

5. Proposed Mitigation of Impacts to Birds and Bats

5.1. Baseline characterization

Describe how baseline data will be established on the presence of bird and bat assemblages, temporal and spatial use of the site by key species within the area of the proposed Project.

5.1.1. Available information

Describe key existing literature and datasets that are available for baseline characterization.



- Equinor Wind will rely on the following information for its baseline characterization of birds:
 - NYSERDA funded digital aerial avian surveys covering the Lease Area over four quarterly surveys and the Offshore planning Area (OPA) over twelve quarterly surveys (data have been combined with Equinor’s surveys for species abundance modelling). Data and reports are also publicly available on https://remote.normandeau.com/nyserda_overview.php
 - Information on threatened and endangered species and/or their habitat is also available through USFWS IPaC, available at <https://ecos.fws.gov/ipac/>
 - NYSDEC Environmental Resource Mapper, available at <https://www.dec.ny.gov/animals/38801.html>
 - Kinlan, B.P., Menza, C., & F. Huettmann. 2012. Predictive Modeling of Seabird Distribution Patterns in the New York Bight. Chapter 6 in “A biogeographic assessment of seabirds, deep sea corals and ocean habitats of the New York Bight: science to support offshore spatial planning.” NOAA Technical Memorandum NOS NCCOS 141 (2012).
 - NYSERDA 2010a. Pre-development of avian species for the proposed Long Island – New York City Offshore Wind Project Area. Final Report prepared for the New York State Energy Research and Development Authority. October 2010.
 - Kinlan, B.P., Winship, A.J., White, T.P., & J. Christensen. 2016. Modeling At-Sea Occurrence and Abundance of Marine Birds to Support Atlantic Marine Renewable Energy Planning: Phase I Report. U.S. Department of the Interior, Bureau of Ocean Energy Management, Office of Renewable Energy Programs, Sterling, VA. OCS Study BOEM 2016-039. xvii+113 pp., available at <https://www.data.boem.gov/PI/PDFImages/ESPIS/5/5512.pdf>.
 - NYSERDA 2017. New York State Offshore Wind Master Plan, November 2017, available at <https://www.nyserda.ny.gov/All-Programs/Programs/Offshore->

[Wind/Offshore-Wind-in-NewYork-State-Overview/NYS-Offshore-Wind-Master-Plan](#)

- Studies funded by BOEM on baseline offshore and near-shore avian studies:
 - Paton, P., K. Winiarski, C. Trocki, and C. McWilliams. 2010. Spatial Distribution, Abundance and Flight Ecology of Birds in Nearshore and Offshore Waters in Rhode Island. Chapter 11a in: Rhode Island Ocean Special Area Management Plan (Ocean SAMP) Volume 2. University of Rhode Island, Kingston, RI. 304pp.
 - Veit, R.R., T.P. White, S.A. Perkins, and S. Curley. 2016. Abundance and Distribution of Seabirds off Southeastern Massachusetts, 2011-2015. U.S. Department of the Interior, Bureau of Ocean Energy Management, Sterling, Virginia. OCS Study BOEM 2016-067. 82 pp.
 - Williams, K.A, I.J. Stenhouse, E.E. Connelly, and S.M. Johnson. 2015. Mid-Atlantic Wildlife Studies: Distribution and Abundance of Wildlife along the Eastern Seaboard 2012-2014. Biodiversity Research Institute. Portland, Maine. Science Communications. Series BRI 2015-19. 32 pp.
- NJDEP 2010a. Ocean/Wind Power Ecological Baseline Studies, Final Report, January 2008/December 2009. New Jersey Department of Environmental Protection Office of Science, available at <https://www.nj.gov/dep/dsr/ocean-wind/report.htm>
- Cetacean and Seabird Assessment Program (CSAP) database of bird observations from 1980-1988
- Rhode Island Block Island Wind Farm and the Massachusetts Cape Wind Project baseline assessment data
- Carbon Trust ORJIP One Bird Collision Avoidance Study co-funded by Equinor - Skov, H., Heinanen, S. Norman, T., Ward, R.M., Mendez-Roldan, S & Ellis, I. 2018. ORJIP Bird Collision and Avoidance Study. Final Report- April 2018. The Carbon Trust. United Kingdom. 247 pp., available at https://www.carbontrust.com/media/675793/orjip-bird-collision-avoidance-study_april2018.pdf
- Bocetti, Carol I., Deahn M. Donner and Harold F. Mayfield. 2014. Kirtland's Warbler (*Setophaga kirtlandii*), version 2.0. In *The Birds of North America* (P. G. Rodewald, editor). Cornell Lab of Ornithology, Ithaca, New York, USA, available at <https://doi.org/10.2173/bna.19>.
- Brown, Charles R. and Mary B. Brown. 1999. Barn Swallow (*Hirundo rustica*), version 2.0. In *The Birds of North America* (P. G. Rodewald, editor). Cornell Lab of Ornithology, Ithaca, New York, USA, available at <https://doi.org/10.2173/bna.452>.
- ESRI. 2016. Audubon Important Bird Areas – Polygon. Available at <https://www.arcgis.com/home/item.html?id=af5fe0b13bae4f8297700345d27201fa>. Accessed April 6, 2020.

- Kerlinger, P., J.D. Cherry, and K.D. Powers. 1982. "Records of Migrant Hawks from the North Atlantic Ocean." *The Auk* 100;488-490.
- Vineyard Wind. (2020). Construction and Operations Plan (COP), Vineyard Wind Lease OCS-A 0501.
- Bureau of Ocean Energy Management Office of Renewable Energy Programs. (2018). Vineyard Wind Offshore Wind Energy Project Draft Environmental Impact Statement.
- Equinor Wind will rely on the following existing information for its baseline characterization of bats:
 - NYSDEC. 2015a. List of Endangered, Threatened and Special Concern Fish & Wildlife Species of New York State. New York State Department of Environmental Conservation. Available at <http://www.dec.ny.gov/animals/7494.html>. NYSDEC. 2015b. New York State Wildlife Action Plan (SWAP) Species of Greatest Conservation Need, available at <http://www.dec.ny.gov/animals/7179.html>
 - NYSEDA 2017. New York State Offshore Wind Master Plan, November 2017, available at <https://www.nyserda.ny.gov/All-Programs/Programs/Offshore-Wind/Offshore-Wind-in-NewYork-State-Overview/NYS-Offshore-Wind-Master-Plan>
 - Vineyard Wind. (2020). Construction and Operations Plan (COP), Vineyard Wind Lease OCS-A 0501.
 - Bureau of Ocean Energy Management Office of Renewable Energy Programs. (2018). Vineyard Wind Offshore Wind Energy Project Draft Environmental Impact Statement.

5.1.2. Data being collected

Describe data that is currently being collected or will be collected to support baseline characterization.

- Equinor Wind is involved in avian surveys within the Beacon Wind project area.
 - Status: Active
- Additionally, data is being collected in neighboring Lease Areas which would be applicable to the Beacon Wind project.
 - Status: Active
- Equinor Wind will be deploying acoustic receivers on data buoys that will detect VEMCO tags and provide information about avian species and abundance in the area surrounding the buoys.
 - Status: Active
- Equinor Wind installed a passive bat detector onboard the survey vessel RV Stril Explorer to detect bats while the vessel was engaged in other survey activity in the 0520 lease area starting in August 2020.
 - Status: Active
- Equinor Wind has and will continue to share the results of the monitoring with the relevant regulatory authorities and stakeholders, and consider whether there is a further need to collect additional site-specific data offshore.
 - Status: Active.

5.2. Species at risk

Describe which species Beacon Wind believes to be of greatest concern and why.

- BOEM’s Revised Environmental Assessment for the Commercial Wind Lease Issuance and Site Assessment Activities on the Atlantic Outer Continental Shelf Offshore Massachusetts states that, “...the most likely taxa to occur in the offshore areas [of the Massachusetts WEAs] include approximately 19 species of waterfowl, 4 species of loons and grebes, 10 species of shearwaters and petrels, 3 species of gannets and cormorants, 2 shorebirds, 3 jaegers, 6 alcids, 3 sulids, and 20 species of gulls and terns (eBird, 2014; Table 4-5). Long-tailed Duck (*Clangula hyemalis*) and other sea ducks winter in the WEA and surrounding areas and especially large populations of Long-tailed Duck occur in the area during November through March (Table 4-5; Allison et al., 2006; Allison et al., 2009)”.

█ [REDACTED]

- Equinor Wind identified the following bats with the greatest potential to migrate through the lease area on their way between breeding and wintering grounds in the spring and fall:
 - eastern red bat,
 - hoary bat, and
 - silver-haired bat.
- Equinor Wind has followed BOEM’s guidelines and use the Mid-Atlantic Ocean Data Portal’s data of temporal use, abundance, and species distribution by avian species or groups in the Lease Area. The modeling data can also be used to potentially identify species that are high risk for collision or displacement, and species that are protected by federal and/or state laws.

5.3. Potential impacts and mitigation measures by phase

The table below should list the potential impacts and mitigation measures to understand and minimize the Project’s risk to birds and bats. At a minimum this should include the steps the Empire Wind will pursue to minimize risk to birds and bats (e.g. lighting); and identification of technological approaches to assess impacts or any Proposals for other research or mitigations relating to birds or bats planned or under consideration at this time.

Potential Impacts	Proposed Mitigation Measures	Phase*			
		1	2	3	4
Collision risk to marine birds and bats	<ul style="list-style-type: none"> • To avoid and minimize attraction- and disorientation-related impacts to birds and bats, artificial lighting on Equinor Wind projects will be reduced to the extent practicable while maintaining human safety and compliance with FAA, USCG, BOEM and other regulations; 		X	X	X

Potential Impacts	Proposed Mitigation Measures	Phase*			
		1	2	3	4
	<ul style="list-style-type: none"> Monitoring will be conducted to determine if there is a need for perching-related deterrents to reduce attraction and minimize potential perching and loafing opportunities for birds; During construction, installation of anti-perching devices where appropriate on offshore, above-water, project-related vessels and structures to minimize introduction of perching structures to the offshore environment; Project-related vessels will be instructed to avoid rafting seabirds to minimize disturbance during construction, operations, and maintenance; Equinor Wind will consider the use of HDD for installation of the export cable landfalls. Equinor Wind will consider the maintenance of anti-perching devices where appropriate on offshore, above-water Project-related vessels and structures to minimize introduction of perching structures to the offshore environment, during operations and maintenance. 				
Habitat impacts, including breeding and nesting areas	<ul style="list-style-type: none"> Siting and construction of nearshore and onshore project components for offshore wind farms (including but not limited to nearshore export cable routes, landfall sites, onshore cable routes, and onshore substations) shall be conducted in such a way as to avoid or minimize the loss or alteration of bird and bat habitat, as well as avoid or minimize disturbance and direct and indirect effects to bird and bat populations and their prey. Specifically, onshore infrastructure (i.e., landfall site, cable routes, substations) and development activities should 1) maximize the use of previously developed or disturbed areas, and 2) avoid unique or protected habitats, as well as habitat for key species, where feasible; For bats, Equinor Wind will avoid tree-clearing at the onshore project components, unless otherwise determined acceptable by the USFWS 		X	X	X

Potential Impacts	Proposed Mitigation Measures	Phase*			
		1	2	3	4
	and relevant state agencies, to minimize risks to bats; <ul style="list-style-type: none"> • Avoidance of key habitats and tree clearing within the onshore substation sites where appropriate and required during sensitive times of year (e.g., breeding season), to minimize risk to tree nesting birds. • Adherence to time of year restrictions as necessary in sensitive onshore bird habitats, where feasible and required, unless otherwise determined acceptable by the applicable agencies. • For both birds and bats, temporarily disturbed areas will be revegetated with appropriate native species, as appropriate. 				
Additional proposed mitigations	<ul style="list-style-type: none"> • Development of a monitoring program to address specific questions, to include identifying key species of interest, and when possible, to contribute to the understanding of long-term project-specific impacts and larger scale efforts to understand cumulative impacts. 	X	X	X	X
*Phase: 1: Survey/Design; 2: Construction; 3: Operation; 4: Decommission					

5.4. Monitor for impacts during each phase

Describe how potential impacts will be monitored on these species during each phase of physical work for the Project (site assessment, construction, operation, and decommissioning) to inform mitigation planning for later phases of the Project as well as for future Projects.

5.4.1. Pre/Post Monitoring to assess and quantify changes

Describe how changes to environmental resources will be quantified using statistically sound methods

- Pre- and post-construction monitoring will be designed in such a way that it improves understanding of the impacts of offshore wind energy development on birds and bats, including identifying specific questions and taxa on which to focus monitoring efforts for the proposed project, or in relation to broader regional efforts to assess variation between sites and understand cumulative impacts for sensitive species.
- Monitoring will, to the extent practicable, use appropriate study designs and methodologies to effectively analyze risk prior to construction and evaluate impacts

during construction and operation by testing hypotheses and helping to assure statistical power for meaningful data analysis.

- Outside expertise will, if practicable, be consulted during study design and data analysis processes.
- Additionally:
 - Equinor Wind believes that monitoring of highly mobile species, such as birds, should focus on behavioral responses rather than pre-, during, and post-construction monitoring of abundance, which may not always have robust statistical power to identify change as a direct result of the wind farm.
 - Should further monitoring of birds be required, for example for Roseate terns, then Equinor Wind is willing to explore monitoring through novel techniques such as GPS tagging exercises, subject to approvals from the relevant regulatory agencies.
 - Equinor Wind will continue desktop studies and stakeholder discussions for avian and bat species. During field studies, Equinor Wind will complete appropriate surveys to further characterize the project area and determine presence/absence of habitat within proposed project activities.
 - Impacts to avian and bat species will be sufficiently examined as part of BOEM's NEPA process and as part of the COP, through state permitting processes, and in consultation with USFWS and relevant stakeholders. Where appropriate, mitigation will be implemented to reduce impacts to as low as practicable.

5.4.2. Address data gaps

Describe how data gaps will be addressed.

- Equinor Wind shall work with stakeholders, including regulatory agencies and local groups, in the design phase of the project to identify data gaps to be addressed through surveys or permitting applications.
- Additionally:
 - Equinor Winds notes that further research and monitoring is important where data and knowledge gaps remain and where there remains uncertainties over potential significant adverse impacts attributable to the offshore wind farm.
 - Equinor Wind will engage with relevant stakeholders, for example through the regulatory process and E-TWG to identify areas where data gaps may exist for further monitoring and research and will consider proposals for research on a case by case basis.

5.5. Strategies for developing alternate protocols

Describe the process for determining when mitigation strategies are insufficient and under what conditions they might elect to rehabilitate or restore impacted birds and bats in an alternative location.

- As necessary, Equinor Wind will explore this further in consultation with the E-TWG, regulatory agencies and relevant stakeholders.

- Additionally:
 - Equinor Wind has yet to finalize a process for alternative protocols, but is open to exploring this further in consultation with the E-TWG, regulatory agencies and relevant stakeholders.

6. Proposed Mitigation of Impacts to Fish, Invertebrates, and their Habitats

6.1. Baseline characterization

Describe what is known about the proposed site in terms fish and invertebrate assemblage, and temporal and spatial variations in fish, invertebrates and their habitats at the proposed site. The use of collaborative monitoring models with the fishing community is encouraged to develop trusted baseline data.

6.1.1. Available information

Describe existing literature and datasets that are available for baseline characterization.

- Public data sources are suitable for characterizing benthic habitat and fisheries resources in the project area, including:
 - The evaluation of NYSERDA’s Master Plan Fish and Fisheries Study (2017; Appendix J).
 - NOAA National Centers for Coastal Ocean Science and BOEM Comprehensive Seafloor Substrate Mapping and Model Validation in the Atlantic (2019).
 - Estuarine Living Marine Resource database (NOAA 2000) provide descriptions of spatial and temporal distributions of species (by life stage) in Hudson River/Raritan Bay and the Great South Bay, however, the database is not updated regularly.
 - Use of commercial and recreational fisheries effort data as a proxy for fish species.
 - The Beacon Wind COP will provide a detailed review of available baseline data.

6.1.2. Data being collected

Describe data collected, or will be collected, to support baseline characterization.

- Equinor Wind has funded a study by the Anderson Cabot Center for Ocean Life at the New England Aquarium to establish monitoring systems to assess the impacts of offshore wind development on highly migratory species (Highly Migratory Species (HMS); sharks, tunas, billfishes) and the large recreational fishery that targets them. The study will occur over an 18-month period and will expand upon a MassCEC project to monitor HMS presence and will also work to monitor recreational fishing activities for HMS.
 - Status: Active
- Equinor Wind also notes that for the Beacon Wind project, neighboring lease holders are also engaged in the collection of baseline data that will strengthen the regional understanding of baseline characterization within the project area.
 - Status: Active

6.2. Species at risk

Describe which species Equinor Wind believes to be of greatest concern and why.

- Equinor Wind notes that fish and invertebrate species of interest in the lease area fall into three groups based on regulatory status: (1) species managed under the MSA; (2) species listed under the ESA; and (3) non-game fish and invertebrate species that are considered important prey (or shelter, in the case of biogenic habitats) for fish and wildlife.
- In addition, the role of the benthic habitat as a fisheries resource is fundamental to the identification of essential fishing habitat (EFH), as reflected in the emphasis on EFH in BOEM’s benthic survey guidance (BOEM 2019). There are 29 species in the Beacon Wind Project Area with designated EFH life stages in the blocks where the proposed area of the Project will be located.
- Full details of species at risk, likely impacts, and proposed mitigation will be described in the COP with consultation from relevant stakeholders, including in presentation and update of this EMP at the E-TWG.

6.3. Potential impacts and mitigation measures by phase

The table below should list the potential impacts to fish, invertebrates, and their habitats and proposed mitigation measures. To this end, this section should describe how the Developer will minimize risk to fish, invertebrates and their habitats (e.g., foundation type, scour protection, cable shielding for electromagnetic fields, construction windows, siltation/turbidity controls, use of dynamic-positioning vessels and jet plow embedment).

Potential Impacts	Proposed Mitigation Measures	Phase*			
		1	2	3	4
Micro-siting conflicts with habitats and fishery resources	<ul style="list-style-type: none"> • Equinor Wind will seek input from regulatory authorities, the fishing industry, and maritime industry to locate foundations and cable routes in the least impactful manner that is practicable. • Equinor Wind will avoid, to the extent possible, siting structures (wind turbines, offshore substations, and submarine cables) in areas of sensitive habitat, where feasible; • Equinor Wind will consider the timing of construction activities; working with the fishing industry and fisheries agencies on sensitive spawning and fishing periods to actively avoid or reduce interaction with receptors, where feasible. 	X			
Temporary, alteration of the seabed and	[REDACTED]	X	X	X	X

Potential Impacts	Proposed Mitigation Measures	Phase*			
		1	2	3	4
localized increases in noise and turbidity	<p>[REDACTED]</p> <ul style="list-style-type: none"> • Most construction vessels will maintain position using dynamic positioning, limiting the use of anchors and jack-up features, where feasible. Any anchors or jack-up features would be placed within the previously cleared and/or disturbed area around the foundations; • Equinor Wind will consider the use of HDD at landfall to minimize physical disturbance of coastal habitats. Equinor Wind would implement appropriate measures during HDD activities at landfalls to minimize potential release of HDD fluid. To minimize an inadvertent fluid return, an HDD Contingency Plan would be developed and implemented; and • Equinor Wind will consider the use of appropriate measures and timing during cable installation activities to minimize sediment resuspension and dispersal in areas of known historically contaminated sediments. <p>[REDACTED]</p>				
Long-term changes to seabed and habitat	<ul style="list-style-type: none"> • Equinor Wind will, to the extent possible, avoid sensitive benthic habitats.) • Equinor Wind will implement mitigation and avoidance measures to protect water quality, such as spill prevention. Specifically, Equinor Wind will use appropriate measures for vessel operation and implementation of an OSRP, which will include measures to prevent, detect, and contain accidental release of oil and other hazardous materials. Project personnel will be trained in accordance with relevant laws, regulations, and Project policies, as described in the OSRP; • During construction, operations, and maintenance, Equinor Wind will utilize sensitive lighting schemes to minimize exposure of light, as practicable; 	X	X	X	X

Potential Impacts	Proposed Mitigation Measures	Phase*			
		1	2	3	4
	<ul style="list-style-type: none"> • Most construction vessels will maintain position using dynamic positioning, limiting the use of anchors and jack-up features, where feasible. Any anchors or jack-up features would be placed within the previously cleared and/or disturbed area around the foundations; • Equinor Wind will consider the use of HDD at the landfall to minimize physical disturbance of coastal habitats. Equinor Wind would implement appropriate measures during HDD activities at landfalls to minimize potential release of HDD fluid. To minimize an inadvertent fluid return, an HDD Contingency Plan would be developed and implemented. 				
EMF Impacts	<ul style="list-style-type: none"> • Equinor Wind will use proper shielding to reduce EMF impacts; • Equinor Wind will conduct EMF modeling and assessments to identify potential mitigation requirements; • Electrical cables will be armored and sufficiently buried where feasible to reduce EMF effects; and • As noted above, Equinor Wind will conduct both onshore and offshore EMF assessments for the COP. 		X	X	
Cable burial	<ul style="list-style-type: none"> • Equinor Wind shall bury export cables to an appropriate minimal depth to reduce exposure risk. If depth cannot be reached, Equinor Wind will add protective materials over the cable. • Sufficient burial of inter-array and export cables to facilitate continued seabed penetrating fishing activity. • Dissemination of information to fishers on cable locations including inclusion on navigational charts. • Intention to bury inter-array and export cables based on Cable Burial Risk Assessment. • Periodical post installation cable surveys as appropriate, with sharing of information on identified navigational risks as appropriate. • Development of a Cable Installation Plan, detailing how cable installation will be managed. 		X	X	

Potential Impacts	Proposed Mitigation Measures	Phase*			
		1	2	3	4
Additional proposed mitigations	<ul style="list-style-type: none"> Equinor Wind will install scour protection, as needed; and Equinor Wind will develop a monitoring program to address specific questions, to include identifying key species of interest, and when possible, to contribute to the understanding of long-term project-specific impacts and larger scale efforts to understand cumulative impacts. 	X	X	X	X
*Phase: 1: Survey/Design; 2: Construction; 3: Operation; 4: Decommission					

6.4. Monitor for impacts during each phase

Describe how potential impacts will be monitored on these types of fish and invertebrates during each phase of physical work for the Project (site assessment, construction, operation, and decommissioning) to inform mitigation planning for later phases of the Project as well as for future Projects.

6.4.1. Pre/Post Monitoring to assess and quantify changes

Describe how changes to environmental resources will be quantified using statistically sound methods.

- Ideally, specific questions and focal taxa shall be chosen for the Project either based on site-specific fisheries risk assessment, or in relation to broader regional efforts to assess variation between sites and understand cumulative impacts for sensitive species.
- Monitoring will, to the extent practicable, use appropriate study designs and methodologies to effectively analyze risk prior to construction and evaluate impacts during construction and operation by testing hypotheses and helping to assure statistical power for meaningful data analysis.
- Outside expertise will, if practicable, be consulted during study design and data analysis processes.
- Equinor Wind will seek to collaborate with other regulatory agencies and stakeholder groups to identify research needs and opportunities.
- Additionally:
 - Equinor Wind understands that from the outset, any research and monitoring to assess changes and impacts should be statistically robust. However, for some biological monitoring, this level of robustness to adequately detect change as a direct result of an offshore wind farm is not always possible as many outside factors can influence these variations with much greater significance than the

factors that can be attributed to causes from offshore wind energy developments (e.g., seawater temperature, nutrient levels, etc.).

- As such, Equinor Wind is open to monitoring that explore other approaches to detect and quantify change, where further monitoring is appropriate, for example behavioral responses. Equinor Wind will work with the regulatory agencies, E-TWG and relevant stakeholders to identify research and monitoring needs and agree on methodology.

6.4.2. Address data gaps

Describe how data gaps will be addressed.

- Equinor Wind will seek to work with stakeholders, including regulatory agencies, to identify data gaps to be addressed through surveys or permitting applications.
- Additionally:
 - Equinor Wind will conduct further research and monitoring where data and knowledge gaps remain that present uncertainties over potential significant adverse impacts attributable to the effects of offshore wind farm development.
 - Equinor Wind is open to discussing further monitoring and research to fill data gaps as appropriate through regulatory agencies, E-TWG and relevant stakeholders.

6.5. Strategies for developing alternate protocols

Describe the process for determining when mitigation strategies are insufficient and under what conditions they might elect to rehabilitate or restore impacted fisheries in an alternative location or when the provision of compensation of some form may be appropriate.

- As necessary, Equinor Wind shall explore this further in consultation with the E-TWG, regulatory agencies and relevant stakeholders.
- Additionally:
 - Equinor Wind has yet to finalize a process for alternative protocols, but is open to exploring this further in consultation with the E-TWG, regulatory agencies and relevant stakeholders.

7. Project Decommissioning

7.1. Potential impacts on marine wildlife, birds, bats, and fisheries

This section should describe potential impacts to marine mammals, sea turtles, birds, bats, and fisheries and habitats from decommissioning the project, based on available information and relevant experience (if any).

- Equinor Wind’s waste handling processes during decommissioning will focus on re-use or recycling, with disposal as the last option.
- Equinor Wind will collaborate with regulatory authorities and key environmental stakeholder groups better understand the effects and potential impacts associated with decommissioning.
- Additionally:
 - Equinor Wind does not expect impacts from decommissioning to exceed impacts resulting from the maximum design scenarios associated with construction.
 - As monitoring during operations provides a better understanding of the spatial and temporal presence of marine mammals, sea turtles, birds, bats, and fish habitats within the Lease Area, mitigation measures can be more tailored and effective at further reducing the likelihood and level of impacts.
 - Equinor Wind will collaborate on further research into the effects and potential impacts associated with decommissioning, including coordination with the E-TWG and F-TWG, using the experiences in Europe to help inform that process as well as experiences from decommissioning of oil and gas installations and other offshore wind developments on the eastern seaboard of the United States.

7.2. Approach for developing a decommissioning plan and coordination with stakeholders

This section should describe how a decommissioning plan will be developed to identify and mitigate potential impacts, including coordination with stakeholders, and any elements of its contemplated decommissioning plan that can be identified at this stage

- Equinor Wind will decommission the project in accordance with all necessary laws and regulations and generate a detailed Project-specific decommissioning plan.
- Equinor Wind will seek input on the detailed project-specific decommissioning plan from regulatory agencies, fisheries and marine stakeholders, and local communities.
- Equinor Wind will use “lessons learned” from the construction and operations activities and apply them when appropriate to the decommissioning plan.
- Additionally:
 - Equinor Wind will continuously evaluate and improve this EMP so that all the components of the EMP are complete and sufficient, including the decommissioning plan.

- Equinor Wind expects that additional guidance and information will become available throughout the planning and regulatory process and will continue to consider its relevance to the EMP at the appropriate intervals.

8. Additional Considerations

8.1. Additional mitigation strategies and EMP refinement

This section should describe any additional mitigation strategies not otherwise described herein that would improve the Plan and reduce impacts on the environment. In addition, describe how the EMP will be updated and refined based on additional information and stakeholder feedback.

- Equinor Wind will support collaborative research on potential mitigation strategies and best management practices, with other developers, agencies, and stakeholders.
- Additionally:
 - Equinor Wind will continue to monitor new and novel approaches to mitigation in the offshore wind industry both in the US and from Equinor's existing offshore wind farms and developments elsewhere in the world, including the forums and networks in which Equinor Wind participates.

8.2. Process for updating the EMP

This section should describe how feedback from the fishing industry stakeholders, F-TWG, and other agencies and working groups will be incorporated and updated in the EMP.

- Updates to the EMP are intended to reflect the results of iterative exchanges with members of the E-TWG, F-TWG, and relevant stakeholders.
- Additionally:
 - Equinor Wind will continuously evaluate and improve this EMP so that all the components of the EMP are complete and sufficient.
 - Equinor Wind expects that additional guidance and information will become available throughout the planning and regulatory process and as such will continue to consider its relevance to the EMP at the appropriate intervals.
 - Currently Equinor Wind is working with the E-TWG to establish a process for updating the Empire Wind EMP, where formal updates will likely occur after major Project milestones (e.g., a project NOI).