

**GENERIC CATEGORICAL EXCLUSION FOR SMALL-SCALE RENEWABLE  
ENERGY RESEARCH AND DEVELOPMENT AND PILOT PROJECTS IN AQUATIC  
ENVIRONMENTS, PACIFIC NORTHWEST NATIONAL LABORATORY,  
RICHLAND, WASHINGTON**

**Proposed Action:**

Pacific Northwest National Laboratory (PNNL) proposes to deploy and operate equipment in aquatic environments for the purpose of renewable energy research and development and pilot projects.

**Location of Action:**

The actions may occur in freshwater and/or marine aquatic environments throughout the United States, including the Outer Continental Shelf.

**Description of the Proposed Action:**

The proposed action includes, but is not limited to, the installation or deployment, and operation of, instrumentation and equipment to characterize renewable energy resources; instrumentation to monitor and evaluate the potential environmental and biological impacts of technologies that harvest renewable energy resources; and small-scale pilot projects to test new means to harvest renewable energy resources. Instrumentation may include, but is not limited to, passive devices to monitor meteorological and aquatic physical parameters, and active devices such as sonar or lidar or other technologies to characterize and monitor resources.

Small-scale research and development and pilot projects may be installed to characterize, monitor, or utilize solar, wind, wave, tidal, or other aquatic renewable energy resources. Devices may be set on the bottom substrate, or may be attached to boats, rafts, piers, or buoys of any size.

Proposed activities must meet the U.S. Department of Energy (DOE) categorical exclusion (CX) eligibility criteria (10 Code of Federal Regulations [CFR] 1021.410) and all of the following criteria:

1. Aquatic renewable energy activities would be conducted in accordance with, where applicable, an approved Spill Prevention, Control, and Countermeasures plan and would incorporate appropriate control technologies and best management practices.
2. Aquatic renewable energy activities would not 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). For example, the Washington Department of Natural Resources supports PNNL's scientific research activities conducted within the Protection Island Aquatic Reserve (located off the Washington coast) because such activities are consistent with the reserve's goals, objectives, and management. 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.

3. Aquatic renewable energy activities would comply with applicable environmental administrative controls and permit requirements.
4. Aquatic renewable energy activities could use hazardous materials when necessary. Inventories would be maintained at the lowest practicable levels while remaining consistent with continuing operations and research goals, pollution prevention measures, applicable permits and licenses, manufacture label use instructions, and waste minimization practices.
5. Releases of liquid and/or airborne substances to the environment would be minimized and remain compliant with applicable facility, local, state, and federal regulations; DOE Orders; and PNNL guidelines.
6. Wastes generated by research activities would be limited to those with an available disposal pathway. Volumes of waste generated by each activity would be reduced as much as possible by pollution prevention measures and waste minimization practices. Wastes would be dispositioned in accordance with applicable local, state, and federal regulations and DOE Orders; and PNNL guidelines.
7. No permanent facilities or devices would be constructed or installed. Aquatic renewable energy activities could involve planned unrecoverable materials when in compliance with applicable environmental administrative controls and permit requirements. In cases where aquatic renewable energy activities result in unplanned loss of materials, efforts to recover materials will be made to the maximum extent practicable and unrecoverable materials will be reported as required by the appropriate regulator(s).
8. Covered actions do not include drilling of resource exploration or extraction wells.

### **Biological and Cultural Resources:**

Biological and cultural resource reviews will be conducted prior to activities with the potential to impact resources to assure that impacts to sensitive resources are avoided or minimized.

The biological resource review will identify the occurrence of federal and state protected species and habitats in the project area such as avian species protected under the Migratory Bird Treaty Act; plant and animal species and critical habitat protected under the Endangered Species Act (ESA), including candidates for such protection; species listed as threatened or endangered by the state where the project is located; species protected under the Marine Mammal Protection Act (MMPA); and essential fish habitat as defined by the Magnuson-

Stevens Fishery Conservation and Management Act (MSA). Resource review recommendations will be followed during deployment and operation to assure there are no adverse impacts to sensitive species and resources.

DOE will conduct a cultural resources review as part of the Section 106 process of the National Historic Preservation Act (NHPA). The Section 106 process assesses undertakings to determine if the undertaking will have an adverse effect/impact to historic properties.

If the biological and/or cultural resource review determines that significant resources may be adversely affected, the conclusions of this CX would need to be reevaluated, and either the site would not be used, mitigation measures would be developed to render the impacts not significant, or additional National Environmental Policy Act (NEPA) analysis and review would be performed.

**Categorical Exclusion to Be Applied:**

Because the proposed action is to conduct renewable energy research and development in aquatic environments, the following CX, as listed in the DOE National Environmental Policy Act (NEPA) implementing procedures, 10 CFR 1021, would apply:

*B5.25* Small-scale renewable energy research and development projects and small-scale pilot projects located in aquatic environments. Activities would be in accordance with, where applicable, an approved spill prevention, control, and response plan, and would incorporate appropriate control technologies and best management practices. Covered actions would not occur (1) within areas of hazardous natural bottom conditions or (2) 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, use of large-scale vibratory coring techniques, or seismic activities other than passive techniques.

Generic CXs are authorized by 10 CFR 1021.410(f) for recurring activities to be undertaken during a specified period of time, after considering potential aggregated impacts.

## Eligibility Criteria

The proposed activity meets the eligibility criteria of 10 CFR 1021.410(b) because the proposed action does not have any extraordinary circumstances that might affect the significance of the environmental effects, 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 environmental impact statement preparation.

The "Integral Elements" of 10 CFR 1021 are satisfied as discussed in the table below:

<b>INTEGRAL ELEMENTS, 10 CFR 1021, SUBPART D, Appendix B (1)-(5)</b>	
<b>Would the Proposed Action:</b>	<b>EVALUATION:</b>
Threaten a violation of applicable statutory, regulatory, or permit requirements for environment, safety, and health?	The proposed action would not threaten a violation of regulations or DOE or Executive Orders. Appropriate permits would be acquired prior to project implementation
Require siting and construction or major expansion of waste storage, disposal, recovery, or treatment facilities?	No waste management facilities would be constructed under this CX. Any generated waste would be managed in accordance with applicable regulations in existing facilities. Waste disposal pathways would be identified prior to generating waste and waste generation would be minimized.
Disturb hazardous substances, pollutants, or contaminants that preexist in the environment such that there would be uncontrolled or unpermitted releases?	No preexisting hazardous substances, pollutants, or contaminants would be disturbed in a manner that or results in uncontrolled or unpermitted releases.
Involve genetically engineered organisms, synthetic biology, governmentally designated noxious weeds, or invasive species?	The proposed action would not involve the use of 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).

<p>Have the potential to cause significant impacts on environmentally sensitive resources, including, but not limited, to:</p> <ul style="list-style-type: none"> <li>• protected historic/archaeological resources</li> <li>• protected biological resources and habitat</li> <li>• jurisdictional wetlands, 100-year floodplains</li> <li>• Federal- or state-designated parks and wildlife refuges, wilderness areas, wild and scenic rivers, national monuments, marine sanctuaries, national natural landmarks, and scenic areas.</li> </ul>	<p>No environmentally sensitive resources would be adversely affected. Resource reviews would be conducted for special circumstances. Refer to the Biological and Cultural Resources section for details regarding the application of cultural and biological resource reviews.</p> <p>The proposed action would not adversely affect floodplains, wetlands regulated under the Clean Water Act, national monuments, or other specially designated areas, prime agricultural lands, special sources of water, or other special habitats.</p> <p>As described above, activities would not occur within or near special and/or sensitive aquatic areas without close coordination with the federal and/or state agencies responsible for the area.</p>
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### Summary of Environmental Impacts

The following table summarizes environmental impacts considered when preparing this CX determination.

<b>Environmental Impacts Considered when Preparing this CX Determination</b>	
<i>Would the Proposed Action:</i>	Evaluation
Result in more than minimal air impacts?	Aquatic renewable energy activities are not likely to have more than minimal air impacts.
Increase offsite radiation dose measurably?	The proposed action would not increase offsite radiation dose.
Require a radiological work permit?	The proposed action would not require a radiological work permit.
Discharge any liquids to the environment?	Liquid wastes, including any biological waste, generated by the proposed action would be discharged into existing treatment systems and/or managed in accordance with applicable regulations and best management practices.
Require a Spill Prevention, Control, and Countermeasures plan?	Aquatic renewable energy activities would be conducted in accordance with, where applicable, an approved Spill Prevention, Control, and Countermeasures plan and would incorporate appropriate control technologies and best management practices.

<p>Use carcinogens, hazardous, or toxic chemicals/materials?</p>	<p>Proposed aquatic renewable energy activities could use small quantities of carcinogens, hazardous and/or toxic chemicals and materials. Project inventories would be maintained at the lowest practicable levels and chemical wastes would be recycled, neutralized, or regenerated if possible. Product substitution (use of less toxic chemicals in place of more toxic chemicals) would be considered where reasonable. These materials would be recycled, re-used, or excessed for other uses to the extent practical.</p>
<p>Involve hazardous, radioactive, polychlorinated biphenyl, or asbestos waste?</p>	<p>Proposed aquatic renewable energy activities could result in hazardous wastes. If unrecyclable, such wastes would be returned to the client or characterized, handled, packaged, transported, treated, stored, and/or disposed of through treatment, storage, and disposal facilities in accordance with applicable regulations.</p>
<p>Cause more than a minor or temporary increase in noise level?</p>	<p>Some of the equipment, especially active sonar, may result in more than a minor increase in noise in the air and/or aquatic environments. The impacts of this will be carefully evaluated for each action, appropriate agencies will be consulted if necessary, and mitigation measures identified and instituted if needed.</p>
<p>Create light / glare, or other aesthetic impacts?</p>	<p>The proposed action is not likely to create significant light, glare, or other aesthetic impacts.</p>
<p>Require an excavation permit (e.g., for test pits, wells, utility installation)?</p>	<p>Most research activities would occur in aquatic environments, but some minor shoreline excavations might be needed for installation of communication or support systems. The normal excavation permit process would be followed, including obtaining biological and cultural reviews and other environmental permits if needed.</p>
<p>Disturb an undeveloped area?</p>	<p>Disturbances, if any, would be very small for the purpose of installing instruments or staging equipment. Additional NEPA would be required if disturbances would significantly impact sensitive species and/or habitats; cultural resources, including historic buildings and Traditional Cultural Properties; or other resources.</p>
<p>Result in more than minimal impacts on transportation or public services?</p>	<p>The proposed action would not have more than minimal impacts to transportation or public services.</p>
<p>Disproportionately impact low-income or minority populations?</p>	<p>The proposed action would not disproportionately affect low-income or minority populations.</p>

Require environmental or other permits from federal, state, or local agencies?	Federal, state, or local environmental permits may be required for aquatic renewable energy activities. All necessary environmental permits would be obtained prior to conducting aquatic research activities and activities will abide by all applicable permit requirements.
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### **Compliance Action**

I have determined that the proposed action satisfies the DOE NEPA eligibility criteria and integral elements, does not pose extraordinary circumstances, and meets the requirements for the CX referenced above. Therefore, using the authority delegated to me, I have determined that the proposed action may be categorically excluded from further NEPA review and documentation. This determination must be reviewed at least once every 5 years.

**Signature:** \_\_\_\_\_  
Tom McDermott  
PNSO NEPA Compliance Officer

cc: ES Norris, PNNL