



U.S. Department of Energy Categorical Exclusion Determination Form

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Proposed Action Title: University of Alaska Fairbanks -- Development of Scalable Coastal and Offshore Macroalgal Farming

Program or Field Office: Advanced Research Projects Agency - Energy

Location(s) (City/County/State): Juneau and Kodiak, AK; Woods Hole, MA; New Haven, CT; San Francisco, CA

Proposed Action Description:

AMENDED NEPA DETERMINATION: (See attached original Determination, dated December 4, 2019). This Amended Determination follows the approval of additional funds and period of performance to support the project team's continued small-scale, research and development of an offshore, replicable kelp farming system. Specifically, the project team will process and analyze a second species of kelp to test the success of combined kelp species cultivation. If successful, the project will deliver a single and multi-species kelp farm design that reduces investment needs and operation costs, resulting in lower cost biomass for renewable fuel production.

Project activities will be conducted at existing facilities at University of Alaska Fairbanks (Juneau and Kodiak, AK), Woods Hole Oceanographic Institution (Woods Hole, MA), Green Wave (New Haven, CT), Marine Biological Laboratory (Woods Hole, MA), Alaska Ocean Farms, LLC (Kodiak, AK), and BLU3 (San Francisco, CA) designed for the proposed work. Project tasks continue to fit within the class of actions identified under the DOE Categorical Exclusions identified below and do not involve any extraordinary circumstances that may affect the significance of the environmental effects of the project. This assessment was based on a review of the proposed scope of work and the potential environmental impact of the project. Project tasks will be conducted in accordance with established safety and materials/waste management protocols and pursuant to applicable Federal, State, and local regulatory requirements. No modifications will be made to the existing facilities to accommodate the proposed work. The project team has certified they possess all necessary permits, authorizations and approvals to conduct the applicable project work referenced in the original Determination and additional activities covered by this determination.

Categorical Exclusion(s) Applied:

A9 - Information gathering, analysis, and dissemination

B3.6 - Small-scale research and development, laboratory operations, and pilot projects

For the complete DOE National Environmental Policy Act regulations regarding categorical exclusions, including the full text of each categorical exclusion, see Subpart D of [10 CFR Part 1021](#).

Regulatory Requirements in 10 CFR 1021.410(b): (See full text in regulation)

The proposal 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 proposal that may affect the significance of the environmental effects of the proposal.

The proposal 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.

Based on my review of the proposed action, as NEPA Compliance Officer (as authorized under DOE Order 451.1B), I have determined that the proposed action fits within the specified class(es) of action, the other regulatory requirements set forth above are met, and the proposed action is hereby categorically excluded from further NEPA review.

NEPA Compliance Officer: **GEOFFREY GOODE** Digitally signed by GEOFFREY GOODE
Date: 2023.09.18 15:59:08 -04'00'

Date Determined:



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Proposed Action Title: University of Alaska-Fairbanks -- Development of Scalable Coastal and Offshore Macroalgal Farming

Program or Field Office: Advanced Research Projects Agency - Energy

Location(s) (City/County/State): Juneau, AK; Kodiak, AK; New Haven, CT; Stamford, CT; Newburyport, MA; Woods Hole, MA; Portland, ME

Proposed Action Description:

Funding will support the project team's small-scale research and development activities to develop replicable scale model sugar kelp (*Saccharina latissima*) farms. Specifically, the team will (1) determine site parameters and instrumentation needs; (2) finalize design for vertical test lines, apply for permits, install and assess growth; (3) finalize farm design, fabricate, and deploy; and (4) develop a small vessel harvest and transportation system to harvest biomass. If successful, the project team will demonstrate a model sugar kelp farm design that reduces capital and operational expenditures, capable of achieving the cost criteria of less than \$80 per dry metric tonne of macroalgal production and automation.

Project activities will be conducted at existing facilities (See Attachment A) designed for the applicable activities. Project tasks will be conducted in accordance with established safety and materials/waste management protocols and pursuant to applicable Federal, State, and local regulatory requirements. No modifications will be made to existing facilities to accommodate the proposed work. The project team, under the terms of ARPA-E Cooperative Agreement, University of Alaska-Fairbanks is prohibited from commencing applicable project work (including, but not limited to, all field deployments and testing) before (1) obtaining necessary permits and approvals and providing them to ARPA-E for review and (2) receiving an amended NEPA Determination from ARPA-E.

Categorical Exclusion(s) Applied:

A9 - Information gathering, analysis, and dissemination

B3.1 - Site characterization and environmental monitoring

B3.6 - Small-scale research and development, laboratory operations, and pilot projects

For the complete DOE National Environmental Policy Act regulations regarding categorical exclusions, including the full text of each categorical exclusion, see Subpart D of [10 CFR Part 1021](#).

Regulatory Requirements in 10 CFR 1021.410(b): (See full text in regulation)

The proposal 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.

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Based on my review of the proposed action, as NEPA Compliance Officer (as authorized under DOE Order 451.1B), I have determined that the proposed action fits within the specified class(es) of action, the other regulatory requirements set forth above are met, and the proposed action is hereby categorically excluded from further NEPA review.

NEPA Compliance Officer:

(This form will be locked for editing upon signature)

Date Determined: 12/04/2019