



Environmental impacts of the Offshore Wind Farms

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Why is the identification of the OWF impacts necessary?

1. For the purposes of **project planning and designing,**
2. For the purpose of **initial consultations and arrangements** regarding the concept of the project,
3. For the purpose of the **procedure for the issuance of the location permit (PSZW),**
4. For the purpose of the **environmental impact assessment procedure,**
5. For the purpose of the **post-execution analysis,**

At which stages the OWF may affect the environment?

- **planning** - during the pre-execution analyses,
- **execution**,
- **exploitation**,
- and **decommissioning** of the farm.

The occurrence of particular impacts and their scale is specific for each project and depend on the characteristics of the project - the size, location, environmental resources within the investment area, selected technologies and working methodologies.

The stage of planning

- Impacts associated with the environmental research:
 - noise emission (airplanes, vessels),
 - excitement of seabed sediments (sampling, ship anchoring, drills),
 - leakages of various substances from vessels (regular exploitation, breakdowns, collisions),
 - production of waste by research teams,
 - landscape distortion.

Short-term local impacts, except for the potential breakdowns.

The stage of execution - scope of impacts

Impacts at the preparatory stage

- ✓ Construction of components (foundations, wind power plants),
- ✓ Transport of the components to the harbour,
- ✓ Storage and warehousing of the components,

The stage of execution - scope of impacts

Impacts at the transport stage

- ✓ Loading and unloading of the components to and from the transport units.
- ✓ Transport of the components, equipment and construction team to the site.

The stage of execution - scope of impacts

Impacts at the construction stage

- ✓ Preparation of the seabed for the foundations,
- ✓ Installation of the foundations,
- ✓ Installation of the wind power plants,
- ✓ Seabed cable laying,
- ✓ Construction of the accompanying infrastructure.

The stage of execution - types of impacts

- emission of **noise**,
- **air pollution** emissions,
- production of **ordinary waste** by persons involved in the installation/assembly,
- production of **waste** (post-installation elements),
- **landscape distortion** – wind power plants as new components of the landscape,
- **water quality** deterioration,
- disturbance and destruction of **seabed habitats**,
- disturbance in the **marine and air traffic**.

The stage of exploitation

Wind power plants

- Exclusion of the body of water from other types of exploitation,
- The risk of collisions (airplanes, vessels),
- Risk of collisions, the barrier effect, scaring away of birds and bats,
- Noise impacts,
- Electromagnetic field and radiation impacts,
- Landscape distortion,
- Changes in the bethos,
- Changes in the undulation, currents and the ice cap,
- Artificial reef effect,
- Emission-free energy generation.

The stage of exploitation

Offshore and onshore accompanying infrastructure

- Electromagnetic field and radiation emission,
- Corona discharges,
- Emission of heat by seabed cables,
- Navigation system interference,
- Collisions with overhead lines,
- Overhead lines landscape impacts,
- Noise emissions from transformer stations.

The stage of decommissioning

- **Impacts at the decommissioning stage**

- ✓ disassembly of the wind power plants,
- ✓ disassembly of the foundations,
- ✓ disassembly of the seabed cables,
- ✓ Disassembly of the accompanying infrastructure.

- **Impacts at the transport stage**

- ✓ Loading and unloading of the components to and from the transport units.
- ✓ Transport of the components, equipment and construction team to the site.

- **Impacts at the disposal stage**

- ✓ Storage and warehousing of the disassembled components,
- ✓ Transport of the components to the disposal area,
- ✓ Disposal of components (foundations, wind power plants).