted until further NEPA review is completed. Additional NEPA review will be completed by DOE once the research study plan is approved by DOE, and all necessary information associated with BP2 activities has been provided by the Recipient.

BP1 activities would focus on design work, performance modeling, and component design, assembly, and testing. Strategies for BP2 testing, fabrication, and project management would also be outlined in planning documents. Proposed project activities would include the following:

Task 1 would consist of the mechanical design of a 1:20 scale WEC prototype (3m x 0.6m). Task work would include component selection, supplier selection, structural design work, and computer aided design (CAD) modeling.

Task 2 would be ongoing throughout the project. The task would consist of recurring computer analysis/simulations of system components, materials, and controls as the WEC prototype is developed.

Task 3 would involve the design, assembly, and testing of two WEC prototype system components: a leg jacking mechanism and a mooring latch. Sensors and actuators would also be used to integrate the two components with

feedback control software. This would be used to test data flow and sensor performance. Integration testing would also be performed in a small wave tank (4.5 m long x 0.5 m wide x 0.3 m deep) using an existing, smaller-scale WEC prototype (1:100).

Task 4 would consist of numerical modeling to predict/simulate wave tank tests and guide structural design of the prototype. Control algorithms would also be developed and tested using the existing 1:100 scale WEC prototype in the small wave tank, discussed in Task 3.

Tasks 5 - 8 would involve the development of various planning documents for BP2 activities. These would include a fabrication plan, installation operation & maintenance plan, a risk management plan, and a testing plan. A testing facility would also be selected as part of Task 6.

All project activities would be performed by Atargis at an existing, purpose built facility in Pueblo, CO. No physical modifications to existing facilities, ground disturbing activities, or changes in the use, mission, or operation of existing facilities would be required for this project. Likewise, no additional permits or authorizations would need to be obtained.

The project would involve the use and handling of hazardous materials, including metals and industrial solvents, as well as hand and power tools for the assembly of component parts. All such handling would be performed indoors, in controlled environments. Risks associated with the handling of these materials would be mitigated through adherence to established health and safety policies and procedures. Protocols would include employee training, proper protective equipment, engineering controls, monitoring, and internal assessments. Atargis would observe all applicable Federal, state, and local health, safety, and environmental regulations.

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 1

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

Budget Period 2

Notes:

Water Power Technologies Office

This NEPA determination requires a tailored NEPA provision.

Review completed by Jonathan Hartman, 07/18/2019

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: Kristin Kerwin** Date: **7/19/2019**
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