

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



RECIPIENT: [Oneka Technologies US Inc.](#)

STATE: FL

PROJECT TITLE : [Oneka Icecube - Emergency Relief Wave-Powered Desalination](#)

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0002793	DE-EE0010979	GFO-0010979-001	GO10979

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.

B3.16 Research activities in aquatic environments

Small-scale, temporary surveying, site characterization, and research activities in aquatic environments, limited to: (a) Acquisition of rights-of-way, easements, and temporary use permits; (b) Installation, operation, and removal of passive scientific measurement devices, including, but not limited to, antennae, tide gauges, flow testing equipment for existing wells, weighted hydrophones, salinity measurement devices, and water quality measurement devices; (c) Natural resource inventories, data and sample collection, environmental monitoring, and basic and applied research, excluding (1) large-scale vibratory coring techniques and (2) seismic activities other than passive techniques; and (d) Surveying and mapping. These activities would be conducted in accordance with, where applicable, an approved spill prevention, control, and response plan and would incorporate appropriate control technologies and best management practices. None of the activities listed above would occur 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.

Rationale for determination:

The U.S. Department of Energy (DOE) is proposing to provide federal funding to Oneka Technologies US Inc. (Oneka) to continue the development of a small scale and rapidly deployable wave-powered desalination buoy (IceCube). The proposed project activities would occur over two Budget Periods (BPs) with a Go/No-Go decision point between the two BPs. Activities in BP1 would include deployment of the existing IceCube device to establish a baseline of its reliability performance and the design, fabrication, and open water testing of an improved IceCube device (Prototype 1). Activities would also include installation of one weather buoy for data collection (Spotter buoy). Activities in BP2 would include the design, fabrication, and open water testing of a subsequent IceCube device (Prototype 2). The Spotter buoy would be used to collect data during both BPs.

Office-based project activities, including planning, engineering design, fabrication, and data analysis would primarily occur at Oneka Technologies Headquarters located in Sherbrooke, Quebec, Canada. National Renewable Energy Laboratory (Golden, CO) would provide consultation support by reviewing and providing input on hydrodynamic computer models. Open water testing activities, including placement of moorings, connection of desalination devices and the Spotter buoy to moorings, re-commissioning of devices, operation of devices/collection of operational and environmental data, and removal of devices/buoys, would all occur at a site off the coast of Fort Pierce, FL. The proposed IceCube mooring would be located about 350 feet west of an existing permitted mooring system, which would be used if both prototypes were deployed at the same time. The proposed Spotter buoy mooring would be located about 550 feet east of the proposed IceCube mooring. Support activities for the proposed open water testing, including device maintenance and modification, would be based out of Oneka's workshop located in Fort Pierce, FL.

The mooring systems would cause ground disturbance on the sandy seabed. The IceCube mooring system would consist of a 5-ton (wet weight) concrete anchor approximately 8-feet x 6-feet x 2-feet high equipped with a single chain for connection to the buoy. The Spotter buoy system would consist of a single buoy with two surface floats and a 400 lbs. concrete anchor. A small workboat with a 90hp outboard motor would be used for transportation and placement of the mooring systems, transportation of the existing IceCube device, the two prototypes, and the Spotter buoy to and from the test site, and maintenance visits. Each IceCube device would measure approximately 5-feet in diameter and 5-feet high. The Spotter buoy would measure 16.4 inches in diameter and 12 inches high.

Award activities would involve typical hazards associated with marine operations including the deployment of the desalination device, maintenance of the device or removal of the device. All marine operations would be conducted by trained personnel using an appropriate workboat. Activities at the workshop location would involve typical hazards associated with working with mechanical and electronic devices. Existing health, safety, and environmental policies and procedures would be followed to mitigate hazards to acceptable levels. All activities would comply with existing federal, state, and local laws and regulations.

The desalination and weather buoys would present a potential physical obstacle to marine vessels. The buoys would operate under a Private Aids to Navigation (PATON) permit from the United States Coast Guard (USCG) and would be equipped with reflective devices and lighting approved by the USCG. The PATON permit would require these safety systems to be maintained throughout the project.

The National Marine Fisheries Service (NMFS) finalized the U.S. Army Corps of Engineers (USACE) Jacksonville

District Programmatic Biological Opinion (JAXBO) for 10 categories of minor in-water activities occurring in Florida and the U.S. Caribbean in December 2017. The JAXBO included project design criteria (PDCs), which are the specific criteria, including the technical and engineering specifications, indicating how an individual project must be sited, constructed, or otherwise carried out to avoid or minimize adverse effects to Endangered Species Act (ESA)-listed species or designated critical habitat. USACE has authorized the proposed project work through a Nationwide Permit 5 – Scientific Measurement Devices and determined that the project activities met the limits of the JAXBO PDCs. Therefore, separate consultation with NMFS was not required for listed species and designated critical habitat that may be present in the project area. No species listed by the Florida Fish and Wildlife Conservation Commission as state-designated threatened species occur in the proposed project area.

The West Indian Manatee, a threatened species under United States Fish and Wildlife Service (USFWS) jurisdiction, may occur in the proposed project area. The USACE reviewed the project using “The Corps of Engineers, Jacksonville District, and the State of Florida Effect Determination Key for the Manatee in Florida - April 2013” (e.g. the Manatee Key) and made a “may affect, not likely to adversely affect” determination contingent on the project proponent following the “Standard Manatee Conditions for In-Water Work” (2011). This determination under the terms of the Manatee Key required no further consultation with USFWS.

The Florida Department of Environmental Protection (Department) issued a de minimis exception for the proposed project, which states that the project activity as described is exempt from the need to obtain a regulatory permit under Part IV of Chapter 373 of the Florida Statutes. The Department also issued a letter of consent under Section 253.77 of the Florida Statutes that allows the proposed activities to occur on the sovereign submerged lands present in the project area.

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.

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 final NEPA determination.

Notes:

Water Power Technologies Office
NEPA review completed by Melissa Parker, 02/07/24

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.

DOE has determined that work to be carried out outside of the United States, its territories and possessions is exempt from further review pursuant to Section 5.1.1 of the DOE Final Guidelines for Implementation of Executive Order 12114; "Environmental Effects Abroad of Major Federal Actions."

The proposed action is categorically excluded from further NEPA review.

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature:  _____ Date: 2/21/2024
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