Information Needs to Assess Fisheries Socioeconomic Impacts from Offshore Wind Energy Projects in the U.S. Greater Atlantic Region

Purpose and Overview

This document is designed to aid BOEM and lessees/project proponents evaluate the socioeconomic impacts to fisheries and associated fishing communities from proposed offshore wind energy activities in NOAA Fisheries (NMFS) Greater Atlantic Region (GAR) (Maine - Virginia). This document is designed to provide an outline of the information and analysis necessary to support a robust analysis of the effects of a proposed offshore wind project on commercial and recreational fisheries. This is not project-specific and may not capture all information needs for all projects. To aid in analyses, we have also included a section on fishery operational factors and fishery dependent data limitations. For each project, we expect that any description of baseline information or analysis of the potential effects of any action will be comprehensive and based on the best available scientific information. We also recognize that quantitative analyses are not always possible; in those cases, qualitative assessments should be provided with a robust explanation of any underlying assumptions or data gaps.

Authority

Under the Council on Environmental Quality National Environmental Policy Act (NEPA) regulations, NOAA serves as a cooperating agency for offshore wind projects to fulfill our mission to conserve and manage coastal and marine ecosystems and resources. The Magnuson-Stevens Fishery Conservation and Management Act (MSA) provides us with the authority to sustainably manage fishery resources and minimize socioeconomic impacts to fishing communities. We have special expertise regarding data derived from fishery operations and independent scientific assessments and surveys. During the review of offshore wind development projects, we will provide access to and advice on the most effective use of fishery related data to describe impacts to fishing operations, fishery catch, and economic viability of affected fishing communities.

Socioeconomic Data Availability

We developed a data query tool for commercial fishing operations and standardized reports for both commercial fishing operations and party/charter (i.e., for-hire recreational fishing) vessels. The standardized reports summarize annualized landings and revenue by species, gear type, and fishery management plan within each project area; revenue by port; and vessel dependence upon operations in each area. They can be used to form the basis of the socioeconomic impact analysis by identifying the major species harvested, fishery operations, and ports affected and the scale of impacts by each offshore wind development. Send separate data queries to nmfs.gar.data.requests@noaa.gov. Vessel monitoring system (VMS) data are available to BOEM staff or upon request.

Contact Information

For information related to fishery operations and fishery data, contact:

- Doug Christel, Greater Atlantic Regional Fisheries Office, Habitat Conservation and Ecosystem Services Division, douglas.christel@noaa.gov
- Benjamin Galuardi, Greater Atlantic Regional Fisheries Office, Analytical and Program Support Division, benjamin.galuardi@noaa.gov

Socioeconomic Information Needs

All data used to describe fishery socioeconomic impacts should include the most recent 10 years of available data, with a terminal year within two years of document submission. To the extent possible and when data are available, socioeconomic impact analysis of offshore wind development projects should include the following elements:

1. **Description of the action, including all parameters in Project Design Envelope**
    a. The number, spacing, and orientation of wind turbine generators (WTGs) within the project area and in relation to adjacent projects
    b. WTG foundation types and sizes
    c. Scour protection measures and their footprint
    d. Cable laying/burial methods, route(s), and construction schedules
    e. Pile driving methods and schedules
    f. All relevant operational and decommissioning activities

2. **Conduct preliminary consultation with NMFS**
    a. Discuss available data and proposed project details, including size and scale
    b. Evaluate appropriate scope of socioeconomic analysis and applicable factors (e.g., fishery operations, communities affected, upcoming actions) that may affect data and resulting analysis

3. **Description of commercial fishing operations, revenue, and affected communities**
    a. Commercial fishery landings and associated revenue
        i. All species combined
        ii. Individual species
        iii. Grouped by year
        iv. Grouped by fishery management plan
        v. Grouped by gear type
        vi. Grouped by fishing community (landing port)
    b. Commercial fishing effort
        i. Number of unique vessels operating within project area
        ii. Number of unique trips within project area
    c. Fishery dependence
        i. % of species-specific landings within project area
        ii. % of species-specific revenue within project area
        iii. % of total individual vessel revenue from within project area
    d. Orientation of trips within project area using vessel monitoring system (VMS)[1] or automatic identification system (AIS) data
        i. Grouped by year
        ii. Grouped by fishery management plan
        iii. Grouped by gear type

[1] Currently, the following fisheries require the use of a VMS: Atlantic herring, Atlantic mackerel, Atlantic sea scallop, Atlantic surfclam, butterfish, *Illex* squid, longfin squid, Northeast multispecies (groundfish), Maine mahogany quahog, and ocean quahog. Other fisheries may elect to use VMS (monkfish), or may be covered by VMS because of the issuance of another fishery permit requiring the use of VMS.

iv. Grouped by fishing community (landing port)

e. Description of affected fishing communities and dependence on fishing operations (See Social Indicators for Fishing Communities and Community Snapshots[2])
   i. Commercial fishing engagement by fishing community
   ii. Commercial fishing reliance by fishing community
   iii. Social Vulnerability Indicators: Personal Disruption Index, Population Consumption Index, Poverty Index (can be used in completing Environmental Justice analysis)
   iv. Retiree migration & urban sprawl (gentrification vulnerability index)

4. Description of recreational fishing operations, revenue, and affected communities[3]

a. Catch (numbers or weight)
   i. All species combined
   ii. Individual species
   iii. Grouped by year
   iv. Grouped by operational type if possible (private angler or party/charter)
   v. Grouped by fishing community
b. Fishing effort
   i. Number of unique party/charter vessels operating within project area
   ii. Number of unique party/charter trips within project area
   iii. Number of private anglers/trips operating within project area, if available
c. Description of affected fishing communities and dependence on fishing operations (Social Indicators for Fishing Communities)
   i. Recreational fishing engagement by fishing community
   ii. Recreational fishing reliance by fishing community
d. Description of affected fishing communities and social vulnerability

5. Additional (Optional) Data and Analysis

a. Hours fished within project area for fisheries using VMS
b. % of total fishery (all species) landings and revenue within project area
   i. Grouped by year
   ii. Grouped by gear type
   iii. Grouped by fishing community (landing port)
c. Number of trips and vessels operating within the project area grouped by FMP, gear type, or community

6. Mitigation

a. In cases where a particular project activity is expected to have more than a minimal impact on fisheries or affected communities, list and assess effectiveness

[2] Some community snapshot data is outdated (2014 or earlier). It's anticipated these will be updated in the next year. The data and methodology that is used to characterize fishing communities within these community snapshots is public and can be duplicated for fishing community assessments.

[3] Recreational catch and effort data are available online on our recreational fisheries statistics query page, although the data are less precise regarding area fished. Area-specific catch and revenue data will be available for party/charter vessels through our data query tool and standardized reports soon.

of proposed mitigation measures such as reduced access funds, gear loss compensation mechanisms, or other mitigation measures, including those required by state procurement or Coastal Zone Management Act programs

b. Explain how proposed mitigation measures are expected to compensate for impacts
c. Justify conclusions using best available scientific information

7. Conclusions

a. Identify the level of anticipated impact (none, negligible, minor, or major, as appropriate) and directionality of impact (positive/beneficial or negative/adverse) to specific species, fisheries, gear types, or communities, either as temporary or long-lasting effects of project development
b. Justify conclusions using best available scientific information, linked with available data

Fishery Operational Factors and Fishery Dependent Data Limitations

1. **Dynamic factors affecting fishing operations (area, timing, targeted species, and intensity):**
    a. **Management**:
        i. Annual quotas for target and bycatch species (individual or fishery)
        ii. Effort controls and access area trip allocations
        iii. Fishery closures (spawning, habitat, triggered quota or bycatch cap)
        iv. Gear restricted areas (to avoid gear conflicts) and exemption areas
        v. Permits
    b. **Biological**:
        i. Species availability and distribution (targeted, bycatch, prey)
        ii. Temperature changes and weather patterns
    c. **Economic**:
        i. Domestic and foreign market price
        ii. Market supply
        iii. Fuel costs
        iv. Monitoring costs to fish in certain areas or with certain gears
        v. Quota (or permit) lease price

2. **Commercial fishery data limitations:**
    a. **Vessel Trip Report (Logbook)**
        i. Limited area precision (stat area and one position/trip)
        ii. Total catch data is limited due to concerns about discard accuracy
        iii. Not timely (most FMPs are weekly, but some are still monthly)
        iv. Self-reported
        v. Trip and sub-trip level catch instead of tow or haul level
        vi. Concerns about accuracy of gear amount and set/soak time
    b. **VMS**
        i. Coverage is not universal for all fisheries, with some fisheries (summer flounder, scup, black sea bass, bluefish, American lobster, spiny dogfish, skate, whiting, and tilefish) not covered at all by VMS
            1. If a vessel is issued a permit in another fishery that requires VMS, trips taken in one of the above non-VMS fisheries is represented by a "DOF-COM" VMS "trip" code.
            2. Analysts cannot differentiate a trip in a particular non-VMS fishery based on the "DOF-COM" VMS code alone, and any trip under that VMS code could represent activities in several non-VMS fisheries.
        ii. Limited historical coverage for most fisheries
            1. Monkfish is optional and elective on a yearly basis
            2. 2005 (or earlier for herring)
            3. 2006 for groundfish and scallops
            4. 2008 for surfclams/ocean quahogs
            5. 2014 for mackerel
            6. 2016 for longfin squid/butterfish

7. 2017 for *Illex* squid

iii. Trip declaration does not necessarily correspond to actual operation
   1. Declared intent may not represent landings
   2. Declaration may mask specific fishery operations (fluke could be declared as DOF-CML and whiting as a squid trip)

iv. Hourly position pings limits area resolution based on speed

v. Fishing time/location can be mis-estimated by operational assumptions (speed and direction) that are affected by externalities (weather, sea state, mechanical issues)

vi. Catch data limited
   1. No information on catch rates
   2. Retained catch composition limited to target and some bycatch species, and not universal
   3. Catch information is for the full trip, not sub-trips

vii. Not all information is collected from all fisheries (gear type)

c. Dealer Reports

i. Does not include fundamental data relating to operations (gear used, area fished, discards, time-in-area or effort)

d. Observer Reports

i. Sub-sample of the entire fleet

ii. Coverage rates vary by year based on bycatch rates

iii. Until recently, only limited coverage of the lobster fishery

iv. Potential operational observer biases in some fisheries

e. Study Fleet Data

i. Partial fishery, fleet, and area coverage

ii. Not all participants are collecting data at the same level (sub-trip vs. haul)

iii. Unclear timeliness of data