

PMC-ND
(1.08.09.13)

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

**RECIPIENT:** Igiugig Village Council**STATE:** AK

PROJECT TITLE: A Resilient and Autonomous Microgrid Powered by Marine Renewable Energy for the Village of Igiugig, Alaska

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0002032	DE-IE0000121	GFO-0000121-001	

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.)

B5.1 Actions to conserve energy or water (a) Actions to conserve energy or water, demonstrate potential energy or water conservation, and promote energy efficiency that would not have the potential to cause significant changes in the indoor or outdoor concentrations of potentially harmful substances. These actions may involve financial and technical assistance to individuals (such as builders, owners, consultants, manufacturers, and designers), organizations (such as utilities), and governments (such as state, local, and tribal). Covered actions include, but are not limited to weatherization (such as insulation and replacing windows and doors); programmed lowering of thermostat settings; placement of timers on hot water heaters; installation or replacement of energy efficient lighting, low-flow plumbing fixtures (such as faucets, toilets, and showerheads), heating, ventilation, and air conditioning systems, and appliances; installation of drip-irrigation systems; improvements in generator efficiency and appliance efficiency ratings; efficiency improvements for vehicles and transportation (such as fleet changeout); power storage (such as flywheels and batteries, generally less than 10 megawatt equivalent); transportation management systems (such as traffic signal control systems, car navigation, speed cameras, and automatic plate number recognition); development of energy-efficient manufacturing, industrial, or building practices; and small-scale energy efficiency and conservation research and development and small-scale pilot projects. Covered actions include building renovations or new structures, provided that they occur in a previously disturbed or developed area. Covered actions could involve commercial, residential, agricultural, academic, institutional, or industrial sectors. Covered actions do not include rulemakings, standard-settings, or proposed DOE legislation, except for those actions listed in B5.1(b) of this appendix. (b) Covered actions include rulemakings that establish energy conservation standards for consumer products and industrial equipment, provided that the actions would not: (1) have the potential to cause a significant change in manufacturing infrastructure (such as construction of new manufacturing plants with considerable associated ground disturbance); (2) involve significant unresolved conflicts concerning alternative uses of available resources (such as rare or limited raw materials); (3) have the potential to result in a significant increase in the disposal of materials posing significant risks to human health and the environment (such as RCRA hazardous wastes); or (4) have the potential to cause a significant increase in energy consumption in a state or region.

B5.24 Drop-in hydroelectric systems The installation, modification, operation, and removal of commercially available smallscale, drop-in, run-of-the-river hydroelectric systems that would (1) involve no water storage or water diversion from the stream or river channel where the system is installed and (2) not have the potential to cause significant impacts on water quality, temperature, flow, or volume. Covered systems would be located up-gradient of an existing anadromous fish barrier that is not planned for removal and where fish passage retrofit is not planned and where there would not be the potential for significant impacts to threatened or endangered species or other species of concern (as identified in B(4)(ii) of this appendix). Covered actions would involve no major construction or modification of stream or river channels, and the hydroelectric systems would be placed and secured in the channel without the use of heavy equipment. 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 Igiugig Village Council (IVC) for the acquisition and installation of a second Ocean Renewable Power Company (ORPC) marine renewable energy (MRE) device on the Kvichak River along with smart microgrid electronics and a battery energy storage system.

Project Description

The proposed project involves the acquisition, installation, and year-round operation of a second ORPC MRE device in the Kvichak River. The second MRE device would be installed directly downstream adjacent to the existing MRE device near Igiugig, Alaska. The main source for the Kvichak River is drainage from Iliamna Lake. The village of Igiugig is at the outlet of Lake Iliamna, approximately 60 river miles upstream from where the Kvichak River empties into Bristol Bay. The site where the device would be deployed is about 100 feet from the right bank (facing downstream) in a part of the river that is deep and has high water velocity. At this site, water depth is approximately 16 feet, river width is approximately 420 feet, and the substrate is scoured cobbles and gravel. This second MRE device would include an in-stream, 35-kW, approximately 52-foot-long, 12-foot-high, 47-foot-wide pontoon-mounted RivGen Power System; an anchoring system consisting of a 6,600-pound anchor, chain, shackles, and 200 feet of mooring; and a 675-foot-long underwater cable connecting the MRE to a junction box. The existing junction box and other associated infrastructure were put in place as part of the installation of the first MRE device.

Two previous demonstrations of this technology have occurred at this location—in 2014 when ORPC built and operated a single device RivGen Power System to deliver power and in 2015 when ORPC made technology improvements, then re-installed and operated an updated RivGen Power System to demonstrate its latest technology advancements.

In addition to the second MRE device being installed, DOE project work would include power system studies, interconnection design, engineering for the microgrid electrical design, microgrid electronics integration into the existing shore station facility and installation of an approximate 100 kWh battery energy storage system inside the existing diesel power plant.

To ensure safe operation of the project and protection of the public, a Project and Public Safety Plan; Navigation Safety Plan; Emergency Shutdown Plan, which includes procedures to notify federal, state, and tribal agencies in the event of a negative interaction between the device and marine mammals; and an Inspection and Maintenance Plan are already in place and would apply to installation, operation, and maintenance of the second MRE device.

Resources of Concern

In May 2019, IVC was issued a 10-year pilot project license from the Federal Energy Regulatory Commission (FERC) for the construction, operation, and maintenance of a hydrokinetic power project that included two MRE devices and associated infrastructure. As part of this licensing, FERC completed an Environmental Assessment (EA) and associated Finding of No Significant Impact (FONSI) for the project in February 2019. DOE project funding would go towards the installation of the second MRE device in the Kvichak River which was analyzed within the FERC EA. A Project Removal and Site Restoration Plan is in place to restore the project site at the end of the license term if a new license is not obtained.

The project currently has in place a Fish Habitat Permit from the Alaska Department of Fish and Game, as well as Land Use and Water Use Permits from the Alaska Department of Natural Resources. An Essential Fish Habitat Assessment was prepared as part of the FERC licensing process and concluded that essential fish habitat would not be adversely affected as a result of the hydroelectric project deployment.

To help protect resources of concern during the construction, operation, and maintenance of the hydroelectric project, the following plans were developed as part of the FERC EA and licensing process. With implementation of these plans (and those mentioned above), the FERC EA found that there were no resources of concern that were expected to be significantly impacted by project activities.

1. Erosion and Sediment Control Plan – To reduce erosion and sedimentation during burial and installation of the cables
2. Fish Monitoring Plan – To monitor environmental effects

3. Adaptive Management Plan – To identify corrective actions, includes annual project review meetings

4. Fuel and Hazardous Substances Spill Plan – To protect water quality during project deployment, operation, and retrieval

On-shore facilities and activities were found to be within the National Register eligible Igiugig Archaeological District. As a result, to protect any newly discovered cultural resources during the construction, installation, maintenance or removal of the FERC licensed project, IVC agreed to stop all work, consult with the Alaska SHPO and implement the necessary measures to protect cultural resources, including the preparation of a Historic Properties Management Plan, if necessary. With this project requirement, the Alaska SHPO determined that the FERC licensed project would have no adverse effect on the district. Microgrid electronics integration and battery energy storage system activities of this DOE funded project would not include any ground disturbance on-shore, therefore DOE has determined that there would be no potential to cause effects to the Igiugig Archaeological District as a result of the DOE project activities.

DOE has reviewed the FERC EA, FONSI, and supporting documentation for the construction, operation, and maintenance of a hydrokinetic power project that included two MRE devices and associated infrastructure on the Kvichak River. Based on this review, DOE agrees with FERC's findings and does not anticipate impacts to resources of concern from the installation, operation, and maintenance of the second ORPC MRE device being funded by this DOE project. DOE also conducted a review of potential impacts to resources of concern resulting from the microgrid electronics integration and battery energy storage system activities of the DOE funded project and found no effects to resources of concern that would be anticipated from these project activities.

NEPA PROVISION

DOE has made a final NEPA determination.

Include the following condition in the financial assistance agreement:

Specific to DOE Award No. DE-IE0000121 for the installation, operation, and maintenance of the second ORPC MRE device, the Recipient must follow all requirements of the Order Issuing Pilot Project License (Project No. 13511-003) issued by the Federal Energy Regulatory Commission on May 23, 2019.

Notes:

Office of Indian Energy Policy and Programs
This NEPA determination requires a tailored NEPA provision.

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: _____



Casey Strickland

NEPA Compliance Officer

Date: 1/28/2020

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: _____