REGIONAL DIRECTOR FOR ENVIRONMENTAL PROTECTION IN GDAŃSK

Gdańsk, 16/10/2025 RDOŚ-Gd-WOO.420.82.2024.AM 17.

zpo/ePUAP

DECISION

Under:

- Article 104 of the Act of 14 June 1960, Code of Administrative Procedure (*consolidated text: Journal of Laws 2024, item 572, as amended*), hereinafter CAP,
- Article 75.1(1)(c), Article 82, and Article 85 of the Act of 3 October 2008 on the provision of information on the environment, public participation in environmental protection and environmental impact assessments (*consolidated text: Journal of Laws of 2024, item 1112, as amended*), hereinafter the EP Act,
- Article 76.1(1) of the Act of 17 December 2020 on promoting and generating electricity in offshore wind farms (*consolidated text: Journal of Laws of 2025, item 498*),
- § 2.1(5) and § 3.1(61) of the Decree of the Cabinet of 10 September 2019 on projects that may have a significant environmental impact (*Journal of Laws of 2019, item 1839, as amended*);

after reviewing the application of:

- Investor Orlen Neptun VIII Sp. z o. o., represented by proxy Mr. Radosław Opioła (a letter without a reference number of 28/11/2024) supplemented on 06/12/2024, concerning issuing of an environmental permit for the project: "**The Baltic East Offshore Wind Farm in area 46.E.1, together with the necessary infrastructure**" (hereinafter "The OWF Baltic East" or OWF BE);

taking into account the information contained in:

- the Environmental Impact Report of the Baltic East Offshore Wind Farm drawn up by the Consortium of the Gdynia Maritime University together with MEWO S.A. with subcontractors under the direction of Mr. Radosław Opioła, November 2024, and supplements and clarifications to the EP Report,
- the opinion of the State Border Sanitary Inspector in Gdynia, reference No.: SE.ZNS.80.4912.10.24 of 15/01/2025, reiterated by letter with a reference No.: ZNS.491.2.6.25.1 of 04/07/2025,
- the arrangement of the Director of the Maritime Office in Gdynia, a decision with a reference No.: INZ.9202.199.3.2024.AD of 22/04/2025, reiterated by letter with a reference No.: INZ.9202.205.3.2024.AD. of 27/06/2025;

and after carrying out the environmental impact assessment of the project and the transboundary impact proceedings

I decide hereby

A. Identify the type and the location where the project is to be executed.

The planned Project includes the construction, operation, and decommissioning of the Baltic East Offshore Wind Farm of a maximum total power of 966 MW. The aim of the Project is to generate electricity using a renewable energy source, i.e. the wind power. The OWF Baltic East site is located in the Exclusive Economic Zone (EEZ) of the Republic of Poland. The OWF Baltic East site covers about 111.7 km^2 and is located off villages of Sasino and Białogóra (the Pomeranian Voivodeship) at a distance of about 22.5 km off the sea shore and at a distance from the EEZ borders of other countries of: about 59 km from the Swedish Exclusive Economic Zone (EEZ), about 82 km from the Danish EEZ, about 73 km from the Russian EEZ and about 199 km from the German EEZ. The planned Project is to be executed in the maritime areas of the Republic of Poland. On 29 September 2023, Orlen Neptun VIII sp. z o.o. received Decision No. IMF/46.E.1 of the Minister of Infrastructure, of 29 September 2023 (ref. No. DGM-3.530.20.2022) concerning a permit for the erection and use of artificial islands, structures and devices within the Polish maritime areas for the project: “The Baltic East Offshore Wind Farm in area 46.E.1 with the necessary infrastructure”.

The planned project will consist of the following elements:

- wind turbines composed of the following components: a nacelle with a rotor, a tower, intermediate components (if they are not an integral part of the foundation), and foundations of single-support (monopile) or multi-support (jacket) design,
- offshore substations (OSS),
- internal power and telecommunication lines with accessories. The wind turbines, along with substations and inter array cable lines, will be embedded or seated on the seabed.

Table No. 1. Parameters characterising the OWF Baltic East.

parameter	Unit	Value
Maximum number of wind power plants	-	64
Power of a single wind power plant (values: minimum–maximum)	MW	15–25
Rotor diameter (maximum)	m	310
Total maximum cable length between wind power plants and OSSes	km	150
Number of offshore substations (maximum)	-	2

Table No. 2. Coordinates of the knee points for the border of the OWF Baltic East by type of the development area (source: EP Report)

BORDER POINT SYMBOL	COORDINATES IN THE ETRS89 REFERENCE SYSTEM	
	Longitude	Latitude
Area A (*)		
1	17° 43' 6,000" E	55° 1' 42,750" N
2	17° 43' 5,640" E	55° 3' 24,394" N
3	17° 43' 5,639" E	55° 5' 6,379" N
4	17° 45' 2,381" E	55° 5' 0,851" N
5	17° 45' 52,819" E	55° 4' 58,466" N
6	17° 43' 5,827" E	55° 1' 10,598" N

Area B (**)		
1	17° 43' 5,643" E	55° 0' 17,984" N
2	17° 43' 5,827" E	55° 1' 10,598" N

3	17° 45' 52,819" E	55° 4' 58,466" N
4	17° 49' 49,457" E	55° 4' 47,284" N
5	17° 46' 55,973" E	55° 0' 51,146" N
6	17° 43' 7,006" E	55° 0' 18,149" N
Area C (*)		
1	17° 51' 30,273" E	55° 4' 42,490" N
2	17° 56' 28,930" E	55° 4' 28,352" N
3	18° 0' 0,359" E	55° 4' 18,343" N
4	18° 0' 0,360" E	55° 3' 38,548" N
5	18° 0' 0,360" E	55° 2' 6,000" N
6	17° 57' 0,960" E	55° 1' 54,527" N
7	17° 56' 59,692" E	55° 1' 54,034" N
8	17° 56' 55,710" E	55° 1' 53,920" N
9	17° 56' 49,220" E	55° 1' 53,695" N
10	17° 56' 42,730" E	55° 1' 53,470" N
11	17° 56' 38,156" E	55° 1' 53,283" N
12	17° 56' 36,245" E	55° 1' 53,205" N
13	17° 56' 29,760" E	55° 1' 52,940" N
14	17° 56' 23,280" E	55° 1' 52,640" N
15	17° 56' 16,800" E	55° 1' 52,340" N
16	17° 56' 10,325" E	55° 1' 51,995" N
17	17° 56' 3,850" E	55° 1' 51,650" N
18	17° 55' 57,385" E	55° 1' 51,270" N
19	17° 55' 50,920" E	55° 1' 50,890" N
20	17° 55' 44,460" E	55° 1' 50,475" N
21	17° 55' 38,000" E	55° 1' 50,060" N
22	17° 55' 31,545" E	55° 1' 49,600" N
23	17° 55' 25,531" E	55° 1' 49,020" N
24	17° 55' 25,090" E	55° 1' 49,140" N
25	17° 55' 18,650" E	55° 1' 48,645" N
26	17° 55' 12,210" E	55° 1' 48,150" N
27	17° 55' 5,775" E	55° 1' 47,615" N
28	17° 55' 4,173" E	55° 1' 47,482" N
29	17° 54' 59,340" E	55° 1' 47,080" N

30	17° 54' 58,112" E	55° 1' 46,971" N
31	17° 54' 52,915" E	55° 1' 46,510" N
32	17° 54' 46,490" E	55° 1' 45,940" N
33	17° 54' 35,801" E	55° 1' 44,953" N
34	17° 54' 25,113" E	55° 1' 43,965" N
35	17° 54' 14,424" E	55° 1' 42,978" N
36	17° 54' 3,736" E	55° 1' 41,990" N
37	17° 53' 53,048" E	55° 1' 41,002" N
38	17° 53' 42,360" E	55° 1' 40,016" N
39	17° 53' 31,672" E	55° 1' 39,022" N
40	17° 53' 20,985" E	55° 1' 38,036" N
41	17° 53' 10,297" E	55° 1' 37,046" N
42	17° 52' 59,610" E	55° 1' 36,057" N
43	17° 52' 48,923" E	55° 1' 35,067" N
44	17° 52' 38,235" E	55° 1' 34,077" N
45	17° 52' 27,549" E	55° 1' 33,087" N
46	17° 52' 16,862" E	55° 1' 32,096" N
47	17° 52' 6,175" E	55° 1' 31,106" N
48	17° 51' 55,489" E	55° 1' 30,115" N
49	17° 51' 44,802" E	55° 1' 29,123" N
50	17° 51' 34,116" E	55° 1' 28,132" N
51	17° 51' 23,430" E	55° 1' 27,140" N
52	17° 51' 17,158" E	55° 1' 26,548" N
53	17° 51' 16,230" E	55° 1' 26,460" N
54	17° 51' 9,825" E	55° 1' 25,825" N
55	17° 51' 3,420" E	55° 1' 25,190" N
56	17° 50' 57,025" E	55° 1' 24,515" N
57	17° 50' 50,630" E	55° 1' 23,840" N
58	17° 50' 44,250" E	55° 1' 23,130" N
59	17° 50' 42,833" E	55° 1' 22,972" N
60	17° 50' 37,870" E	55° 1' 22,420" N
61	17° 50' 32,824" E	55° 1' 21,821" N
62	17° 50' 31,505" E	55° 1' 21,665" N
63	17° 50' 25,140" E	55° 1' 20,910" N
64	17° 50' 18,785" E	55° 1' 20,125" N
65	17° 50' 12,430" E	55° 1' 19,340" N
66	17° 50' 6,095" E	55° 1' 18,510" N
67	17° 49' 59,760" E	55° 1' 17,680" N

68	17° 49' 53,435" E	55° 1' 16,815" N
69	17° 49' 47,110" E	55° 1' 15,950" N
70	17° 49' 40,805" E	55° 1' 15,045" N
71	17° 49' 34,500" E	55° 1' 14,140" N
72	17° 49' 28,210" E	55° 1' 13,200" N
73	17° 49' 21,920" E	55° 1' 12,260" N
74	17° 49' 19,920" E	55° 1' 11,949" N
75	17° 49' 15,650" E	55° 1' 11,285" N
76	17° 49' 10,889" E	55° 1' 10,545" N
77	17° 49' 9,380" E	55° 1' 10,310" N
78	17° 46' 55,973" E	55° 0' 51,146" N
79	17° 49' 49,441" E	55° 4' 47,263" N
80	17° 49' 49,457" E	55° 4' 47,284" N

*Development area A and C – areas where, apart from the linear infrastructure, other elements of the OWF (i.e. wind turbines, offshore substations, etc.) will be installed;

**Development area B - on/at the bottom of which only linear infrastructure (cables) will be installed;

B. Determine the environmental conditions for the planned project consisting in building of the offshore wind farm OWF BE, and at the same time, I specify the following conditions for the execution of the project.

I. Conditions for the use of land at the phase of the project execution and operation or use, with a particular regard to the need to protect valuable natural values, natural resources, and heritage objects, as well as to limit the nuisance to neighbouring areas.

1. For all phases of the project:

1.1. The adopted technologies for carrying out any work should include procedures to be implemented if any pollutants are released into marine waters; this, in particular, protection against pollution with solid and liquid waste. Equip the project site with measures to contain and control contamination with petroleum derivatives. In the event of a spill of a petroleum substance, it should be immediately and continuously removed from the water surface.

1.2. All works related to the project must be conducted in accordance with the provisions of the spatial development plan(s) of the Polish maritime areas in force at the project execution site.

1.3. If any new, previously unidentified archaeological objects are discovered, they must be secured against any damage as a result of the work being carried out and the relevant administrative authorities need to be informed of the discovery.

1.4. At night time, limit the use of powerful light sources on ships and farm structures, and do not direct the light beam upward, subject to the need to provide lighting to ensure safety, including occupational safety and health (OSH) regulations.

1.5. Provide a coordination centre to oversee the construction, operation and decommissioning of the OWF BE.

1.6. Develop plans for the safe construction, operation and decommissioning of the OWF BE.
1.7. Conduct the execution, operation and decommissioning of the project in a manner that does not pose a threat to people and the environment.
1.8. Designate safety zones and appropriately mark and secure areas temporarily or permanently taken out of use.
1.9. Conduct appropriate, regular training of ship crews, and for employees and subcontractors involved in the construction, operation and decommissioning of the OWF BE.
1.10. Ensure that machinery and equipment are operated by persons trained in general and specific occupational health and safety rules.
1.11. Reduce exposure to noise, vibrations and the effects of exhaust fumes, dust, and electromagnetic fields on contractors and maintenance technicians through adequate mitigation measures.
1.12. Carry out work with equipment in a good operating condition, ensure proper maintenance and servicing of construction machinery and equipment, and maintain the equipment in a good operating condition during its operation.
1.13. Provide for the collection of municipal sewage in a manner appropriate for the site at which it is generated.
1.14. Develop procedures for the transfer and storage of substances that may be a source of pollution.
1.15. Ensure selective collection of waste (including bilge and other hazardous oils) during construction and maintenance work, operation, and decommissioning of the project.
1.16. Develop maritime operations and search and rescue plans, as well as evacuation and safety plans and hazard prevention strategies, including construction disasters.
1.17. Conduct information campaigns on the nature and scope of the investment and related nuisances and ways to mitigate them.
1.18. Equip vessels and substations with measures to remove spills of petroleum derivatives or released waste.
1.19. Ensure the appropriate level of treatment and disposal of oily waters.
1.20. Use materials and equipment that meet relevant standards and are certified for use in the relevant type of environment.

2. For the project execution phase:

2.1. Analyse the available technical solutions to reduce underwater noise during pile driving, and then implement the selected noise reduction system, which should minimise the impact of underwater noise on marine mammals and fish, ensuring that underwater noise levels generated during foundation piling are controlled throughout the year at a distance of 11 km from the source at the most favourable propagation direction, so as not to exceed the maximum underwater noise levels, i.e. 140 dB re 1 μPa^2s SEL_{cum} weighted by the HF function (HF function for marine mammals with high sensitivity to high-frequency sounds - porpoise) and 170 dB re 1 μPa^2s SEL_{cum} weighted by the PW function (PW function for pinniped marine mammals - seals).
2.2. Regardless of the use of underwater noise suppression technology, the piling process should be preceded each time by a soft-start procedure.
2.3. As far as possible, build successive elements of the offshore wind farm in such a way as to fill the site designated for investment with structures in stages, increasing the scaring effect and thus gradually displacing fish, birds and marine mammals from the

site designated for the project. It is permissible to use animal deterrent devices during piling.

2.4. Carry out all work under the supervision of a naturalist, who will be responsible for the control and supervision of the construction work performed, so that the task is carried out in accordance with environmental and nature protection laws and relevant administrative decisions. This supervision should be carried out by experts with expertise in conducting supervision in the fields of ichthyology, ornithology, and marine mammals.

2.5. Upon completion of the construction work, remove from the seabed all debris from the construction process and any contamination.

2.6. Prior to the start of the construction phase, develop and implement appropriate procedures to prevent accidents related to duds and, in particular, chemical warfare agents. If any duds or toxic warfare agents are found, notify the Director of the Maritime Office in Gdynia and to the Navy Hydrographic Office.

2.7. Internal power cables at the OWF BE site should be laid in a space-saving manner, under the surface of the seabed, and if this is not possible, other permanent protection should be used to allow the safe use of static anchored nets.

2.8. Ensure proper organisation and the schedule for the construction works.

2.9. Organise adequate facilities and social conditions for workers with proper sanitary facilities.

2.10. Ensure that the construction work is conducted by contractors with relevant experience and licenses and by trained workers.

2.11. Ensure that the construction work is conducted in weather conditions that enable its safe and precise execution in accordance with the chosen technology.

2.12. Implement warning systems for vessels unrelated to the construction of the OWF BE, provide navigational surveillance, use a system for delivery of navigational warnings and messages, and conduct continuous monitoring of vessel traffic.

2.13. Check the seabed to determine the exact location of objects that could pose a danger during the works and to other users of the maritime areas, inform the relevant services of the existing danger, and follow the relevant guidelines.

2.14. Ensure proper storage and transportation conditions for the components of the project.

2.15. Publish information on the planned scope of work, traffic volume, and the need for caution in the construction area.

2.16. Carry out the technological commissioning of the equipment, and putting it into operation after obtaining all required approvals and permits.

3. For the project operation phase:

3.1. OWF BE components should be equipped with elements that minimise the risk of oils entering the marine environment, including but not limited to sealed turbine casings and oil trays/sumps.

3.2. Equip offshore substations with oil sumps of a capacity of about 110% of the amount of oil in the transformers, capable of containing a total spill in the case of leak.

3.3. Conduct maintenance and direct operation work in weather conditions ensuring their safe and accurate execution.

3.4. Perform periodic inspections of individual components and keep the infrastructure in a good operating condition.

3.5. Develop emergency response plans during the operation of the project.

4. For the project decommissioning phase:

4.1. Upon completion of the operation of the subject project, remove all above-water elements of OWF BE. Before starting the decommissioning process, it is necessary to conduct a biological inventory of the objects embedded in or on the seabed. It is allowed to leave part of the objects sited on the seabed if they will be a habitat of valuable communities of marine organisms, after a prior agreement with the Director of the Maritime Office in Gdynia.

4.2. Start the removal of offshore wind farm components from one place, so that the body of water occupied by the structures is released gradually.

4.3. Carry out all work under the supervision of a naturalist, who will be responsible for the control and supervision of the decommissioning work performed, so that the task is carried out in accordance with environmental and nature protection laws and relevant administrative decisions.

4.4. Upon completion of the decommissioning work, remove from the seabed all debris from the decommissioning process and any contamination.

II. Environmental requirements necessary to be included in the construction design:

1. Design a maximum of 64 offshore wind turbines, with a minimum clearance between the bottom position of the rotor wing and the sea surface of not less than 22.5 m, a maximum rotor diameter not exceeding 310 m, and a maximum total height of the wind turbine not exceeding 347.5 m above the sea level.
2. Design a maximum of two offshore substations (OSSes) and a maximum of 150 km of inter array cable line sections.
3. The maximum total rotor sweep area must be limited to 2.87 million meters ^{2}.
4. To minimise the risk of collision during bird migrations, at night time, limit the use of powerful light sources on farm structures, and do not direct the light beam upward, subject to the need to provide lighting to ensure safety, including occupational safety and health (OSH) regulations.
5. Lay power cables at a depth of up to 3 m below the surface of the seabed. The minimum burial depth should be determined on the basis of the seabed characteristics, the sediment type (its thermal conductivity), and the power grid type (load size and type, thermal characteristics). If it is not technically possible to bury the cable, it should be laid on the seabed surface. Protect cables laid on the seabed surface by laying rock material, concrete mattresses, or other technological solutions that provide permanent protection from damage.
6. Design the infrastructure taking into account the principles of minimising impacts on its surroundings, especially the principles of safety, noise emissions, electromagnetic radiation, emissions to the air, and ensuring proper hygiene and health conditions and fire safety.
7. Provide OWF Baltic East with a permanently operating bird migration monitoring system and a system of shutdown/speed reduction of individual wind power plants along the flight path, which will be activated when crane flights are detected. Periodically turn off/reduce the speed of individual wind power plants or, if this is not possible, the entire farm during the periods of the most intense, peak seasonal migrations of cranes at collision heights (i.e., from March 15 to April 30 and from September 1 to October 31, with special attention to adverse weather conditions). Determine the flight intensity on the basis of the indications of the system for monitoring the migration intensity.

8. At the OWF Baltic East site, leave an unobstructed migration corridor for birds (at least 4 km wide), i.e. an area with no wind turbines and offshore substations constructed, described by the geographical coordinates of the knee points of the area boundary, summarised in the table below:

	Longitude	Latitude
	COORDINATES IN THE ETRS89 REFERENCE SYSTEM	
1	17° 43' 5,643" E	55° 0' 17,984" N
2	17° 43' 5,827" E	55° 1' 10,598" N
3	17° 45' 52,819" E	55° 4' 58,466" N
4	17° 49' 49,457" E	55° 4' 47,284" N
5	17° 46' 55,973" E	55° 0' 51,146" N
6	17° 43' 7,006" E	55° 0' 18,149" N

C. Impose the following obligations on the applicant:

1. Obligations of the applicant concerning measures to minimise and mitigate negative environmental impacts related to the need to reduce noise from piling and associated with the need to reduce the impact on birds, fish and marine mammals:

1) As far as possible, build successive elements of the offshore wind farm in such a way as to fill the site designated for investment with structures in stages, increasing the scaring effect and thus gradually displacing fish, birds and marine mammals from the site designated for the project.
2) At night time, limit the use of powerful light sources on ships and farm structures, and do not direct the light beam upward, subject to the need to provide lighting to ensure safety, including occupational safety and health (OSH) regulations.
3) To reduce the impact of noise on ichthyofauna, ornithofauna and marine mammals, start piling using the so-called soft-start procedure, in order to allow fish, birds and marine mammals to leave and move away from the area of work.
4) When planning piling work, other operations planned or conducted within 50 km of the site should be taken into account. Simultaneous piling at the indicated distance is allowed only under the condition that the permitted noise levels are not exceeded, so as to prevent the accumulation of adverse environmental impacts, and so that the number of simultaneous piling operations does not exceed two.
5) Conduct visual observations by qualified marine mammal observers (MMOs) from aboard ship in accordance with the methodology set forth by the JNCC commission, combined with Passive Acoustic Monitoring (PAM) based on the use of a set of hydrophones (PAM detectors) placed in the midwater. The duration of the search for mammals before piling should be at least 30 minutes.
6) During piling, use noise reduction systems that limit noise emissions, for example, air/bubble curtains or other technologies, ensuring that the boundary of the Natura 2000 area Ostoja Słowińska PLH220023 is not exceeded:
   a) 140 dB re 1 μPa^2s SEL_{cum} and weighted by the VHF function (the VHF weighting function for marine mammals with high sensitivity to very high frequency sounds - porpoise) [according to. Southall et al., 2019],
   b) 170 dB re 1 μPa^2s SEL_{cum} and weighted by the PW function (the PW weighting function for pinniped marine mammals - seals) [according to NMFS, 2018].

The noise reduction methods used at the piling stage must enable maintaining the noise level specified above at the border of the Natura 2000 area Ostoja Słowińska PLH220023. In the event that noise measurements indicate that the above-mentioned threshold is exceeded, stop pile driving and take additional

minimising measures to achieve the threshold noise level specified above. Immediately notify the Regional Director for Environmental Protection in Gdańsk about such a situation, no later than 7 days of the event. Further works can be continued after the implementation of measures preventing situations in which noise level thresholds are exceeded, and which will ensure that the above-mentioned threshold noise level is achieved.

2. Obligations of the applicant to monitor the environmental impact of the project:

2.1. Scope of pre-investment (pre-construction) monitoring.

1) Monitoring related to bird surveys should include counts of birds in the area of the planned OWF and in the reference area, performed during the day.
   a. The route of a survey session should be planned so as to cover with counts a 5-kilometre zone around the OWF boundaries, ensuring that changes in the density of birds present at different distances from future power plants can be assessed.
   b. Conduct on a monthly basis, for one year prior to the commencement of any work of the OWF Baltic East execution phase.
   c. On the basis of the construction design, determine the course of marine avifauna study transects in the OWF Baltic East area, so as to meet the condition of performing surveys at various distances from the wind turbines.

2.2. The scope of monitoring during the construction phase:

1) Underwater noise monitoring:
   a) Carry out monitoring during the execution phase of the OWF Baltic East during the piling of support structures. Carry out the measurements taking into account the following guidelines:
      - a collection of acoustic recordings in the frequency range from 10 Hz to 20 kHz,
      - take into account the recommendations of Skiellerup et al. (2015)
      i. use calibrated omnidirectional hydrophones with a sensitivity deviation below ±2 dB to 40 kHz in the horizontal plane and below ±3 dB to 40 kHz in the vertical plane, and record the calibration signal,
      ii. determine SEL for each pile driver strike,
      iii. select measuring stations at two different depths, at 66 and 33% of water depth and more than 2 m below the sea surface;
      - use measuring stations, where monitoring will be carried out during each piling,
      iv. one station at a distance of 11 km from the piling location in the direction with the best propagation of underwater noise,
      v. one station on the border of the Natura 2000 area Ostoja Słowińska, at the above-mentioned stations, underwater noise generated during piling should not exceed the following levels: 140 dB re 1 μPa^2s SEL_{cum} weighted by the VHF function according to Southall et al., 2019, and 170 dB re 1 μPa^2s SEL_{cum} weighted by the PW function according to NMFS, 2018,
2) The monitoring of the porpoise presence, carried out using devices of the C-POD/F-POD type or an equivalent monitoring technology available at the time of survey, should be conducted throughout the construction phase in accordance with the monitoring methodology developed
   for the purposes of the EP Report, with devices installed, where possible, at the same stations.

2.3. <u>Scope of post-execution monitoring:</u>

1. Monitor ichthyofauna both during the operation of the OWF and after its decommissioning. Carry out surveys in spring and summer one and five years after completion of construction works and one year after completion of decommissioning.
    a) As part of the monitoring, use a set of survey tools in the form of multi-panel bottom-set nets, and in the case of early development stages, a Bongo-type ichthyoplankton net.
    b) Designate survey stations at the OWF site in the same number as during the surveys for the EP Report.
2. Monitoring of migratory birds including both flight observations with radar and counts of birds present at the OWF site performed during the day.
    a) Target radar surveys at the trajectory of birds flying toward the OWF and their response to the barriers they encounter in the form of the OWF, as well as to determine the intensity of migration at the OWF Site and in its immediate vicinity to allow comparative analysis with other available studies in this area, and to provide new data for analyses of the barrier effect and frequency of avoidance (avoidance by birds).
    b) The monitoring is to consist of simultaneous visual, radar, and acoustic observations (at night, for species identification) allowing identification of not only the direction of flight and response, but also the species. As an alternative to acoustic observations, the farm can be equipped with a system that ensures identification not only of the direction of flight, but also of the species of migratory birds.
    c) Locate the research stations on a fixed platform (e.g., an OWF substation) or an anchored vessel, so that it allows observation of the OWF from the direction from which the birds arrive at a given stage of migration (in spring, on the southwestern side of the OWF, and in autumn, on the northeastern side of the OWF).
    d) In each migration season, conduct observations for at least 20 days, in 2–5 day sessions evenly spaced throughout the migration season.
    e) carry out monitoring in two cycles during the year, resulting from the two migration periods of birds, i.e. from March to May (spring migration) and from July to November (autumn migration), in four monitoring blocks:
        - two survey cycles in the first year after the completion of all works of the execution phase, i.e. one during the spring migration period and the second during the autumn migration period,
        - two survey cycles in the fourth year after the completion of all works of the execution phase, i.e. one during the spring migration period and the second during the autumn migration period.
3. Monitoring of seabirds should include counts of birds in the area of the OWF and in the reference area, performed during the day. The route of the survey cruise should be the same, or very similar to the pre-investment (pre-construction) monitoring.
    a. The surveys must primarily cover the period when birds are present in the greatest numbers in the southern Baltic Sea, that is, from October to May with a frequency of at least one survey session per month (optimally two survey sessions per month). In the other months, the number of birds in the community in the area of the OWF BE site is low, so during the summer it is sufficient to carry out two survey sessions, one in August and one in September.

b. The dates of the survey sessions should be synchronised so that the counts on both discussed bodies of water are performed, if possible, during a single survey session, to ensure comparability of results.
c. Conduct these studies for two consecutive years (the first two years of the OWF operation phase), if the construction is not conducted in stages. Otherwise, carry out these studies after the first stage of construction, and after the entire OWF BE is completed.

4. Conduct monitoring of the porpoise presence for at least two years after completion of construction of the planned project, using the same/comparable methods as during the research conducted for the EP report.
5. Monitoring of benthic organisms aimed at studying colonisation of artificial hard substrates by animal and plant periphyton communities.
   a. Benthos monitoring surveys:
      - Conduct the benthos monitoring programme at the OWF Site, covering studies of periphyton flora and fauna on 5 underwater structural elements of wind power plants and associated infrastructure.
      - At each site surveyed, collect samples of the periphytic organisms, and prepare film and photographic documentation of the entire riser overgrown by macroalgae and periphytic fauna.
      - Conduct the survey once a year in June. For the first time, surveys should be carried out after the first year after the Project start-up. Further studies should be performed after five and 10 years. Perform the last study one year before the planned decommissioning of the wind farm.
   b. Macrozoobenthos monitoring:
      - Carry out surveys within five foundations or support structures of wind power plants selected to represent potential stages of the construction work (structures built at different stages) and to be located in different parts of the OWF site.
      - In the vicinity of a single foundation or support structure, designate six stations, including three stations on the transect of the main profile (in the axis of the bottom current) at distances of 20, 50 and 100 m from the foundation or support structure, and three stations on the transect perpendicular to the main profile (reference profile) at the same distances.
      - Carry out surveys after the construction of the structures selected for monitoring is completed, once during a period similar to the one of the inventory surveys (May–June). Perform the first survey in the specified period after the completion of construction, and subsequent surveys two and four years after the first survey. Perform the last study one year before the planned decommissioning of the wind farm.
6. Bat monitoring aimed at determining species composition and abundance.
   a. The equipment used is to enable automatic recording and meet the minimum equipment requirements used in the surveys carried out at the biological inventory stage.
   b. Post-execution monitoring is to cover a period of three years, in the first year after the wind power plant is put into operation, and in the 2nd and the 3rd year of the OWF operation. The monitoring must cover the spring (April–May) and autumn (August–October) migration periods.

2.4 The monitoring programme, together with the specification of the methodology used and the deadlines for submission of its results to the local authority, should be submitted to

the Regional Director for Environmental Protection in Gdańsk for approval before its implementation. When determining the scope of monitoring, it is necessary to take into account the assumptions contained in the justification of this decision, information collected during the work on the report on the project's environmental impact, and other data concerning the natural environment of the analysed site.

2.5 Provide the Regional Director for Environmental Protection in Gdańsk with the results of monitoring, together with a proposal for preventive or minimising actions, if necessary, in the form of:

- interim reports, within three months after the end of the respective year of monitoring;
- final reports (summarising the entire survey cycle) - within six months after the completion of the survey for a given environmental resource.

In order to allow verification of the results of the analyses and their possible recalculation (in accordance with the principle of *repeatability* of results used in scientific research), the raw data forming the basis for performed analyses (e.g., tables of field observation results, radar data, acoustic data) should also be provided with the annual reports.

2.6 If significant negative impacts on an environmental resource are demonstrated in the interim or final report, or other significant environmental risks are identified, propose preventive or minimising measures (e.g., turbine shutdowns/slowing down due to bat activity) in the monitoring report, together with a proposed method of their implementation and verification of their results. On the other hand, in the case of unexpected, uncontrolled occurrence of significant changes in the state of preservation of natural habitats as well as habitats of protected plant and animal species, including those that are the subject of protection in Natura 2000 areas, which may have a significant impact on the elements of the natural environment, the Regional Director for Environmental Protection in Gdańsk must be informed immediately and a professional assessment of the causes of the observed changes must be provided, including the presentation of ways to repair and prevent adverse phenomena: the professional assessment with conclusions and recommendations should be performed within one month of the date on which the adverse phenomena were observed and (in each case) sent to the Regional Director for Environmental Protection in Gdańsk immediately after its execution, but no later than one month from the preparation of the assessment.

2.7 The Regional Director for Environmental Protection in Gdańsk, on the basis of the monitoring results provided, may decide, for example, to extend the monitoring duration, change its scope, or apply other minimising measures.

D. Provide environmental supervision of the project:

1. The project should be carried out under a naturalist supervision, led by a person(s) with knowledge and experience in ornithology, ichthyology, and marine mammal biology and ecology. This supervision should include:
   a) training for construction supervisors;
   b) protective indications during the works performance;
   c) supervision over the implementation of the provisions of the environmental permit, in terms of compliance with the Nature Protection Act;
   d) supervision over the implementation of the provisions of the environmental permit concerning underwater noise emissions.

2. An environmental specialist responsible for developing and applying a rapid response procedure for emergency situations (e.g., contamination of marine waters with oil substances from transformers and ships) at the farm, and training those involved in rescuing animals that come into contact with oily waters.

E. Do not find it necessary to create a restricted use area. Wind power plants are not listed in the catalogue of projects for which it is possible to create a restricted use area. The project will also involve the construction of offshore power lines and substations, for which regulations provide for the possibility of creating such an area. However, it is not anticipated that any environmental quality standards may not be met by these facilities, and therefore there is no need to create a restricted use area for the Project.

F. Determine the need to reassess the environmental impact as a part of the procedure for issuing a building permit, with particular attention to:

1. Specifying the methods for foundation construction and for accurate determining of areas permanently occupied by foundations and, on this basis, assessing the impact of this stage of the investment on the various components of the natural environment, along with an analysis of how to maintain the structural elements of the OWF BE.
2. Specifying the location and parameters of individual turbines and platforms, and the impact of the aforementioned elements on the accessibility of the site to animals, especially seabirds and marine mammals, and establishing the impact on birds' long-distance migration routes and local flights.
3. Specifying key parameters of wind power plants.
4. Indicating the exact location and parameters of offshore substations, as well as the type and size of foundations on which they will be installed.
5. Model calculations for bird collision, which will be based on the parameters of wind turbines of the OWF BE site.
6. Proposals for solutions to minimise the impact of noise and reduce the extent of its impact, appropriate to the adopted methods for foundation construction.
7. Analysing the appropriateness of using a system of temporary shutdown/slowing down of individual wind turbines or groups of wind turbines during periods of intense migration when larger numbers of bird species fly at collision height. Issues identified by the Director of the Maritime Office as to be taken into account under the procedure for issuing a building permit:

1. Determine the areas permanently occupied by foundations of wind power plants and offshore substations, and estimate the extent of physical losses in the seabed, and to present their spatial extent using geographic coordinates.
2. Provide an analysis of the impact of the planned project at the stage of construction, execution and decommissioning on other uses of marine space, especially fishing and shipping.
3. Provide an analysis of the cumulative impacts of the discussed project and projects being executed, completed or planned, for which an environmental permit was issued, located in the area where the project is planned to be executed, and in the area of the project's impact, or whose impacts fall within the area of the planned project's impact - to the extent that their impacts may lead to cumulative impacts with the planned project at the stage of its construction, execution and decommissioning on:

- integrity, coherence and the subject and aims of protection of the Natura 2000 areas Przybrzeżne wody Bałtyku (PLB990002), Ławica Słupska (PLC990001), and Ostoja Słowińska (PLH220023),
- other uses of marine space, especially fishing and shipping;

4. Propose solutions to minimise significant cumulative impacts of the planned project, if such impacts are identified during reassessment, together with an assessment of their effectiveness;
5. Refer in detail to the applicable environmental objectives arising from strategic documents relevant to the project execution, and provide a detailed analysis of whether the discussed project can affect the achievement of individual environmental objectives;
6. Describe in detail the objectives of the marine mammal observer (MMO) programme, which was provided in the EP Report as a measure mitigating the impact on marine mammals;
7. Describe in detail the assumptions of the temporary shutdown system, which was identified in the EP Report as a measure mitigating the impact on seabirds.

The reassessment should be carried out on the basis of technical and organisational details of the project, in terms of, among other things, the farm parameters and the deployment of infrastructure, as well as current data, especially the results of environmental monitoring and pre-investment and post-execution monitoring for offshore wind farms and associated infrastructure.

As a part of the environmental impact assessment, there is no obligation to conduct a transboundary environmental impact study under Article 104 of the EP Act.

G. Post-execution analysis.

Submit a post-execution analysis containing conclusions from the execution and post-execution monitoring within six months from the end of the last season of post-execution studies, while after each year of sub-monitoring, within three months, reports on the conducted individual stages of monitoring should be submitted to the Regional Director for Environmental Protection in Gdańsk.

H. Attach the characteristics of the project as Appendix No. 1 to this decision.

I. This decision is immediately enforceable under Article 76.1(1) of the Act of 17 December 2020 on promoting and generating electricity in offshore wind farms *(Journal of Laws of 2025, item 498*).

In the context of the comments of the affected countries, the conditions for minimising negative environmental impacts have been included in the greatest possible extent in the terms of this decision.

GROUNDS

On 28/11/2024, the Regional Director for Environmental Protection in Gdańsk received an application from the Investor: Orlen Neptun VIII Sp. z o. o., represented by proxy Mr. Radosław Opioła (a letter without a reference number of 28/11/2024) supplemented on 06/12/2024, concerning issuing of an environmental permit for the project: “The Baltic East Offshore Wind Farm in area 46.E.1”.

The following documents were attached to the said application:

1) the Environmental Impact Report of the Baltic East Offshore Wind Farm (the Consortium of the Gdynia Maritime University together with MEWO S.A. with subcontractors under the direction of Mr. Radosław Opioła, November 2024) (two hardcopies + four copies on CD);
2) a map showing the anticipated area where the project will be executed, and the anticipated area that will be affected by the project, with a the map in electronic form;
3) power of attorneys for: Ms. Martyna Socha, Mr. Radosław Opioła and Mr. Andrzej Dziura to represent the company;
4) proof of payment of the stamp duty for the issuance of the decision (PLN 205) and powers of attorney (PLN 51).

Considering the above, with a notice dated 16/12/2024, with ref. No. RDOŚ-GdWOO.420.82.2024.AM.1, the local authority informed the Investor about the initiation of proceedings in the discussed case and about the possibility of familiarising with the documents and submitting possible comments and applications. The information on the application was included in the publicly available Ekoportal data list (www.ekoportal.pl) under number 639/2024, maintained pursuant to Article 21 of the EP Act. The EP Report, together with its abstract, was uploaded to the publicly available Ekoportal list (*http://www.ekoportal.pl*).

According to Article 74.3a of the EP Act, a party to the proceedings on the issuance of an environmental permit is the applicant and an entity that has a property right to a real estate located in the area that will be affected by the project in the variant proposed by the applicant, subject to Article 81.1 of the EP Act. The said area is defined as the foreseen area where the project will be executed, and the area within 100 meters of the boundaries of that area; plots of land where environmental quality standards would be exceeded as a result of the execution, operation, or use of the project, or plots of land within the range of significant impact of the project, which may introduce restrictions in the property development in accordance with its current use.

It follows from the submitted report on the project environmental impact that the investment in question will be executed within the Polish maritime area in the exclusive economic zone in the POM.46.E body of water, and is located off the villages of Sasino and Białogóra at a distance of about 22.5 km from the coast (the Pomeranian Voivodeship). Pursuant to Article 2.2 of the Act of 21 March 1991 on the maritime areas of the Republic of Poland and maritime administration(*consolidated text: Journal of Laws of 2024, item 1125, as amended*), the exclusive economic zone is part of the territory of the Republic of Poland. It is clear from a well-established line of jurisprudence that no entity can hold property rights to the waters, the airspace above those waters, and the seabed of the waters of the exclusive economic zone, or the interior of the earth. In addition, the discussed project will be executed within the boundaries of the Development Area, and the impacts of the discussed project will not cause environmental quality standards to be exceeded either within or outside the boundaries of the development area. Therefore, as of the date of initiation of the proceedings, the only entity that may have the rights of a party to the proceedings in question is the Investor, i.e. Orlen Neptun VIII Sp. z o. o.

The planned project will involve the construction of the Baltic East offshore wind farm (OWF) of a maximum installed power of 966 MW. It will consist of up to 64 wind power plants,

up to 150 km of internal installation cable routes and up to two offshore substations. The OWF Baltic East is located within the Polish maritime area in the exclusive economic zone.

Pursuant to § 2.1.5 of the Decree of the Cabinet of 10 September 2019 on projects likely to have a significant environmental impact(*Journal of Laws of 2019, item 1839, as amended*), the planned project is qualified as *"installations using wind energy for the generation of electricity of a total nominal power of the power plant no less than 100 MW, located in the maritime areas of the Republic of Poland".* In view of the above, under Article 71.2(1) of the EP Act, the execution of the project requires an environmental permit.

Taking into account the fact that the project is one that may always have a significant environmental impact, and due to the fact that it is located in a maritime area, according to the wording of Article 75.1(1) (c) of the Environmental Protection Act, the competent authority to consider the case is the Regional Director for Environmental Protection in Gdańsk.

According to Article 6 of the EP Act, the requirement to agree or provide an opinion does not apply if the body conducting the proceedings is also the body agreeing or providing an opinion. In the present case, the competent bodies for opinion/agreement are: The State Border Sanitary Inspector in Gdynia and the Director of the Maritime Office in Gdynia. On 16/12/2024, the Regional

Under Articles 77.1 (1) and 77.1 (2) of the Act of October 3, 2008 on providing information on the environment and its protection, public participation in environmental protection and environmental impact assessments the Director for Environmental Protection, in their letter with ref. No. RDOŚ-GdWOO.420.82.2024.AM.2, applied to the Director of the Maritime Office in Gdynia and the State Border Sanitary Inspector for an opinion on the conditions of the project execution.

The State Border Sanitary Inspector in Gdynia, in their letter SE.ZNS.80.4912.10.24 dated 15/01/2025, gave an opinion on the conditions of the project execution. Subsequently, the State Border Sanitary Inspector in Gdynia in their letter with ref. No. ZNS.491.2.6.2025 dated 15/04/2025 and on 10/07/2025 in their letter with ref No.: ZNS.491.2.6.2025.1 dated 04/07/2025, upheld their position contained in the aforementioned opinion with ref. No. SE.ZNS.80.4912.10.24. The local body considered the above opinion, taking this into account in the content of this decision in Conditions No.: **I.1.5, I.1.6, I.1.7, I.1.8, I.1.9, I.1.10, I.1.11, I.1.12, I.1.13, I.1.14, I.1.15, I.1.16, I.1.17, I.1.18, I.1.19, I.2.10, I.2.11, I.2.12, I.2.13, I.2.14, I.2.15, I.2.16, I.2.17, I.2.18, I.2.19, I.3.4, I.3.5, I.3.6.**

The Director of the Maritime Office in Gdynia (hereinafter referred to as the UM Director), in their letter with ref. No. INZ.9202.205.1.2024.AD dated 24/01/2025, informed that they could not agree on the conditions for execution of the project in question because the report contents needed to be supplemented. In connection with the above, on 11/02/2025, the Regional Director for Environmental Protection (RDOŚ) in Gdańsk, in their letter with Ref. No. RDOŚ-GdWOO.420.82.2024.AM.6., requested the Investor to submit clarifications and to supplement the EP Report. Orlen Neptun VIII, submitted relevant supplements with their letter with Ref. No. ON8/06/2025 on 05/03/2025 and with their letter with Ref. No. ON8/07/2025 on 11/03/2025.

On 28/04/2025, the Director of the Maritime Office in Gdynia, in their letter with Ref. No. INZ.9202.205.2.2024.AD, agreed on the conditions for execution of the project in question. Subsequently, on 30/06/2025, in their letter with Ref. No. INZ1.9202.205.3.2024.AD of 27/06/2025, they upheld their position contained in the aforementioned decision.

The local body considered the above opinion, taking this into account in the content of this decision in Conditions No.: **I.1.1, I.1.2, I.1.3, I.2.1, I.2.2, I.2.4, I.2.5, I.2.7, I.2.8, I.2.9, I.3.1, I.4.2, I.4.3, I.4.5, II.1, II.2, II.8., and F.**

Poland's obligations to conduct transboundary environmental impact assessments are defined by the Convention on Environmental Impact Assessment in a Transboundary Context, drawn up in Espoo on 25 February 1991 (Espoo Convention). Acting on the basis of Article 108.1(2) of the EP Act, in their letter with Ref. No. RDOŚ-GdWOO.420.82.2023.AM.4 dated 23/01/2025, the local authority informed the General Director for Environmental Protection (hereinafter GDOŚ) of the possibility of a transboundary environmental impact of the planned project and provided them with the EP Report.
The OWF BE site is located in the Polish exclusive economic zone (EEZ).
The distances of this site from the EEZ borders of other countries are:

- above 59 km from the Swedish exclusive economic zone (EEZ),
- above 82 km from the Danish EEZ,
- above 73 km from the Russian EEZ,
- above 199 km from the German EEZ; therefore transboundary impacts are likely to occur in the area of the above-mentioned countries, resulting from the construction, operation and decommissioning of the project in question, taking into account the type and scale of the anticipated execution activities and the existing knowledge on the environmental impacts of offshore wind farms.

Acting on the basis of Article 108.1(1) of the EP Act, the Regional Director for Environmental Protection in Gdańsk, with their decision RDOŚ-Gd-WOO.420.82.2024.AM.3 of 23/01/2025, stated the necessity to conduct proceedings on the transboundary environmental impact of the above-mentioned project, and imposed on the Investor the obligation to prepare and submit the appropriate documentation specified by the provisions of the EP Act. On 31/01/2025, the Investor, by their letter without a reference number, forwarded to the local authority the required documents for the project drawn up in Swedish, Danish, and English. In their letter with Ref. No. RDOŚ-Gd-WOO.420.82.2024.AM.5 dated 06/02/2025, the Regional Director for Environmental Protection in Gdańsk forwarded the documents submitted by the Investor to the General Director for Environmental Protection as the body responsible for coordinating the procedure of environmental impact assessment in the transboundary context. Subsequently, in their letter with Ref. No. DOOŚ-WST.440.13.2024.BW1.1 dated 07/02/2025, the General Director for Environmental Protection notified the Swedish and Danish parties of the planned project in accordance with Article 3 of the Espoo Convention and Article 7 of Directive 2011/92/EU. Furthermore, in order to maintain the transparency of the environmental impact assessment procedure, in their letter with Ref. No. DOOŚ-WST.440.13.2024.BW.2. dated 07/02/2025, the General Director for Environmental Protection notified about the planned project representatives of Estonia, Finland, Lithuania, Latvia and Germany. Subsequently, in their letter with Ref. No. DOOŚ-WET.440.13.2024.BW.3 dated 17/03/2025, the General Director for Environmental Protection sent the positions of the countries to the authority in question.

- In their letter of 12/03/2025 with Ref. No. NV-25-002619, **Swedish Environmental Protection Agency** notified that it wished to continue their participation in the proceedings on the transboundary environmental impact for the project in question. In addition, the notification received was forwarded to central government authorities, county boards, and non-governmental environmental organisations for consideration during the period from 11 February 2025 to 11 March 2025. Responses from representatives of authorities and

organisations (i.e. the Gotland County Administrative Board, the Swedish Maritime and Water Agency, the Swedish Meteorological and Hydrological Institute, the Swedish Transport Agency, the Swedish University of Agricultural Sciences, the Swedish Pelagic Federation, and the Swedish Fish Producers Organisation) were forwarded to the Investor for translation and providing reply to the comments contained therein (letter with Ref. No. RDOŚ-Gd.WOO.420.82.2024.AM.9 of 31/03/2025). Orlen Neptun VIII sp. z o. o. submitted the required supplement in their letter with Ref. No.: ON8/09/2025 on 18/04/2025. In their letter with Ref. No. RDOŚ-Gd-WOO.420.82.2024.AM.10. of 24/04/2025, the local authority submitted the required documents to GDOŚ in an electronic form. On 25/04/2025, with their letter with Ref. No. DOOŚ-WST.440.13.2024.BW.6, the General Director for Environmental Protection informed that they had notified the Swedish party in accordance with the Espoo Convention. Subsequently, the GDOŚ provided the Sweden's position. In their letter of 28/05/2025 with Ref. No. NV25-002619, the Swedish Environmental Protection Agency (SEPA) informed that it cannot consider the explanations provided sufficient. At the same time, it did not propose for cross-border consultations in the form of an expert meeting. In view of the above, according to GDOŚ letter with Ref. No. DOOŚ-WST.440.13.2024.BW.7, dated 09/06/2025, the substantive clarification stage of the transboundary consultation with Sweden under Article 5 of the Espoo Convention was considered completed. At the same time, all comments made by the Swedish party were included in the terms of this decision;

- **Denmark** informed in an e-mail dated 12/03/2025 that the Ministry of Green Tripartite Affairs (the Green Transformation and Water Environment Agency) expressed its willingness to participate as an Affected Party in the transboundary environmental impact proceedings of the project in question. The Danish party informed the notification had been forwarded to the Danish authorities and organisations concerned (the Defence Ministry's Real Estate Agency; the Green Transformation and Water Environment Agency; the Danish Maritime Agency; Danish Shipping Companies, and the Emergency Management Agency) and was published on the Danish Environmental Protection Agency's website. No comments to the environmental impact report have been submitted;
- In their letter of 06/03/2025 with Ref. No. D8(E)-944, **the Ministry of the Environment of the Republic of Lithuania** informed that the Lithuanian party had not identified the possibility of significant negative transboundary impacts on Lithuanian territory and does not intend to participate in transboundary consultations as an Affected Party. At the same time, they asked to be informed about the progress of the wind farm project execution and the solutions for connecting the wind farm to the power grids as soon as they are known;
- In their letter of 07/03/2025 with Ref. No. 2.10/516/2025-N, **the Agency for Energy and Environment of the Republic of Latvia** informed that it had analysed the submitted materials, sought the opinion of the competent authorities on the possible significant transboundary impact of the project, and published the environmental impact report on the Agency's website. By the specified deadline (4 March 2025), the Agency received responses from the Ministry of Foreign Affairs of the Republic of Latvia, the Ministry of Transport of the Republic of Latvia and the State Centre for Defence Logistics and Procurement. The Agency did not receive any comments from the public. The Agency agrees with the information presented in the environmental impact report that the offshore wind farm project will not result in the possibility of direct significant adverse transboundary impacts on the territory of Latvia. In addition, the Ministry of Transport of the Republic of Latvia stressed that negative transboundary impacts on Latvian territory had not been identified within the Ministry's competencies, as the project would not affect vessel traffic

to Latvian ports. The Latvian side did not notify any comments to the environmental impact report;

- In an email dated 18/02/2025, **the Ministry of Climate of Estonia** informed that due to the lack of identification of possible significant negative transboundary impacts on the territory of Estonia, it did not wish to participate in the transboundary environmental impact proceedings and had no comments to the environmental impact report;
- In their letter of 14/02/2025 with Ref. No. SYKE/2025/284 **the Finnish Environmental Institute** informed that it had no comments to the environmental impact report. At the same time, they asked to inform Finland of the project in question on a regular basis, and to communicate the final decision in accordance with Article 6 of the Espoo Convention;
- In an email dated 10/03/2025, **the Federal Maritime and Hydrographic Agency of Germany** informed that it did not foresee any possible transboundary impacts due to the significant distance of the offshore wind farm in question from the German exclusive economic zone. **At the same time, the Federal Agency for Nature Conservation** in its position of 5 March 2025, submitted comments and informed that it requested its further participation in the proceedings. The General Director for Environmental Protection assumed that the German party did not wish to participate in the proceedings on transboundary environmental impact, and the position of the Federal Agency for Nature Protection would be taken into account when issuing an environmental permit (of which the German party was informed in an e-mail dated 11/03/2025). Subsequently, in their letter with Ref. No. DOOŚ-WST.440.13.2024.BW.4 dated 19/03/2025, supplementing the letter dated 17/03/2025 with Ref. No. DOOŚ-WST.440.13.2024.BW.3, GDOŚ informed that the German party clarified its position and expressed its willingness to participate in the proceedings on transboundary environmental impact of the project in question as the Affected Party, and attached the comments to the contents of the report of the German Party's authority, i.e. Federal Agency for Nature Conservation. Considering the above, with their letter with Ref. No. RDOŚ-Gd.WOO.420.82.2024.AM.9 dated 31/03/2025, the local body asked the Investor to supplement the necessary documentation in German. Orlen Neptun VIII sp. z o. o. submitted the required supplement in their letter with Ref. No.: ON8/09/2025 on

  18/04/2025. In their letter with Ref. No. RDOŚ-Gd-WOO.420.82.2024.AM.10. of 24/04/2025, the local authority submitted the required documents to GDOŚ in an electronic form. On 25/04/2025, with their letter with Ref. No. DOOŚ-WST.440.13.2024.BW.6, the General Director for Environmental Protection informed that they had notified the German party in accordance with the Espoo Convention. Subsequently, GDOŚ forwarded the position of Germany, an e-mail dated 30/05/2025 from the Federal Agency for Shipping and Hydrography (BSH) stating that the German party had no further comments to the clarifications provided, thus the stage of consultation with the German party in accordance with Article i 5 of the Espoo Convention has been completed (letter with Ref. No. DOOŚ-WST.440.13.2024.BW.7, dated 09/06/2025).

The comments and requests submitted by the Affected Parties in accordance with the applicable regulations have been analysed in the proceedings in question, and taken into account as stated in this decision.

According to Article 62 of the EP Act, the process of environmental impact assessment specifies, analyses, and evaluates:

1) the direct and indirect impact of the project in question on:
   a) the environment and the population, including people's health and living conditions,
   b) tangible goods

c) heritage objects, (ca) landscape, including cultural landscape,
d) interactions between the elements referred to in letters (a)–(ca),
e) access to mineral deposits;
1a) the risk of major accidents and natural and construction disasters;
2) opportunities and ways to prevent and reduce the negative impact of the project on the environment;
3) required scope of monitoring.

The assessment of a project's impact on a Natura 2000 area shall identify, analyse and evaluate the project's impact on Natura 2000 areas, also taking into account the cumulative impact of the project with other ongoing, completed or planned projects.
Pursuant to the definition in Article 3.1(8) of the EP Act, the discussed assessment includes, in particular:
1) verification of the project's environmental impact report;
2) obtaining opinions and agreements required by law;
3) providing opportunities for public participation in the proceedings.
The above activities are the main determinants of the evidentiary proceedings in the present case.

According to Article 79 of the Environmental Protection Act, before issuing a decision on environmental conditions, the authority competent to issue that decision will ensure the possibility of public participation in the proceedings under which it conducts an assessment of the project environmental impact.

On 11/07/2025, with its notice with Ref. No. RDOŚ-Gd-WOO.420.82.2024.AM.14, the Regional Director for Environmental Protection in Gdańsk made the above information public, along with information about the possibility of familiarising oneself with the EP Report and the right to submit comments and requests at the office of the authority within 30 days, i.e. from 18/07/2025 to 16/08/2025, inclusive. The following documents were made available to the public:

- application for an environmental permit dated 28/11/2024;
- the environmental impact report for the discussed project drawn up by the team of Mewo led by Mr Radosław Opioła (27/11/2024), with appendices and supplementations, dated: 05/03/2025, 11/03/2025, and 04/06/2025.
- the position of the Director of the Maritime Office in Gdynia: letters INZ1.9202.205.2.2024.AD dated 22/04/2025 and INZ1.9202.205.3.2024.AD dated 27/06/2025,
- the position of the State Border Sanitary Inspector in Gdynia, letters SE.ZNS.80.4912.10.24 of 15/01/2025, ZNS.491.2.6.2025 of 15/04/2025, and ZNS.491.2.6.2025.1 of 04/07/2025.

The notice was posted on website of the authority
(www.rdos.gdansk.gov.pl) and on the bulletin board at the headquarters of the RDOŚ authority in Gdańsk. In addition, the aforementioned notice was forwarded for publication to: the Director of the Maritime Office in Gdynia, the President of the City of Gdańsk, the President of the City of Gdynia, the President of the City of Sopot, the Head of the Ustka Commune, the Mayor of the City of Ustka, the Head of the Smołdzino Commune, the Head of the City of Łeba, the Head of the Wicko Commune, the Head of the Choczewo Commune, the Head of Krokowa Commune, the Mayor of Władysławowo, the Mayor of Jastarnia, the Mayor of Hel, the Head of Puck Commune, the Mayor of Puck, the Head of Kosakowo Commune, the Head of Stegna

Commune, the Head of Sztutowo Commune, and the Mayor of Krynica Morska. No comments or applications were submitted within the stipulated deadline.

Evaluating all evidence collected in the present case, the Regional Director for Environmental Protection in Gdańsk established as follows:

The planned Project includes the construction, operation, and decommissioning of the Baltic East Offshore Wind Farm of a maximum total power of 966 MW. The aim of the Project is to generate electricity using a renewable energy source, i.e. the wind power. the OWF Baltic East site is located in the Exclusive Economic Zone (EEZ) of the Republic of Poland. The OWF Baltic East site covers about 111.7 km^2 and is located off villages of Sasino and Białogóra (the Pomeranian Voivodeship) at a distance of about 22.5 km off the sea shore and at a distance from the EEZ borders of other countries of: about 59 km from the Swedish Exclusive Economic Zone (EEZ), about 82 km from the Danish EEZ, about 73 km from the Russian EEZ and about 199 km from the German EEZ. The aim of the Project is to generate electricity using a renewable energy source, i.e. the wind power. The kinetic energy of the wind is converted into mechanical energy of the rotating rotor. It is then converted in a generator into low-voltage alternating current, which is then transformed into medium- or high-voltage for further transmission to the substation via the internal power infrastructure.
The OWF does not include any infrastructure for the transmission of electricity generated by the farm to the shore. The project for construction of the connection infrastructure will be covered by separate administrative proceedings.

The Baltic East Wind Farm will consist of the following components:
- wind turbines (a nacelle with a rotor, a tower, intermediate components), and foundations of single-support (monopile) or multi-support (jacket) design," (to w ogóle mam tylko raz w tekście).
- offshore substations (OSS),
- internal power and telecommunication lines with accessories.

Parameters characterising the OWF Baltic East:
- maximum installed power of 966 MW,
- a maximum of 64 wind power plants,
- wind turbine power: minimum - 15 MW, and maximum - 25 MW,
- a maximum rotor diameter of 310 m,
- a minimum clearance above the sea surface - 22.5 m,
- a maximum height of the wind turbine: 347.5 m above sea level,
- maximum two offshore substations (medium/high voltage),
- a maximum length of inter array cable lines of 150 km,
- maximum 5% of the disturbed seabed area,
- the total rotor sweep area – minimum 2.79 million meters ^{2}, and maximum 2.87 million m^2.

The nacelle is a key component of a wind turbine. It is completely assembled on the shore and then transported and mounted on the wind turbine tower. It includes the equipment of the drive system and the housing that protects it from the weather. The drive system converts the energy of the rotating rotor into three-phase alternating current. The components of the

drive system include a rotor, a rotating shaft with or without a gearbox, and a generator. The converter converts the voltage supplied to the generator and the power supplied from the generator to the grid. The current conversion that takes place in it consists of changing variable frequency alternating current from the generator into constant frequency alternating current with active and reactive power levels and other parameters necessary for the production of electricity supplied to the grid.

The rotor is another essential component of the wind turbine, and it consists of three blades and a hub. The wind makes the rotor to perform a rotary motion and transfer kinetic energy to the remaining components of the nacelle. The rotor is automatically set against the wind. To optimise its operation, the rotor is equipped with aerodynamic brakes, and the approach angle of the blades is adjusted in real time depending on the current wind conditions. The rotor plays a key role in the turbine operation, and its size (diameter) affects its power output. In terms of materials, the rotor blades are made of composites (fibreglass, carbon fibre, epoxy or polyester resins).

The wind turbine is equipped with systems that constantly monitor and protect its operation. The two main systems ensuring the safe turbine operation are the overspeed protection system and the lightning protection system.

The overspeed protection system is a safety system that monitors the rotor speed, which activates emergency braking of the rotor when the speed limit is exceeded, and this occurs independently of the turbine controller in accordance with current standards. The latter system is a lightning protection system (LPS) conforming to IEC 61400-24. It helps protect the wind turbine from physical damage caused by direct lightning (lightning strikes). Additionally, the use a system of temporary turbine shutdown systems during the period of intensive bird migration is foreseen. On the basis of detection of bird migration (e.g., using radars and cameras), turbines can be slowed down to 2–4 rpm. For technological reasons, it is not possible to stop the rotor completely, only to slow it down significantly.

The tower is a structural element that connects the nacelle to the foundation. Structurally, the tower is a steel tube tapering at the top, composed of sections connected by bolted flanged joints. The tower acts as a carrier for the wind turbine and provides a base for routing the necessary cabling, i.e. control cables, power cables, and other systems and equipment essential for the operation of the entire plant. The tower's internal and external equipment includes platforms, supports, a lift, etc., providing maintenance service teams to access the nacelle and elements of the tower itself.

In the case of the OWF Baltic East, the wind turbine is permanently fixed to the seabed with a steel or concrete support structure (single- or multi-supported). The selection of an appropriate support structure depends on the size and weight of the wind turbine, and the prevailing environmental conditions at the OWF site, including: the depth of the body of water, geological conditions of the seabed, and other environmental conditions, i.e.: wave action, currents, icing, biotic qualities; the economic aspect also represents an important factor. The support structure performs the following functions: ensures the required rigidity and strength of the wind turbine; provides support for cable systems; it is the connection between the wind turbine and the bottom; and it ensures the effective installation of the wind turbine. In the process of installing an offshore wind turbine, the support structure is installed first, followed by the other wind turbine components. It is planned to use large diameter piles (monopiles) and/or multi-support foundations for the foundation of turbines and offshore substations in the OWF Baltic East.

The monopile foundation (a large diameter pile) that is planned for the OWF Baltic East is a steel structure composed of cylinders welded together. Depending on the construction conditions of a particular wind turbine, the monopile length will not exceed about 120 meters. Installation of monopiles involves driving (or, in the case of difficult geological conditions, partially boring) them into the bottom to an appropriate depth, and a transition piece is installed on the part of the large-diameter pile protruding above sea level, on which the wind turbine tower is mounted. Of the available technological solutions, it is also possible to directly mount the tower on the foundation with an integrated transition part*(TP-less*). At the OWF Baltic East, the use large-diameter piles, with diameters of up to 12 meters, bottom penetration depths of up to ca. 60 meters and weights of up to 2,400 tonnes, is planned.

A truss*(jacket*) structure consists of a number of tubular elements connected to each other at K, X or Y nodes. The entire structure is braced with tubular elements with a diameter of about 1 m. The truss is installed indirectly on the seabed. The brackets of the main girders are rigidly connected to piles set in the ground. If a truss structure is used in the OWF Baltic East, such structures can have diameters ranging from 1.8 m (the bottom penetration depth of about 70 m) to 4.0 m (the bottom penetration depth of about 40 m).

The advantage of using monopiles is their simple design and universal application. Their disadvantages are the limited possibility of complete removal from the bottom during the phase of the wind farm decommissioning, while during the construction phase, underwater noise is generated when the structure is driven into the bottom, affecting marine animals. It should also be noted whether drilling is required, if the installation of piles is hindered due to the presence of difficult ground conditions. During the operation phase, sea currents are modified in the immediate vicinity of the large-diameter piles, and this affects the movement of sediment on the seabed.

The advantages of using a truss solution result primarily from the way in which the structure transfers loads to the ground, i.e. by distributing the force within the support structure to three or four independent pile supports, thus achieving better performance characteristics. This type of the support structure is more stable and less susceptible to bending moment generated by horizontal forces than it is the case with monopiles. The support area for the technological load-bearing capacity of the structure is also larger.

The choice of foundation type will depend on geotechnical conditions and depth at specific locations. In addition, depending on the depth of the body of water and the anticipated weather conditions, it may be necessary to construct anti-erosion bottom reinforcement. In addition, in areas where the seabed is subject to hydrodynamic processes, it may be necessary to protect the seabed surface around the pile with a protective layer, such as armour rock*(scour protection*).

OWF inter array cables (*IAC*) connect wind turbines to substations located within the wind farm. The OWF Baltic East will use inter array cables with a voltage rating of 66 kV, which is the current standard for offshore wind power generation. An increase in voltage to 132 kV is being considered for wind turbines with higher ratings than those currently installed. It is planned to use cables consisting of three insulated wires (copper or aluminium) and additionally equipped with fibre optic cables. It is permissible to use newer technologies available at the time of the Project execution.

The depth of power cable burial in the seabed along the majority of the cable line route will be up to 3 m below the seabed. If it will be impossible to reroute the cable line in order to avoid an obstacle located on or under the seabed, such as the presence of foreign line infrastructure, it will be necessary to route the cable line on the seabed surface and protect it

adequately with, for example, armour rock, rock meshes, concrete covers, reinforced concrete half-shells, protective pipes, and protection made of profiles. The maximum total length of cable lines within the OWF will be up to 150 km **(Condition B.II.2 and B.II.5).**

An offshore substation (*OSS*) is one of the main components of an offshore wind farm. The primary function of offshore substations is to receive electricity generated by offshore wind turbines via inter array cable lines and transmit electricity to the shore via export cables (offshore and onshore), while maintaining voltage stability and minimising transmission losses. At an offshore substation, lower-voltage alternating current (e.g., 66 kV), which is not suitable for long-distance transmission, is converted into higher-voltage alternating current (e.g., 220 kV or more) to reduce transmission losses.
The substations used in the OWF Baltic East will consist of the following basic elements:

- a support structure (multi-support foundation or a large-diameter pile) used as the foundation of an offshore substation and for the transfer to the seabed of loads generated during its operation,
- above-water *(topside*) structure – located on top of the support structure, including, but not limited to, the following components:
  - transformers – used to transform the voltage level;
  - auxiliary transformers – used to provide power for station equipment;
  - grounding transformers - used to obtain an artificial zero point; in networks grounded through a resistor or compensated networks;
  - high- and medium-voltage switchgear – used for connecting, interrupting and separating electrical circuits;
  - backup generators - to provide power in case of an outage;
  - chokes – used to compensate for reactive power;
  - AC filters – used to eliminate higher harmonics.

Power, auxiliary and ground transformers use transformer oil as a cooling and insulating medium. It is assumed that the use of oil will amount to about 260 tonnes for power transformers and about 20 tonnes for auxiliary and grounding transformers. In addition, each of the two OSS stations has a diesel-powered emergency generator installed, of a volume of about 15^{m3} per OSS.

An integral part of the Baltic East OWF is the Noise Reduction System (NRS). It is used to minimise the negative impact of underwater noise during the installation of pile foundations and to comply with the permissible noise levels specified in this environmental permit. The Noise Reduction System includes the use of various types of noise reduction solutions, which together will constitute NRS. The selection of the underwater Noise Reduction System takes into account, among other things:

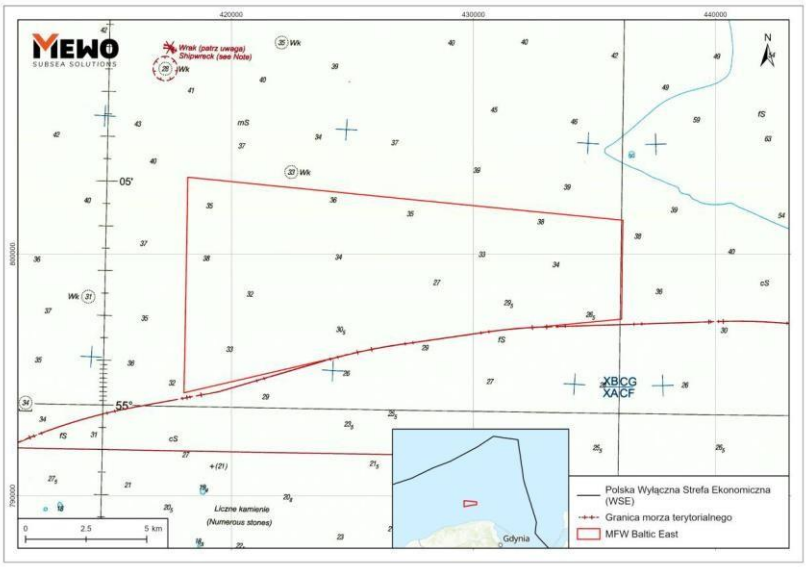
- piling locations, including piling locations on neighbouring investments (within a radius of 50 km),
- the work schedule, including work on other investments (piling within a radius of 50 km),
- parameters of a pile driver (type, maximum energy, and values during a cycle of operation, the frequency and number of strokes), or other technical solution used to drive a pile into the bottom,
- geotechnical parameters of sediments,
- parameters of driven piles (geometry and materials),

- seasonal variability in environmental conditions (including, periods of particular importance for animals, and parameters of underwater noise propagation).

The OWF Baltic East site is located in the Exclusive Economic Zone (EEZ) of the Republic of Poland. The OWF Baltic East site covers about 111.7 km^2 and is located off villages of Sasino and Białogóra (the Pomeranian Voivodeship) at a distance of about 22.5 km off the sea shore and at a distance from the EEZ borders of other countries of: about 59 km from the Swedish Exclusive Economic Zone (EEZ), about 82 km from the Danish EEZ, about 73 km from the Russian EEZ and about 199 km from the German EEZ (Figure No. 1). This decision in **section A** and the characteristics(**Appendix 1**) include the coordinates of the knee points of the OWF Baltic East site boundary. The area of the OWF BE is covered by the arrangements of the spatial development plan, established by the Decree of the Cabinet of 14 April 2021 *on the adoption of the spatial development plan of internal marine waters, territorial sea, and the exclusive economic zone in the scale of 1:200 000* (Journal of Laws 2021, item 935, as amended). For the area POM.46.E, where the OWF BE is located, the primary function of renewable energy generation (E) was established. Functions permitted in the basin are: aquaculture (A); scientific research (N); cultural heritage (D); technical infrastructure (I); mineral exploration and prospecting and mineral extraction from deposits (K); fishing (R); artificial islands and structures (W); transportation (T); and tourism, sports and recreation (S). In terms of obtaining renewable energy, the following conditions for the use of the water body were introduced:

- an area designated for the generation of energy from the wind by means of offshore wind turbines. Internal and external technical infrastructure form an integral elements of the project;
- at the time of commencement of the investment of erection of artificial islands and structures, it is required to introduce, by a decision of the territorially competent director of a maritime office, a ban on fishing and navigation in the body of water occupied by construction, along with a 500-meter safety zone around the body of water, for the duration of construction works;
- during the operation of offshore wind power plants, it is required to introduce, by decision of the territorially competent director of the maritime office, restrictions on fishing and navigation in the safety zones established for each structure and in places that pose a threat to the safety of the internal technical infrastructure.

Figure No. 1 - Location of the planned OWF Baltic East project (source: EP report)



The applicant provides for execution of the project in a continuous process, as well as in stages. It is assumed that the construction works themselves will last for two years, with some phases overlapping; this time does not include possible interruptions in the work. The schedule for the project execution phase assumes for the following components: preliminary and preparatory work; and construction/installation work.

The construction phase must be preceded by the preparation of the seabed prior to installation of foundations or support structures for wind turbines and OSS, and laying of inter array cables. The type of preparatory work will be determined by the geological conditions at the foundation sites, cable laying, and the type of foundation used and the available technology. The applicant allows preparatory work to be carried out sequentially, or simultaneously. The operation phase of the OWF Baltic East will last a maximum of 55 years. After the end of operation, the decommissioning of the OWF Baltic East is assumed, the expected duration of this work will be about two years; this period does not include possible interruptions of the work, analogous to the execution phase.

The impact assessment in the EP Report was based on the envelope concept, with the assessment of the furthest-reaching scenario in terms of impact on the individual analysed environmental components, i.e. taking from among the considered technological solutions and parameters of the project in the analysed variants for assessment those that may have the greatest impact on a given environmental component. The envelope concept means that when evaluating a selected parameter and the feasibility of different technical solutions, an environmental assessment was conducted for the potentially most environmentally burdensome solution. It was assumed that if the most burdensome solution did not have a significantly negative environmental impact, the others, as less burdensome solutions, would also be acceptable.

One of the mandatory elements of the EP Report is a variant analysis. Since it is not possible to specify location variants for the Project, as its location has already been specified in the permit for the erection and use of artificial islands, two variants were selected for variant analyses within the framework of this study:

- the variant proposed for implementation – that is, the variant proposed by the Applicant (WPW), which was also found to be the rational environmentally preferable variant as part

of the environmental impact assessment performed in this EP Report; – the reasonable alternate variant (RWA).

Both variants were described by the same parameters, for which the maximum possible values were assumed. This assumption enables performing an environmental impact assessment with a large margin of safety, since maximum individual parameters will always be taken into account in the assessment, even if they do not actually occur together. In accordance with the requirements for the preparation of EP Reports, the two options adopted for evaluation are reasonable, that is, feasible under the current legal status (including within the framework of the issued PSzW Decision No. MFW/46.E.1), technical and technological conditions, and the current state of knowledge of environmental conditions.

The variant proposed by the Applicant (WPW) assumes the use, to the greatest extent possible, of the most optimal technological solutions available on the market at the stage of development of the construction design. This variant includes the use of wind turbines of different rated power, i.e. wind turbines with a single turbine rating of 15 MW to 25 MW. In terms of foundation technology, it is planned to use large-diameter piles and/or truss foundations. The execution of the OWF Baltic East project with the total maximum capacity specified in the OWF Baltic East PSzW (up to 966 MW) involves the installation of up to 64 wind turbines. The variant proposed by the Applicant takes into account the continuous, intensive development of technology in the OWF area in recent years, going both in the direction of increasing the size of rotors, generators, and structural elements, as well as in the issue of increasing the actual efficiency of the technical and technological solutions used. WPW, according to the results of the environmental impact assessments presented in the report, is the option environmentally preferable to RWA.

The fundamental premise of the rational alternative was to adopt existing technological solutions that are currently in use and commercially available on an industrial scale. This option assumes for the installation of wind turbines of a rated power of 14 MW. With the maximum total nominal capacity of the OWF complex of 966 MW specified in the OWF Baltic East PSzW, the total number of wind turbines in this variant is 69. The RWA assumes for the use of one type of wind turbines on different types of foundations (large diameter and/or truss piles).

Table No. 3 Comparison of basic technical parameters of OWF in WPW and RWA

Parameter	WPW	RWA
Individual installed capacity [MW]	966	966
Maximum number of wind turbines [units]	64	69
Minimum clearance between rotor working area and water surface [m]	22.5	20
Swept area [million m2]	2.79-2.87	3
rotor diameter [m]	310	236
Maximum height of the wind turbine [m a.s.l.]	347.5	256
Maximum volume of sediments that need to be replaced for proper installation of foundations [m^3]	240,000	260,000
Maximum disturbed seabed area [%]	5	5
Maximum length of inter array cable infrastructure of the OWF [km]	150	160
Number of OSSes	2	3

In this proceeding, the impact of the project on all elements of the environment was analysed, and then, on the basis of the results of the analysis, measures were specified to minimise the negative impact of the investment on the various elements of the environment, which are specified in this decision.

Due to the location of the planned project entirely executed in the maritime area, all related activities, in all phases of its course, will be carried out in the mode of offshore operations, taking into account their special conditions and specificities. Deliveries to and from the OWF Baltic East site will be made using various types of vessels:

- construction and installation vessels - large, specialised vessels, with an advanced level of safety, equipped with dynamic positioning systems (with varying degrees of security); often such vessels can be fully stabilised in a selected position during their activities, through a system of supports supported on the seabed, but the possibility of anchoring is not excluded;

- transport vessels – universal or specialised vessels adapted to transport of large-scale structures (including large-diameter piles, towers, nacelles, or blades), often equipped with dynamic positioning systems;
- transport barges (platforms) – vessels used for transport of large structural components to the installation site, as a rule, without their own propulsion, using pushers or tugboats;
- pushers and tugboats – auxiliary vessels, used for handling larger ships and transport barges, or for independent transport of large structural components (such as large diameter piles or other wind turbine components) from ports to their installation sites;

- service vessels – usually smaller vessels, used to transport OWF service personnel and/or operating materials, adapted for mooring to wind turbine towers or accompanying platforms and enabling safe transfer of people and handheld equipment to OWF structural elements.
- helicopters – can be used in certain cases, especially during the OWF operation phase, to transport rescue teams or in emergency situations.

Handling of activities related to the transportation of large-size structural elements of the OWF must be carried out from ports that meet certain requirements, including:

- the length and carrying capacity of the wharf, allowing for the installation, storage and loading of OWF structural elements;
- the adequate depth of port basins to allow large construction vessels to operate in them.

All vessels involved in the work throughout the project will comply with the requirements and regulations of the International Convention for the Prevention of Pollution from Ships (MARPOL 73/78), including, in particular, the procedures contained in the "Hazard and Pollution Control Plans" prepared in accordance with the Decree of the Minister of Infrastructure of 15 December 2021 on the rescue plan and the hazard and pollution control plan for an offshore wind farm and a set of equipment (Journal of Laws, item 2391).

At the current stage of development of the OWF Baltic East, the installation, transshipment, and support ports under consideration are the ports of Świnoujście, Gdańsk, Gdynia, Władysławowo, Łeba and Rønne, Aalborg. The port of Rønne in Denmark (on the island of Bornholm) is the closest port with complete and used infrastructure for activities associated with offshore wind energy generation. During the operation phase of the OWF Baltic East, it will be possible to use a smaller and at the same time closer port, i.e. the port in

Władysławowo or Łeba. Installation and service ports with their infrastructure are not part of this Project.

The OWF execution phase requires the involvement of vessels, equipment, and human resources functioning as a coordinated supply chain of goods and specialised services in various areas: manufacturing, transportation, construction, assembly, and installation. As part of the preliminary and preparatory work, the Investor will use port areas as a construction base and storage yards, from there the elements will be transported to the OWF Baltic East site. First, seabed preparation work will be carried out for the foundation and inter array cables. Boulders and disturbed sediments are assumed to remain entirely within the OWF Baltic East site. The construction includes transport and construction of foundations, wind turbines, and substations, laying of inter array cable connections, securing the foundations, cable crossing points with foreign infrastructure and cable lines laid on the seabed against scouring (so-called *scour protection*), as well as cleaning of the bottom.

Various technologies and equipment for cable laying will be used. The foreseen cable laying methods are:

- Simultaneous Lay and Burial (*SLB*) method, i.e. simultaneous excavation, laying and burial of the cable,
- Post Lay Burial (*PLB*) method, i.e. burying the cable after it has been laid on the bottom.

The choice of cable laying method depends on environmental and logistic conditions, and the technology recommended by the manufacturer or work contractor.

Piling - large diameter piles at the OWF Baltic East will be driven into the bottom with surface pile drivers from specialised vessels, which may have several supports with feet (*spudcans*), and this requires bottom preparation. Significant underwater noise is generated when piling foundations, so a noise reduction system (NRS) will be used, which may include:

- visual and acoustic observations along with deterrence systems and a soft-start system for the pile driver,
- passive noise reduction systems, such as air curtains or similar,
- organisation of work taking into account work schedules at other investments.

At the phase of project execution, transportation will include transhipment work and ship traffic on the port - OWF - port route or between ports. The number of specialised marine operations is proportional to the number of facilities and cables at the OWF site. It has been estimated that an average of 2.5 vessels will be stationed at the OWF during the 2-year construction period, and about 360 voyages of about 40 vessels will be made.

The operation phase is distinguished by its characteristic issues related to marine transportation, electromagnetic field emissions, and the emission of heat generated by the cables. The OWF requires regular servicing of underwater and above-water components consisting of inspections and preventive maintenance, as well as interventions when malfunctions or defects are observed. small and medium-sized vessels will have the largest share in maritime traffic, as well as larger vessels with cranes, if necessary. Activities will be carried out by specialised ships, service ships, work boats, and unmanned underwater vehicles, among others. The number of voyages of vessels serving the OWF may reach 700 per year - between the port of Łeba/Władysławowo (or other) and the OWF Baltic East site. There may be about 100 voyages a year on the route between the Gulf of Gdańsk – OWF Baltic East – the Gulf of Gdańsk. The service season has two periods: high (from April to October with an intensive service campaign - about two voyages a day) and low (with minimised service work - about one voyage a day).

The source of the electromagnetic field is the inter array cables that transmit electricity from each wind turbine to the offshore substation. Cables for 66 kV or 132 kV will be used. Electric field emissions will be residual due to the optimisation of cable routing on the seabed, the magnetic PEM component of the cables is minimised by using the closest possible routing of individual cables.

The decommissioning phase is the reversal of the OWF construction phase. Individual components of the OWF will be removed and transported by ship to the mainland. The decommissioning of the structures is expected to take place to the level of the seabed, and parts of the foundations driven into the seabed will remain, as they do not cause environmental impacts, while their removal may cause them, for example, when using explosives. The part of the piles above the bottom will be cut off or burned. The underwater components of the OWF Baltic East may provide habitat for marine organisms. The possibility of repowering, that is, removing wind turbines and replacing them with next-generation turbines, is not ruled out.

Noise emissions will occur during each phase of the OWF Baltic East's life. During both the preparation and construction phases, the presence and movement of construction vessels and construction support vessels will be a source of noise. In addition, during the construction phase, noise emissions will be associated with piling. During pile driving, a noise reduction system (NRS) appropriate to the technology and geological conditions will be used. These safeguards will be implemented for all sites of wind turbines and offshore substations. Appropriate NRS elements will be used, for specific sites of installation of wind turbine and offshore substation foundations, at which the permissible values may be exceeded.

The installation of the project's structural elements (foundations) in the seabed is accompanied by the generation of significant underwater noise. Driving, vibration driving, or boring of large-diameter piles in generates underwater noise, which can reach instantaneous SPL values exceeding 230 dB re 1 µPa at a distance of 1 m. Hence, during the installation of piles, the use of that various types of noise reduction solutions is foreseen, which together will constitute a Noise Reduction System (NRS). Air curtains represent a commonly used mean for reducing underwater noise. The method involves pumping air through diffusers installed on the bottom. The resulting curtain formed by air bubbles rising toward the surface of the sea effectively diffuses the sound generated by piling. The soft-start procedure is also commonly used, i.e. successive increases in piling energy, which allows marine mammals and fish to move away from the zone of greatest noise impact **(Condition No. B.I.2.2.).**

During the operation phase, the main sources of underwater noise will be vessels performing inspection and servicing of the OWF BE and possible repair and overhaul work, as well as sounds generated by the rotor and nacelle in operation, transmitted to the midwater in the form of vibrations of the wind turbine support structure. Noise generated by ships, mainly small and medium-sized, will be comparable to the levels of its emissions estimated for the construction phase.

Ships and other vessels, and equipment used during construction also generate noise into the air. Due to the large distance from the shore (more than 20 km) and the fact that the sea area is not subject to noise protection in accordance with the Regulation of the Minister of Environment of 14 June 2007 *on permissible levels of noise in the environment* (Journal of Laws 2014 item 112, consolidated text), it is assumed that there will be no impact on people, except for construction personnel. Construction personnel will be subject to health and safety regulations, which include the use of appropriate personal protective equipment and limiting exposure to noise, **Conditions No. B.I.: 1.9, 1.10, 1.11, 1.12.** Furthermore, in specific cases

helicopters can be used, especially during the OWF operation phase, to transport rescue teams or in emergency situations. The acoustic power of helicopters is not expected to exceed 107 dB re 1 µPa at a distance of 1 m from the source, but given their sporadic use, this impact was considered negligible.

The intensity and frequency of underwater noise generated by ships depends primarily on their size and speed. Larger, slow-moving vessels generate noise at lower frequencies, while smaller and faster vessels generate noise with more energy at higher frequencies. Noise emitted by ships affects marine animals - mainly mammals and fish, causing behavioural changes and interference with communication between individuals. Impacts associated with noise emissions on biotic elements of the environment are described later in the grounds for this decision.

Emissions of pollutants into the air during the various phases of the project execution are associated with exhaust emissions from vessels, systems or equipment. As of the date of submission of the EP Report, it is not possible to calculate the planned fuel consumption, and therefore it is not possible to estimate emissions of pollutants into the atmospheric air during all life stages of the OWF Baltic East.

All vessels involved throughout the project will comply with the requirements and regulations of the International Convention for the Prevention of Pollution from Ships (MARPOL 73/78), including, in particular, the procedures contained in the "Hazard and Pollution Control Plans" prepared in accordance with the Decree of the Minister of Infrastructure of 15 December 2021 on the rescue plan and the hazard and pollution control plan for an offshore wind farm and a set of equipment (Journal of Laws, item 2391).

Electromagnetic field. In the case of offshore wind energy generation projects, the source of the electromagnetic field are inter array cables that transmit electricity from each wind turbine to the offshore substation. The OWF Baltic East project will use 66 kV or 132 kV cables and their total horizontal length will not exceed 150 km. Electromagnetic fields generated by the flow of electric current can alter the natural migratory behaviour of marine mammals and fish, and can also be a source of thermal energy introduced into the marine environment. Burying power cables in the bottom sediment is the simplest and most effective method of eliminating the PEM impact on the marine environment. As studies have shown, burying cable lines less than 1 m below the sediment surface effectively eliminates the PEM impact on organisms on the seabed surface (Tricas and Gill 2011). For power cables laid on the seabed surface and covered with protective structures, the impact of PEM emissions on bottom and demersal fauna (including demersal fish) may be greater. However, studies have shown that even for those organisms that are sensitive to changes in the electromagnetic field within the seabed, the negative impact of PEM emissions from operating power cables can only manifest itself in the case of their long sections laid on the seabed, which can pose an obstacle to the movement of these organisms (Chapman et al. 2023; SunCable 2023). Electric field emissions are expected to be residual by optimising the placement of cables on the seabed by burying them, or protecting them from damage on the seabed in the absence of technical capabilities to bury them on the seabed. The possible magnetic PEM component of the cables is minimised by routing single conductors as close as possible (for individual phases for AC.

The phenomenon of heat emission will occur during the operation phase of the OWF Baltic East, when the temperature of the cable reaches a value above that of the surrounding environment. Exact quantitative determination of the heat transferred is difficult, since the

occurring phenomena, i.e.: heat conduction, rising and radiation, are governed by different physical laws (Stiller et al. 2006). Heating of sediments can lead to changes in the taxonomic composition of benthos living on and in the seabed in the immediate vicinity of cables (Merck 2009). The OSPAR Guidelines on Best Environmental Practice (BEP)in Cable Laying and Operation (2012) specify that burying the cable in the seabed at a depth of 1 to 3 m is sufficient to ensure that 0.2 m below the bottom surface the increase in sediment temperature associated with heat release by power cables under load does not exceed 2°C. Inter array cables laid to a depth of up to 3 m within the OWF Baltic East are in line with the above conditions.

Impacts regarding both PEM emissions and heat were considered together when deciding for **Condition No.: B.II.5.**

Light emissions are associated with vessels used in the construction of wind farms and the illumination of drilling rigs and other structures illuminated by artificial light, mainly during night-time hours. The scale of the impact will depend on the number of vessels involved in the execution phase, their size, the configuration of the lights and their intensity, the duration of the execution phase and the phenological period during which the work will be carried out. At the phase of the OWF Baltic East operation, light emissions will come from the obstruction lights of the wind turbines (red light). Also in this phase, an additional aspect of light emission is the flickering effect. According to the EP Report, at the OWF Baltic East, light emissions will be restricted to the level necessary under current regulations and occupational safety standards. The above is included in **Conditions No.: B.I.1.4.7 and C.1.3).**

The Project's wastewater emissions are related to the execution phase (process wastewater, wastewater from ships and vessels) and water consumption for crew living needs on- and offshore. OWF wastewater generation and emission locations are associated with off- and onshore locations. During the execution phase (at the port serving the Project), wastewater may be generated by cleaning of machinery and onshore construction facilities and storage yards. The estimated volume of wastewater during the execution phase will be about 11,000 $m^{3.}$ Waste and wastewater will be generated during operations by people on board the vessels and during servicing of towers, substations and inter array cables. The estimated volume of wastewater during the operation phase will be about 385 m^3/year. During the decommissioning phase, the estimated wastewater emissions will be at the level of the execution phase. During each phase of the OWF Baltic East, applicable legal requirements and good practices on issues of waste and wastewater management will be followed.

The expected types and quantities of waste generated at the successive phases of the OWF Baltic East project in accordance with the Regulation of the Minister of Climate of January 2, 2020 on the waste catalogue (Journal of Laws 2020 item 10) are summarised in the table. The quantities of waste presented are included on a unit basis, i.e. they apply to a single wind turbine or one offshore substation or 1 km of a cable. According to the EP Report, at this stage of the Project it is not possible to precisely determine the types of waste generated and their quantities; the table below includes all theoretically possible types of waste generated and estimates of their maximum expected quantities on an annual basis, based on information about the assumed technology.

Table No.: 4 Summary of estimated amounts of waste generated during the construction, operation and decommissioning phases of the OWF Baltic East on an annual basis (source: EP Report).

WASTE CODE (*HAZARDOUS WASTE)	WASTE TYPE	ESTIMATED QUANTITY [MG/YEAR]		
		Construction phase	Operation phase	Decommissioning phase
08 01 11*	Waste paint and varnish containing organic solvents or other dangerous substances	0.05	0.50	NA
08 01 12	Waste paint and varnish other than those mentioned in 08 01 11	0.05	0.50	NA
12 01 13	Welding wastes	0.10	0.10	NA
13 01 09*	Mineral-based chlorinated hydraulic oils	0.05	0.03	0.05
13 01 10*	Mineral-based non-chlorinated hydraulic oils	0.05	0.03	0.05
13 01 11*	Synthetic hydraulic oils	0.05	0.03	0.05
13 01 12*	Readily biodegradable hydraulic oils	NA	0.03	0.05
13 01 13*	Other hydraulic oils	NA	0.03	0.05
13 02 04*	Mineral-based chlorinated engine, gear and lubricating oils	0.05	0.03	NA
13 02 05*	Mineral-based non-chlorinated engine, gear and lubricating oils	0.05	0.03	0.01
13 02 06*	Synthetic engine, gear and lubricating oils	0.05	0.03	0.01
13 02 07*	Readily biodegradable engine, gear and lubricating oils	0.05	0.03	0.01
13 02 08*	Other engine, gear and lubricating oils	0.05	0.03	0.01
13 03 01*	Insulating or heat transmission oils containing PCBs	0.20	1.00	82.5
13 04 03*	Bilge oils from marine vessels	0.10	0.10	0.1
13 05 02*	Sludges from oil/water separators	0.50	0.50	NA
13 05 06*	Oil from oil/water separators	0.50	0.50	NA
13 05 07*	Oily water from oil/water separators	0.50	0.50	NA
13 07 01*	Fuel oil and diesel	0.05	0.10	0.05
13 07 02*	Gasoline	0.05	0.05	0.05
13 08 80	Oily solid waste from ships	0.10	0.10	0.1
14 06 01*	Freons, HCFCs, HFCs	0.05	0.05	0.1

14 06 02*	Other halogenated solvents and solvent mixtures	0.05	0.05	0.1
14 06 03*	Other solvents and solvent mixtures	0.05	0.05	0.1
15 01 01	Paper and cardboard packaging	2.00	0.10	0.1
15 01 02	Plastic packaging	2.00	0.10	0.1
15 01 03	Wooden packaging	2.00	0.10	0.1
15 01 04	Metallic packaging	2.00	0.10	0.1
15 01 05	Composite packaging	2.00	0.10	0.1
15 01 06	Mixed packaging	2.00	0.10	0.1
15 01 07	Glass packaging	0.10	0.10	0.1
15 01 09	Textile packaging	0.10	0.10	0.1
15 02 02*	Absorbents, filter materials (including oil filters not otherwise specified), wiping cloths (e.g., cleaning clothes), protective clothing contaminated by dangerous substances (e.g., PCB)	1.00	0.30	1
15 02 03*	Absorbents, filter materials, wiping cloths (e.g. rags, cloths) and protective clothing other than those mentioned in 15 02 02	1.00	0.30	1
16 06 01*	Batteries and lead rechargeable batteries	0.10	0.10	0.1
16 06 02*	Batteries and nickel-cadmium rechargeable batteries	0.10	0.10	0.1
16 06 03*	Batteries containing mercury	0.01	0.01	0.01
16 06 04	Alkaline batteries (excluding 16 06 03)	0.01	0.01	0.01
16 06 05	Other batteries and accumulators	0.01	0.01	0.01
16 81 01*	Wastes exhibiting hazardous properties	1.00	0.30	1
16 81 02	Wastes other than that those mentioned in 16 81 01	1.00	0.30	1
17 01 01	Concrete from demolishing and refurbishment works	50.00	5.00	7000
17 01 03	Tiles and ceramics	10.00	1.00	50
17 01 07	Mixture of concrete, bricks, tiles and ceramics other than those mentioned in 17 01 06	NA	NA	50
17 01 82	Wastes not otherwise specified	50.00	5.00	50
17 02 01	Wood	2.00	0.20	0.1

17 02 02	Glass	0.10	0.10	2
17 02 03	Plastics	5.00	0.50	1000
17 04 01	Copper, bronze, brass	0.05	0.05	1
17 04 02	Aluminium	0.05	0.05	1
17 04 04	Zinc	0.05	0.05	1
17 04 05	Iron and steel	1.00	1.00	4000
17 04 07	Mixed metals	0.05	0.05	1
17 04 11	Cables other than those mentioned in 17 04 10	5.00	5.00	71
17 09 03*	Other construction and demolition wastes (including mixed wastes) containing dangerous substances	20.00	2.00	50
17 09 04	Mixed construction and demolition wastes other than those mentioned in 17 09 01, 17 09 02 and 17 09 03	20.00	2.00	50
19 08 05	Stabilised municipal sewage sludge	1.00	3.00	1
20 01 01	Paper and board	1.00	2.00	1
20 01 02	Glass	1.00	2.00	1
20 01 08	Biodegradable kitchen and canteen waste	1.00	2.00	1
20 01 10	Clothes	1.00	2.00	1
20 01 21*	Fluorescent tubes and other mercury-containing waste	0.05	0.10	0.05
20 01 23*	Equipment containing freons	0.05	0.10	0.05
20 01 29*	Detergents containing hazardous substances	0.05	0.10	0.05
20 01 30	Detergents other than that those mentioned in 20 01 29	0.05	0.10	0.05
20 01 33*	Batteries and accumulators included in 16 06 01, 16 06 02 or 16 06 03 and	0.05	0.10	0.05
	unsorted batteries and accumulators containing these batteries			
20 01 34	Batteries and accumulators other than that those mentioned in 20 01 33	0.05	0.10	0.05
20 01 35*	Discarded electrical and electronic equipment other than those mentioned in 20 01 21 and 20 01 23 containing hazardous components (1)	0.05	0.10	0.05
20 01 36	Discarded electrical and electronic equipment other than those mentioned in 20 01 21, 20 01 23 and 20 01 35	0.05	0.10	0.05
20 03 01	Mixed municipal waste	20.00	30.00	20

During the execution phase, waste is expected to be generated in connection with the normal operation of the various vessels involved in the construction of the project and during the joining of structural elements (e.g. welding or joining), in the piling process, i.e. the driving or boring piles in (e.g. sediment from boring), as well as the installation of corrosion protection elements and possible abrasion of protective coatings (e.g. during piling). The anodic-cathodic method will be used for corrosion protection of the OWF structural components in accordance with accepted standards. During the operation phase of the OWF Baltic East, the main drivers of waste and wastewater generation will be repairs performed and the use of ships. From the technical point of view, the decommissioning phase is the reversal of the OWF construction phase. In order reversed in relation to the construction phase, individual OWF components will be removed and transported to disposal sites.

At all phases of the Project, ballast water will be managed in accordance with the International Convention for the Control and Management of Ships' Ballast Water and Sediments adopted on 13 February 2004.

The phases of execution, operation, and decommissioning may involve unplanned events and failures, such as:

- leakage of petroleum substances as a result of a collision, failure or construction disaster,
- accidental release of municipal waste or wastewater of construction materials,
- release of hazardous substances from objects of anthropogenic origin located on the surface of the seabed or deposited in the bottom sediment.
- explosions of duds (unexploded ordnance, UXO).

It is expected that the greatest risk of a major accident will be concern the phases of construction and possible decommissioning, when the volume of work will be the greatest, with the largest participation of vessels in the project. Leakage of petroleum substances - mainly diesel from the vessel(s) - into the environment as a result of a collision with another vessel or with OWF structures, must be considered the greatest risk of a major emergency. Although the risk of such an event is very small, it cannot be completely excluded. The number of potential spills is proportional to the number of vessels used in each phase of the Project. The magnitude of contamination with petroleum substances can be classified as follows:

- Level I (small spill, up to 20 m^3) – minor spills of petroleum substances, not requiring the intervention of external forces and resources, possible to remove using own resources technical difficulties and do not pose a major threat to the marine environment;
- Level II (medium-size spill, up to 50 m^3) – spills of petroleum substances, the scale of which requires coordinated counteraction within the maritime area under the authority of the director of the maritime office, who decides on the required scale of counteractive measures;
- Level III (catastrophic spill, above 50 m^3) - spills of petroleum substances

posing an extraordinary threat to the environment, combating of which requires forces and resources managed by more than one director of a maritime office. During the normal operation of ships, small spills of petroleum substances, i.e. diesel, lubricants, and gasoline, may occur. In most cases, the released petroleum substances will cause a Level I spill. The largest oil spills can occur as a result of major emergencies or collisions of vessels with each other and with OWF structures. In order to minimise the likelihood of such a situation, **Conditions B. 2.2.14. and B. 2.2.18** were imposed. In the worst-case scenario, Level III spills (catastrophic spills) may occur during the construction and decommissioning phases. The risk

of a major emergency resulting in emissions of hazardous substances is minimal. The likelihood of such events as ship collisions falls into the category of very rare events.

Unplanned events or emergencies may occur in connection with the project execution. As a result of a collision, emergency, construction disaster, or during normal operations, a leakage of petroleum substances or accidental release of waste into the environment may occur. As a result of unplanned events, the abiotic environment, primarily marine waters and to a lesser extent, bottom sediments, may be contaminated. However, indirectly, these events can also affect living organisms that inhabit or otherwise use the seabed, the midwater, and the sea surface. Due to the potential hazards, it was recommended, among others, to equipped the farm with elements that minimise the risk of oils entering the marine environment, including but not limited to sealed turbine casings and oil trays/sumps. Furthermore, the project site should be equipped with measures to control spill of a petroleum substances, and in the event of a spill of a petroleum substance, it should be immediately and continuously removed from the water surface. Additionally, the local authority emphasises that, in accordance with the regulations, a plan for countering hazards and pollution in marine waters must be developed and updated on an ongoing basis, and the potential area at risk for the occurrence of spills of various sizes, the methods for countering oil spills, and the equipment planned to be used to contain them, sufficient to eliminate independently oil spills described as Level I should be specified in it. **Conditions from B.1.2.12 to B.1.1.19.**

It cannot be ruled out that during the preparatory work for the construction process of the OWF BE, including, in particular, the examination of the cleanliness of the seabed for the presence of unexploded ordnance and chemical weapons, anthropogenic objects may be revealed, the disturbance of which would result in the release of the contaminants contained in them (e.g. containers with chemicals or unexploded ordnance). During geophysical surveys carried out between March 2022 and May 2024, the OWF Baltic East site was subjected to a systematic inspection of the seabed for the presence of objects of anthropogenic origin, including packaging and containers that may contain hazardous chemicals. Such objects may come, for example, from insufficiently secured and lost cargoes of ships passing through the OWF Baltic East Site, which ended up in the sea. On the basis of an analysis of sonar and bathymetric data, 68 objects on the seabed were selected for visual inspection. Nine objects were not found during the inspection. The selected objects were assigned to specific groups: pUXO (unexploded ordnance) (2); wrecks (3); linear objects (18); other objects of anthropogenic origin (17); geological objects (17); objects of other types (11), including (9) not recorded during ROV inspections. During the construction phase, new, as yet unidentified objects may be discovered that are believed to be heritage objects, and which, due to lack of knowledge of their existence, were not included in the EP Report. If any new, previously unidentified archaeological objects are discovered, they must be secured against damage caused by the work being carried out, the relevant administrative authorities must be notified of the finding, and provisions of Articles 32 and 33 of the Act of 23 July 2003 *on the protection and care of historical monuments* and of the Plan must be followed. While maintaining a precautionary approach, it should be assumed that conventional and unconventional warfare agents from periods of warfare may lie on the seabed at the OWF BE site and pose a potential threat to the safety of the project execution. Accordingly, development and implementation of procedures to prevent accidents involving unexploded ordnance, especially chemical warfare agents was recommended – **Condition No.: B.2.2.6.**

According to the Construction Law, the construction disaster is understood as "*an unintended sudden destruction of a building or its part, as well as structural components of scaffolding, components of formworks, tight walls, and trench formworks*". In the case of the OWF, a construction disaster - the destruction of wind turbines and/or associated infrastructure - could

occur following an emergency; in this case only due to a serious collision with a vessel or as an effect of extreme weather conditions. It is expected that such situations will occur very rarely, and they will be further eliminated and minimised by design solutions developed for the safe conduct of offshore works. Due to their intended use, the OWF structures are designed and built to withstand extremely harsh environmental conditions. All components, despite being subjected to extremely high loads, are designed for many years of service. All equipment is subjected to continuous monitoring, and any signal of the appearance of deviations from the situation classified as safe operation automatically triggers remote service interventions or changes in operating parameters up to and including equipment shutdown. The rotor is stopped automatically when the wind speed exceeds operation that is safe for a wind turbine. A maintenance plan will be developed, the implementation of which will ensure trouble-free operation of the OWF BE throughout the operation phase.

According to Article 3.23 of the EP Act, a major emergency is understood as an event, in particular an emission, fire or explosion, occurring during an industrial process, storage or transportation, in which one or more hazardous substances are present, leading to an immediate danger to human life or health, or to the environment, or to the occurrence of such a danger with a delay. In turn, according to Article 3(24) of the EP Act, a major industrial emergency is understood as a major emergency at a plant. According to Article 3(48) of the EP Act, the plant is understood as one or more installations together with the land, to which the operator of the system has the legal title, and the equipment located therein. According to Article 248 (1) of the EP Act, a plant that poses a risk of a major industrial emergency, depending on the type, category and quantity of hazardous substance present at the plant, shall be considered either a plant with a higher risk of an emergency or a plant with a high risk of an emergency, depending on the anticipated quantity of hazardous substance likely to be present at it. The criteria for including the plant in one of the listed categories are specified in the *Regulation of the Minister of Development of 29 January 2016 concerning types and quantities of hazardous substances present in a plant, decisive for classifying a plant as a plant at an increased or significant risk of a serious industrial emergency* (Journal of Laws of 2016, item 138).

According to the EP Report, the OWF BE will not be a storage site for substances decisive for the classification of the project as a plant at an increased or high risk of a major industrial emergency, according to § 1 of the above-mentioned Regulation. At the same time, it should be noted that according to Article 2.4 of the EP Act, the rules for the protection of the sea from pollution by ships, and the administrative bodies competent for such protection are provided for in separate regulations. However, due to the relatively small amounts of hazardous substances, the farm was not included in any of the above categories.

Investment's impact on the climate. The climatic conditions of the southern Baltic are described as humid-moderate, influenced by the Atlantic climate, with prevailing ocean winds. The vicinity of the Atlantic Ocean, through the influx of large air masses, significantly determines the climate of the Baltic Sea region. As a result of these conditions, winters are relatively mild and warmer compared to the northern part of Europe, while summers are cooler compared to the southern part of Europe. The climate specific for the Polish coast and adjacent areas of the sea can be classified as a climate of the coastal belt type, with relatively small amplitudes of air temperature, high humidity, mild winters, cooler summers, and strong winds. The prevailing winds are from the west and southwest. In areas of the open sea, including the OWF Baltic East site, climatic conditions are characterised by smaller air temperature amplitudes and higher average wind speeds, when compared to adjacent onshore areas.

Climate change forecasts for the area of Poland, including the coastal zone and maritime areas under the jurisdiction of the Polish state, as well as scenarios for adaptation measures aiming at mitigating and counteracting the effects of these changes have been and are the subject of intensive work conducted by the Ministry of Climate and Environment and the Institute of Environmental Protection PIB. Taking into account the conclusions and recommendations relating to the Baltic Sea coast and adjacent areas, it was concluded that the observed and predicted climate changes will have a negative impact on conditions in the coastal zone. The negative impact of periodic sea level rises, resulting primarily from an increase in the frequency and intensity of severe storms, is anticipated. In the case of the Baltic Sea, this refers to a possible increase in the number, intensity, and duration of these events, with an increase in the irregularity of the occurrence of these events, i.e. long periods of relative calm may be followed series of storms of considerable strength in quick succession. A factor accelerating the process of coastal erosion is the warming of winters, as a result of which a reduction in the ice cover that protects beaches from storm surges, and thus from coastal erosion, is to be expected. Very significant effects of climate change will include an increase in the frequency of storm floods and more frequent flooding of low-lying areas, as well as the degradation of coastal cliffs and the seashore, which will put heavy pressure on the infrastructure located in these areas. Due to the increase in the average water temperature and increased inflow of biogenic pollutants (nitrogen and phosphorus compounds) to the sea, progressive eutrophication, especially at the water surface (algal blooms), will be a negative phenomenon.

The actions undertaken to adapt the coastal zone to the climate change concern areas along the Baltic Sea coastline. However, to date there are no specific guidelines and recommendations relating to open sea areas, including installations and structures installed or located there, outlining the scope of measures to counteract the effects of forecast changes in climate conditions.

During the farm construction and decommissioning phases, increased emissions of pollutants introduced into the atmosphere (including greenhouse gases) can be expected, which will be associated with increased traffic of vessels involved in the project execution. It is not possible to estimate the amount of these atmospheric emissions at this stage, as the number, the type, and duration of use of specialised vessels be determined only in the detailed design. It was assumed that only vessels that meet standards resulting from national norms and international treaties for emissions of pollutants would be used. During the construction phase, the planned project's impact on climate and greenhouse gases is expected to be negligible, as there will be no factors that could have any noticeable impact on their change. During the construction phase, the impact of the planned project on air quality will be temporary and will disappear after the work ceases. Furthermore, due to the open area free of obstacles, the concentration of pollutants will quickly dissipate. Therefore, the significance of the impact will be negligible.

Wind turbines will locally reduce wind energy and disturb the atmospheric pressure directly in the rotor area. Power plant towers can locally disturb the velocities and directions of water flows and locally dampen the energy of sea waves, which is manifested as a decrease in their height. Since the emissions generated during the OWF operation will be minimal, it can be assumed that there will be no significant emissions of dust pollutants and only minor emissions of gaseous pollutants, including carbon dioxide, which is a greenhouse gas. Hence, no deterioration in air cleanliness and downgrading in its cleanliness class is expected. At the operation phase, the planned investment will have both negative and positive impacts on the climate. Negative impacts are related to greenhouse gas emissions caused by the burning of fuels by service vessels. A positive climate impact will be associated with generation of

electricity from the renewable energy sources by the OWF BE at the level of 966 MW, which will lead to a noticeable reduction in the country's CO_2 emissions.

The Project's impact on cultural heritage and archaeological sites. In the area of studies conducted around the OWF Baltic East, a total of three wrecks were found during geophysical surveys conducted between March 2022 and May 2024, including one (labelled as ID: WK-0055) named "Sailing Ship," which had already been identified from SIPAM data, and two (labelled as ID: SSS-033 and SSS049) so far unidentified. In accordance with applicable regulations, the newly found wrecks were notified as potential elements of underwater cultural heritage to the Pomeranian Voivodeship Heritage Conservator in Gdańsk, the Maritime Office in Gdynia, and the Polish Navy Hydrographic Office. By the time of submitting the EP Report, the heritage conservation services had not decided whether the reported wrecks would be subject to special protection. The applicant assumes that in the event that these wrecks are given special protection, no works will be carried out in connection with the execution and operation of the OWF Baltic East in the places where they are located and in their immediate protection zones, first in accordance with the conditions set forth in the OWF Baltic East PSzW, and later in accordance with the conditions set forth by the Pomeranian Voivodeship Heritage Conservator in Gdańsk. In the OWF Baltic East PSzW, the Investor was obliged to conduct an archaeological inventory and submit its results to the director of the Maritime Office, as well as to carry out work in the vicinity of identified cultural heritage sites as part of the project under archaeological supervision. Furthermore, the Investor is required to provide *in situ* protection for heritage objects with their surroundings, i.e. the seabed at a distance of at least 25 m from the outer line of the heritage object, until a protection zone is established. Work listed in the OWF Baltic East PSzW that could disturb the seabed or lead to the destruction or damage of a heritage object were banned.

Similarly, the potential presence of containers with chemical weapons must be considered, which were sunk mainly in the Baltic depths after World War II. While maintaining a precautionary approach, it should therefore be assumed that conventional and unconventional warfare agents from periods of warfare may lie on the seabed also at the OWF BE site and pose a potential threat to the safety of the project execution. Prior to the start of construction, the Investor will conduct a survey for the presence of duds and unexploded ordnance (*UXO*) on the seabed. If warfare agents/unexploded ordnance are found during these surveys, the Investor shall inform the relevant authorities and institutions and comply with the orders issued by them. In view of the above, **Condition No. B.I.2.6.** was imposed on the Applicant

Potential impacts on human health and living conditions and an analysis of possible social conflicts associated with offshore wind farms are specified, among others, in:

- shipping:

Execution of the Project will affect the safety of navigation through the emergence of new risks associated with the construction and operation of the OWF Baltic East. Each phase of the project will be associated with the movement of additional vessels and the presence of vessels with limited manoeuvrability and certain restrictions on the navigation of other vessels related to, for example, the designation of safety zones, speed limits, prohibition of anchoring, and performance of underwater work. The main hazards will be associated with the construction phase, i.e. installation of foundations, and structures of wind turbines and substation structures, and laying of inter array cables. The risk assessment for other projects

of this type shows that, subject to implementation of appropriate risk reduction measures, the likelihood of incidents is rare.

Unlike the risks associated with the connection infrastructure, for which the risk of incidents is extremely rare during the operation phase, during the operation phase of the OWF Baltic East, some of the risks will be present permanently, throughout its lifetime. This is due to the fact that the wind farm structures will become significant navigational obstacles, affecting navigation conditions and safety.

The main risks associated with the project execution are collisions and contact. Collision - a collision of vessels or a case of a vessel being struck by another vessel, regardless of whether it is en route, anchored or moored, but excluding striking of an underwater wreck. Contact (allision) - a violent contact between a ship and a permanent structure/a ship running upon an external object or a ship being struck by an external object that is neither a ship nor the seabed. Likely scenarios:

- the vessel (by type and class, including small one-man vessels) on the route contacts a permanently fixed structure;
- an installation or service vessel has a contact with the OWF structure;
- a vessel not controlling its movements (drifting) is in contact with a vessel or set of vessels of limited manoeuvrability;
- a failure of the stabilisation system of an installation vessel causes it to drift, contact the OWF structure, or capsize;
- a failure of lifting equipment on an installation vessel causes the collapse of the OWF structural element - a damage to the vessel or an accompanying vessel in the vicinity;
- a failure of the OWF structure causes its components to fall on board of the ship.

With regard to the location of hazards and the degree of their impact on shipping, the re-analysis of shipping resulting from the new maritime spatial planning conditions will be of greatest importance. The construction of the offshore wind farms planned in the first phase will result in changes in the organisation of ship traffic. The anticipated ship traffic associated with the construction of wind farms is described using a shipping model assuming that vessels engaged in regular shipping will avoid properly marked hazardous areas.

During the execution phase of the OWF Baltic East, the area will gradually be excluded from shipping, fishing, and research and tourist cruises for safety reasons. Only the presence of vessels associated with the project will be allowed. The construction of the OWF Baltic East will not interfere with the use of the Navy's training grounds. The objects of cultural heritage identified during the survey should be protected by establishing exclusion zones at a distance of at least 25 m. Increased ship traffic supporting the construction of the OWF may mean disruptions in ship traffic along the route south of the OWF BE. The spatial extent of impacts will be local, and the duration of impacts will be short-term at the preparation phase and medium-term at the construction phase. Impacts will be temporary and permanent. The nature of the impacts will be negative.

- fishing:

There are fishing activities carried out by Polish fishing vessels at the OWF Baltic East site. The analysis of this activity was based on data from fishing vessel catch reports, taking into account the fishing location (a fishing square or a geographic position, fish species, month of fishing, fishing gear and vessel size (vessels of up to 12 m and over 12 m)). The analysis was prepared on the basis of fishing data for 2019–2023 available in the npzdr.pl database (National Fisheries Data Collection Programme), which is based on information from the

Fisheries Monitoring Centre. The value of the catch was calculated on the basis of average annual first-sale prices of each fish species and the weight of the fish caught. Since the reported most detailed information on the location of fishing is available for areas of fishing squares (areas of about 400 km^2), not overlapping with the area of the OWF Baltic East, in order to determine the impact with the greatest possible accuracy. The main fish species caught in the area of the two analysed squares were herring and sprat, representing a total share of as much as 99% of the total volume and value of fish caught. The observed decrease in catches of both species in 2023 versus 2019 - by 53% for herring (the decrease in value was significantly lower due to the increase in prices) and by 95% for sprats, might have been a consequence of, on the one hand, the reduction in quotas in this period - by 54% for Baltic herring and by 16% for sprats in 2023, and, on the other hand, the recorded volume of catches in the analysed area is so low that the observed fluctuations in catches could also result from random changes in the activity of a small number of fishing vessels. The volumes of annual catches estimated only for the area that the OWF will occupy (including the 500-meter buffer zone) ranged from 10 kg to about 13 t, giving an average of only 3.2 t worth about PLN 10,000. The average share of fish caught in 2019-–2023 in the OWF BE area in relation to the value of total Polish catches in the Baltic Sea was 0.01%. Analysing the relative importance of the area of fishing squares to be partially occupied by the OWF Baltic East as a location of fishing for fishing vessels located in different ports, it appears that it has a noticeable importance (1.36%) only for vessels from Władysławowo. For vessels registered at the other ports, catches in the area of the two quadrants analysed can be considered insignificant, their relative size did not exceed 0.5% for any of the analysed years.

Studies done for existing offshore wind farms show that the reduction in fishing space can have two types of effect. The first is the decline in demersal fish catch, since within the OWF the greatest restrictions concern the use of bottom fishing gear. The second, opposite effect is an increase in pelagic fish catches, which may result from the so-called "artificial reef" effect. This phenomenon is caused by the appearance of artificial hard-surface objects in the environment, which can be overgrown by the periphytic fauna and flora. Submerged objects populated by plant and animal communities provide feeding, rearing sites for fry, and shelter for fish, providing them with a favourable habitat affecting the development of their populations. However, the effect of the farm execution will be measurable only at the operation phase, after at least a few years of its operation, when the qualitative and quantitative structure of the periphytic organisms stabilises and the fish adapt to the new environmental conditions.

- exploration and extraction of minerals:

Within the borders of the OWF Baltic East study area and in its immediate vicinity, no mineral deposit or mining area has been identified. According to the geoenvironmental map of Polish marine areas (Kramarska et al. 2019), the eastern and northeastern parts of the OWF Baltic East study area are indicated as prospective for the occurrence of clastic minerals. A prospective area of sands and sands and gravels was designated there (Area II - "Coastal Zone of the Baltic Sea Bottom"). Within the Baltic East OWF study area, no areas of sand suitable for artificial shore nourishment were mapped. According to the provisions of the Spatial development plant for Polish marine areas for the POM.46.E body of water, in which the OWF Baltic East site is located, the specified primary function is "generation of renewable energy". The permitted function is "exploration of and prospecting for mineral deposits and extraction of minerals from deposits," which is described further in the charter of the body of water as follows: "*throughout the body of water, execution of the function (for exploration of and prospecting for mineral deposits and extraction of minerals from deposits) shall be limited to*

ways that do not disturb linear elements of technical infrastructure; that do not threaten the ecological function of spawning grounds and survival of early development stages of fish (eggs and larvae) of commercial species; throughout the body of water, extraction of minerals from deposits shall be limited to projects agreed with the relevant investor of offshore wind farms."
In view of the specification of the primary function for the POM.46.E body of water - generation of renewable energy, the issue of exploration of and prospecting for mineral deposits and extraction of minerals from deposits should be treated as a secondary one.

- national defence:

The OWF Baltic East site is not located in zones permanently or periodically closed to navigation and fishing, established by the Minister of Defence by decree in accordance with the Act of 21 March 1991 *on maritime areas of the Republic of Poland and maritime administration* (consolidated text: Journal of Laws of 2024, item 1125). According to the data in the EP Report, the OWF Baltic East site is located:

- at a distance of about 3 Mm (about 6 km) north of sub-area 34.923.B designated for the Polish Navy fairways (0023, 0024, 0026, 0304, 0305);
- at a distance of about 6 Mm west of sub-areas 54.923.B, designated for training grounds P-14, P-15, P-16, and P-18 and 54.926.B for the Polish Navy fairways (0301, 0302, 0303, 0304);
- at a distance of less than 5 Mm (about 9 km) south of sub-area 16.923.B designated for training grounds (P-15, P-16, P-18, P-19, P-22, P-23) of the Polish Navy.

A change in the existing status of the development area requires arrangements with the Minister of National Defence. During the period of operations carried out by the Polish Armed Forces in the aforementioned sub-areas, other functions may be prevented. According to the EP Report, the OWF site is outside the range of areas with defence functions (military training grounds and Navy fairways).

A formal public consultation was conducted during this environmental impact assessment procedure. No comments or proposals were made by the public during the consultation.

The OWF Baltic East site is located 22.5 kilometres from the seashore. The landscape of the area is the open sea. The landscape changes according to the weather; on windless days the sea is calm, steady, while with increased wind strength, reduced sunshine, increased cloud cover and higher humidity, including precipitation, the sea state, wave action, and air clarity also change. Water vapour rises above the water, which also reduces visibility, making it difficult for an observer to determine the border between the sea and sky on the horizon. Important shipping routes pass through and around the OWF Baltic East site, within a distance of a few to several dozen kilometres. Tankers, container ships, cargo-rail ferries, passenger ferries, passenger ships, cargo ships, freighters, oil tankers, and other vessels pass along these routes. On the north side of the OWF Baltic East site runs the northeast shipping route (POM.49.T body of water). On the south side of the OWF Baltic East site runs another northeast shipping route (POM.34.T, POM.54.T body of water). The OWF Baltic East sit is located in parts of two fishing squares, with fishing vessel traffic. Other closest forms of development are areas with permits for oil and gas exploration and prospecting, and the nearest Baltic-Beta mining platform is more than 40 kilometres away, which is beyond the range of visibility from the OWF Baltic East. The maritime cultural landscape includes the anthropogenic development and use of both the sea and the seabed, which is accessible only to divers and underwater vehicle operators. The landscape of the Baltic Sea is not subject to classification, and the concept of submarine landscapes was developed only in the BALANCE project, "Baltic

Sea Management - Nature Conservation and Sustainable Development of the Ecosystem through Spatial Planning" (2005–2007). There are no permanent development elements in and around the OWF Baltic East site. The onshore area from Ustka in the west to Hel on the east is within the range of the potential zone of the OWF Baltic East impact on the landscape. Due to the shape of the coastal zone, the OWF Baltic East may be visible from the beaches in this section. In the section in question, under meteorological conditions with good air clarity, the OWF Baltic East will potentially be visible.

Impact of the planned project on the natural environment:

In June 2022, environmental surveys were conducted at the OWF Baltic East site, concerning **phytobenthos.** Filming of the seabed was carried out on 4 transects of 120–122 m each, for a depth range of 24.6 to 27.7 m. The stones and boulders on the bottom were overgrown with dense colonies of mussels, i.e. bivalves of the species *Mytilus trossulus*, and coelenterata.

For the purposes of the EP Report, a separate pre-investment survey was performed for **macrozoobenthos** on the soft (sand, gravel, gravel and sand, gravel and stones, and sand and gravel sediments) and on the hard (stones, boulders) bottom at the OWF Baltic East site, obtaining comprehensive data for qualitative and quantitative analyses of benthic invertebrate communities and assessment of the ecological quality status of seabed habitats. The results of the qualitative study of macrozoobenthos showed that the region was inhabited by a fairly diverse benthic macrofauna. Twenty-two macrozoobenthos taxa were found on the soft bottom. The predominant taxa were those typical for the shallow to medium-depth bottom (up to about 40 metres below sea level) of the open waters of the southern Baltic. Whereas on the hard bottom, the community of periphyton and associated fauna was formed by 20 macrozoobenthos taxa. The average abundance of macrozoobenthos from the soft bottom of the study area was 2198 individuals·m^{-2}. In terms of abundance, the dominant species in the structure of the macrozoobenthos of gravel and sand bottoms was the polychaete *Pygospio elegans* (69.10%) that prefers sandy habitats. On the other hand, the average biomass of soft-bottom macrozoobenthos was 15.93 g·m^{-2}, and one species of bivalve, the Baltic tellin *Macoma balthica* (49.47%), had the greatest share in the total biomass of this habitat. A significant portion of the study area was formed by a layer of boulders and large stones, at the depth range of about 25–35 m. In terms of abundance and biomass, their surface was dominated by mussels *Mytilus trossulus* (95 and 99%, respectively), which are a component of the diet of benthic-feeding birds. Juvenile mussel specimens from the 1–5 mm shell length class predominated in terms of abundance, while individuals from the 21–25 mm shell length class dominated in terms of biomass. In the southern part of the study area, macrozoobenthos abundance was much lower than in its northern part, but even there it did not exceed 4,000 individuals·m^{-2}. The highest abundance of macrozoobenthos on the hard bottom, exceeding 80,000 individuals ·m^{-2}, was found in the central part of the study area, which was associated with aggregations of juvenile mussel *Mytilus trossulus* on the boulders. The highest macrozoobenthos biomass was found in the central part of the OWF Baltic East site, both on the soft bottom (up to 150 g m.m.·m^{-2} – due to the high biomass of the bivalve *Macoma balthica*) and on the boulders (more than 4,000 g m.m.·m^{-2} – due to the high biomass of *Mytilus trossulus*).

Additionally, it should be noted that no protected macrozoobenthos species were found in the entire study area.

Construction activities that may affect the seabed include seabed preparation, installation of offshore wind turbine foundations, cables and OSSes, and operation of construction-related

vessels. The analysis showed that the most adverse impact would be the disturbance of seabed sediment structure in areas where seabed plant and animal species are currently present.

The ongoing operation of the farm and related maintenance work will affect the benthos in its study area. During the operation phase, the most important impacts will include the loss of natural habitats and the creation of new artificial ones, as the foundations of offshore wind turbines can provide settlement, shelter, and foraging space for some species (the so-called artificial reef).

During the decommissioning phase, seabed disturbance will be comparable to that at the construction phase, although the intensity of activities will be lower. With the exception of the removal of the artificial reef, all impacts during the decommissioning phase for each plant and animal receptor on the seabed are expected to be small and insignificant.

The local authority requested in this decision conducting of post-construction benthic monitoring, to determine possible changes in seabed plant and animal species compared to the results of pre-construction surveys. Furthermore, the local authority requested in this decision conducting of studies before and after the OWF BE decommissioning, to assess the impact of habitat disturbance through the removal of offshore wind farm components and associated infrastructure. **Conditions No.: B.I.: 4.1, 4.2, 4.3, 4.4 C.1.1), C. 2.3.5 a and b, and D.**

The conducted **ichthyological** analysis shows that the area is typical in terms of species diversity, with a clear predominance of cod and flounder in bottom fishing, and herring and sprat in pelagic fishing, which is typical for southern Baltic waters. Fish belonging to 22 taxa were caught in all survey gear in the study area. Permanent fish communities in the study area included the cod, the flounder, the shorthorn sculpin, sandeels, the herring, sprats, the fourbeard rockling, the turbot, the lumpsucker, and the eelpout. The taxonomic diversity of ichthyoplankton in the study area was relatively low (eggs of 2 species and larvae of 13 fish taxa).

On the basis of the results of ichthyoplankton surveys and literature information, it can be assumed that late spring and summer spawning of sprat takes place in the study area in July. The presence of numerous Gobiidae larvae in the collected samples indicates the intensive spawning of these fish that takes place in July, which takes place in summer outside the study area in shallower waters. This is supported by literature data indicating shallow regions with bottoms covered with sandy, gravelly sediment as a natural environment favourable for the reproduction of these fish.

The moderate abundance of sandeel larvae suggests that spawning of this taxon occurs in the summer season outside the study area at shallower depths. The low larval abundances of the shorthorn sculpin, the long-spined bullhead, the rock gunnel, the herring, th common seasnail and the straightnose pipefish, together with their environmental preferences for spawning (very shallow areas), indicate that the study area is not a spawning area for these taxa. No cod, flounder, or plaice eggs were found in the study area. Spawning is not possible due to the low salinity of these waters. The larvae caught in the spring came from spawning in the Gdańsk Deep or the Słupsk Furrow), from where they were carried with the currents to the shallower study area.

The results of the control herring catches indicate that in summer, the study area was the site of temporary aggregation of part of the herring stock in the monitored bentopelagic layer of the Baltic Sea. Due to its relatively great depth and lack of suitable substrate, the study area is not a significant spawning ground for herring. The results of the pelagic trawl control

catches show that in autumn, during the sprat post-spawning feeding, these fish were present in small numbers (an average of 25.8 kg/haul), but their numbers were large (an average of 280.1 kg/haul) during the spring spawning season. In summer and winter, no sprats were caught with a WPE-type trawl. In both fall and spring samples, sprats of age group 4 prevailed, followed by those of group 3. The sprat spawning and spawning migration takes place from March to July. The study area is not an important spawning ground for this species. In terms of numbers, fish participating in spawning, i.e. with gonads at stages VI (active spawners) and VII (resting) played a lesser role in the numerical distribution of sprats caught in spring, together, they accounted for 18.0% of fish in the samples.

The results of the cod abundance surveys conducted in different study seasons indicate a significant quantitative variation and, at the same time numerous, and in the winter season very numerous, presence of these fish in the study area in the annual cycle. Thus, the above results of cod abundance surveys may indicate that the area of the planned project is, regardless of the season, an important habitat for fish of this species. The study area was characterised by a clear predominance of juvenile cod, which includes cod of age groups 0-2 and small, in all study seasons. The study area is not a breeding ground for cod. The significant diversity of nutritional components found in cod stomachs clearly indicates that the area of the planned project is very favourable for cod of different sizes in terms of food composition.

The project's study area was the site of numerous seasonal habitats for flounder, mainly adult individuals. An analysis of the gonad maturity did not reveal spawning activity of flounder in the study area. Taking into account the prevailing hydrological conditions (maximum recorded salinity below 10 psu) that are unfavourable for the reproduction of the European flounder *(Platichthys flesus*), as found in the study area (Momigliano et al. 2018), it can be assumed that fish from the study area moved to the nearby Słupsk Furrow or Gdańsk Deep for spawning. This assumption could be confirmed by the results of ichthyoplankton catches, in which the presence of flounder larvae in the study area was recorded in winter and spring. They most likely drifted here from spawning grounds located in the aforementioned depths.

The work carried out on the seabed during the construction phase of the OWF will result in the following impacts affecting ichthyofauna: noise and vibration, increase in the concentration of suspended solids in the water, habitat alteration, pollutant emissions, and physical barrier.

The main source of noise and vibration during the construction phase is the installation of foundations by the piling method. The sound generated during piling is pulsed, short in duration (less than one second), and has a wide frequency band from 100 to 1000 Hz, with most of the energy concentrated in the range of up to 500 Hz (Dahl et al., 2015). The level of noise generated during the work depends on hammer impact energy, the material of which the pile is made, its diameter and length, the depth to which the pile is driven into the sediment, and the parameters of the sediment into which the pile is driven (composition, cohesiveness, resistance to pile driving). Noise level values expressed as cumulative sound energy for one pulse (SEL_{ss}) reported in the literature, measured at a distance of 750 m from the sound source, range from 157 dB re: 1 µPa²s (for a pile of 0.9 m in diameter) to 180 dB re: 1 µPa²s (for a pile of 5 m in diameter). In turn, the maximum pressure values recorded for a single SPLpeak pulse range from 183 dB re: 1 µPa (for a pile of 0.9 m in diameter) do 200 dB re: 1 µPa (for a pile of 4 m in diameter) (Andersson et al., 2017). Noise generated when driving piles of larger diameters, calculated using the exponential relationship between the pile diameter and the noise level, can reach above the SEL level of 180 dB re: 1 µPa and above SPLpeak of 205 dB re: 1 µPa for a pile of 8 m in diameter. The spatial extent of the noise impact highly depends on salinity, temperature, pressure and, in the case of shallower regions, sediment type and

bottom morphology. Simulations conducted by Andersson et al. (2017) indicate that for southern Baltic conditions, the noise at the level of 226 dB re: 1 μPa²s (SEL_{ss}) at its source, at a distance of 5 km will drop to 170 dB re: 1 μPa²s in winter and 160 dB re: 1 μPa²s in summer, and at a distance of 20 km it will be 155 dB re: 1 μPa²s and 143 dB re: 1 μPa²s, respectively. Slightly lower noise levels are expected during cable-laying work. The values reported in the literature, recorded during excavating trenches for cables, range from 178 dB re: 1 μPa^2s(Wilhelmsson, 2010) to 188.5 dB re: 1 μPa (Bald et al. 2015). The extent of the impact largely depends on the noise intensity, as well as the morphology of the bottom, as they can affect sound propagation. According to Taormina et al. (2018), noise levels reaching 120 dB re: 1 μPa²s can be expected in an area of about 400 km^2. The impact of piling noise at the OWF Baltic East site may even cause increased fish mortality. However, given the very small area where fish deaths can occur (up to a few dozen metres from the work site) and the possibility of adults escaping from the dangered area, facilitated by the *soft-start* procedure**(Condition No.: B.I.2.2.2)**. It can be assumed that any increase in mortality will not affect ichthyofauna at both population and local aggregation scales. It cannot be ruled out that some indirect effect on increasing fish mortality may result from a periodic reduction in the ability to register auditory stimuli (reversible hearing loss, TTS) leading to a decrease in predator or prey detection efficiency and orientation in the environment. However, the extent of this impact is relatively small, affecting, in the furthest modelling scenario, an area of 575 km^2 for the TTS effect and 4.4 km^2 for reversible hearing loss. At the same time, taking into account the relatively short duration of such hearing impairment, reaching a maximum of a few days in the case of TTS, it can be assumed that any increase in mortality will not be significant at the population level.

During the construction of turbine foundations and the laying of connection cables between turbines, it is necessary to carry out dredging work leading to an increase in the concentration of suspended solids in the water. The response of fish to an increase in suspended solids concentration depends on both physical factors arising from local abiotic environmental conditions and those related to the biology of the ichthyofauna. The effect of suspended solids on fish depends on the concentration of suspended sediment and the exposure time of the organism, and the main biological factors shaping the response to an increase in suspended solids concentration are the fish mode of life, mode of reproduction, developmental stage, and health. The impact of suspended solids on ichthyofauna can result in a whole range of negative effects, from avoidance reactions, through growth inhibition and reduced reproductive success, up to increased mortality. The analysis in the EP Report for the OWF BE shows that the impact on fish associated with an increase in suspended solids will be a negative, direct, local, and short-term. The significance of the impact is assessed to be negligible for all fish species studied.

During the foundation and cable laying work, resuspension of sediments and release of accumulated pollutants into the midwater will occur. Additional sources of emissions may be oil spills caused by equipment or vessel breakdowns. Taking into account the low concentrations of most harmful substances in sediments found at the OWF Baltic East site during the 2022–2023 surveys, it can be assumed that they will not pose a significant threat to ichthyofauna. The fish's greatest sensitivity to effects of harmful substances is observed in maturing females and early larval stages. The impact on fish, associated with the release of pollutants and nutrients from the sediment into the water, will be negative, direct, temporary and local. Emissions of harmful substances during the construction phase can occur as a result of unplanned events, such as ship collisions, improperly conducted disconnections and connections of equipment, errors in their operation, or spills of municipal waste from vessels. Toxic chemicals can also be released from sediments during dredging operations. According to the Helsinki Commission, these may include heavy metals (cadmium, chromium, copper,

lead, mercury, nickel, zinc, and arsenic), chlorinated biphenyls, organochlorine and organophosphate pesticides, tributyltin (TBT) and its breakdown products, total petroleum hydrocarbons (*TPH*), polychlorinated dibenzodioxins (PCDDs), polychlorinated dibenzofurans, and PCBs. The ichthyofauna exposure to harmful chemicals may result cancerous lesions, hormonal disorders affecting reproductive processes, or morphological changes. Sensitivity to this impact depends on the fish developmental and physiological stage. Heavy metals penetrate from the water into the fish's body mainly through the gills and, to a lesser extent, through the body surface. According to Garai et al. (2021) the most common sources of toxic effects in fish are cadmium, chromium, nickel, arsenic, copper, mercury, lead, and zinc. They cause oxidative stress responsible for weakening of the immune system, tissue and organ damage, growth defects, and reduced reproductive capacity.

It can be assumed that the risk of chemical emissions into the environment caused by unintended activities is relatively small and can be reduced by following a detailed hazard and pollution prevention plan that includes a description of procedures and mitigation measures for such events. **(Conditions No.: B.I.1. 1.14, 1.16).**

Ichthyofauna sensitivity to habitat loss, in the case of pelagic-feeding fish (herring, sprat), even complete temporary abandonment of the Project site, will not reduce the food base due to its availability in neighbouring areas. The impact on fish, associated with the change of habitat, will be negative, direct, temporary and local. The significance of the impact was assessed to be negligible for all fish species studied.

Unfavourable environmental conditions during the execution phase, caused by the conducted works (high concentration of suspended solids in the midwater, noise caused by the installation and dredging works) and increased ship traffic compared to the current situation may cause fish to avoid the Project site. This could result in the disruption of migration routes passing through the area in question. However, studies conducted at Danish offshore wind farms have shown no significant disruption of fish migration caused by vessel traffic (Leonhard et al. 2011). Despite the potentially higher intensity of traffic during the execution phase, the active ability of fish to move should limit the negative impact of this factor. If there are no similar impacts from nearby regions at the same time, it can be assumed that the scale of the impact will be local and short-term, leading only to temporary avoidance of the area during the works.

The Regional Director for Environmental Protection in Gdańsk obliged the Investor to perform post-execution monitoring of ichthyofauna - **Condition No.: C.2 2.3 1.** It will be conducted both during the operation of the OWF and after its decommissioning. The monitoring programme is intended to enable the identification of noticeable changes occurring locally around the Project's infrastructure, and of potential indirect changes further away from the infrastructure site, and the comparison of the results with the data collected during the pre-investment surveys. Surveys should be carried out in the spring and summer - one year after the completion of construction and one year after the decommissioning phase. A set of survey tools in the form of multi-panel bottom-set nets, and in the case of early development stages, a Bongo-type ichthyoplankton, net should be used. It is necessary to designate study stations both at the OWF Site and at some distance from it, in a body of water not intended for offshore power generation, but characterised by similar parameters of the marine environment (depth, distance from the shore, etc.). The result of the monitoring will be important for determining possible measures to prevent or minimise impacts, mainly related to anthropopressure (commercial and recreational fishing).

Four species of **marine <u>mammals</u>** are found at the OWF Baltic East site: the harbour porpoise (*Phocoena phocoena*) and three species of seals – the grey seal (*Halichoerus grypus*), the harbour seal (*Phoca vitulina*), and, occasionally, the ringed seal (*Pusa hispida*). In

order to investigate to what extent the OWF Baltic East site is used by porpoises, passive acoustic monitoring was conducted using C-pods (Chelonia Ltd., online). The survey was conducted from 1 July 2022 to 23 October 2023.

The following impacts on marine mammals were identified for the OWF Baltic East execution phase: an increase in underwater noise and a change in habitat and food base.
Two main sources of noise are recognised during the OWF Baltic East construction phase that may have an impact on marine mammals - piling and increased ship traffic compared to the current situation in the area. The wind turbines will be set on large-diameter piles driven into the seabed. The process of pile driving during construction work will be associated with the generation of underwater noise, which can significantly increase the background noise level around the construction area and at great distances from it. Marine mammals, both porpoises and seals, respond to elevated noise levels in the environment. Underwater noise is detected by animals when its values exceed the level of naturally occurring background noise. Because of the vital importance of sounds to the biology of porpoises and seals, noise can significantly affect their behaviour and physiological state. In general, the effects of noise on animals can be divided into several categories: detection, masking, behavioural changes, and physiological damage, such as permanent and temporary hearing loss (Thomsen et al., 2021).

Detection means that the body is able to hear a signal, but does not show a clear reaction. Masking occurs when noise interferes with the detection of biologically relevant signals used, for example, for communication and orientation in space. It occurs when the frequency of sounds in the environment is within the spectrum relevant for a given species, and exceeds the level of naturally occurring background noise. The behavioural response includes various types of behavioural changes under the influence of noise exposure, such as, for example, fleeing the affected area, stopping feeding or resting, faster swimming, or deeper diving. The prolonged exposure to unwanted sounds may lead to repetitive behavioural modifications and result in a deterioration in the physiological health of individuals, and in a shift in their range. In consequence, an impact at the population level may occur. Hearing impairments include temporary (TTS) and permanent (PTS) shifts in the hearing threshold. In the case of TTS, the animal may regain its original ability to perceive sounds after the negative factor is withdrawn and a period of recovery. PTS leads to irreversible damage to the auditory system. With marine mammals relying primarily on the sense of hearing, impacts of this nature have a very significant negative impact and can result in population-level impacts. Noise-induced physiological changes involve damage to tissue or entire organs, which in extreme cases can even lead to death of the individual.

The results of the numerical modelling showed that the use of mitigation measures will be necessary for the piling process at the OWF Baltic East site due to the possible hearing loss, both TTS and PTS, in porpoises and seals. Acceptable acoustic thresholds were exceeded in all analysed scenarios. Therefore, by design, measures were applied to reduce noise propagation during piling, which the Applicant considers as an inseparable element of the Project.

The construction of a wind farm may lead to changes the chemical parameters of seawater due to, for example, resuspension of suspended solids from the seabed. Such fluctuations in the environment may affect marine mammals indirectly, mainly in terms of their impact on the food base, i.e. fish populations. Changes in water parameters associated with the construction process can negatively affect populations of plankton and benthic organisms on which fish feed. In consequence, a temporary decline in the numbers of these animals may occur, and thus a loss of a potential food source and foraging habitat for marine mammals.

The main source of underwater noise during the operation phase of the wind farm will be the operating turbines. Its sources are moving mechanical parts of the nacelle - the generator

and gearbox, as well as the tower vibrations caused by the wind. Sound is transmitted into the water through the turbine base and supporting structures. The noise generated is in the low-frequency spectrum, with most of the energy below 1 kHz (Madsen et al. 2006; Thomsen et al. 2006). The sounds generated are continuous and are almost constantly present in the environment during the wind farm operation, potentially contributing to the increase in local background sound level.

The operation of the wind farm will be associated with the traffic of service vessels, probably of large and medium size. Such vessels have the potential to increase environmental noise levels, including frequencies relevant to marine mammals. However, it is expected that both the number of service activities and units moving at the same time will be low, thus having little impact on marine mammals. It is presumed that there will be a gradual process of restoration once construction work, being the cause of environmental disturbance and potential loss of foraging sites for marine mammals, ceases. It is likely that habitats for benthic organisms will develop again around the wind farm site and attract fish, while restoring the availability of food for porpoises and seals.

To protect marine mammals, the local authority imposed Conditions No.: B.I.2.1, B.I.2.2, B.I.2.3, B.I.2.4, C.2.2.2, C.2.2.3.4, and D.

Surveys of flights of **migratory birds** were conducted during the period of autumn (August–November 2022) and spring (March–May 2023) migration. Data was collected during fifteen research cruises, covering a total of 40 days of visual observations, vertical and horizontal radar tracking, and acoustic recordings. Among the most abundant migratory bird species observed during the survey were the long-tailed duck, the razorbill, the greater white-fronted goose, the skylark, and the velvet scoter, as well as geese, ducks, auks and Passeridae, for which species were not determined. The cormorant, the European wigeon and the common scoter were also found in large numbers. In autumn, geese were observed in the greatest numbers (nearly 30% of all visual observations), mainly unidentified to species, the white-fronted, and the taiga bean geese. During visual observations in spring, the most abundant species found were the long-tailed duck, auks, the common scoter, the cormorant, the greylag goose, and the little gull. Twenty-one species are listed in Annex I to Directive 2009/147/EC of the European Parliament and of the Council of November 30, 2009 on the conservation of wild birds. On the basis of the IUCN (the International Union for Conservation of Nature) international classification, the common eider *Somateria mollissima* is recognised as endangered (EN) on the European scale. The species considered to be vulnerable (VU) are the velvet scoter *Melanitta fusca*, the pintail *Anas acuta*, the tundra swan *Cygnus columbianus*, the rook *Corvus frugilegus*, the common snipe *Gallinago gallinago*, and the northern lapwing *Vanellus vanellus*, while the species with the near threatened (NT) status are the hen harrier *Circus cyaneus*, the common curlew *Numenius arquata*, the red-footed falcon *Falco vespertinus*, the tufted duck *Aythya fuligula*, the red-breasted merganser *Mergus serrator*, the common swift *Apus apus*, and the horned grebe *Podiceps auritus*. According to HELCOM endangered categories, critically endangered (CR) are the wintering populations of both species of divers, while endangered (EN) are the wintering populations of the horned grebe *Podiceps auritus*, the common eider *Somateria mollissima*, the velvet scoter *Melanitta fusca*, the common scoter *Melanitta nigra*, the taiga bean goose *Anser fabalis*, and the long-tailed duck *Clangula hyemalis*, as well as the breeding population of the dunlin *Calidris alpina schinzii*. The breeding populations of the horned grebe *Podiceps auritus*, the common eider *Somateria mollissima* and the velvet scoter *Melanitta fusca*, and the entire populations of the lesser black-backed gull *Larus fuscus*, the greater scaup *Aythya marila*, the Caspian tern *Hydroprogne caspia*, and the red-breasted merganser *Mergus serrator* are considered

vulnerable. The species listed as near threatened (NT) include the little gull *Larus minutus*, the Temminck's stint *Calidris temminckii*, the northern wheatear *Oenanthe oenanthe*, the tufted duck *Ayhthya fuligula* and the northern lapwing *Vanellus vanellus*. Of the listed species, the horned grebe *Podiceps auritus*, the common eider *Somateria mollissima*, the Caspian tern *Hydroprogne caspia*, the northern wheatear *Oenanthe oenanthe*, the Temminck's stint *Calidris temminckii*, the common snipe *Gallinago gallinago*, the Sandwich tern *Thalasseus sandvicensis*, the dunlin *Calidris alipca schinzii*, the rook *Corvus frugilegus*, the black guillemot *Cepphus grylle* and the northern lapwing *Vanellus vanellus* were observed in very small numbers (up to 10 individuals). The particularly numerous species observed on the basis of visual and radar observations combined included the long-tailed duck *Clangula hyemalis* (almost 2,000 individuals in total), the razorbill *Alca torda* (more than 1,400 individuals), the velvet scoter *Melanitta fusca* (more than 1,200 individuals), the Eurasian skylark *Alauda arvensis* (almost 1,200 individuals), the Eurasian wigeon *Mareca penelope* (more than 1,000 individuals), the common scoter *Melanitta nigra* (more than 900 individuals), the taiga bean goose *Anser fabalis* and the greater white-fronted goose *Anser albifrons* (more than 800 individuals of each of these species), the cormorant *Phalacrocorax carbo* (more than 800 individuals), the little gull *Larus minutus* (more than 600 individuals), the common murre *Uria aalgae*, and the whooper swan *Cygnus cygnus* (more than 400 individuals of each of these species).

During the construction phase, impacts on migratory birds will occur due to the barrier effect and the risk of collision with OWF BE construction vessels. Underwater and surface noise is not considered to be a potential impact on migratory birds.

The presence of construction vessels in the studied area of the Baltic Sea creates a physical barrier, which can affect the way migrating birds move. The magnitude of the impact will depend on the number of vessels, their size, operating time, as well as the time of year (season). Migratory birds that are sensitive to ship-generated interference may change their trajectory vertically or horizontally, which can lengthen their flight and thus also increase the energy costs of migration. However, the change in the route will only represent a small part on the scale of the entire migration, and therefore the additional energy expenditures involved will be negligible, such as those calculated for the long-tailed duck by the Masden team (Masden and Cook 2016). The analysis of the change in the length of the migration route in the next phase, i.e. operation, indicates that the route will be lengthened only slightly (by about 0.02%). Changes of this magnitude have a minimal impact on the length of the entire migration (Pennycuick 2001, Skov et al. 2011).

Migratory birds, especially some terrestrial species, may be attracted to lights used on ships at night or during adverse weather conditions (heavy rainfall, fog). The magnitude of this impact is as yet poorly understood, and the current state of knowledge does not allow this impact to be quantified. However, in accordance with the precautionary principle, in order to minimise negative impacts, **Condition No.: B.I.1.4** was imposed.

Barrier effects and collisions with vessels were classified as direct impacts, due to the fact that the presence of erected structures as well as structural units can directly alter the flight trajectory of migratory birds or cause collisions. The extent of these impacts was considered local because, if impacts do occur, they will be limited to a small area where construction work is currently in progress. The temporal extent of both impacts was considered temporary. The barrier effect has reversible characteristics, disappearing with the cessation of construction work, while collisions, due to the 100% mortality rate of birds in the event of a collision, were considered irreversible. On the basis of the analysis of impacts during the construction phase, the magnitude of the barrier effect was considered small, and collisions with ships were considered moderate.

During the operation phase, impacts on migratory birds will occur due to the barrier effect and the risk of collision with OWF BE structures. Underwater and surface noise is not considered to be a potential impact on migratory birds. The presence of the OWF creates a barrier effect affecting the behaviour (movement) of migratory birds. The scale of the impact will depend on the number of wind turbines, their size and distribution at the OWF BE site. Birds may have to change their flight direction horizontally or vertically, which can slightly lengthen the migration and increase energy requirements. Research to date on this subject indicates that bypassing even a few OWFs adds negligibly to both the total length of the migration route and the energy expenditure associated with the migration. In case of limited visibility (low clouds, night, dense fog), birds are able to spot an OWF from a much shorter distance, and this results in a higher risk of collision **(Conditions No. B. II.7 and B. II.8).**

Species diversity of **seabird assemblages recorded at the OWF Baltic East Site varied, depending on the seasons in which observations were conducted.** Only three species of seabirds and waterbirds rarely seen at sea away from the coast were recorded at the OWF Baltic East Site during summer. The most abundant were the common murre (64.8% of the assemblage) and the herring gull (34.1%). During the autumn migration period, 14 species were found at the OWF Site, the most numerous of which was the long-tailed duck, representing 30.8% of all birds spotted. A share of at least 10% in the total assemblage of birds was reached by three other species: the razorbill (27.3%), the common murre (16.7%), and the herring gull (10.8%). The remaining species were much less abundant, and their total abundance recorded during all nine surveys did not reach 100 birds. During that period, 15 ducks were also found, for which a species could not be determined. During winter, the presence of 14 species was recorded. The most numerous species wintering in the area was the long-tailed duck, accounting for 62.1% of the total assemblage of birds. The razorbill was also numerous, reaching the share of 24.5%. During the spring migration period, 15 species of seabirds were found at the OWF Site, the most numerous of which was the long-tailed duck, representing 61.5% of all birds spotted. The razorbill (17.8%) and the herring gull (7.0%) were also numerous. The remaining species did not exceed a 5% share in the assemblage. Seven divers were also found during that period.

Various types of vessels will be present during the execution phase of the Project, disturbing seabirds through their physical presence, noise (including noise generated by pile driving), and light emissions. The first two factors are not expected to alter the flight routes of those waterbird species that do not use this area, but only fly over it (migrating bentophages and ichthyophages). However, it cannot be ruled out that such an impact will be noticeable at night, especially if the construction site is heavily lit. This is because during migration birds navigate using natural light sources, such as stars and the sun. It was noted that during the night they also head for lighthouses, drilling rigs and other structures illuminated by artificial light (Wiese et al. 2001).

Construction of foundations or support structures and cable lines will cause disturbance of bottom communities at the OWF BE site. This process will directly affect the seabed and the water column above it. Due to the above considerations, some of the natural benthic habitats used by seabirds and other birds during migration will be lost, but most likely new ones will develop in their place (artificial reef effect). The scale of the impact will mainly depend on the number of offshore wind turbine foundations or support structures and their technical characteristics. As a result of construction activities, bottom sediments will be agitated and levels of suspended solids in water will increase. Direct sediment transport and resuspension will result in reduced water clarity. If it exceeds naturally occurring levels, then it may cause problems during hunting for those birds that rely on sight while searching for food, i.e.

ichthyophages and benthophages, and thus result in the birds moving to clearer waters. Bird species vulnerable to impacts associated with interferences in the seabed are mainly bentophages and ichthyophages. However, they are very sensitive to disturbance caused by the presence of boats and other human activities at sea. Therefore, it is estimated that the impact from disturbance due to the presence of construction vessels will be the first impact in the area of construction activities, resulting in sensitive species moving to other areas. Therefore, these birds will not experience additional impacts related to the reduction of their foraging base during the construction phase. The destruction of benthic habitat and the increase in the water turbidity during construction activities are direct impacts on bentophages and ichthyophages, local in their scope, medium-term and reversible.

The OWF Baltic East structures, gradually appearing during the execution phase, will deter birds. The effect of this impact on birds depends on the pace of the OWF construction. Initially, individual power plants will have a small impact, but gradually the deterrent effect will increase (Stewart et al. 2005) Literature data clearly indicate that seabirds avoid the area occupied by wind turbines and decline in their numbers within a radius of up to 2 and even up to 4 km (Christensen et al. 2003, Petersen et al. 2006; Leopold et al. 2011; Krijgsveld et al. 2011). Adult birds are likely to be able to get used to the presence of wind farms to some extent. However, individuals undertaking the migration toward wintering grounds for the first time may have problems with getting past the extensive barrier posed by a cluster of wind farms. This may be due to their inexperience, which is the reason for the higher mortality of birds in the first year of life (Clark et al. 2007 Redmond et al. 2012; McKim-Louder et al. 2013). The lack of data on bird behaviour in the vicinity of OWFs covering large areas indicates the need to plan a post-investment monitoring study. A parameter affecting the scale of impact is the number and size of wind power plants being built. The distance between individual wind turbines at the OWF Baltic East site and neighbouring OWFs is also important. The appearance of new structures at sea and the associated increased in vessel traffic are direct, long-term and reversible impacts on bentophages and ichthyophages.

During migration birds navigate using natural light sources, such as stars and the sun. It was noted that during the night they also head for lighthouses, drilling rigs and other structures illuminated by artificial light. Birds migrating at night use the stars to help them navigate and maintain their direction of flight. The magnitude of the impact will depend on the number of turbines and vessels involved, their size, the method of illumination and intensity of light sources, the configuration of lights, the duration of the construction phase and the phenological period during which the work will be carried out. Lighting of the investment site during the construction phase will cause direct impacts on seabirds.

The analysis of possible impacts from the OWF operation indicates that their effects on changes in seabird biodiversity will be local. They will involve the potential increase in mortality in consequence of collisions with wind turbines or ships. The highest mortality is recorded for wind farms located on feeding grounds and regular flight routes. The risk of collision also depends on the species of bird. Furthermore, the identified threats to biodiversity include scaring and displacement from habitat of some of the seabirds present on the body of water occupied by the wind turbines and the adjacent strip of water about 2 km or even 4 km wide. The degree and the area of displacement of birds from this body of water and its surroundings will depend on their species. During the operation phase, this will result in direct negative impacts on seabirds of a local range (of a regional range for the long-tailed duck, due to the possible impact on the species' biogeographic population). Light and noise emissions represent another scaring factor. During the first season of the farm operation, birds will gradually get accustomed to the situation in which the body of water designated for the investment will become inaccessible to them (so-called habituation), which will result in

changes in their distribution. Therefore, this period can be regarded as transitional, and only in the second year after the completion of the entire investment will the scale of the OWF Baltic East impact on seabirds in that region stabilise. However, habituation will not cause birds to return to the area occupied by the wind farm.

During the operation phase, the primary source of noise will be the operation of wind turbines, i.e., noise from the rotating rotor and noise from air flow at the edge of the wind turbine blades. Given the high sensitivity of seabirds to disturbance, the main effect of wind turbines will be to scare birds away and displace them from their habitats, which will mask the effect of noise impacts as less significant. For the duration of the farm's operation, the Project site will be excluded for some individuals as a feeding ground, which may have a negative impact on seabirds. The degree and the area of their displacement from this body of water and its surroundings will depend on the species and the OWF technical parameters (number of turbines, density, rotor diameter).

The scaring and displacement from habitat as a result of noise emissions from the planned Project at the operation phase will cause direct, local and reversible impacts on seabirds. For ichthyophages and bentophages, this impact is a long-term one.

The OWF illumination may make it more difficult for seabirds to navigate and increase the risk of their collisions with the turbines. This is especially true for migratory species that exhibit the nocturnal activity (ichthyophages and bentophages). During migration birds navigate using natural light sources, such as stars and the sun.

In order to minimise the impact of the discussed project on birds, the following conditions were imposed, among others:

- each start of work should be preceded by a soft-start procedure to allow the birds to move away from the area of work; **(Condition No. B.I.2. 2.2)**
- at night time, limit the use of powerful light sources on ships and farm structures, and do not direct light upwards; **(Condition No. B.I.1.1.4)**
- equip the OWF with a designed crane flight monitoring system, consisting of a radar and camera system, as well as a system of shutdowns (slowdowns) of individual wind turbines or groups of wind turbines, triggered in the event of detected crane overflight by the monitoring system. **(Condition No. B. II.7).**

During field surveys - detector monitoring on transects and at monitoring points - flights were recorded and three species of bats were recognised: the common noctule *Nyctalus noctula*, Nathusius' pipistrelle *Pipistrellus nathusii* and the soprano pipistrelle *Pipistrellus pygmaeus*. All identified bat species are under strict protection (Regulation of the Minister of Environment of 16 December 2016 *on the protection of animal species* (consolidated text: Journal of Laws of 2022, item 2380), the provisions of the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) (Appendix III - the common pipistrelle and the soprano pipistrelle, Appendix II - other species), the Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention), and the Agreement on the Conservation of European Bat Populations (EUROBATS) ratified by Poland, as well as Annex IV of the Habitats Directive). The species found in the surveyed area are common and frequent on a national scale, and are assigned the category of Least Concern (*LC*) according to the IUCN (International Union for Conservation of Nature and Natural Resources). The finding of these species is consistent with the data obtained from the literature on the occurrence of chiropterofauna in marine areas. No species of rare and with the highest conservation status, according to Annex II of the Habitats Directive, were found. Of the recorded species, the genera Nyctalus and Pipistrellus are considered species highly

vulnerable to collisions with wind turbines (Kepel et al. 2011). During spring migration, a total of 55 units of bat activity were recorded: on transects - four units of Nathusius' pipistrelle activity and one of the common noctule, and at the monitoring post - 46 units of Nathusius' pipistrelle, three units of the common noctule and one unit of the soprano pipistrelle activity. During this period, Nathusius' pipistrelle dominated. During autumn migration, a total of 197 units of bat activity were recorded: on transects - four units of Nathusius' pipistrelle activity and one of the common noctule, and at the monitoring post - 163 units of the common noctule and nine units of Nathusius' pipistrelle activity. The common noctule predominated.

Potential impacts during the construction phase may result from works and activities conducted on the sea surface. The construction of the wind farm will certainly be associated with the increased presence of vessels, which will involve an additional and unusual source of noise that may scare bats. When assessing the potential scaring of bats as a result of noise associated with the installation of a wind farm, it should be assumed as highly probable that the work will take place mainly during the daytime and will be carried out successively (not all wind turbines will be built at the same time). On the other hand, ships anchored and illuminated by intense light during night work, as well as stay, can attract many nocturnal insects, which will provide an opportunity for migrating bats to replenish their energy as they migrate across the sea. The ships will also provide animals with an opportunity to rest, as a daytime shelter with numerous nooks and crannies, but also as a short-term night-time hiding place.

At the operation phase, offshore wind turbines, similarly as their onshore counterparts, pose a potential threat to migrating bats. This danger is mainly associated with the possibility of direct collision, as well as with barotrauma. Operating offshore wind turbines will form a physical barrier across the bat migration route. Collision with a rotor in operation is the main cause of their mortality (Kunz et al. 2007; Kepel et al. 2011). Animals struck by rotor blades die from fractures, open wounds, multi-organ injuries, or wing amputations. The significant height of wind turbine towers does not protect against those collisions.

Newly erected wind turbines can act as attractants for migrating bats in the open sea, providing a convenient resting place during migration, especially in adverse weather conditions. Too strong and white light used for lighting will attract nocturnal insects, creating foraging sites, which may result in cases of mortality of these mammals even in areas not used by them before the investment execution.

It cannot be ruled out that the migration routes of any of the identified species pass through the area of the planned offshore farm. Previous studies for the other planned sites, monitoring bat migrations over Polish marine areas did not disclose the existence of bat migration corridors above those bodies of water. No surveys are also available that would identify starting points along the Polish coast. However, the existence of such corridors should not be assumed.

In view of the above, the local authority imposed with this decision the obligation to carry out bat monitoring **(Condition No. B. I. 2.3. 6**) aimed at determining species composition and abundance. The equipment used is to enable automatic recording and meet the minimum equipment requirements used in the surveys carried out at the pre-investment survey stage.

The investment is located outside Natura 2000 areas. The following Natura 2000 areas are the closest to the project:

- ca. 11.83 km to the south – Przybrzeżne wody Bałtyku PLB990002,
- ca. 26.22 km to the southwest – Ostoja Słowińska PLH220023, - ca. 34.66 km to the west – Ławica Słupska PLC990001.

According to the Standard Data Form (updated: June 2025) the objects of protection in the Natura 2000 area **Przybrzeżne wody Bałtyku PLB990002** are the following species: razorbill *(Alca torda*), black guillemot *(Cepphus grylle*), the long-tailed duck *(Clangula hyemalis*), the black-throated diver *(Gavia arctica*), the red-throated diver *(Gavia stellata*), the herring gull *(Larus argentatus*), the common gull *(Larus canus*), the velvet scoter *(Melanitta fusca*) and the common scoter *(Melanitta nigra*). Other human activities related to urbanisation, industry, etc., pose a threat to this area. No protection plan has been established for the Natura 2000 area Przybrzeżne wody Bałtyku PLB990002. On 22/03/2023, with an announcement with Ref. No. IOW1.815.17.2023.MZI.1, the Director of the Maritime Office in Gdynia announced the adoption of interim protection objectives for species and their habitats that are objects of protection in the above-mentioned Natura 2000 area. An analysis of the impact of the intended project on the interim conservation objectives established for each species is presented below:

A001 - The Red-throated diver (*Gavia stellata*) The population type in:

- the "Population status" indicator: maintaining the size of the wintering population at the level of 1 - 100 individuals;
- the “Habitat condition” indicator: maintaining a stable area of the species' habitat in favourable condition (FV) on an area of at least 194,673.70 hectares, taking into account natural processes.

Assessment: As part of seabird observations at the OWF Baltic East Site, the maximum number of individuals noted per month was as follows:

- during the summer: not found;
- during the autumn migration period: one individual sitting on the water (0.02 individuals/10 km of the transect) and two individuals in flight;
- during winter: one individual sitting on the water (0.02 individuals/10 km of the transect) and two divers of the undetermined species (*Gavia* sp.) in flight;
- during the spring migration period: five divers of the undetermined species (*Gavia* sp.) sitting on the water, and two red-throated divers and two divers of the undetermined species (*Gavia* sp.) in flight. As part of observations of bird flights at the OWF Baltic East Site, the maximum number of individuals noted per month was as follows:
  - on the basis of visual observations:
    - during the autumn migration period: seven individuals and 24 unidentified divers (*Gavia indet.*),
    - during the spring migration period: eight individuals and 29 unidentified divers (*Gavia indet.*),
  - on the basis of radar monitoring:
    - during the autumn migration period: 11 individuals and 24 unidentified divers (*Gavia indet.*),
    - during the spring migration period: 23 individuals and 99 unidentified divers (*Gavia indet.*),
  - on the basis of acoustic monitoring:
    - during the autumn migration period: not found,
    - during the spring migration period: not found.

The planned investment is located outside the boundaries of the Natura 2000 area Przybrzeżne wody Bałtyckie PLB990002 and will not interfere in any way with the habitat of the aforementioned species. Two types of indirect impacts of the investment may occur: an effect of avifauna being scared away by rotors in operation, resulting in rerouting and

ultimately choosing another area as a destination, or a collision of avifauna with the blades of wind turbines in operation, resulting in losses in the population (of protected species) affecting the number of individuals that will reach the identified protected areas. After the application of minimisation measures, the significance of the impact in the form of a physical barrier and increased risk of collision with turbines was assessed as moderate. The interim conservation objectives, including the population size and habitat conservation status of the species under protection in the area, will not be threatened by the project.

A002 -The Black-throated diver (*Gavia arctica*) The population type in:

- the "Population status" indicator: maintaining the size of the wintering population at the level of
  1 - 12 individuals;
- the “Habitat condition” indicator: maintaining a stable area of the species' habitat in an unimpaired condition (U1) on an area of at least 194,673.70 hectares, taking into account natural processes.

Assessment: As part of seabird observations at the OWF Baltic East Site, the maximum number of individuals noted per month was as follows:

- during the summer: not found;
- during the autumn migration period: no individuals were found sitting on the water, but one individual was observed in flight;
- during winter: one individual sitting on the water (0.02 individuals/10 km of the transect) and one individual and two divers of the undetermined species (*Gavia* sp.) in flight;
- during the spring migration period: 28 individuals (0.64 individuals/10 km of the transect) and five divers of the undetermined species (*Gavia* sp.) sitting on the water, and 19 black-throated divers and two divers of the undetermined species (*Gavia* sp.) in flight.

As part of observations of bird flights at the OWF Baltic East Site, the maximum number of individuals noted per month was as follows:

- on the basis of visual observations:
  - during the autumn migration period: seven individuals and 24 unidentified divers (*Gavia indet.*),
  - during the spring migration period: 46 individuals and 29 unidentified divers (*Gavia indet.*),
- on the basis of radar monitoring:
  - during the autumn migration period: 11 individuals and 24 unidentified divers (*Gavia indet.*),
  - during the spring migration period: 97 individuals and 99 unidentified divers (*Gavia indet.*),
- on the basis of acoustic monitoring:
  - during the autumn migration period: not found,
  - during the spring migration period: not found.

The planned investment is located outside the boundaries of the Natura 2000 area Przybrzeżne wody Bałtyckie PLB990002 and will not interfere in any way with the habitat of the aforementioned species. Two types of indirect impacts of the investment may occur: an effect of avifauna being scared away by rotors in operation, resulting in rerouting and ultimately choosing another area as a destination, or a collision of avifauna with the blades of wind turbines in operation, resulting in losses in the population (of protected species) affecting the number of individuals that will reach the identified protected areas. After the

application of minimisation measures, the significance of the impact in the form of a physical barrier and increased risk of collision with turbines was assessed as moderate. The interim conservation objectives, including the population size and habitat conservation status of the species under protection in the area, will not be threatened by the project.

A064 - The long-tailed duck (*Clangula hyemalis*) The population type in:

- the "Population status" indicator: maintaining the size of the wintering population at the level of
  2 750 – 7 150 individuals;
- the “Habitat condition” indicator: maintaining a stable area of the species' habitat in an unimpaired condition (U1) on an area of at least 194,673.70 hectares, taking into account natural processes.

Assessment: As part of seabird observations at the OWF Baltic East Site, the maximum number of individuals noted per month was as follows:

- during the summer: not found;
- during the autumn migration period: 137 individuals (3.13 individuals/10 km of the transect) and 15 ducks of the undetermined species (Anatidae) sitting on the water, and 245 long-tailed ducks and 25 ducks of the undetermined species (Anatidae) in flight;
- during winter: 197 individuals (4.50 individuals/10 km of the transect) sitting on the water and 29 long-tailed ducks and 17 ducks of the undetermined species (Anatidae) in flight;
- during the spring migration period: 328 individuals (7.49 individuals/10 km of the transect) sitting on the water and 64 long-tailed ducks and 18 ducks of the undetermined species (Anatidae) in flight.

As part of observations of bird flights at the OWF Baltic East Site, the maximum number of individuals noted per month was as follows:

- on the basis of visual observations:
  - during the autumn migration period: 204 individuals and 333 unidentified ducks (*Anatidae indet.*),
  - during the spring migration period: 180 individuals and 171 unidentified ducks (*Anatidae indet.*),
- on the basis of radar monitoring:
  - during the autumn migration period: 145 individuals and 150 unidentified ducks (*Anatidae indet.*),
  - during the spring migration period: 140 individuals and 150 unidentified ducks (*Anatidae indet.*); on the basis of acoustic monitoring:
  - during the autumn migration period: not found, during the spring migration period: not found.

The planned investment is located outside the boundaries of the Natura 2000 area Przybrzeżne wody Bałtyckie PLB990002 and will not interfere in any way with the habitat of the aforementioned species. Two types of indirect impacts of the investment may occur: an effect of avifauna being scared away by rotors in operation, resulting in rerouting and ultimately choosing another area as a destination, or a collision of avifauna with the blades of wind turbines in operation, resulting in losses in the population (of protected species) affecting the number of individuals that will reach the identified protected areas. After the application of minimisation measures, the significance of the impact in the form of a physical barrier and increased risk of collision with turbines was assessed as moderate. The interim

conservation objectives, including the population size and habitat conservation status of the species under protection in the area, will not be threatened by the project.

A065 - The common scoter (*Melanitta nigra*) The population type in:

- the "Population status" indicator: maintaining the size of the wintering population at 350–3,000 individuals;
- the “Habitat condition” indicator: maintaining a stable area of the species' habitat in favourable condition (FV) on an area of at least 194,673.70 hectares, taking into account natural processes. The population type c:
- the "Population status" indicator: maintaining the size of the migrating population at the level of 3000 individuals;
- the “Habitat condition” indicator: maintaining a stable area of the species' habitat in an unimpaired condition (U1) on an area of at least 194,673.70 hectares, taking into account natural processes.

Assessment: As part of seabird observations at the OWF Baltic East Site, the maximum number of individuals noted per month was as follows:

- during the summer: no individuals were found sitting on the water, but three individuals were observed in flight;
- during the autumn migration period: 15 ducks of the undetermined species (Anatidae) sitting on the water and 18 common scoters and 25 ducks of the undetermined species (Anatidae) in flight;
- during the winter: no individuals were found sitting on the water, but 17 ducks of the undetermined species (Anatidae) were observed in flight;
- during the spring migration period: one individual (0.02 individuals/10 km of the transect) sitting on the water and 92 common scoters and 18 ducks of the undetermined species (Anatidae) in flight. As part of observations of bird flights at the OWF Baltic East Site, the maximum number of individuals noted per month was as follows:

O on the basis of visual observations:

- during the autumn migration period: 14 individuals, 15 birds with the genus determined as *Melanitta* (*Melanitta indet.*), and 333 unidentified ducks (*Anatidae indet.*),
- during the spring migration period: 81 individuals, four common scoters/velvet scooters (*Melanitta indet.*) and 171 unidentified ducks (✌■♋♦♓♎♋♏ ♓■♎♏♦👍); **O** on the basis of radar observations:
  - during the autumn migration period: 20 individuals, 10 common scoters/velvet scooters (*Melanitta indet.*) and 150 unidentified ducks (*Anatidae indet.*),
  - during the spring migration period: 107 individuals, 11 common scoters/velvet scooters (*Melanitta indet.*) and 150 unidentified ducks (✌■♋♦♓♎♋♏ ♓■♎♏♦👍); **O** on the basis of acoustic observations:
  - during the autumn migration period: not found, ○ during the spring migration period: not found.

The planned investment is located outside the boundaries of the Natura 2000 area Przybrzeżne wody Bałtyckie PLB990002 and will not interfere in any way with the habitat of the aforementioned species. Two types of indirect impacts of the investment may occur: an effect of avifauna being scared away by rotors in operation, resulting in rerouting and ultimately choosing another area as a destination, or a collision of avifauna with the blades

of wind turbines in operation, resulting in losses in the population (of protected species) affecting the number of individuals that will reach the identified protected areas. After the application of minimisation measures, the significance of the impact in the form of a physical barrier and increased risk of collision with turbines was assessed as moderate. The interim conservation objectives, including the population size and habitat conservation status of the species under protection in the area, will not be threatened by the project.

A066 - The velvet scoter (*Melanitta fusca*) The population type in:

- the "Population status" indicator: maintaining the size of the wintering population at the level of
  1,600 - 11,700 individuals;
- the “Habitat condition” indicator: maintaining a stable area of the species' habitat in an unimpaired condition (U1) on an area of at least 194,673.70 hectares, taking into account natural processes.

Assessment: As part of seabird observations at the OWF Baltic East Site, the maximum number of individuals noted per month was as follows:

- during the summer: not found;
- during the autumn migration period: 15 ducks of the undetermined species (Anatidae) sitting on the water and 70 velvet scoters and 25 ducks of the undetermined species (Anatidae) in flight;
- during winter: 33 individual sitting on the water (0.75 individuals/10 km of the transect) and
  13 individuals and 17 ducks of the undetermined species (Anatidae) in flight;
- during the spring migration period: two individuals (0.05 individuals/10 km of the transect) sitting on the water and individuals and 18 ducks of the undetermined species (Anatidae) in flight.

As part of observations of bird flights at the OWF Baltic East Site, the maximum number of individuals noted per month was as follows:

- on the basis of visual observations:
  - during the autumn migration period: 119 individuals and 333 unidentified ducks (*Anatidae indet.*),
  - during the spring migration period: 46 individuals, four common scoters/velvet scooters (*Melanitta indet.*) and 171 unidentified ducks (✌■♋♦♓♎♋♏ ♓■♎♏♦👍);
- on the basis of radar observations:
  - during the autumn migration period: 93 individuals, 10 common scoters/velvet scooters (*Melanitta indet.*) and 150 unidentified ducks (*Anatidae indet.*),
  - during the spring migration period: 64 individuals, 11 common scoters/velvet scooters (*Melanitta indet.*) and 150 unidentified ducks (✌■♋♦♓♎♋♏ ♓■♎♏♦👍); on the basis of acoustic observations:
  - during the autumn migration period: not found, during the spring migration period: not found.

The planned investment is located outside the boundaries of the Natura 2000 area Przybrzeżne wody Bałtyckie PLB990002 and will not interfere in any way with the habitat of

the aforementioned species. Two types of indirect impacts of the investment may occur: an effect of avifauna being scared away by rotors in operation, resulting in rerouting and ultimately choosing another area as a destination, or a collision of avifauna with the blades of wind turbines in operation, resulting in losses in the population (of protected species) affecting the number of individuals that will reach the identified protected areas. After the application of minimisation measures, the significance of the impact in the form of a physical barrier and increased risk of collision with turbines was assessed as moderate. The interim conservation objectives, including the population size and habitat conservation status of the species under protection in the area, will not be threatened by the project.

A182 - The common gull (*Larus canus*) The population type in:

- the "Population status" indicator: maintaining the size of the wintering population at the level of 70–
  550 individuals;
- the “Habitat condition” indicator: maintaining a stable area of the species' habitat in an unimpaired condition (U1) on an area of at least 194,673.70 hectares, taking into account natural processes.

Assessment: As part of seabird observations at the OWF Baltic East Site, the maximum number of individuals noted per month was as follows:

- during the summer: not found;
- during the autumn migration period: one individual sitting on the water and 19 individuals in flight;
- during winter: two individuals sitting on the water and five individuals in flight;
- during the spring migration period: one individual sitting on the water and four individuals in flight. As part of observations of bird flights at the OWF Baltic East Site, the maximum number of individuals noted per month was as follows:
  - on the basis of visual observations:
    - during the autumn migration period: 11 individuals;
    - during the spring migration period: 24 individuals;
  - on the basis of radar monitoring:
    - during the autumn migration period: 12 individuals;
    - during the spring migration period: 26 individuals;
  - on the basis of acoustic monitoring:
    - during the autumn migration period: four individuals;
    - during the spring migration period: seven individuals.

The planned investment is located outside the boundaries of the Natura 2000 area Przybrzeżne wody Bałtyckie PLB990002 and will not interfere in any way with the habitat of the aforementioned species. Two types of indirect impacts of the investment may occur: an effect of avifauna being scared away by rotors in operation, resulting in rerouting and ultimately choosing another area as a destination, or a collision of avifauna with the blades of wind turbines in operation, resulting in losses in the population (of protected species) affecting the number of individuals that will reach the identified protected areas. After the application of minimisation measures, the significance of the impact in the form of a physical barrier and increased risk of collision with turbines was assessed as moderate. The interim

conservation objectives, including the population size and habitat conservation status of the species under protection in the area, will not be threatened by the project.

A184 - The herring gull (*Larus argentatus*) The population type in:

- the "Population status" indicator: maintaining the size of the wintering population at 1,250–7,300 individuals;
- the “Habitat condition” indicator: maintaining a stable area of the species' habitat in favourable condition (FV) on an area of at least 194,673.70 hectares, taking into account natural processes.

Assessment: As part of seabird observations at the OWF Baltic East Site, the maximum number of individuals noted per month was as follows:

- during summer: 34 individual sitting on the water (0.30 individuals/10 km of the transect) and
  24 individuals in flight;
- during the autumn migration period: 14 individuals sitting on the water (0.32 individuals/10 km of the transect) and 122 individuals in flight;
- during winter: 14 individuals sitting on the water (0.32 individuals/10 km of the transect) and 65 individuals in flight;
- during the spring migration period: 36 individual sitting on the water (0.82 individuals/10 km of
  the transect) and 40 individuals in flight.

As part of observations of bird flights at the OWF Baltic East Site, the maximum number of individuals noted per month was as follows:

- on the basis of visual observations:
  - during the autumn migration period: 63 individuals,
  - during the spring migration period: not found;
- on the basis of radar monitoring:
  - during the autumn migration period: seven individuals;
  - during the spring migration period: one individual;
- on the basis of acoustic monitoring:
  - during the autumn migration period: 60 herring gulls and 650 unidentified large gulls (*Laridae indet.* +),
  - during the spring migration period: 78 herring gulls and 790 unidentified large gulls (*Laridae indet.* +).

The planned investment is located outside the boundaries of the Natura 2000 area Przybrzeżne wody Bałtyckie PLB990002 and will not interfere in any way with the habitat of the aforementioned species. Two types of indirect impacts of the investment may occur: an effect of avifauna being scared away by rotors in operation, resulting in rerouting and ultimately choosing another area as a destination, or a collision of avifauna with the blades of wind turbines in operation, resulting in losses in the population (of protected species) affecting the number of individuals that will reach the identified protected areas. After the application of minimisation measures, the significance of the impact in the form of a physical barrier and increased risk of collision with turbines was assessed as moderate. The interim conservation objectives, including the population size and habitat conservation status of the species under protection in the area, will not be threatened by the project.

A200 - The razorbill (*Alca torda*) The population type in:

- the "Population status" indicator: maintaining the size of the wintering population at 5–50 individuals;
- the “Habitat condition” indicator: maintaining a stable area of the species' habitat in an unimpaired condition (U1) on an area of at least 194,673.70 hectares, taking into account natural processes.

Assessment: As part of seabird observations at the OWF Baltic East Site, the maximum number of individuals noted per month was as follows:

- during the summer: no individuals were found sitting on the water, but one individual was observed in flight;
- during the autumn migration period: 107 individuals sitting on the water (2.44 individuals/10 km of the transect) and 23 individuals in flight;
- during winter: 145 individuals sitting on the water (3.31 individuals/10 km of the transect) and 70 individuals in flight;
- during the spring migration period: 66 individuals sitting on the water and 42 individuals in flight.

As part of observations of bird flights at the OWF Baltic East Site, the maximum number of individuals noted per month was as follows:

O on the basis of visual observations:

- during the autumn migration period: 113 individuals and 148 common murres/razorbills (*Uria/Alca*),
- during the spring migration period: 116 individuals and 104 common murres/razorbills (*Uria/Alca*); **O** on the basis of radar monitoring:
- during the autumn migration period: 116 individuals and 163 common murres/razorbills (*Uria/Alca*); - in the spring migration period: 144 individuals and 185 common murres/razorbills (*Uria/Alca*); **O** on the basis of acoustic monitoring:
- during the autumn migration period: not found;
- during the spring migration period: not found.

In addition, the report notes: “*The relatively high share of common murres and razorbills at the OWF Baltic East Site is a result that deviates from previous knowledge of the species structure of seabird assemblages on bodies of water in the Polish zone of the Baltic Sea. (...) This may indicate that, off the Polish coast, these species form aggregations on water bodies of greater depths than diving benthophagi, and thus such sites have not been previously known, because previous studies focused mainly on shallower areas where high numbers of birds, especially diving benthophagi, are expected (Chodkiewicz et al. 2018; Wardecki et al. 2022).* The planned investment is located outside the boundaries of the Natura 2000 area Przybrzeżne wody Bałtyckie PLB990002 and will not interfere in any way with the habitat of the aforementioned species. Two types of indirect impacts of the investment may occur: an effect of avifauna being scared away by rotors in operation, resulting in rerouting and ultimately choosing another area as a destination, or a collision of avifauna with the blades of wind turbines in operation, resulting in losses in the population (of protected species) affecting the number of individuals that will reach the identified protected areas. After the application of minimisation measures, the significance of the impact in the form of a physical barrier and increased risk of collision with turbines was assessed as moderate. The interim conservation objectives, including the population size

and habitat conservation status of the species under protection in the area, will not be threatened by the project.

A202 - The common murre (*Cepphus grylle*) The population type in:

- the "Population status" indicator: maintaining the size of the wintering population at the level of 1–7 individuals;
- the “Habitat condition” indicator: maintaining a stable area of the species' habitat in an unimpaired condition (U1) on an area of at least 194,673.70 hectares, taking into account natural processes.

Assessment: As part of seabird observations at the OWF Baltic East Site, the maximum number of individuals noted per month was as follows:

- during the summer: not found;
- during the autumn migration period: not found;
- during winter: three individuals sitting on the water (0.07 individuals/10 km of the transect), no individuals observed in flight;
- during the spring migration period: not found.

As part of observations of bird flights at the OWF Baltic East Site, the maximum number of individuals noted per month was as follows:

- on the basis of visual observations:
  - during the autumn migration period: not found,
  - during the spring migration period: not found;
- on the basis of radar monitoring:
  - during the autumn migration period: one individual,
  - during the spring migration period: not found;
- on the basis of acoustic monitoring:
  - during the autumn migration period: not found;
  - during the spring migration period: not found.

The planned investment is located outside the boundaries of the Natura 2000 area Przybrzeżne wody Bałtyckie PLB990002 and will not interfere in any way with the habitat of the aforementioned species. Two types of indirect impacts of the investment may occur: an effect of avifauna being scared away by rotors in operation, resulting in rerouting and ultimately choosing another area as a destination, or a collision of avifauna with the blades of wind turbines in operation, resulting in losses in the population (of protected species) affecting the number of individuals that will reach the identified protected areas. After the application of minimisation measures, the significance of the impact in the form of a physical barrier and increased risk of collision with turbines was assessed as moderate. The interim conservation objectives, including the population size and habitat conservation status of the species under protection in the area, will not be threatened by the project.

According to the Regulation of the Minister of Climate and Environment of 13 July 2021 on the special area of habitat protection **Ostoja Słowińska PLH220023** (*Journal of Laws of 2021, item 1361*), the objects of protection in the aforementioned Natura 2000 area are natural habitats: 1150 - coastal lagoons, 1170 - reefs, 1330 - Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*, part - coastal communities), 2110 - embryonic shifting dunes, 2120 - shifting dunes along the shoreline (*Elymo Ammophiletum*), 2130 - fixed coastal dunes with

herbaceous vegetation, 2140 - decalcified fixed dunes with Empetrum nigrum (*Empetrion nigri*), 2170 - dunes with Salix repens ssp argentea, 2180 - wooded dunes of the Atlantic, Continental and Boreal regions, 2190 - humid dune slacks, 3150 - natural eutrophic lakes with communities of *Nympheion*, *Potamion*, 3160 - natural dystrophic lakes and ponds, 6430 - Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels (*Adenostylion alliariae* and *Convolvuletalia sepium*), 7110 - active raised bogs, 7120 - degraded raised bogs still capable of natural regeneration, 7140 - transition mires and quaking bogs (mostly with *Scheuchzerio-Caricetae*), 9110 - *Luzulo-Fagetum* beech forest, 9190 - old acidophilous oak woods with Quercus robur on sandy plains (*Quercion robori-petraeae*), and 91D0 - bog woodlands (*Vaccinio uliginosi*, *Vaccinio uliginosi Pinetum*, *Pino mugo-Sphagnetum*, *Sphagno girgensohnii-Piceetum*) and birch-pine boreal swamp forests. Species under protection also include: toadflax (*Linaria loeselii (Linaria odora)*), wolf (*Canis lupus*), European beaver(*Castor fiber*), Eurasian otter (*Lutra lutra*), grey seal (*Halichoerus grypus*), porpoise (*Phocoena phocoeana*), twait shad (*Alosa fallax*), spined loach (*Cobitis taenia*), weatherfish (*Misgurnus fossilis*), sabrefish (*Pelecus cultratus*), European bitterling (*Rhodeus sericeus amarus*), river lamprey (*Lampetra fluviatilis*), brook lamprey (*Lampetra planeri*), sea lamprey (*Petromyzon marinus*), yellow-spotted whiteface (*Leucorrhinia pectoralis*), and green snaketail (*Ophiogomphus cecilia*). Threats identified in the Standard Data Form (updated: June 2025) for the aforementioned area include: modification of water functioning, paths, hiking trails, bicycle trails, waste, sewage, yachting, pastoral abandonment, lack of grazing, removal of dead and dying trees, sports and recreational infrastructure, sediment removal, works related to defence against sea activity and to coast protection, dikes, hiking, horseback riding and riding on non-motorised vehicles, sports and various forms of active outdoor recreation, and scattered development.

No plan of protective actions has been established for the Natura 2000 area Ostoja Słowińska PLH220023. The Natura 2000 area Ostoja Słowińska PLH220023 overlaps with the area of the Słowiński National Park, so the developed draft of the protection plan for the Słowiński National Park takes into account the scope of the protection plan for the Natura 2000 area Ostoja Słowińska PLH220023.

Due to its location in the marine area and significant distance from the shore, the planned investment will not affect the objects of protection of the above-mentioned Natura 2000 area, such as natural habitats: 1150 - coastal lagoons, 1330 - Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*, part - coastal communities), 2110 - embryonic shifting dunes, 2120 - shifting dunes along the shoreline (*Elymo Ammophiletum*), 2130 - fixed coastal dunes with herbaceous vegetation, 2140 - decalcified fixed dunes with Empetrum nigrum (*Empetrion nigri*), 2170 - dunes with Salix repens ssp argentea, 2180 - wooded dunes of the Atlantic, Continental and Boreal regions, 2190 - humid dune slacks, 3150 - natural eutrophic lakes with communities of *Nympheion*, *Potamion*, 3160 - natural dystrophic lakes and ponds, 6430 - Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels (*Adenostylion alliariae* and *Convolvuletalia sepium*), 7110 - active raised bogs, 7120 - degraded raised bogs still capable of natural regeneration, 7140 - transition mires and quaking bogs (mostly with *Scheuchzerio-Caricetae*), 9110 - *Luzulo-Fagetum* beech forest, 9190 - old acidophilous oak woods with Quercus robur on sandy plains (*Quercion robori-petraeae*), and 91D0 - bog woodlands (*Vaccinio uliginosi*, *Vaccinio uliginosi Pinetum*, *Pino mugo-Sphagnetum*, *Sphagno girgensohnii-Piceetum*) and birch-pine boreal swamp forests, as well as the following species: toadflax, wolf, European beaver, Eurasian otter, twait shad, spined loach, weatherfish, sabrefish, European bitterling, river lamprey, brook lamprey, sea lamprey, yellow-spotted whiteface, and green snaketail – because they are not associated with the marine environment

at the investment site. Analyses of the impact of the OWF Baltic East on habitat 1170 - reefs, as well as on the grey seal and the porpoise are discussed later in the text.

According to the Regulation of the Minister of Climate and Environment of 9 October 2023 on the special area of habitat protection Ławica Słupska (PLC990001) (*Journal of Laws of 2023, item 2347*), the objects of protection in **the Natura 2000 area Ławica Słupska PLC990001** are natural habitats: 1110 – sublittoral sandbanks, permanently submerged, and 1170 – reefs. In addition, according to the Standard Data Form (updated: May 2025), species of conservation concern include: the common murre (*Cepphus grylle*), the long-tailed duck (*Clangula hyemalis*), and the velvet scoter (*Melanitta fusca*). Threats to the area include sand and gravel mining, wind energy generation, passive fishing, active fishing, shipping lanes, and military training grounds. No plan of protective actions has been established for the Natura 2000 area Ławica Słupska PLC990001.

The planned project is located outside the boundaries of the aforementioned protected areas of the European Natura 2000 network. In addition, for none of the aforementioned Natura 2000 areas a plan of protective tasks been established, with, among other things, defined objectives of protective measures and threats to the objects of protection in a given area. On 22/03/2023, with an announcement with Ref. No. IOW1.815.17.2023.MZI.1, the Director of the Maritime Office in Gdynia announced the adoption of interim conservation objectives for species and their habitats that are objects of protection in the Natura 2000 area Przybrzeżne wody Bałtyku PLB990002. On the basis of the results of environmental studies and biological inventories carried out in 2022–2023 for the OWF Baltic East contained in the case file, and in accordance with the precautionary principle, under which any probability of negative effects of an action should be treated as if they were certain to occur, given the type, character and extent of the possible impact of the proposed construction project at all phases of the planned investment process, in the case of marine avifauna and mammal species, in the opinion of the local authority, the potential impact of the project on the objects of protection in the above Natura 2000 areas is possible. The area of the planned OWF Baltic East is an area of low occurrence of marine mammals. Seabird surveys conducted at the OWF Baltic East site during all four phenological periods indicate that this body of water is not a place with very high concentrations of avifauna. This is primarily due to the great depths found here, too deep for diving birds that are benthic foragers and obtain their food from the seabed. In the study area, the common relationship between the depth of a body of water and the abundance of birds was not clearly marked. This may indicate low stocks of bivalve molluscs - the main food component of this morpho-ecological group of seabirds that is the most numerous on the Baltic Sea during the non-breeding season. Considering the above and the results of the field survey, it can be assumed that the long-tailed duck and the common murre are more likely to fly between areas: Przybrzeżne wody Bałtyku PLB990002, Ławica Słupska PLC990001 and Hoburgs bank och Midsjöbankarna SE0330308. Also, the velvet scoter can fly between the Natura 2000 areas Przybrzeżne wody Bałtyku PLB990002 and Ławica Słupska PLC990001. In the case of the herring gull, which is a subject of protection in the Natura 2000 area Przybrzeżne wody Bałtyckie PLB990002, but is not a subject of protection in other Natura 2000 areas analysed, it can be assumed that the species is less likely to migrate between the coastal water zone and bodies of water north of it.

The Natura 2000 areas Ławica Słupska PLC990001 and Przybrzeżne wody Bałtyku PLB990002 are located on the migration route of Eurasian seabird populations to their wintering sites. Radar monitoring of migrating birds showed that transiting birds wintering in this part of the Baltic Sea fly in all directions without a clear pattern, and this suggests short flights to feeding grounds rather than long-distance movements. It was found that at

observation points located along the Natura 2000 area Przybrzeżne wody Bałtyku PLB990002, birds more often fly in west-south and northeast directions, i.e. along the coastline. The largest number of recorded flights was documented in the strip between the Natura 2000 areas Ławica Słupska PLC990001 and Przybrzeżne wody Bałtyku PLB990002. The presence of an Offshore Wind Farm (OWF), for example, may result in a **barrier effect** affecting the behaviour (movement) of migratory birds, and the magnitude of such an impact will depend on the number of wind turbines forming the farm, their size and distribution at the OWF Baltic East Site. The distance between individual wind turbines at the OWF Baltic East site and neighbouring OWFs is also important. Due to the above impact, birds may have to change their flight direction horizontally or vertically, which can slightly lengthen the migration and increase energy requirements. However, the change in the route will only represent a small part on the scale of the entire migration, and therefore the additional energy expenditures involved will be negligible, such as those calculated for the long-tailed duck by the Masden team (Masden and Cook 2016). The analysis of the change in the length of the migration route in the next phase, i.e. operation, indicates that the route will be lengthened only slightly (by about 0.02%). Changes of this magnitude have a minimal impact on the length of the entire migration (Pennycuick 2001, Skov et al. 2011). Since the distance travelled by birds of the same species is not the same (due to different resting places, nesting sites, differences in the flight route taken, etc.), the significance of the impact during the implementation phase was assessed to be negligible for all analysed species and groups of species. Adult birds are likely to be able to get used to the presence of wind farms to some extent. However, individuals undertaking the migration toward wintering grounds for the first time may have problems with getting past the extensive barrier posed by a cluster of wind farms. This may be due to their inexperience, which is the reason for the higher mortality of birds in the first year of life (Clark et al. 2007 Redmond et al. 2012; McKim-Louder et al. 2013). The lack of data on bird behaviour in the vicinity of OWFs covering large areas indicates the need to plan a post-investment monitoring study. During the OWF operation, most bird species will avoid being near it, so they will largely lose access to feeding grounds. The OWF operation will result in scaring and displacement from habitat of some of the seabirds present on the body of water occupied by the wind turbines and the adjacent strip of water about 2 km or even 4 km wide. The degree and the area of displacement of birds from this body of water and its surroundings will depend on their species. A single OWF is a barrier to birds, the majority of which avoid a body of water with wind turbines. This behaviour minimises the risk of a collision, especially during the day when visibility is good. However, for a long time, the OWF site will be excluded as a feeding ground for a large number of individuals, and this may have a negative impact on some species. The analysis of the collected data shows that the forced change in the route to avoid the OWF Baltic East results in its extension by an average of 17 km, which lengthens migration routes by an average of 1.41%, and in the case of cranes by 0.49%. The 17-km extension of the route associated with the barrier effect of the OWF Baltic East will increase energy expenditures necessary to cover that route by a negligible amount (Merkel and Johansen 2021; Pennycuick 2001). Therefore, the significance of the impact associated with the barrier effect for all groups of birds and species included in the analysis was considered to be of low importance and negligible. Considering the investment assumptions associated with wind power generation in the central part of the southern Baltic Sea (bodies of water POM 46.E, 45.E, 44.E and 43.E) and assuming that they are realised, a built-up area of about 130 km will eventually be created. For birds flying along the prevailing migration directions in the area, the actual barrier width will be about 90 km. Disturbance of space in such a long stretch of marine areas could lead to significant disruption in bird migration. Taking into account the requirements of environmental permits for neighbouring OWFs (Baltic Power and BC-Wind) in the design assumptions of the Baltic East

OWF, the Applicant designated an area excluded from the installation of structures above the water surface. It is a 4 km wide migratory corridor for birds. Such division of the OWF Baltic East development area allows to prevent and/or minimise the occurrence of the barrier effect for seabirds. Additionally, from the point of view of habitat conditions, which are decisive for the attractiveness of these areas, the results obtained clearly indicate that the OWF Baltic East site is used by birds to a much lesser extent when compared to the discussed Natura 2000 areas. Although the accessibility of the OWF Baltic East site to populations of birds that winter and rest during migration and are objects of protection in neighbouring Natura 2000 areas will be reduced, this impact was considered as minor for the long-tailed duck, the velvet scoter, auks, and common scoters, while no impact will occur for the herring gull and the common murre. No significant negative impacts of the OWF Baltic East are expected in terms of displacement of bird species that are the objects of protection within the Natura 2000 areas Ławica Słupska PLC990001 and Przybrzeżne wody Bałtyku PLB990002.

In addition, according to the case documentation, the specified location of the proposed OWF Baltic East was planned on the route of autumn and spring bird migrations, so its execution may affect various bird species during the seasonal migrations. Birds migrating across the southern Baltic Sea may collide with elements of wind turbines (the tower and parts of the rotor) if they do not notice these obstacles in time (for example, when visibility is limited due to weather conditions, or at night). The risk of collision and the loss of habitat are considered as potentially the greatest OWF impact on birds, as impacts are generally permanent and persist throughout the OWF life, and possible minimising activities are limited for these impacts. The risk of collision can be seen as the impact opposite to the barrier effect, with the risk of collision increasing when the barrier effect is less pronounced. The risk of collision also depends on the species of bird. Large species of waterbirds, such as swans, are more vulnerable to collisions with wind turbines because in their case sudden manoeuvres in the air are difficult (Brown et al. 1992). (1992). The majority of seabirds species travel low above the water, and when they are between wind turbines, they lower their flight and maintain equal distances from obstacles (Desholm et al. 2005; Hüppop et al. 2006; Petersen et al. 2006). Petersen et al. 2006; This means that the risk of collision is affected by the clearance between the lower position of the rotor blade and the sea surface. The smaller it is, the greater the likelihood of a bird colliding with a rotor in operation. The risk of collision depends on the OWF parameters, such as the number of wind turbines, the rotor diameter, the size of clearance between the lower reach of the rotor and the water surface, and on biological parameters and individual species - body size, flight speed, flight height, and collision avoidance rate, but also on weather parameters. As a part of the EP Report, the collision risk modelling was conducted for each of the bird species flying through the OWF Baltic East site. Collision risk modelling for each species was carried out for a total of 28 scenarios, differing in the number of turbines (69, 64, and 38 units), the clearance between the lower rotor position and the water table (20.0; 22.5; 30.0; and 37.5 m), and the avoidance index (from 0.95 to 0.995). To determine the collision risk of individual bird species present at and migrating through the study area, the commonly used Band's Collision Risk Model (CRM) was applied (Band 2012; Masden et al. 2016). The maximum estimated number of collisions during the spring and autumn migration periods for the turbine complex is:

- for the long-tailed duck, 0.00–0.15 collisions/season,
- for the common scoter, 0.03–0.76 collisions/season,
- for the velvet scoter, 0.03–1.76 collisions/season,
- for the razorbill and the common murre 0.00 collisions/season,
- for all auks in total, 0.00–0.14 collisions/season,

- for the black-throated diver 0.01–0.50 collisions/season, • for all divers 0.04–0.95 collisions/season,
- for all gulls in total, 0.33–10.17 collisions/season.

The analyses show that there is no variant in which collisions will not occur at all. For all the species included in the analysis, the significance of the impact resulting from the collision was assessed to be of low importance for species that are objects of protection in the Natura 2000 areas Ławica Słupska PLC990001 and Przybrzeżne wody Bałtyku PLB990002. The maximum, cumulative number of collisions/season during the migration period, for all offshore wind farm projects in the Baltic Sea, as calculated by modelling, is, among others: 9 collisions for the long-tailed duck, 51 collisions for the common scoter, and 23 collisions for divers. Assuming even the worst-case scenario, the significance of the impact continues to be negligible and insignificant for migratory birds, which are the objects of protection of the Natura 2000 areas Ławica Słupska PLC990001 and Przybrzeżne wody Bałtyku PLB990002. Nevertheless, in accordance with the precautionary principle, according to which any probability of negative impacts should be treated as if they were certain to occur, the aim of some of the above-mentioned Conditions that were imposed on the Applicant and must be introduced and applied in the project in question at the phase of its execution, operation or decommissioning, is to minimise possible losses in the population of various avifauna species to the greatest possible extent. As a part of actions minimising negative impacts at the operation stage, the OWF Baltic East will be provided with a permanently operating bird migration monitoring system and a system of shutdown/speed reduction of individual wind power plants along the flight path, which will be activated when flights of migrating birds are detected.

Individual wind power plants will be periodically turned off/their speed will be reduced, or, if this is not possible, the entire farm will be shut down during the periods of the most intense, peak seasonal migrations of birds at collision heights (i.e., from March 15 to April 30 and from September 1 to October 31, with special attention to adverse weather conditions). The flight intensity will be determined on the basis of the indications of the system for monitoring the migration intensity. The wind turbine towers will have a solid structure. The clearance between the water surface and the rotor operating area will not be less than 22.5 meters. As indicated in the addendum to the EP Report, there are no studies on the direct assessment of the painting of above-water elements of the truss foundations, and all the conducted analyses concern the impact of painting of rotor blades – rotating components, and increasing their visibility in motion, while their results are inconclusive and apply to few species, including for species not observed at the OWF Baltic East site.

Light emissions are associated with vessels used in the construction of wind farms and the illumination of drilling rigs and other structures illuminated by artificial light, mainly during night-time hours. The scale of the impact will depend on the number of vessels involved in the execution phase, their size, the configuration of the lights and their intensity, the duration of the execution phase and the phenological period during which the work will be carried out. At the phase of the OWF Baltic East operation, light emissions will come from the obstruction lights of the wind turbines (red light). Also in this phase, an additional aspect of light emission is the flickering effect. During studies of bird behaviour near oil rigs, it was noted that lighting causes seabirds to congregate around these structures not only during the migration period. This was mostly true for tubenoses (Procellariiformes), which mostly exhibit nocturnal activity, but was been observed in the little auk (*Alle alle*) (Wiese et al. 2001), which is closely related to the auks and the common murres found in the area of the planned project. However, for most typical seabird species (sea ducks, divers), the impact of artificial lighting on birds present near and far from light sources remains very poorly understood. Lighting of the investment site

during the execution phase will cause a direct and negative impact on seabirds. For benthophages and ichthyophages, the impact is regional in its range, due to the possible influence on the species' biogeographic population, while it is local for gulls. For bentophages and ichthyophages, the impact is short-term, while for gulls it is temporary. During the operation stage, the power plant during the night will be illuminated by small, weak and pulsating light sources. Constantly shining bright lights and pulsating white lights increase the risk of collision with passing birds. During reduced visibility - lighting will be changed from continuous to pulsating, with a long interval. Light emissions will be reduced to the level necessary under current regulations and occupational safety standards.

Various types of vessels will be present during the execution phase of the project, disturbing seabirds through their physical presence, noise (including noise generated by pile driving), and light emissions. The first two factors are not expected to alter the flight routes of those waterbird species that do not use this area, but only fly over it (migrating bentophages and ichthyophages). However, it cannot be ruled out that such an impact will be noticeable at night, especially if the construction site is heavily lit. This is because during migration birds navigate using natural light sources, such as stars and the sun. It was noted that during the night they also head for lighthouses, drilling rigs and other structures illuminated by artificial light (Wiese et al. 2001). The period in which the work will take place is important, as most seabird species, including the long-tailed duck, demonstrate very large differences in abundance from one phenological period to another. The effect of scaring will increase with the progressive development of the OWF site. Initially, it will be of a local character, and birds will be able to find places to feed nearby (e.g., in the neighbouring Natura 2000 areas Przybrzeżne wody Bałtyku and Ławica Słupska), but in the final phase of construction, the extent of this impact will increase noticeably, strongly limiting for birds opportunities for feeding and rests at the OWF site. Traffic of vessels during the execution phase will cause a direct and negative impact on seabirds. For benthophages and ichthyophages, the impact is regional in its range, due to the possible influence on the species' biogeographic population, while it is local for gulls. For bentophages and ichthyophages, the impact is short-term, while for gulls it is temporary.

In addition to the above, when considering the potential impact of the proposed project, among others, on the objects of protection in the nearest Natura 2000 areas, it was noted that the presence of the OWF is also associated with the generation of underwater noise - at all phases related to its construction, operation or decommissioning. During both the preparation and construction phases, the presence and movement of construction vessels and construction support vessels will be a source of noise. However, the greatest concerns are related to underwater noise emitted during erection/construction, due to the high levels of sound generated when piles are driven into the seabed. One common method for driving the piles is impact driving, during which a hydraulic hammer repeatedly strikes the top of the pile, about once per second. The sounds generated during piling are of high intensity and in a wide range of frequencies, including in bands relevant to both porpoises and seals. Available scientific research shows that marine mammals are sensitive to sound, hence noise associated with the OWF construction activities may significantly affect the aforementioned groups of marine mammals. In general, the effects of noise on animals can be divided into several categories: detection, masking, behavioural changes, and physiological damage, such as permanent and temporary hearing loss (Thomsen et al., 2021). Detection means that the body is able to hear a signal, but does not show a clear reaction. Masking occurs when noise interferes with the detection of biologically relevant signals used, for example, for communication and orientation in space. It occurs when the frequency of sounds in the environment is within the spectrum relevant for a given species, and exceeds the level of naturally occurring background noise. The behavioural response includes various types of behavioural changes under the influence

of noise exposure, such as, for example, fleeing the affected area, stopping feeding or resting, faster swimming, or deeper diving. The prolonged exposure to unwanted sounds may lead to repetitive behavioural modifications and result in a deterioration in the physiological health of individuals, and in a shift in their range. In consequence, an impact at the population level may occur. Hearing impairments include temporary (TTS) and permanent (PTS) shifts in the hearing threshold. In the case of TTS, the animal may regain its original ability to perceive sounds after the negative factor is withdrawn and a period of recovery. PTS leads to irreversible damage to the auditory system. With marine mammals relying primarily on the sense of hearing, impacts of this nature have a very significant negative impact and can result in population-level impacts. Noise-induced physiological changes involve damage to tissue or entire organs, which in extreme cases can even lead to death of the individual. To determine the zones of influence in the form of hearing loss (TTS and PTS) and behavioural changes in different groups of organisms, criteria are used that describe the level of noise that cannot be exceeded to cause a given effect. The manner in which sounds from piling propagate depends on a number of factors, such as the type of bottom, depth of seabed penetration, water depth, and hydrological conditions. Therefore, the degree in which the generated noise will affect marine organisms is strongly dependent on the location of the work, among other factors. In order to estimate the potential impact of sounds from piling during construction of the OWF Baltic East on marine mammals, numerical modelling of noise propagation was performed as part of the EP Report. The modelling considered three wind turbine locations perceived as the worst-case scenario. Analyses of sound propagation during piling at the OWF Baltic East site were carried out for scenarios without and with the application of mitigation measures representing examples of noise reduction system (NRS) components. Two types of mitigation were considered - with a bubble curtain (BBC) and with simultaneous use of a double bubble curtain (DBBC) and a hydro sound damper (*HSD*). Modelling was performed for two seasons - summer and winter. The summer season was considered the worst-case scenario from an environmental point of view (based on the results of marine mammal monitoring), while the winter season was considered the worst-case scenario from a physical point view (the best conditions for sound propagation). Analyses were carried out for a monopile of 12 metres in diameter, for two potential piling sites located in different parts of the OWF site, at different depths - the western (35 m) and the eastern (41 m) location. Considering the assessment of the impact on animals, the most important results obtained for the hearing loss effect (TTS and PTS) during the piling for a single turbine concerned the cumulative case, i.e. assuming the total time required to drive a single pile in. For the behavioural change, the animals' response to a sound generated by a single hammer blow was considered. The results provided insight into the approximate ranges and areas where a given impact may occur. During pile driving, a noise reduction system (NRS) appropriate to the technology and geological conditions will be used. These safeguards will be implemented for all sites of wind turbines and offshore substations. Appropriate NRS elements will be used, for specific sites of installation of wind turbine and offshore substation foundations, at which the permissible values may be exceeded. In the case of porpoises, on the basis of the obtained results it can be assumed that during piling at a single location, the use of mitigation measures in the form of BBC will be sufficient to reduce the impact of noise in the form of hearing loss (TTS, PTS). The projected impact ranges for the behavioural response are less than the distance from areas important for the biology of Baltic porpoises, or where this species is protected. The closest Natura 2000 areas where the porpoise is a subject of protection are Ostoja Słowińska PLH220023 and Hoburgs bank Midsjöbankarna SE0330308, located about 27 km and 67 km from the OWF Baltic East, respectively (the distance from the locations for which modelling was performed). However, the maximum modelled impact range is about 17 km (eastern location). Therefore, it can be

assumed that the effect of behavioural change caused by piling will not have a significant impact on the status of the porpoise population in the Baltic Proper. Porpoises are likely to avoid the area of increased sound intensity, which may result in a temporary reduction in food availability in the impacted area. It is presumed that once the disturbing factor is no longer present, the animals will return. Concerning seals, analyses conducted as part of the EP Report showed that a single mitigation with the BBC is not sufficient to rule out the likelihood of hearing loss in the form of TTS. The use of dual mitigation in the form of HSD+DBBC reduces the impact in the form of TTS to negligible. Considering the behavioural response of seals, none of the analysed mitigation measures completely limit the probability of impact. The use of HSD+DBBC limits the occurrence of the effect to a maximum of 18 km^2 in winter and 14 km^2 in summer (the eastern location). For behavioural changes, the impact of noise from piling may cause temporary avoidance of the work area, which is not expected to significantly affect the animals. Summing up, the analysis conducted showed that the noise generated during piling at the OWF Baltic East site can propagate over long distances, significantly affecting marine mammals, so mitigation measures are necessary to carry out the piling process. Considering the effect in the form of hearing loss, the use of a single mitigation measure in the form of BBC may not be sufficient to rule out the likelihood of TTS in seals. In the case of behavioural changes, the mitigation methods analysed do not ensure that impact ranges are limited to a minimum. In particular, in the case of the porpoise, the areas of influence are relatively large. However, given that the planned location of the OWF Baltic East is in an area where porpoises and seals occur with low frequency, it is presumed that the significance of the behavioural effect associated with piling noise will be low. This decision imposes on the investor a condition to apply NRS during the implementation of the project, the effect of which will be to reduce noise to a level not exceeding 140 dB re 1 μPa^2s SEL_{cum} and weighted by the HF function (for the porpoise) and 170 dB re 1 μPa^2s SEL_{cum} and weighted by the PW function (for seals) at the border of the Natura 2000 area Ostoja Słowińska PLH220023. Therefore, it can be concluded that after noise mitigation with NRS (including through the use of dual mitigation in the form of HSD+DBBC), the impact ranges for PTS, TTS and behavioural responses, also in terms of cumulative impact, will not reach the Natura 2000 area Ostoja Słowińska PLH220023. The execution phase of the OWF Baltic East will involve greater vessel traffic, which may increase the level of background noise naturally occurring in this area. Underwater noise generated by ships and boats comes from propulsion systems, among other things. Its intensity and characteristics depend on many factors, including the type and size of the vessel, the type of engine, the shape of the hull, or the conditions at sea. Low-frequency sounds are primarily generated by large and slower vessels, while high frequencies are mainly associated with small and fast boats. The sounds generated by ships have a large frequency range that can coincide with frequencies important to marine organisms. Since the main noise energy from watercraft is generally below 1 kHz (e.g., Richardson, 1995; OSPAR 2009), the most vulnerable to impacts are organisms for which low frequencies are most important (e.g. fish). However, an important part of the noise energy generated by ships is in the high frequency band (tens of Hz), which is very important for porpoises, among others. With regard to the OWF Baltic East execution phase, it is assumed that units generating low-frequency sounds will be used primarily, with a lower impact on porpoises . However, it can be suspected that animals will temporarily avoid an area with increased ship traffic. In the case of seals, studies indicate that low-frequency sounds generated by watercraft can interfere with the vocalisations of these animals (Erbe et al., 2019). However, it should be taken into account that in the OWF Baltic East region, seals are unlikely to appear in larger groups or for mating purposes, that is, in situations where they use vocalisations. Therefore, it can be suspected that sounds generated from ships used for construction should not interfere with the behaviour of appearing animals.

The presence and movement of construction vessels will be a major cause of seabird disturbance in the body of water in which the OWF Baltic East will be constructed. This impact will be far greater than other pressures associated with the execution phase, such as underwater noise emissions. Bird monitoring during the construction work at the OWF Egmond aan Zee in the Netherlands showed no discernible response to piling in those bird species, which are insensitive to disturbance associated with the presence of ships (mainly gulls and terns) (Leopold et al. 2007). Noise and vibrations during the execution phase represent direct negative impacts on seabirds. For benthophages and ichthyophages, the impact is regional in its range, due to the possible influence on the species' biogeographic population, while it is local for gulls. For bentophages and ichthyophages, the impact is short-term, while for gulls it is temporary. As part of the minimisation measures, in order to allow animals such as fish, birds and marine mammals to leave and move away from the area where works are being conducted, each start of the work will be preceded by a *soft-start* procedure. Ornithological surveillance will be conducted during the piling. If the ornithological surveillance does not observe the presence of the common murres, the common murres, long-tailed ducks, and velvet scoters in an area with a radius of 2 km from the piling site, work can begin, each time preceded by a *soft-start* procedure. Successive power plants will be built starting from one site, so that the body of water designated for the investment will be filled with structures gradually, expanding the area of the OWF Baltic East in question to include neighbouring power plants. No more than two simultaneous pilings will be used in the OWF Baltic East and one of the other five OWFs (Baltic II, Baltic III, Baltica 2, Baltica 3, Baltic Power, BC-Wind) planned in adjacent locations. It is to be understood that at the same time in the entire area of the planned locations of the aforementioned Offshore Wind Farms, no more than two pilings may be carried out simultaneously.

The main risks that may occur during the execution, operation and decommissioning of the OWF Baltic East are spills of petroleum-based substances, mainly diesel, hydraulic, transformer and lubricating oils. To a lesser extent, the marine environment incidentally may be threatened by materials containing hazardous substances, if such are used. During the operation phase, oil spills can be a major cause of marine pollution. Both within open marine waters (e.g., OWFs) and near shore, they can be a problem with long-lasting effects on fauna, flora, fishing and beaches affected by contamination. In order to counteract this risk, OWF systems will be equipped with measures to prevent spills of hazardous substances. If dry transformers cannot be used in the planned system, offshore substations will be equipped with oil sumps with a capacity of about 110% of the amount of oil in the transformers, i.e. so they contain the entire oil spill, should they leak. Stormwater systems at facilities located at the OWF Baltic East site will be equipped with oil separators. Oily water generated during the work will be collected and separated until oil concentrations are below 15 p.p.m., and the oil extracted during the separation will be stored and transferred onshore to specialised disposal companies. In addition, a plan will be developed to address risks and pollution during the construction, operation and decommissioning of the OWF Baltic East.

The construction of a wind farm may lead to changes the chemical parameters of seawater due to, for example, resuspension of suspended solids from the seabed. When determining the extent of the impact of the increase in suspended solids in water and the resulting sedimentation, the following assumptions were made, on the basis of the modelling:

a) the maximum range of a suspension with a concentration of 5 mg dm^{-1} is 9.7 km from the site at which it is generated;
b) the maximum extent of the area of sedimentation of suspended solids of a thickness of 1 mm does not exceed 4.3 km from the site at which it is generated.

Such fluctuations in the environment may affect marine mammals indirectly, mainly in terms of their impact on the food base, i.e. fish populations. Changes in water parameters associated with the construction process can negatively affect populations of plankton and benthic organisms on which fish feed. In consequence, a temporary decline in the numbers of these animals may occur, and thus a loss of a potential food source and foraging habitat for marine mammals. As a result of the analysis, the project's impact on marine mammals during the execution phase was determined to be of negligible to moderate significance, assuming the use of NRS. Some of the habitats used by seabirds and birds stopping during migration will be lost due to the setting of the support structures. This process will also directly affect the seabed and the water column. Natural benthic habitats will be lost, but new ones will most likely develop in their place (artificial reef effect). The scale of the impact will mainly depend on the number of offshore wind turbine foundations or support structures and their type and size. Bird species vulnerable to impacts associated with loss of bottom habitats due to space occupation are mainly sea ducks that are benthic foragers. However, these species are very sensitive to disturbance by the presence of boats and other human activities at sea, hence it is estimated that the impact from disturbance due to the presence of construction vessels will be the main impact in this area, thus resulting in the displacement of sensitive species to other areas. Therefore, these birds will not experience the additional impact associated with occupation of the space during the execution phase. Destruction of benthic habitats represents a direct and negative impact on seabirds. For benthophages, this impact is regional in its range, due to the possible influence on the species' biogeographic population, while it is local for gulls and ichthyophages. For bentophages, the impact is short-term, while for gulls and ichthyophages it is temporary. The significance of the impact was determined to be significant for bentophages, moderate for ichthyophages, and minor for gulls. The increase in suspended solids concentration and sedimentation due to the maximum extent of these phenomena will not affect natural habitats: 1110 – sublittoral sandbanks, permanently submerged, and 1170 – reefs in the Natura 2000 area Ławica Słupska PLC990001, as well as 1170 - reefs in the Natura 2000 area Ostoja Słowińska PLH220032.

Concluding, in order to ensure the protection of individuals of individual species of birds and marine mammals (with a particular regard to species constituting the objects of protection of the above mentioned Natura 2000 areas) against the effects of possible negative impacts of the proposed project - at all stages associated with its construction, operation or decommissioning - certain conditions for the project execution were imposed on the Applicant, including ordering that all works associated with the project must be carried out under the supervision of a naturalist, led by a person/persons with knowledge and experience in the field of ornithology and biology and ecology of marine mammals, as well as deciding to introduce appropriate monitoring: for marine and migratory avifauna, marine mammals and for underwater noise having a negative impact on aquatic organisms, at strictly defined phases of its execution and/or operation. On the basis of the above, it can be assumed that the execution of the construction project specified in the application, consisting in the construction of the Offshore Wind Farm Baltic East, with the conditions specified in this decision of the local authority maintained, will not significantly negatively affect the Natura 2000 areas nearest to this investment: Przybrzeżne wody Bałtyku PLB990002, Ostoja Słowińska PLH220023 and Ławica Słupska PLC990001, and therefore, the local authority does not see the need to reassess the environmental impact of the proposed project for Natura 2000 areas.

The environmental impact assessment, including under Article 6.3 of the Habitats Directive, shows that the planned project will not have a significant negative impact on the objects of protection and integrity of the nearest Natura 2000 areas: Przybrzeżne wody Bałtyku PLB990002, Ostoja Słowińska PLH220023 and Ławica Słupska PLC990001. There is also no

reason to believe that the implementation of the proposed project could result in the loss or fragmentation of natural habitats or habitats of species for which the aforementioned Natura 2000 areas were designed. In the opinion of the local authority, the specified interim conservation objectives for the habitats of species and species that are objects of protection in the Natura 2000 area Przybrzeżne wody Bałtyku PLB990002 will be maintained, and the execution of the proposed investment, while adhering to the conditions of this permit, will not cause a threat to the objects of protection of the Natura 2000 areas Przybrzeżne wody Bałtyku PLB990002, Ostoja Słowińska PLH220023 and Ławica Słupska PLC990001. In addition, the implementation of the indicated minimisation measures and design solutions at the stage of investment execution will eliminate or significantly reduce the investment impact on various components of the natural environment.

Cumulative impact of the OWF Baltic East and other projects.

No other projects are currently being or will be executed at the OWF Baltic East Site. At all its phases the OWF Baltic East, due to the proper and safe operation of this Project, prevents other activities in the same area. Hence, impacts that could potentially cumulate with those of the OWF Baltic East will originate outside its site.

In the Polish Maritime Area (POM), there are completed, ongoing or planned projects related to the extraction of hydrocarbons from under the seabed and the production of hydrogen, which received environmental permits. In addition, other offshore wind farms are planned in the OWF Baltic East area. Eight permits are currently in force, for the erection and use of artificial islands, structures and devices in offshore areas for the OWFs nearest to the Baltic East area: Baltic II, Bałtyk Środkowy II (Bałtyk II), Baltica 2, Baltica 3, Bałtyk Środkowy III (Bałtyk III), Baltica 3, Baltic Power and BC-Wind. In addition, the first Polish nuclear power plant (NPP), for which a decision has been issued, is planned to be executed in the Choczewo Commune. In connection with the

the NPP execution, associated investments covered by separate environmental permits will also be executed. Among other things, tasks such as the Marine Off-Loading Facility (MOLF) and the cooling system for the NPP will be executed at the POM - of these two, only the cooling system has received an environmental permit.

The execution of the OWF Baltic East is planned to start in a few years, so it is now likely that the start of its execution will take place simultaneously to the final stages of the execution of the neighbouring OWFs Baltic Power and BC-Wind, or the two mentioned farms will already be operated. After the completion of the execution phases, the operation phases of each OWF will begin, and due to the considerable length of the operation phases in projects of this type, they will overlap to a significant extent. In the case of the OWF decommissioning phases, both the timing and scale of the decommissioning are unknown at this time, except for the operational periods indicated in the environmental permit. Environmental impacts associated with this phase will be of a different nature and will be no greater than for the execution phase. As a result of the start of the removal of structures above the water level, space will gradually be freed up until the state without offshore wind turbines is restored. Also, the removal of underwater structures will be a gradual process of restoring the development condition prior to the OWF execution phase.

The impacts of the OWF Baltic East that may cause cumulative impacts with other projects include those resulting from:

- space disturbance;
- impediments/restrictions to fishing;

- underwater noise;
- increase in suspended solids concentration and sedimentation.

Two of the identified impacts (related to underwater noise and increases in suspended solids concentration and sedimentation) will occur during the execution phase, while the others will occur at the end of the execution phase and during the operation phase.

The execution of the planned Project will result in a temporary loss of availability of feeding grounds for bentophages and ichthyophages. Spatial disturbances resulting from preparatory and construction activities, such as noise emissions and reduced water transparency, will cause bird scaring and reduce the availability of food for diving birds. The greatest effect of occupying the feeding grounds will occur in the worst-case situation - when the operation phase of the last of the OWFs begins. The cumulative loss of minor habitat will cause seabirds move to more accessible, richer feeding grounds located in nearby Natura 2000 areas.

Within the OWF Baltic East, as well as at other OWFs, there will be a partial, long-term restriction in air space use. The formation of a physical barrier will result in the need to avoid it, both during flights to wintering regions, and spring and autumn migrations. As construction progresses and more offshore wind turbines are built, the barrier effect will gradually increase, reaching its maximum at the operating stage. Undisturbed space will remain within all OWF development areas and around individual OWF sites. The discontinuous nature of the development, with significant distances between individual OWF structures, will ensure that the disturbance of space will not be continuous and uniform. The greatest disruption of space will occur within the operating range of the rotor, i.e., at least more than 20 meters above the water surface. The OWF Baltic East project takes into account the need to leave such an area free of wind turbines. It is expected that the establishment of this area, in conjunction with other above-mentioned free areas, will create a system of free space in this area, allowing birds to move in a way that minimises potential disruption in their migration. The maximum cumulative number of collisions can occur during migration. Initially, during the execution phase, with the construction of structures above the water level, cumulative impacts will be generated, consisting of landscape disturbance from the OWF Baltic East additionally to other OWFs that are under construction or already completed. Then, during the operation phase, the impacts on the landscape will be greatest and will last the longest, for assumed several decades. With the decommissioning of the OWF Baltic East, including the dismantling of the structure, the disturbance of the natural landscape will decrease until it completely disappears when the structure is dismantled to the seabed level.

The construction of a single wind farm, as well as a larger number of wind farms, may cause disruptions in the normal functioning of systems using electromagnetic fields. The extent of disruption will depend on the number of structures built in the maritime areas and may cover a larger maritime area, as well as be related to the order in which the projects are executed. The extent of the PEM environmental impact will be local, while it may be regional in terms of ensuring proper operation and safety, as the communication facilities are located outside the OWF Baltic East site. These may include cumulative long-term impacts, both temporary and permanent. The sensitivity of communication systems to potential impacts during the execution, operation and decommissioning phases of the project can be assessed as very high. The scale of the impact, due to the need to ensure uninterrupted communication of the functioning systems of various operators, should be considered very large.

The OWF Baltic East, along with other planned OWFs, will impact marine fishing activities. The presence of overwater structures will result in two possible impacts due to space limitations, i.e. the inability to fish within the OWF, and the need to bypass the OWF on the way to and from fisheries located north of the OWF. Fishing, especially bottom trawling, will also be

impossible in the immediate vicinity of the transmission infrastructure. The need to relocate fishing units using static gears could cause conflicts with existing users of the fisheries, where the number of gear set would increase. Excessive concentration of bottom set nets is not to be expected once the overlap is shifted away from the area occupied by the OWF. As a result of locating many wind farms in sites directly bordering each other, a barrier will be formed, stretching for many kilometres, impeding the navigation of marine vessels. Locating other wind farms adjacent to the OWF Baltic East on the east and the west, without designating a shipping corridor, could significantly lengthen the route of fishing boats to productive fisheries below the Central Shoal. This could result in additional losses, mainly for vessels stationed in the ports of Ustka and Łeba, due to higher fuel costs and longer time needed to reach the fisheries. Given the above, the significance of the cumulative negative impact associated with the need to extend the route of fishing vessels to the fisheries should be considered high.

In order to reduce the cumulative negative impact on fishing in this area, it would be necessary to leave a navigation corridor(s) between the farms of the width sufficient to maintain the safety of navigation. In this case, the significance of the Project's cumulative impact on fishing will be considered moderate.

The sound emitted during the piling of wind turbine support structures at the execution phase can propagate in the water depths over considerable distances and negatively affect organisms. For underwater noise, the results of modelling of various possible scenarios of simultaneous piling showed the ranges of impacts, including possible cumulation of impacts. The results of the calculations indicate that in the scenario of applying double mitigation, the effect of hearing loss in marine mammals is not expected, but behavioural changes may occur on a very large area, especially in the case of porpoises. Due to the likelihood of cumulative impacts, construction work associated with pile driving should not take place at the same time as at the planned OWF Baltic Power and OWF BC Wind **(Condition No. C.1.4).** During the OWF Baltic East operation and decommissioning phases, underwater noise levels associated with wind turbine operation, ship traffic, and cutting and drilling in large-diameter piles will be much lower than during the execution phase, and their cumulative impact can be assessed as negligible.

After analysing the scope of the planned project and identifying its environmental impacts and their magnitude, it was concluded that the planned project may cause potential transboundary environmental impacts. The course of the transboundary proceedings has been described in the grounds for this decision, and the comments and requests made during the transboundary proceedings by the affected countries were analysed in the proceedings in question. The process of transboundary proceedings has been cited in the grounds for this decision, and the environmental protection requirements for reducing transboundary environmental impacts have been taken into account in this decision.

Having analysed the EP Report, taking into account the specific features of the site where the project in question will be executed, the scope of the planned work, the presence of protected areas, and being guided by the precautionary principle, with this decision the authority specified the conditions to be applied at the project execution and operation phases.

The conditions and obligations set forth in **section B.I. of this decision** were imposed on the basis of conclusions and recommendations in the submitted EP Report and the opinions of cooperating bodies. The conditions specified for the project execution phase were formulated with a view to the following obligations:

- to ensure the economical use of the site during the investment preparation and execution – Article 74.1 of *the Act of 18 April 2001, Environmental Protection Law (consolidated text: Journal of Laws of 2025, item 647, as amended,* hereinafter referred to as the EP Act),
- to take into account environmental protection at the works site, and in particular to protect the soil, greenery, natural terrain, and hydrographic conditions – Article 75.1 of the EP Act,
- when carrying out construction work, to use and transform natural elements only to the extent that it is necessary in connection with the execution of a specific project - Article 75.2 of the EP Act,
- conduct waste management in a manner ensuring protection of human life and health and the environment, in particular, in such a way that waste management does not pose a hazard to water, air, soil, plants, or animals (Article 16 of the Waste Act).

The above requirements were established with a focus on the most significant of the identified emissions, the lack of management of which could be a source of negative environmental impact, including on human health or, in the extreme cases, lead to a state of environmental emergency. The considerations given include both preventive and supervisory measures, as well as technical emission management measures. The conditions set for the construction project form a direct guideline for a designer, and aim at ensuring the economical use of environmental resources, and minimisation and proper management of emissions. The aforementioned guidelines are based, among others, on:

- the principles of prevention, precautionary and bearing the costs of environmental impacts, resulting from Articles 6 and 7 of the EP Act;
- a ban on causing significant deterioration of the environment or a threat to human life or health (Article 141.2 of the EP Act);
- an order to comply with environmental quality and emission standards (Articles 141.1 and 144.1 of the EP Act);
- a prohibition to operate a system resulting in an introduction of gases or dust into the air, emission of noise, and generation of electromagnetic fields to the extent resulting in an exceedance of environmental quality standards outside the area to which the operator of the installation has the legal title (Article 144.2 of the EP Act);
- a prohibition to undertake activities that may, separately or in combination with other activities, significantly adversely affect the conservation objectives of the Natura 2000 area (Article 33.1 of the Nature Protection Act).

Due to the lengthy process of preparing the project for the phase of its physical execution, and in view of the possibility of changes in the environment during this time, it was found necessary to obtain additional inventory data documenting the most up-to-date state of the environment possible before the start of the project. The results of this study will be taken into account in the assessment of the effects caused by the execution of the project performed at the stage of the post-execution analysis. Given the need to assess the effectiveness of the preventive and mitigating measures used, the Applicant has been obliged to monitor changes in the environment caused by the project execution and the system operation, to the extent specified **in section C.2 of this decision.** Pursuant to Article 82.1(5) of the EP Act, the Applicant is required to submit a post-execution analysis. The post-execution analysis will allow to confront the effects in the environment, on the basis of results of the conducted monitoring. The timing and scope of the post-execution analysis was linked to the obligations imposed on the Applicant regarding environmental monitoring, while also adopting the period necessary for the collection of reliable data that would allow for possible

designing of further measures to reduce negative environmental impacts.

By virtue of this decision, an obligation was imposed on the applicant to prepare documentation for the reassessment of the project's environmental impact, in **this decision in section F.** The basis for conducting a reassessment of environmental impact is Article 82.2 of the EP Act. Taking into account its content, in the discussed case, the decision about the need for reassessment is made taking into account the fact that:

- the data about the project available at the stage of issuing the environmental permit does not allow to sufficiently assess its environmental impact and determine the conditions for implementation of the project, taking into account the envelope description of the project established by the Investor;
- due to the nature and characteristics of the project and its relationship with other projects, cumulative impacts of projects located in the area that will be affected by the project are possible. According to the guidelines for environmental impact assessment for offshore wind farms (a study under the guidance of Maciej Stryjecki, Warsaw 2025). Chapter 10.3, quote: "*If the so-called envelope description of the project (a description covering the widest possible range of potential options for project execution) is used, impact reassessment should form a standard part of the management of an OWF project*. *The envelope description assumes that at the early analysis and planning stage of the project, not all technical details are fully defined (...)*

- *Technological variability: An envelope description of a project that provides for different technological options (e.g. different types of turbines or foundations) may require a reassessment of the impact when the investor makes a final technical decision. Then the reassessment of the environmental impact enables to precisely adjust the environmental permit to the specific technology, preventing the risk of having to make later changes or inadequate restrictions specified in the environmental permit.*
- *Location variability: In the case of OWF projects, the exact location of turbines, transformer stations, or cable routes is known only at the project development stage. The reassessment allows for a thorough analysis of the environmental impact of the new locations and for the introduction of minimisation measures in line with current conditions.*

The imposition of an impact reassessment for the project in question stems from the concept of the envelope description of the project. This solution gives investors greater flexibility, while minimising the risk of unforeseen environmental and legal consequences due to taking the most far-reaching and possible impact-related scenarios for evaluation. Reassessment with the assumption of the most far-reaching evaluation gives the opportunity to determine modifications to the conditions set forth in the environmental permit according to the final and ultimately adopted technical parameters of the project, consistent with the construction design, which minimises the risk of unforeseen environmental and legal consequences."

In the opinion of the Regional Director for Environmental Protection in Gdańsk, the factual circumstances supporting the reassessment in the present case are both the above-mentioned technological and locational variability of the project in question, and therefore the need to confirm the conclusions regarding the scale and intensity of the environmental impact, as well as the lack of significant negative impacts of the project on Natura 2000 areas, based on the final solutions adopted in the construction design. The basis for imposing a reassessment of environmental impact can also be found in the position of the Director of the Maritime Office, ref. No.: INZ.9202.199.3.2024.AD of 22/04/2025, reiterated by letter with a reference No.: INZ.9202.205.3.2024.AD. dated

27/06/2025. That authority also specified the elements that should be included in the said assessment.

In addition, it should be pointed out that the role of the reassessment is to remove the risk of redundant environmental conditions limiting the project, so the reassessment will remove/change oversized restrictions concerning the area, scheduling, redundant shielding and monitoring activities that negatively affect the optimal development of the project.

Under Article 135.1 of the EP Act, it is permitted to establish a restricted use area if, considered together: 1) the investment does or did concern a sewage treatment plant, a municipal landfill, a composting plant, a traffic route, an airport, a power line and a substation, and radio communication, radio navigation and radiolocation system; this catalogue is exhaustive; 2) an environmental audit, an environmental impact assessment of a project, or a post-execution analysis show that despite the application of available technical, technological and organisational solutions, environmental quality standards outside the plant premises or other facility cannot be met.

Wind power plants are not listed in the catalogue of systems for which a restricted use area can be created. This means that the investor's title should cover such land that guarantees compliance with environmental quality standards at the boundary of that site. A restricted use area may be created only for power lines and substations, as long as standards for electromagnetic fields or environmental noise can be exceeded. However, it is not anticipated that any environmental quality standards may not be met by these facilities, and therefore there is no need to create a restricted use area for the project. According to the attached documentation, at the current stage of the investment preparation, there are no grounds for determining the possibility that the environmental quality standards will be exceeded with regard to both air, noise, and wastewater, as well as the strength of magnetic and electric fields. Impacts will not exceed permissible values outside the area to which the Applicant has the title. The nearest areas for which environmental quality standards have been determined in the aforementioned extent are on the shore, i.e. more than 20 km away. Therefore, it is not anticipated that any environmental quality standards may not be met by these facilities, and therefore there is no need to create a restricted use area for the project. The above is reflected in this decision in **section E.**

Before issuing the decision, in a letter with a Ref. No. RDOŚ-Gd-WOO.420.82.2024.AM.16 dated 03/09/2025, the Regional Director for Environmental Protection in Gdańsk notified the parties to the proceedings, in accordance with Article 10 of the Code of Administrative Proceedings, that the collection of evidence has been completed, and that they have an option to review the case file and comment on the collected evidence and materials. No comments or applications were received within the specified deadline.

Regardless of the provisions of this decision, the execution of the project under this decision, as well as the subsequent operation of the facilities created as a result of the project, does not relieve the Investor from their obligation to:

- apply regulations on technical conditions established pursuant to Article 7 of the Act of 7 July 1994 – the Construction Law *(consolidated text: Journal of Laws 2025, item 418)*;
- obtain permits, opinions and agreements required under applicable law;
- in terms of proper operation of equipment, as defined by the provisions of the Environmental Protection Law of 27 April 2001*(consolidated text: Journal of Laws 2025, item 647, as*

amended); • waste management, as defined by the provisions of the Waste Act of 14 December 2012*(consolidated text: Journal of Laws 2023, item 1587, as amended*).

Such obligations, as existing and binding under the applicable law, are not subject to reimposition and disclosure in the decision.

In these circumstances, the decision had to be as in the introduction.

Stamp duty in the amount of PLN 205 was collected for the issuance of this decision (Annex No. 1, part I, item 45 of the Stamp Duty Act of 16 November 2006 *(consolidated text: Journal of Laws 2025, item 1154)*.

The decision is subject to disclosure in the publicly available data list.

NOTE

The party is entitled to appeal against this decision to the General Director for Environmental Protection through the Regional Director for Environmental Protection in Gdańsk, Chmielna 54/57, 80-748 Gdańsk, within 14 days of the date of delivery of this decision to the party, or within 30 days of the date of the announcement or delivery of the notice of issuance of the decision, in accordance with Article 76.1 of the Act of 17 December 2020 on promoting electricity generation in offshore wind farms(*Journal of Laws 2025, item 498*).

The environmental permit is not a substitute for a permit under Article 56 of the Nature Protection Act. For any destruction of species habitats, scaring or relocation of protected species, a permit must be obtained under Article 56 of the Nature Protection Act of 16 April 2004 *(consolidated text of 2024, item 1478, as amended*).

Regional Director for Environmental Protection in Gdańsk
Anna Tchórzewska
/signed electronically/

Recipients:

1. Investor - Orlen Neptun VIII Sp., z o. o., through its proxy: Mr. **Andrzej Dziura - Kancelaria Radców Prawnych i adwokatów Otawski, Dziura Jarzyński Troszyński Hernik Sp. p, al. Niepodległości 221/ap. 2 02-087 Warszawa** / Martyna Socha MEWO S.A, ul. Starogardzka 17 A, 83 - 010 Straszyn 83 - 010 Straszyn / Mr. Radosław Opioła - ePUAP
2. to file Drawn up by Agata Mach, (Phone 58 68 36 804, 10.00 a.m. -1.00 p.m.) CC:

1. Director of the Maritime Office in Gdynia, Chrzanowskiego 10, 81-338 Gdynia
2. State Border Sanitary Inspector in Gdynia, 69 Kontenerowa St., 81-155 Gdynia
3. General Director for Environmental Protection, Al. Jerozolimskie 136, 02-305 Warszawa - ePUAP

REGIONAL DIRECTOR

FOR ENVIRONMENTAL PROTECTION

IN GDAŃSK

APPENDIX 1

To Decision No. RDOŚ-Gd-WOO.420.82.2024.AM.17

***In accordance with Article 84.2 of the Act of 03 October 2008 on making available information on the environment and its protection, society participation in the environmental protection and on an environmental impact assessment* (consolidated text of 2024, item 1112 as amended)**

The planned Project includes the construction, operation, and decommissioning of the Baltic East Offshore Wind Farm of a maximum total power of 966 MW. The aim of the Project is to generate electricity using a renewable energy source, i.e. the wind power. The OWF Baltic East site is located in the Exclusive Economic Zone (EEZ) of the Republic of Poland. The OWF Baltic East site covers about 111.7 km^2 and is located off villages of Sasino and Białogóra (the Pomeranian Voivodeship) at a distance of about 22.5 km off the sea shore and at a distance from the EEZ borders of other countries of: about 59 km from the Swedish Exclusive Economic Zone (EEZ), about 82 km from the Danish EEZ, about 73 km from the Russian EEZ and about 199 km from the German EEZ. The aim of the Project is to generate electricity using a renewable energy source, i.e. the wind power. The kinetic energy of the wind is converted into mechanical energy of the rotating rotor. It is then converted in a generator into low-voltage alternating current, which is then transformed into medium- or high-voltage for further transmission to the substation via the internal power infrastructure.
The OWF does not include any infrastructure for the transmission of electricity generated by the farm to the shore. The project for construction of the connection infrastructure will be covered by separate administrative proceedings.

The Baltic East Wind Farm will consist of the following components:

- wind turbines (a nacelle with a rotor, a tower, intermediate components), and foundations of single-support (monopile) or multi-support (jacket) design," (to w ogóle mam tylko raz w tekście).
- offshore substations (OSS),
- internal power and telecommunication lines with accessories.

The parameters characterising the OWF Baltic East are:

- the maximum installed power of 966 MW,
- a maximum of 64 wind power plants,
- wind turbine power: minimum - 15 MW, and maximum - 25 MW,
- a maximum rotor diameter of 310 m,
- a minimum clearance above the sea surface - 22.5 m,
- a maximum height of the wind turbine: 347.5 m above sea level,

- maximum two offshore substations (medium/high voltage),
- maximum length of inter array cable lines 150 km, - maximum 5% of the disturbed seabed surface,
- total sweeping area of rotors - max. 2.87 million m^2.

The nacelle is a key component of a wind turbine. It is completely assembled on the shore and then transported and mounted on the wind turbine tower. It includes the equipment of the drive system and the housing that protects it from the weather. The drive system converts the energy of the rotating rotor into three-phase alternating current. The components of the drive system include a rotor, a rotating shaft with or without a gearbox, and a generator. The converter converts the voltage supplied to the generator and the power supplied from the generator to the grid. The current conversion that takes place in it consists of changing variable frequency alternating current from the generator into constant frequency alternating current with active and reactive power levels and other parameters necessary for the production of electricity supplied to the grid.

The rotor is another essential component of the wind turbine, and it consists of three blades and a hub. The wind makes the rotor to perform a rotary motion and transfer kinetic energy to the remaining components of the nacelle. The rotor is automatically set against the wind. To optimise its operation, the rotor is equipped with aerodynamic brakes, and the approach angle of the blades is adjusted in real time depending on the current wind conditions. The rotor plays a key role in the turbine operation, and its size (diameter) affects its power output. In terms of materials, the rotor blades are made of composites (fibreglass, carbon fibre, epoxy or polyester resins).

The wind turbine is equipped with systems that constantly monitor and protect its operation. The two main systems ensuring the safe turbine operation are the overspeed protection system and the lightning protection system.

The overspeed protection system is a safety system that monitors the rotor speed, which activates emergency braking of the rotor when the speed limit is exceeded, and this occurs independently of the turbine controller in accordance with current standards. The latter system is a lightning protection system (LPS) conforming to IEC 61400-24. It helps protect the wind turbine from physical damage caused by direct lightning (lightning strikes). Additionally, the use a system of temporary turbine shutdown systems during the period of intensive crane migration is foreseen. On the basis of detection of bird migration (e.g., using radars and cameras), turbines can be slowed down to 2–4 rpm. For technological reasons, it is not possible to stop the rotor completely, only to slow it down significantly.

The tower is a structural element that connects the nacelle to the foundation. Structurally, the tower is a steel tube tapering at the top, composed of sections connected by bolted flanged joints. The tower acts as a carrier for the wind turbine and provides a base for routing the necessary cabling, i.e. control cables, power cables, and other systems and equipment essential for the operation of the entire plant. The tower's internal and external equipment includes platforms, supports, a lift, etc., providing maintenance service teams to access the nacelle and elements of the tower itself.

In the case of the OWF Baltic East, the wind turbine is permanently fixed to the seabed with a steel or concrete support structure (single- or multi-supported). The selection of an appropriate support structure depends on the size and weight of the wind turbine, and the prevailing environmental conditions at the OWF site, including: the depth of the body of water, geological conditions of the seabed, and other environmental conditions, i.e.: wave action,

currents, icing, biotic qualities; the economic aspect also represents an important factor. The support structure performs the following functions: ensures the required rigidity and strength of the wind turbine; provides support for cable systems; it is the connection between the wind turbine and the bottom; and it ensures the effective installation of the wind turbine. In the process of installing an offshore wind turbine, the support structure is installed first, followed by the other wind turbine components. It is planned to use large diameter piles (monopiles) and/or multi-support foundations for the foundation of turbines and offshore substations in the OWF Baltic East

The monopile foundation (a large diameter pile) that is planned for the OWF Baltic East is a steel structure composed of cylinders welded together. Depending on the construction conditions of a particular wind turbine, the monopile length will not exceed about 120 meters. Installation of monopiles involves driving (or, in the case of difficult geological conditions, partially boring) them into the bottom to an appropriate depth, and a transition piece is installed on the part of the large-diameter pile protruding above sea level, on which the wind turbine tower is mounted. Of the available technological solutions, it is also possible to directly mount the tower on the foundation with an integrated transition part*(TP-less*). At the OWF Baltic East, the use large-diameter piles, with diameters of up to 12 meters, bottom penetration depths of up to ca. 60 meters and weights of up to 2,400 tonnes, is planned.

A truss*(jacket*) structure consists of a number of tubular elements connected to each other at K, X or Y nodes. The entire structure is braced with tubular elements with a diameter of about 1 m. The truss is installed indirectly on the seabed. The brackets of the main girders are rigidly connected to piles set in the ground. If a truss structure is used in the OWF Baltic East, such structures can have diameters ranging from 1.8 m (the bottom penetration depth of about 70 m) to 4.0 m (the bottom penetration depth of about 40 m).

The advantage of using monopiles is their simple design and universal application. Their disadvantages are the limited possibility of complete removal from the bottom during the phase of the wind farm decommissioning, while during the construction phase, underwater noise is generated when the structure is driven into the bottom, affecting marine animals. It should also be noted whether drilling is required, if the installation of piles is hindered due to the presence of difficult ground conditions. During the operation phase, sea currents are modified in the immediate vicinity of the large-diameter piles, and this affects the movement of sediment on the seabed.

The advantages of using a truss solution result primarily from the way in which the structure transfers loads to the ground, i.e. by distributing the force within the support structure to three or four independent pile supports, thus achieving better performance characteristics. This type of the support structure is more stable and less susceptible to bending moment generated by horizontal forces than it is the case with monopiles. The support area for the technological load-bearing capacity of the structure is also larger.

The choice of foundation type will depend on geotechnical conditions and depth at specific locations. In addition, depending on the depth of the body of water and the anticipated weather conditions, it may be necessary to construct anti-erosion bottom reinforcement. In addition, in areas where the seabed is subject to hydrodynamic processes, it may be necessary to protect the seabed surface around the pile with a protective layer, such as armour rock*(scour protection*).

OWF inter array cables (*IAC*) connect wind turbines to substations located within the wind farm. The OWF Baltic East will use inter array cables with a voltage rating of 66 kV, which is the current standard for offshore wind power generation. An increase in voltage to 132 kV is

being considered for wind turbines with higher ratings than those currently installed. It is planned to use cables consisting of three insulated wires (copper or aluminium) and additionally equipped with fibre optic cables. It is permissible to use newer technologies available at the time of the Project execution.

The depth of power cable burial in the seabed along the majority of the cable line route will be up to 3 m below the seabed. If it will be impossible to reroute the cable line in order to avoid an obstacle located on or under the seabed, such as the presence of foreign line infrastructure, it will be necessary to route the cable line on the seabed surface and protect it adequately with, for example, armour rock, rock meshes, concrete covers, reinforced concrete half-shells, protective pipes, and protection made of profiles. The maximum total length of cable lines within the OWF will be up to 150 km.

An offshore substation (*OSS*) is one of the main components of an offshore wind farm. The primary function of offshore substations is to receive electricity generated by offshore wind turbines via inter array cable lines and transmit electricity to the shore via export cables (offshore and onshore), while maintaining voltage stability and minimising transmission losses. At an offshore substation, lower-voltage alternating current (e.g., 66 kV), which is not suitable for long-distance transmission, is converted into higher-voltage alternating current (e.g., 220 kV or more) to reduce transmission losses.

The substations used in the OWF Baltic East will consist of the following basic elements:

- a support structure (multi-support foundation or a large-diameter pile) used as the foundation of an offshore substation and for the transfer to the seabed of loads generated during its operation,
- above-water *(topside*) structure – located on top of the support structure, including, but not limited to, the following components:
  - transformers – used to transform the voltage level;
  - auxiliary transformers – used to provide power for station equipment;
  - grounding transformers - used to obtain an artificial zero point; in networks grounded through a resistor or compensated networks;
  - high- and medium-voltage switchgear – used for connecting, interrupting and separating electrical circuits;
  - backup generators - to provide power in case of an outage;
  - chokes – used to compensate for reactive power;
  - AC filters – used to eliminate higher harmonics.

Power, auxiliary and ground transformers use transformer oil as a cooling and insulating medium. It is assumed that the use of oil will amount to about 260 tonnes for power transformers and about 20 tonnes for auxiliary and grounding transformers. In addition, each of the two OSS stations has a diesel-powered emergency generator installed, of a volume of about 15^{m3} per OSS.

An integral part of the Baltic East OWF is the Noise Reduction System (NRS). It is used to minimise the negative impact of underwater noise during the installation of pile foundations and to comply with the permissible noise levels specified in this environmental permit. The Noise Reduction System includes the use of various types of noise reduction solutions, which together will constitute NRS. The selection of the underwater Noise Reduction System takes into account, among other things:

- piling locations, including piling locations on neighbouring investments (within a radius of 50 km),
- the work schedule, including work on other investments (piling within a radius of 50 km),
- parameters of a pile driver (type, maximum energy, and values during a cycle of operation, the frequency and number of strokes), or other technical solution used to drive a pile into the bottom,
- geotechnical parameters of sediments,
- parameters of driven piles (geometry and materials),
- seasonal variability in environmental conditions (including, periods of particular importance for animals, and parameters of underwater noise propagation).

The OWF Baltic East site is located in the Exclusive Economic Zone (EEZ) of the Republic of Poland. The OWF Baltic East site covers about 111.7 km^2 and is located off villages of Sasino and Białogóra (the Pomeranian Voivodeship) at a distance of about 22.5 km off the sea shore and at a distance from the EEZ borders of other countries of: about 59 km from the Swedish Exclusive Economic Zone (EEZ), about 82 km from the Danish EEZ, about 73 km from the Russian EEZ and about 199 km from the German EEZ (Figure No. 1). The area of the OWF BE is covered by the arrangements of the spatial development plan, established by the Decree of the Cabinet of 14 April 2021 *on the adoption of the spatial development plan of internal marine waters, territorial sea, and the exclusive economic zone in the scale of 1:200 000* (Journal of Laws 2021, item 935, as amended). For the area POM.46.E, where the OWF BE is located, the primary function of renewable energy generation (E) was established. Functions permitted in the basin are: aquaculture (A); scientific research (N); cultural heritage (D); technical infrastructure (I); mineral exploration and prospecting and mineral extraction from deposits (K); fishing (R); artificial islands and structures (W); transportation (T); and tourism, sports and recreation (S). In terms of obtaining renewable energy, the following conditions for the use of the water body were introduced:

- an area designated for the generation of energy from the wind by means of offshore wind turbines. Internal and external technical infrastructure form an integral elements of the project;
- at the time of commencement of the investment of erection of artificial islands and structures, it is required to introduce, by a decision of the territorially competent director of a maritime office, a ban on fishing and navigation in the body of water occupied by construction, along with a 500-meter safety zone around the body of water, for the duration of construction works;
- during the operation of offshore wind power plants, it is required to introduce, by decision of the territorially competent director of the maritime office, restrictions on fishing and navigation in the safety zones established for each structure and in places that pose a threat to the safety of the internal technical infrastructure.

Table No. 1. Coordinates of the knee points for the border of the OWF Baltic East by type of the development area (source: EP Report)

BORDER POINT SYMBOL	COORDINATES IN THE ETRS89 REFERENCE SYSTEM	
	Longitude	Latitude
Area A (*)		
1	17° 43' 6,000" E	55° 1' 42,750" N

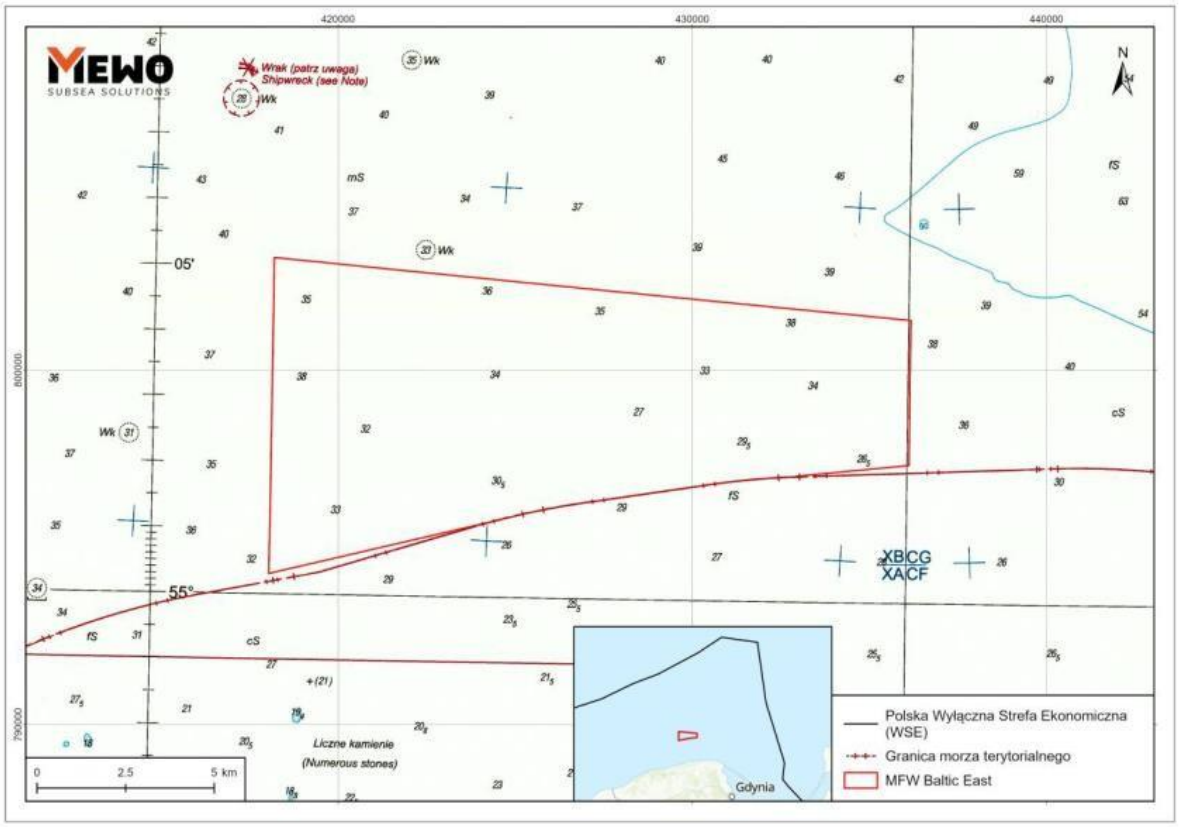
2	17° 43' 5,640" E	55° 3' 24,394" N
3	17° 43' 5,639" E	55° 5' 6,379" N
4	17° 45' 2,381" E	55° 5' 0,851" N
5	17° 45' 52,819" E	55° 4' 58,466" N
6	17° 43' 5,827" E	55° 1' 10,598" N
Area B (**)		
1	17° 43' 5,643" E	55° 0' 17,984" N
2	17° 43' 5,827" E	55° 1' 10,598" N
3	17° 45' 52,819" E	55° 4' 58,466" N
4	17° 49' 49,457" E	55° 4' 47,284" N
5	17° 46' 55,973" E	55° 0' 51,146" N
6	17° 43' 7,006" E	55° 0' 18,149" N
Area C (*)		
1	17° 51' 30,273" E	55° 4' 42,490" N
2	17° 56' 28,930" E	55° 4' 28,352" N
3	18° 0' 0,359" E	55° 4' 18,343" N
4	18° 0' 0,360" E	55° 3' 38,548" N
5	18° 0' 0,360" E	55° 2' 6,000" N
6	17° 57' 0,960" E	55° 1' 54,527" N
7	17° 56' 59,692" E	55° 1' 54,034" N
8	17° 56' 55,710" E	55° 1' 53,920" N
9	17° 56' 49,220" E	55° 1' 53,695" N
10	17° 56' 42,730" E	55° 1' 53,470" N
11	17° 56' 38,156" E	55° 1' 53,283" N
12	17° 56' 36,245" E	55° 1' 53,205" N
13	17° 56' 29,760" E	55° 1' 52,940" N
14	17° 56' 23,280" E	55° 1' 52,640" N
15	17° 56' 16,800" E	55° 1' 52,340" N
16	17° 56' 10,325" E	55° 1' 51,995" N
17	17° 56' 3,850" E	55° 1' 51,650" N
18	17° 55' 57,385" E	55° 1' 51,270" N
19	17° 55' 50,920" E	55° 1' 50,890" N
20	17° 55' 44,460" E	55° 1' 50,475" N
21	17° 55' 38,000" E	55° 1' 50,060" N
22	17° 55' 31,545" E	55° 1' 49,600" N
23	17° 55' 25,531" E	55° 1' 49,020" N
24	17° 55' 25,090" E	55° 1' 49,140" N
25	17° 55' 18,650" E	55° 1' 48,645" N
26	17° 55' 12,210" E	55° 1' 48,150" N
27	17° 55' 5,775" E	55° 1' 47,615" N
28	17° 55' 4,173" E	55° 1' 47,482" N
29	17° 54' 59,340" E	55° 1' 47,080" N
30	17° 54' 58,112" E	55° 1' 46,971" N
31	17° 54' 52,915" E	55° 1' 46,510" N
32	17° 54' 46,490" E	55° 1' 45,940" N
33	17° 54' 35,801" E	55° 1' 44,953" N

34	17° 54' 25,113" E	55° 1' 43,965" N
35	17° 54' 14,424" E	55° 1' 42,978" N
36	17° 54' 3,736" E	55° 1' 41,990" N
37	17° 53' 53,048" E	55° 1' 41,002" N
38	17° 53' 42,360" E	55° 1' 40,016" N
39	17° 53' 31,672" E	55° 1' 39,022" N
40	17° 53' 20,985" E	55° 1' 38,036" N
41	17° 53' 10,297" E	55° 1' 37,046" N
42	17° 52' 59,610" E	55° 1' 36,057" N
43	17° 52' 48,923" E	55° 1' 35,067" N
44	17° 52' 38,235" E	55° 1' 34,077" N
45	17° 52' 27,549" E	55° 1' 33,087" N
46	17° 52' 16,862" E	55° 1' 32,096" N
47	17° 52' 6,175" E	55° 1' 31,106" N
48	17° 51' 55,489" E	55° 1' 30,115" N
49	17° 51' 44,802" E	55° 1' 29,123" N
50	17° 51' 34,116" E	55° 1' 28,132" N
51	17° 51' 23,430" E	55° 1' 27,140" N
52	17° 51' 17,158" E	55° 1' 26,548" N
53	17° 51' 16,230" E	55° 1' 26,460" N
54	17° 51' 9,825" E	55° 1' 25,825" N
55	17° 51' 3,420" E	55° 1' 25,190" N
56	17° 50' 57,025" E	55° 1' 24,515" N
57	17° 50' 50,630" E	55° 1' 23,840" N
58	17° 50' 44,250" E	55° 1' 23,130" N
59	17° 50' 42,833" E	55° 1' 22,972" N
60	17° 50' 37,870" E	55° 1' 22,420" N
61	17° 50' 32,824" E	55° 1' 21,821" N
62	17° 50' 31,505" E	55° 1' 21,665" N
63	17° 50' 25,140" E	55° 1' 20,910" N
64	17° 50' 18,785" E	55° 1' 20,125" N
65	17° 50' 12,430" E	55° 1' 19,340" N
66	17° 50' 6,095" E	55° 1' 18,510" N
67	17° 49' 59,760" E	55° 1' 17,680" N
68	17° 49' 53,435" E	55° 1' 16,815" N
69	17° 49' 47,110" E	55° 1' 15,950" N
70	17° 49' 40,805" E	55° 1' 15,045" N
71	17° 49' 34,500" E	55° 1' 14,140" N
72	17° 49' 28,210" E	55° 1' 13,200" N
73	17° 49' 21,920" E	55° 1' 12,260" N
74	17° 49' 19,920" E	55° 1' 11,949" N
75	17° 49' 15,650" E	55° 1' 11,285" N
76	17° 49' 10,889" E	55° 1' 10,545" N
77	17° 49' 9,380" E	55° 1' 10,310" N
78	17° 46' 55,973" E	55° 0' 51,146" N
79	17° 49' 49,441" E	55° 4' 47,263" N

80	17° 49' 49,457" E	55° 4' 47,284" N

*Development area A and C – areas where, apart from the linear infrastructure, other elements of the OWF (i.e. wind turbines, offshore substations, etc.) will be installed;
**Development area B - on/at the bottom of which only linear infrastructure (cables) will be installed;

Figure No. 1 - Location of the planned OWF Baltic East project (source: EP report)



The applicant provides for execution of the project in a continuous process, as well as in stages. It is assumed that the construction works themselves will last for two years, with some phases overlapping; this time does not include possible interruptions in the work. The schedule for the project execution phase assumes for the following components: preliminary and preparatory work; and construction/installation work.

The construction phase must be preceded by the preparation of the seabed prior to installation of foundations or support structures for wind turbines and OSS, and laying of inter array cables. The type of preparatory work will be determined by the geological conditions at the foundation sites, cable laying, and the type of foundation used and the available technology. The applicant allows preparatory work to be carried out sequentially, or simultaneously. The operation phase of the OWF Baltic East will last a maximum of 55 years. After the end of operation, the decommissioning of the OWF Baltic East is assumed, the expected duration of this work will be about two years; this period does not include possible interruptions of the work, analogous to the execution phase.

Regional Director for Environmental Protection in Gdańsk

Anna Tchórzewska
/signed electronically/