

UNITED STATES DEPARTMENT OF THE INTERIOR
Bureau of Ocean Energy Management
Office of Renewable Energy Programs

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**Guidelines for Mitigating Impacts to Commercial and Recreational Fisheries on
the Outer Continental Shelf Pursuant to 30 CFR Part 585**

Guidance Disclaimer

Except to the extent that the contents of this document derive from requirements established by statute, regulation, lease, contract, or other binding legal authority, the contents of this document do not have the force and effect of law and are not meant to bind the public in any way. This document is intended only to provide clarity to the public regarding legal requirements, related agency policies, and technical issues.

I. Introduction to Guidelines

As part of its approval of plans for the siting of renewable energy facilities and their components¹ on the Outer Continental Shelf (OCS), the U.S. Department of the Interior, Bureau of Ocean Energy Management (BOEM) requires lessees to submit information on social and economic conditions, including “recreational and commercial fishing (including typical fishing seasons, location, and type)” that could be affected by the lessee’s proposed activities (see: 30 CFR 585.611(b)(7) for a Site Assessment Plan (SAP); 30 CFR 585.627(a)(7) for a Construction and Operations Plan (COP); and 30 CFR 585.646(b)(7) for a General Activities Plan (GAP)). In Addition, 30 CFR 585.610(a)(8) and 585.626(b)(15) requires that the SAP and COP, respectively, include project-specific information, including proposed mitigation measures for avoiding, minimizing, reducing, eliminating, and monitoring environmental impacts.

The information required in the regulations assists BOEM in complying with the Outer Continental Shelf Lands Act (OCSLA) (43 U.S.C. § 1337p)), the National Environmental Policy Act (NEPA) and other relevant laws. Failure to submit the necessary information in a SAP, COP, or GAP may result in delay, disapproval of a plan, or approval of a plan with additional terms and conditions. See also 30 C.F.R. 585.633(a), 585.633(b)(2), and 585.628(f)).

Between 2013 and 2014, BOEM held a series of workshops from Maine to North Carolina to identify best management practices (BMP) and mitigation measures to reduce

¹ See definition of “Facility” in 30 C.F.R. 585.112

potential impacts to commercial and recreational fisheries.² These workshops resulted in five BMP areas:

1. Fisheries communication and outreach
2. Project siting, design, navigation, and access
3. Safety
4. Environmental monitoring
5. Financial compensation

BOEM issued guidance on fisheries communication and outreach in an October 20, 2015, document entitled, *Guidelines for Providing Information on Fisheries Social and Economic Conditions for Renewable Energy Development on the Atlantic Outer Continental Shelf Pursuant to 30 CFR Part 585*³. These guidelines were modified and reissued on May 27, 2020.

The guidelines in this document discuss the remaining BMPs and provide suggestions for complying with information requirements in the regulatory provisions listed above. These guidelines may be updated periodically based upon public feedback and evaluation by BOEM staff.

II. Authority and Regulations

Under subsection 8(p)(4) of OCSLA, BOEM must ensure that any activity under this subsection is carried out in a manner that provides for, among other goals, safety, protection of the environment, conservation of the natural resources of the OCS, prevention of interference with reasonable uses (as determined by the Secretary) of the [U.S.] exclusive economic zone, the high seas, and the territorial seas, and consideration of any other use of the sea or seabed, including use for a fishery. BOEM also has statutory obligations under NEPA (42 U.S.C. §§ 4321 *et seq.*) to evaluate social and economic impacts of a potential project. Under BOEM's regulations, BOEM must coordinate with relevant Federal agencies, including those agencies involved in planning activities that are undertaken to avoid conflicts among users and to maximize the economic and ecological benefits of the OCS (30 CFR 585.102(a)(5)).

For BOEM to evaluate potential impacts to social and economic conditions of the fishing industry, a lessee's SAP, COP, or GAP should provide the necessary information to assist BOEM in determining whether the proposed activities could result in unreasonable interference with other uses of the OCS or could cause undue harm to the environment (see 30 CFR 585.606, 621, 641). Also, the lessee's plans should provide proposed measures for avoiding, minimizing, reducing, eliminating, and monitoring environmental impacts (see 30 CFR 585.610(a)(8) and 626(b)(15)). BOEM will review the submitted SAP, COP, or GAP and any relevant supporting information to determine if the plan contains the information necessary to conduct BOEM's technical and environmental reviews. Upon

² "Development of Mitigation Measures to Address Potential Use Conflicts between Commercial Wind Energy Lessees/Grantees and Commercial Fishermen on the Atlantic Outer Continental Shelf" (Ecology and Environment, Inc. 2014), available at <http://www.boem.gov/OCS-Study-BOEM-2014-654/>.

³ <https://www.boem.gov/Social-and-Economic-Conditions-Fishery-Communication-Guidelines/>

completion of BOEM's technical and environmental reviews and other reviews required by Federal laws, BOEM may approve, disapprove, or approve with modifications the lessee's SAP, COP, or GAP.

Relevant regulatory provisions for lessees within 30 CFR Part 585 Subpart F include the following:

	Information Requirement	Type of Plan	Regulatory Citation
1.	Your plans must demonstrate that you have planned and are prepared to conduct the proposed activities in a manner that does not unreasonably interfere with other uses of the OCS and uses best management practices.	SAP, COP, and GAP	30 CFR 585.606(a)(3) & (6) (SAP); 30 CFR 585.621(c) & (f) (COP); and 30 CFR 585.641(c) & (f) (GAP).
2.	You must submit with your plans a list of agencies and persons with whom you have communicated, or with whom you will communicate, regarding potential impacts associated with your proposed activities. This description must contain the contact information and the issues discussed.	SAP, COP, and GAP	30 CFR 585.610(a)(13) (SAP), 30 CFR 585.626(b)(17) (COP), 30 CFR 585.645(b)(14) (GAP)
3.	You must submit additional information requested by BOEM.	SAP, COP, and GAP	30 CFR 585.610(a) (16) (SAP), 30 CFR 585.626(b)(23) (COP), and 30 CFR 585.645(b)(16) (GAP)
4.	You must provide a description of the social and economic conditions of commercial and recreational fisheries that could be affected by the activities proposed in the plan.	SAP, COP, and GAP	30 CFR 585.611(b)(7) (SAP); 30 CFR 585.627(a)(7) (COP); and 30 CFR 585.646(b)(7) (GAP)
5.	BOEM may require additional information during the review of the plans and failure to provide the information may result in the disapproval of the plan.	SAP, COP, and GAP	30 CFR 585.613(d) (SAP); 30 CFR 585.628(e) (COP); 30 CFR 585.648(d) (GAP)
6.	You must provide proposed measures for avoiding, minimizing, reducing, eliminating, and monitoring environmental impacts	SAP, COP	30 CFR 585.610(a)(8) 30 CFR 585.626(b)(15)

Some of the actions described in these guidelines may be required for lessees under the terms and conditions of a specific lease or grant. A lease or grant may also have requirements for lessees that differ from or add to regulatory requirements and

recommendations discussed in these guidelines. To the extent that there is a conflict between the terms of the lease or grant and these guidelines, the terms of the lease or grant would control. If there is a conflict between the lease or grant and the applicable regulations the regulations would control.

Recommended Practices for Mitigating Impacts to Commercial and Recreational Fisheries

Per the Council of Environmental Quality (CEQ) regulations (40 CFR 1508.1(s)), mitigation includes:

1. Avoiding the impact altogether by not taking a certain action or parts of an action.
2. Minimizing impacts by limiting the degree or magnitude of the action and its implementation.
3. Rectifying the impact by repairing, rehabilitating, or restoring the affected environment.
4. Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.
5. Compensating for the impact by replacing or providing substitute resources or environments.

The following measures may mitigate the impacts of a proposed project, as identified in environmental analyses and public feedback, to commercial and recreational fisheries. These measures may work in tandem with additional mitigation measures that are directed at the overall health of a fishery or community (e.g., marketing/seafood promotion initiatives, gear development, and support programs that ensure safe and profitable fishing alongside offshore wind energy development).

A. General Approach to Developing Mitigation Measures

As reflected in the *Guidelines for Providing Information on Fisheries Social and Economic Conditions for Renewable Energy Development on the Atlantic Outer Continental Shelf Pursuant to 30 CFR Part 585*, BOEM recommends that the lessee engage with commercial and recreational fishing communities prior to engaging in any activity in support of a plan. Several planning tools may help lessees identify communities to engage including the NOAA and BOEM Ocean Reports tool, the Northeast Region Ocean Council's (NROC) Northeast Data Portal, the Mid-Atlantic Region Council on the Ocean's (MARCO) Mid-Atlantic Data Portal, the South Atlantic Fish Management Council (SAFMC) Digital Dashboard in the Atlantic, the Gulf of Mexico Alliance in the Gulf, the California Offshore Wind Energy Gateway, and the Oregon Offshore Wind Mapping Tool (OROWindMap) on the Pacific Coast. In some cases, additional community outreach may be necessary to identify potentially affected communities.

This pre-activity engagement should be respectful of the views of the fishing communities consulted. The engagement should result in a public document describing the nature of the engagement and how the lessee has addressed the measures identified by the fishing communities to mitigate the impacts of the proposed activity. The intent of this

recommendation is to improve lessee communication, transparency, and accountability with fishing communities that may be impacted by a project's OCS activities. As a result the lessee's project design should reflect the current and future uses of the project area and mitigate potential adverse effects if necessary. The lessee should make reasonable efforts to implement the project in a manner that minimizes, mitigates, or redresses any adverse project effects on commercial and recreational fisheries. Early engagement with fishing communities can promote equity and encourage participation in the development of mitigation plans for the entire fishing community.

B. Project Siting, Design, Navigation, and Access

As described in section A above, BOEM recommends that offshore wind lessees meet with commercial and recreational fishing groups at the earliest stages of the facility design process. These meetings should occur before a lessee conducts site-specific data collection surveys to best account for design considerations relating to the wind turbine foundations, mooring systems (if applicable), inter-array cable, and export cables. BOEM recognizes that there is not a standard facility design that will mitigate potential impacts to all fisheries in all regions. However, the lessee should consider design elements described below in consultation with fisheries stakeholders.

Recommended static cable design elements:

1. All static cables should be buried to a minimum depth of 6 feet below the seabed where technically feasible. Technical feasibility constraints include seabed conditions that preclude burial, such as telecommunication cable crossings.
2. Lessees should avoid installation techniques that raise the profile of the seabed, such as the ejection of large, previously buried rocks or boulders onto the surface. The ejection of this material may damage fishing gear.
3. If needed, cable protection measures should reflect the pre-existing conditions at the site. This mitigation measure chiefly ensures that seafloor cable protection does not introduce new obstructions for mobile fishing gear. Thus, the cable protection measures should be trawl-friendly with tapered or sloped edges. If cable protection is necessary in "non-trawlable" habitat, such as rocky habitat, then the lessee should consider using materials that mirror the benthic environment.

Recommended dynamic cable design elements:

1. Dynamic cables should be suspended at a depth that minimizes interactions with fishing operations.
2. Where feasible, cables should share corridors and minimize the total cable footprint.

Recommended facility design elements:

1. The facility design should maximize access to fisheries, including by consideration of:
 - a. Transit within the project area and traditional fishing activities within the project area.
 - b. Consolidation of infrastructure, where practicable, to reduce space-use conflicts.

- c. Consideration of larger turbine sizes to reduce total project footprint and meet energy production commitments.
 - d. Coordination of turbine and substation array layouts between and among neighboring lease areas to allow safe fishing operations and transit through multiple projects. In instances where layout design cannot accommodate two common lines of orientation across adjacent leases, the lessee should consider incorporating a 1 nautical mile setback, within which no surface structures may be constructed. See Navigation and Vessel Inspection Circular 10-19⁴ for more details.
2. Turbine locations should be sited to avoid known sensitive benthic features, such as natural and artificial reefs.
 3. Facility planning should use nature inclusive designs⁵, where applicable, to maximize available habitat for fish.

C. Safety Measures

To improve safety at sea in and around offshore wind facilities, BOEM recommends that lessees consider the following measures in their plan submittals.

1. Charting all facilities and obstructions resulting from construction and operations of an offshore wind energy facility and providing that information to NOAA, U.S. Coast Guard (USCG), and navigational software companies.
2. Considering installation techniques and time windows that minimize disruption to fishing activities (e.g., simultaneous lay and burial, or conducting activity during the appropriate time of year).
3. Employing liaisons from the commercial fishing industry to provide safety and communication services during construction.
4. Monitoring cable burial in real-time and report all potential hazard events to the USCG as soon as possible.
5. Using digital information technology platforms (e.g., smartphone applications) to bring together survey and construction schedules and locations in addition to standard local notices to mariners via the USCG.
6. Marking facilities and appurtenances with permanent identification of the project and company.
7. Providing training opportunities for the commercial fishing industry to simulate safe navigation through a wind facility in various weather conditions and at various speeds.
8. Monitoring safety threats (e.g., radar disruption, ice shedding, vessel allisions and collisions, security threats, and impacts on search and rescue efforts) throughout the life of a project.
9. Consulting with the fishing industry and the USCG to identify which structures would be most appropriate for Automatic Identification System (AIS) transponders

⁴ <https://www.dco.uscg.mil/Our-Organization/NVIC/>

⁵ See “Evaluating the Effectiveness of Nature Inclusive Design Materials” here:

https://www.boem.gov/sites/default/files/documents/environment/environmental-studies/SDP_2022-2023.pdf

consistent with BOEM's Lighting and Marking Guidelines⁶.

10. Considering lessee-funded radar system upgrades for commercial and for-hire recreational fishing vessels (e.g. solid state Doppler-based marine vessel radar systems⁷).

D. Environmental Monitoring

BOEM recommends that lessees work with State and Federal fisheries management agencies to explore the need and methods to monitor changes in fishing activity as a result of proposed offshore wind energy development. Separately, BOEM provides recommendations for conducting and reporting the results of baseline collection studies in separate guidelines: <https://www.boem.gov/Survey-Guidelines/>. In 2021 the Responsible Offshore Science Alliance (rosascience.org) worked with State, Federal, and fisheries constituents to develop the Offshore Wind Monitoring Framework and Guidelines document (https://www.rosascience.org/_files/ugd/99421e_b8932042e6e140ee84c5f8531c2530ab.pdf). This document is an important resource in understanding necessary considerations in developing pre-construction, construction, and post-construction fisheries monitoring surveys.

E. Financial Compensation

General Approach

BOEM recommends that the lessee consider establishing a compensation process if a project is likely to result in lost income to commercial and recreational fisheries. The compensation process should be equitable and fair across fisheries and fishing communities and consider best practices and consistency across other offshore wind energy projects. The scope of impacts or losses that should be addressed by compensatory mitigation should be based on the impacts identified in the various environmental documents including the lessee's COP and BOEM's assessments analyzing the potential effects of the lessee's submitted plans. BOEM recommends that a lessee accept valid claims from fishing interests (see Eligible Entities below).

Compensation for Gear Loss and Damage

BOEM recommends following the minimum standards for gear loss that exist for the Fisheries Contingency Fund (FCF) claims process⁸. The lessee should consider reimbursements for fisheries gear loss and damage resulting from lessee's actions (e.g., a lessee-contracted survey vessel damaging fishing gear during survey operations). The lessee should also consider compensation for damaged gear resulting from interactions between the fishing industry and non-marked and/or non-charted obstructions that are the property of the lessee. A lessee may elect to reimburse damage to fishing gear from marked and charted obstructions in order to limit interactions with lessee property. The

⁶ <https://www.boem.gov/sites/default/files/documents/renewable-energy/2021-Lighting-and-Marking-Guidelines.pdf>

⁷ National Academies of Science Engineering and Medicine. 2022. *Wind Turbine Generator Impacts to Marine Vessel Radar*. Washington, D.C.: The National Academies Press. <https://doi.org/10.17226/26430>.

⁸ <https://www.fisheries.noaa.gov/national/funding-and-financial-services/fishermens-contingency-fund-program>

lessee should review claims filed within 90 days after the date of first discovery of the incident. The lessee should consider fully compensating for the repair or replacement of the damaged gear and up to 50-percent of gross income loss during the period from the discovery of the lost or damaged gear to when the gear is repaired or replaced. The lessee should also consider compensating for reasonable fees paid to an attorney, certified public accountant, or other consultant for the preparation of the claim.

Compensation for Lost Fishing Income

BOEM recommends the following minimum standards when determining compensation for lost fishing income. The lessee should consider establishing adequate reserve funds (see below) to compensate for lost income as a direct result of the lessee's actions.

Determining Adequate Reserve Funds for Compensation

Revenue Exposure

In the U.S. offshore energy sector, claims for financial loss by fisheries have primarily focused on claims associated with lost gear and income associated with actual interactions between fishing gear and property of offshore energy companies. There are no existing Federal policies or laws explicitly and specifically requiring compensation of economic loss from displacement attributed to offshore energy installations. Thus, there is a no history of claims for such loss that might be referenced to determine adequate reserve funds for such compensation. BOEM recommends that lessees consider using fishing revenue exposure (i.e., the amount of ex-vessel revenue⁹ generated from the project area of potential displacement) for the purposes of determining the value of reserve funds to set aside for compensation.

As a general matter, BOEM considers the following to be a reasonable definition of revenue exposure: the total ex-vessel value of the fish landed, usually presented in an annualized format. This measurement is not the direct estimate of net income loss (revenue exposure minus expenses) to the business, nor representative of the actual duration for which an impact may have occurred. Under this definition, BOEM generally expects that lost income is a portion of the total revenue exposure. In many cases this over-estimation, if utilized by the lessee, is likely to be sufficient to cover shoreside income loss and potentially under-reported landings (See Appendix A for more discussion of shoreside revenue estimation). However, in some localities it may be appropriate to apply a multiplier (previous projects estimated at approximately 1-2 percent) to the total revenue exposure to ensure that shoreside income loss is adequately covered (See Appendix A for more details on appropriate multipliers in the northeast United States). Similarly, some localities may have a sector of fishing activity for which accurate revenue exposure data is unavailable. In those cases, the lessee should consider developing an additional multiplier for the missing information to ensure the adequacy of compensation funds. Revenue exposure analyses included in plans should use the GDP Implicit Price Deflator for standardizing dollar amounts across years. The GDP Implicit Price Deflator is also the standard used by NMFS in fisheries management analyses.

⁹ A measure of the dollar value of commercial landings, usually calculated as the price per pound at first purchase of the commercial landings multiplied by the total pounds landed. (NOAA Sustainable Fisheries Glossary)

Duration of Compensatory Mitigation Period

Construction

For purposes of determining voluntary compensation for losses to commercial and recreational fisheries, lessees should consider the proportion of the project area that is rendered unavailable to fishing during active construction on the OCS and should specifically consider whether the entirety of the project area is unavailable. In that event, lessees should consider compensation for lost income for the duration of foundation and submarine cable installation where exclusion from fishing grounds is necessary for safety or for the activity that has resulted in the behavior of target fish species such that they are no longer available to the fishery (e.g., where the fish are not biting at hooks during elevated acoustic exposure).

Operations

As discussed above, the scope of impacts or losses addressed by compensatory mitigation should be based on the impacts identified in various environmental documents analyzing the potential effects of the action proposed in the lessee's submitted plans. Generally, and as a minimum standard it should be assumed that there is an adjustment period for fisheries post construction. BOEM recommends that, at minimum, lessees consider the following payment structure be available for claimants: 100 percent of revenue exposure for the first year after construction, 80 percent of revenue exposure 2 years after construction, 70 percent of revenue exposure 3 years after construction, 60 percent after four years, and 50 percent after five years post construction. Compensatory mitigation beyond 5 years post-construction may be necessary and should be evaluated based on the activities proposed in the COP.

Decommissioning

Since BOEM evaluates only conceptual decommissioning during COP approval, BOEM recommends that the lessee's decommissioning application required under 30 CFR 585.906 include the measures to mitigate impacts to commercial and recreational fishing. In general, the same principles as described under construction, above, should apply.

Management of Funds

BOEM recommends that lessees consider contracting with a neutral third-party to process claims, manage, and disburse funds, and handle appeals. Funds may be established at the project level, company level (multiple projects), or regional multi-lessee level.

Eligible Entities

Lessees should consider the propriety of permitting claims from entities other than vessel owners, operators, and crew including shoreside businesses, such as seafood processors and bait dealers, that can demonstrate in a claim that their business experienced a loss of income due to unrecovered economic activity resulting from displaced fisheries. Lessees may consider a pre-application process to identify all eligible entities as early in the compensation development process as practicable. This pre-application process could facilitate more efficient claims processing.

Claims Process

As described above, BOEM recommends lessees establish a neutral third party to administer mitigation funds, process claims, and handle appeals or adjustments. The lessee or the neutral third party should honor verified claims from eligible entities as described above. A variety of compensation models may mitigate project impacts, including programs that provide funds more directly to an impacted community to improve overall financial health of the fishing community for disbursement by community members, as mentioned in the introduction. However, BOEM's suggested model is based on individual claims and directs funds to impacted businesses. This mechanism ensures that claims are commensurate with the impacts to the claimant rather than pooled into a more general fund that may benefit the fishing industry more broadly.

Claims should be honored for up to 2 years after the income loss was experienced. Income loss due to displacement might not be realized until the end of a fishing season, or able to be substantiated until State or Federal landings records are made publicly available, thus necessitating a longer period for the claim to be submitted.

The lessee should consider establishing a claims appeal or adjustment process. Appeals or adjustment claims should be considered if filed within 6 months of the original decision on the claim. BOEM recommends that lessees or its neutral party consider paying validated claims within 1 month of receipt of a complete claim. BOEM encourages lessees to make any claims process as simple as possible and to accommodate a variety of different business records.

Review of Information Resources

In developing a fisheries mitigation plan, lessees may find the following information helpful:

- Ecology and Environment, Inc. 2014. Development of Mitigation Measures to Address Potential Use Conflicts between Commercial Wind Energy Lessees/Grantees and Commercial Fishermen on the Atlantic Outer Continental Shelf Report on Best Management Practices and Mitigation Measures. A final report for the U.S. Department of the Interior, Bureau of Ocean Energy Management, Office of Renewal Energy Programs, Herndon, VA. OCS Study BOEM 2014-654. Available at <http://www.boem.gov/OCS-Study-BOEM-2014-654>.
- National Marine Fisheries Service's (NMFS) Office of Science and Technology, provides a baseline understanding of fishery social and economic conditions which is available at <https://www.st.nmfs.noaa.gov>. Their Human Dimensions Program maintains community profiles, social indicators, and social and cultural studies.
- In 2015, BOEM and NMFS completed an assessment of fisheries revenue from BOEM's wind energy areas and potential impacts from fishing disruption in those

areas. This report, published in February 2017 and entitled “Socio-Economic Impact of Outer Continental Shelf Wind Energy Development on Fisheries in the U.S. Atlantic,” is posted on BOEM’s renewable energy study webpage: <http://www.boem.gov/Renewable-Energy-Completed-Studies/>.

BOEM Guidance Document Statement

This guidance document sets forth BOEM’s general policy to provide the public with additional information regarding the agency’s approach to managing its renewable energy program. This guidance does not have the force and effect of law and does not bind the public or BOEM in any way. Lessees are encouraged to contact BOEM with questions or concerns related to the guidance or to site-specific permitting.

Paperwork Reduction Act Statement

These guidelines provide clarification, description, or interpretation of requirements contained in 30 CFR 585, Subpart F. An agency may not conduct or sponsor a collection of information unless it displays a currently valid OMB Control Number. OMB has approved the information collection requirements in the 30 CFR 585, Subpart F regulations under OMB Control Number 1010-0176. These guidelines do not impose additional information collection requirements subject to the Paperwork Reduction Act of 1995.

**Appendix A. Data and Methodology for Developing Compensatory Mitigation in
the Northeast Atlantic**

DRAFT