Dear Member of the Offshore Wind Energy Community:

We kindly request your assistance in gathering information on offshore wind energy projects around the world and the environmental monitoring conducted at each.

The [*Tethys*](https://tethys.pnnl.gov/) team has partnered with IEA Wind’s [WREN Initiative](https://tethys.pnnl.gov/about-wren) to collect information, or metadata, on the environmental effects of offshore wind energy projects on marine animals, habitats, and ecosystem processes. By making this information widely available, *Tethys* and WREN aim to advance global understanding of these effects and progress the industry in an environmentally responsible manner. *Tethys* hosts similar information for marine energy projects (e.g., wave, tidal) through the OES-Environmental Initiative, which can be viewed [here](https://tethys.pnnl.gov/oes-environmental-metadata).

**Please fill in the following questionnaire with information on your project and any associated environmental monitoring efforts**, including links to **relevant publications and any publicly available data.** We are collecting information from test sites, demonstration projects, and commercial farms that have conducted environmental monitoring at any stage in the life cycle. Please find the example questionnaire attached to this email and send any questions to [tethys@pnnl.gov](mailto:tethys@pnnl.gov). We will request annual updates to ensure the information provided is accurate and up to date, so please be sure to provide a reliable point of contact.

By participating in the metadata collection process, you will assist the offshore wind energy community by contributing to the compilation of environmental effects information in a single location to allow for:

* **Increased awareness** amongst developers and regulators about new and current monitoring techniques, which may inform new investments into monitoring methods and mitigation strategies;
* **Increased efficiency** of the permitting/consenting process by precluding studies shown to yield few results (under certain conditions), allowing for shorter and less costly processes;
* **Reduced uncertainty** for targeted investments of environmental effects by government agencies and other funding sources, further clarifying the permitting/consenting process; and
* **Value-added interpretation and knowledge** through the examination of key research findings in conjunction with project monitoring data, informing optimal siting, and permitting.

Thank you in advance for contributing to this valuable effort!

Kind regards,

The *Tethys* Team

**OFFSHORE WIND ENERGY PROJECT - METADATA QUESTIONNAIRE**

Name & Affiliation of Person Reviewing Form: Date Submitted/Last Reviewed:

Project Contact Information

*Name (will be publicly available):*

*Email (will be publicly available):*

Project Details

*Project Name:*

*Project Website:*

*Project Manager(s):*

*Project Scale:*  Test Site  Demonstration  Commercial Farm

*Project Status:*   Planning  Under Construction  In Operation  Not in Operation

Decommissioned  Cancelled

*Technology Type:*  Fixed Offshore Wind  Floating Offshore Wind

*Project Coordinates (Mercator in decimal degrees):*

*Country:*

*Construction Start Date:*

*Operation Start Date:*

*Decommissioning Date (if applicable):*

*Physical Site Conditions (Select all that apply)*

*Site:*  Deep water (> 60 m)  Shallow water (< 60 m)  Lake ☐ Marine

*Water Depth (e.g., 20 m):*

*Distance from shore (km):*

*Benthic Habitat:*  Hard-bottom Habitat  Soft-bottom Habitat

*Turbine Developer(s):*

*Turbine* *Model(s):*

*Hub Height(s):*

*Rotor diameter(s):*

*Number of Turbines:*

*Capacity of Each Turbine (MW):*

*Installed Capacity (MW):*

*Foundation Manufacturer(s):*

*Support Structure (Select all that apply)*

*Substructure:*  Monopile  SPAR Buoy

Gravity Foundation  Tension Leg Platform

Tripod Foundation  Semi-Submersible

Jacket Foundation  Suspended Counter Weight

Suction Bucket  Other: \_\_\_\_\_\_\_\_\_\_

*Anchor (if applicable):*   Suction Anchors  Gravity Anchors

Drag Embedment Anchors  Other: \_\_\_\_\_\_\_\_\_\_

*Mooring (if applicable):*  Catenary  Semi-Taut  Taut  Tension Leg  Other: \_\_\_\_\_\_\_\_

*Power Export Cables (select all that apply):*   Buried Seafloor Cables  Unburied Seafloor Cables

Cables in the Water Column

*Inter-array Cable Voltage (kV):*

*Export Cable Type:*  AC  DC

*Export Cable Voltage (kV):*

*Number of Export Cables:*

*Cable Landfall Method*:  Horizontal Directional Drill  Trenched  Other: \_\_\_\_\_\_\_\_\_

Project Image

*Please attach a high-resolution image of the project (or project site) or provide a link to an image. If the image is too large to email, we can provide a file transfer link.*

[intentionally left blank for your input]

Project Description *Please provide a brief description of the project and any additional project information not included above.*

Location

*Please provide any additional information about the project location (e.g., water body, distance to shore, distance to nearest port, cable landfall).*

Project Timeline

*Please provide a brief description of the project’s timeline including its current status and planned development.*

Licensing Information

*Please provide a brief description listing the organizations involved,* *licenses acquired, and duration of the permitting/consenting process.*

Key Environmental Issues

*Please provide a brief summary of the key environmental issues faced by this project, such as sensitive species or habitats in the development area, and plans or strategies to address these issues (e.g., monitoring, mitigation).*

[intentionally left blank for your input]

Papers and Reports

*Please list any key reports or papers that describe environmental assessments or monitoring conducted. Documents will be added to* Tethys*, so please provide a PDF of the file or a link to where the file can be accessed. Details on specific studies and available datasets can be listed in the tables below.*

Environmental Monitoring Conducted at the Project Site

*In the applicable tables below, please provide details of the environmental monitoring associated with the project, including descriptions of each study’s objective, design, and methods; results (if available); status (e.g., planned, ongoing, completed); links to relevant publications; and links to any publicly available data. Additional rows may be added to report on other stressors and receptors (e.g., baseline noise and electromagnetic field assessments; viewshed and fisheries impacts). Blank rows will not be displayed in the online version.*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Baseline Assessments** | | | | | | |
| **Receptor** | **Study Type** | **Design & Methods** | **Results** | **Status** | **Publications** | **Link(s) to Data** |
| [Bats](https://tethys.pnnl.gov/receptor/bats) |  |  |  |  |  |  |
| [Birds](https://tethys.pnnl.gov/receptor/birds) |  |  |  |  |  |  |
| [Ecosystem Processes](https://tethys.pnnl.gov/receptor/ecosystem-processes) |  |  |  |  |  |  |
| [Fish](https://tethys.pnnl.gov/receptor/fish) |  |  |  |  |  |  |
| [Invertebrates](https://tethys.pnnl.gov/receptor/invertebrates) |  |  |  |  |  |  |
| [Marine Mammals](https://tethys.pnnl.gov/receptor/marine-mammals) |  |  |  |  |  |  |
| [Physical Environment](https://tethys.pnnl.gov/receptor/physical-environment) |  |  |  |  |  |  |
| [Reptiles](https://tethys.pnnl.gov/receptor/reptiles) |  |  |  |  |  |  |
| Other |  |  |  |  |  |  |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Construction & Operations Monitoring** | | | | | | | |
| **Stressor** | **Receptor** | **Study Type** | **Design & Methods** | **Results** | **Status** | **Publications** | **Link(s) to Data** |
| [Attraction](https://tethys.pnnl.gov/stressor/attraction) | Bats |  |  |  |  |  |  |
| Birds |  |  |  |  |  |  |
| Fish |  |  |  |  |  |  |
| Invertebrates |  |  |  |  |  |  |
| Marine Mammals |  |  |  |  |  |  |
| Reptiles |  |  |  |  |  |  |
| [Avoidance](https://tethys.pnnl.gov/stressor/avoidance) | Bats |  |  |  |  |  |  |
| Birds |  |  |  |  |  |  |
| Invertebrates |  |  |  |  |  |  |
| Marine Mammals |  |  |  |  |  |  |
| Reptiles |  |  |  |  |  |  |
| [Changes in Flow](https://tethys.pnnl.gov/stressor/changes-flow) | Ecosystem Processes |  |  |  |  |  |  |
| Physical Environment |  |  |  |  |  |  |
| [Collision](https://tethys.pnnl.gov/stressor/collision)  (i.e., with turbines or vessels) | Bats |  |  |  |  |  |  |
| Birds |  |  |  |  |  |  |
| Fish |  |  |  |  |  |  |
| Marine Mammals |  |  |  |  |  |  |
| Sea Turtles |  |  |  |  |  |  |
| [Displacement](https://tethys.pnnl.gov/stressor/displacement) | Bats |  |  |  |  |  |  |
| Birds |  |  |  |  |  |  |
| Fish |  |  |  |  |  |  |
| Invertebrates |  |  |  |  |  |  |
| Marine Mammals |  |  |  |  |  |  |
| Reptiles |  |  |  |  |  |  |
| [Electromagnetic Fields](https://tethys.pnnl.gov/stressor/emf) | Fish |  |  |  |  |  |  |
| Invertebrates |  |  |  |  |  |  |
| Marine Mammals |  |  |  |  |  |  |
| Reptiles |  |  |  |  |  |  |
| [Entanglement](https://tethys.pnnl.gov/stressor/entanglement) | Birds |  |  |  |  |  |  |
| Fish |  |  |  |  |  |  |
| Marine Mammals |  |  |  |  |  |  |
| Reptiles |  |  |  |  |  |  |
| [Habitat Change](https://tethys.pnnl.gov/stressor/habitat-change) | Birds |  |  |  |  |  |  |
| Ecosystem Processes |  |  |  |  |  |  |
| Fish |  |  |  |  |  |  |
| Invertebrates |  |  |  |  |  |  |
| Marine Mammals |  |  |  |  |  |  |
| Physical Environment |  |  |  |  |  |  |
| Reptiles |  |  |  |  |  |  |
| [Lighting](https://tethys.pnnl.gov/stressor/lighting) | Bats |  |  |  |  |  |  |
| Birds |  |  |  |  |  |  |
| Fish |  |  |  |  |  |  |
| Marine Mammals |  |  |  |  |  |  |
| Sea Turtles |  |  |  |  |  |  |
| [Noise](https://tethys.pnnl.gov/stressor/noise) | Bats |  |  |  |  |  |  |
| Birds |  |  |  |  |  |  |
| Fish |  |  |  |  |  |  |
| Invertebrates |  |  |  |  |  |  |
| Marine Mammals |  |  |  |  |  |  |
| Reptiles |  |  |  |  |  |  |
| Other |  |  |  |  |  |  |  |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Decommissioning** | | | | | | | |
| **Stressor** | **Receptor** | **Study Type** | **Design & Methods** | **Results** | **Status** | **Publications** | **Link(s) to Data** |
| [Attraction](https://tethys.pnnl.gov/stressor/attraction) | Bats |  |  |  |  |  |  |
| Birds |  |  |  |  |  |  |
| Fish |  |  |  |  |  |  |
| Invertebrates |  |  |  |  |  |  |
| Marine Mammals |  |  |  |  |  |  |
| Reptiles |  |  |  |  |  |  |
| [Avoidance](https://tethys.pnnl.gov/stressor/avoidance) | Bats |  |  |  |  |  |  |
| Birds |  |  |  |  |  |  |
| Invertebrates |  |  |  |  |  |  |
| Marine Mammals |  |  |  |  |  |  |
| Reptiles |  |  |  |  |  |  |
| [Changes in Flow](https://tethys.pnnl.gov/stressor/changes-flow) | Ecosystem Processes |  |  |  |  |  |  |
| Physical Environment |  |  |  |  |  |  |
| [Collision](https://tethys.pnnl.gov/stressor/collision)  (i.e., with turbines or vessels) | Bats |  |  |  |  |  |  |
| Birds |  |  |  |  |  |  |
| Fish |  |  |  |  |  |  |
| Marine Mammals |  |  |  |  |  |  |
| Sea Turtles |  |  |  |  |  |  |
| [Displacement](https://tethys.pnnl.gov/stressor/displacement) | Bats |  |  |  |  |  |  |
| Birds |  |  |  |  |  |  |
| Fish |  |  |  |  |  |  |
| Invertebrates |  |  |  |  |  |  |
| Marine Mammals |  |  |  |  |  |  |
| Reptiles |  |  |  |  |  |  |
| [Electromagnetic Fields](https://tethys.pnnl.gov/stressor/emf) | Fish |  |  |  |  |  |  |
| Invertebrates |  |  |  |  |  |  |
| Marine Mammals |  |  |  |  |  |  |
| Reptiles |  |  |  |  |  |  |
| [Entanglement](https://tethys.pnnl.gov/stressor/entanglement) | Birds |  |  |  |  |  |  |
| Fish |  |  |  |  |  |  |
| Marine Mammals |  |  |  |  |  |  |
| Reptiles |  |  |  |  |  |  |
| [Habitat Change](https://tethys.pnnl.gov/stressor/habitat-change) | Birds |  |  |  |  |  |  |
| Ecosystem Processes |  |  |  |  |  |  |
| Fish |  |  |  |  |  |  |
| Invertebrates |  |  |  |  |  |  |
| Marine Mammals |  |  |  |  |  |  |
| Physical Environment |  |  |  |  |  |  |
| Reptiles |  |  |  |  |  |  |
| [Lighting](https://tethys.pnnl.gov/stressor/lighting) | Bats |  |  |  |  |  |  |
| Birds |  |  |  |  |  |  |
| Fish |  |  |  |  |  |  |
| Marine Mammals |  |  |  |  |  |  |
| Sea Turtles |  |  |  |  |  |  |
| [Noise](https://tethys.pnnl.gov/stressor/noise) | Bats |  |  |  |  |  |  |
| Birds |  |  |  |  |  |  |
| Fish |  |  |  |  |  |  |
| Invertebrates |  |  |  |  |  |  |
| Marine Mammals |  |  |  |  |  |  |
| Reptiles |  |  |  |  |  |  |
| Other |  |  |  |  |  |  |  |