Regional Assessment of Offshore Wind Development in Nova Scotia
Frequently Asked Questions (FAQ) – Edition Four

Offshore Wind and Fisheries

The purpose of this document is to provide responses to frequently asked questions (FAQs) raised during the Regional Assessment. New FAQ editions, addressing a variety of topics, will be posted regularly to the Registry throughout the Regional Assessment process.

Q. How long is the construction process for offshore wind and how could that affect access to fishing?

A. The duration of construction will depend on factors such as:

- number of turbines
- type of turbine foundation
- water depths
- sea bottom conditions
- distance of the wind farm from a port

Typically, construction takes 2+ years. In Nova Scotia, these activities would likely occur during preferred weather conditions, from April to December. The degree to which fishers may be displaced during construction is project-specific and dependent on wind farm location, design, and size.

Q. Will installation of turbine foundations and/or burying of cables affect fish habitat?

A. All offshore wind farms interact with the seafloor to some degree and can temporarily disrupt or permanently alter fish habitat (e.g., temporary increase in suspended sediment in the water column, replace substrate with solid foundation structures until decommissioned).

Effects on fish habitat will also depend on the habitat present at the turbine/farm site (i.e., local conditions), foundation type, and the fish species present and their recovery time.

Q. Can fishing take place within an offshore wind project?

A. Some jurisdictions allow fishing to occur within the footprint of a wind farm, but certain gear types are restricted such as dragging or trawling because of the possibility of contact with electrical cables. Longline fishing may also be incompatible within the boundaries of a wind farm due to the potential for entanglement.

The North Sea and the Baltic Sea regions are investigating the possibility of some aquaculture activities (e.g., blue mussel, sugar kelp) occurring within wind farms to promote co-existence.

Q. Will there be exclusion zones for fishing activity around wind development projects?

A. Yes, some requirement for exclusion zones is expected:

- During construction: a safety exclusion zone around the construction and/or project area; and
- During operation:
  - buffer zones around turbines where other ocean uses are prohibited, except for vessel navigation – the sizes of buffer zones vary (refer to table below)
  - restrictions to fisheries and navigation / access around wind turbines depending on various conditions such as turbine foundation types, fishing gear types, and vessel lengths etc.

Country	**Summary of Operational Safety Distances and Permissions in some European Jurisdictions**
United Kingdom	1. No mandatory safety zones during operation 2. Developer may apply for 50 m permanent safety zone around each turbine 3. Conditional fishing over export cables (based on agreements with developers)
Sweden	1. No mandatory safety zones 2. Developer may apply for a 50 m exclusion zone around each wind farm
Denmark	1. No mandatory safety zones 2. Cable protection zones used with 200 m buffer on each side of the cable 3. Conditional bottom trawling along cable lines based on defined agreements
Belgium	1. No defined safety zones 2. Conditional passive fishing gears may be permitted
Norway	1. No defined safety zones, but may be up to 500 m 2. Fishing allowed around cables under agreement between cable owners and fishers
Netherlands	1. 'Passport areas' (500 m safety zones around each wind farm area) to allow operations of experimental passive fisheries 2. 250 m fisheries multi-use safety zone around turbines and both sides of cables 3. Transit of vessels allowed when bottom-disturbing gear is visible above the waterline

Potential fishing distances from turbines will be established by the Canada-Nova Scotia Offshore Petroleum Board, soon to be rebranded to the Canada -Nova Scotia Offshore Energy Regulator.

Q. How can fishers safely work around offshore wind turbines?

A. Safety requirements and procedures will be adapted from the offshore wind industry in other jurisdictions and from Canada's offshore oil and gas industry including:

- requirements for lighting, spacing, and charting of individual turbines
- compliance with any notice to mariners associated with the wind farm
- protocol for accidents and malfunctions
- navigation requirements
- establishment of appropriate safety setbacks or exclusion zones around each turbine

Q. What are EMFs, and can they affect fish and crustaceans?

A. Electromagnetic fields (EMFs) are physical fields produced by electrically charged objects. Operation of turbines does not generate EMFs, but cables used to connect offshore wind turbines together and to transmit the power do produce an electromagnetic field. EMFs decrease with distance from the cable and cables are wrapped in a sheath and are buried beneath the seafloor where possible or otherwise covered with rock or concrete mattresses to protect the integrity of the cable and to also reduce magnetic fields.

There is no conclusive evidence to show that EMFs from cables causes impacts to individual animals or populations. Studies of effects of EMFs on fish and invertebrates indicate that some species (e.g., skates, sharks, and lobster) have demonstrated behavioral responses, such as increased foraging and exploratory movements, but those behavioral responses have not been determined to negatively affect a species population, and that magnetic fields do not appear to act as barriers to movement. It is important to note that further research is needed to refine our understanding of the effects of EMFs on marine species.

For more information on offshore wind visit:

- Offshore wind – Government of Nova Scotia, Canada
- Marine Renewables 101 » Marine Renewables Canada
- Offshore Wind 101 – NYSERDA
- Renewable Energy | Bureau of Ocean Energy Management (boem.gov)
- Tethys | Environmental Effects of Wind and Marine Renewable Energy (pnnl.gov)