



**REGIONAL DIRECTOR  
FOR ENVIRONMENTAL  
PROTECTION IN GDAŃSK**

RDOŚ-Gd-WOO.420.3.2021.KSZ.14  
zpo

Gdańsk, October 26, 2021

**DECISION**

Pursuant to Article 104 and Article 154 § 2, Article 155 of the Act of June 14, 1960, Code of Administrative Procedure (consolidated text, Journal of Laws of 2021, item 735, as amended), and Article 75 section 1 point 1 letter c), in conjunction with Article 71 section 2 point 1 and Article 87 of the Act of October 3, 2008, on access to information on the environment and its protection, public participation in environmental protection and on environmental impact assessments (consolidated text, Journal of Laws of 2021, item 247, as amended) and § 2 section 1 point 5 of the Regulation of the Council of Ministers of September 10, 2019, on projects that may have a significant impact on the environment (consolidated text, Journal of Laws of 2019, item 1839), having examined the application without number of January 19, 2021 of MFW Bałtyk II Spółka z o.o. with its registered office in Warsaw, acting through the representative Ms. Marta Porzuczek, for the change of the decision on environmental conditions, ref. No.: RDOŚ-Gd-WOO.4211.26.2015.KSZ.20 of March 27, 2017, issued by the Regional Director for Environmental Protection in Gdańsk, for the project entitled “Construction of the Polenergia Bałtyk II Offshore Wind Farm” – current name of the project:

**“Construction of the Bałtyk II OWF Offshore Wind Farm”**

taking into account the data contained in:

- environmental impact assessment report for the change of the decision on environmental conditions, Bałtyk II OWF Offshore Wind Farm prepared by ODJT Kancelaria Radców Prawnych Otawski, Dziura, Jędrzejewski i Troszyński Sp. p., Warsaw, January 2021;
- opinion of the State Border Sanitary Inspector in Gdynia, ref. No.: SE.ZNS.80.4912.3.21 of March 2, 2021;
- approval of the Director of the Maritime Office in Gdynia, ref. No.: INZ.8103.8.3.2021.AD of June 28, 2021, corrected by the decision ref. No.: INZ.8103.8.4.2021.AD of July 21, 2021;

having completed the environmental impact assessment for the project,

**I hereby decide to**

- I. change the decision on environmental conditions, ref. No.: RDOŚ-Gd-WOO.4211.26.2015.KSZ.20 of March 27, 2017 (hereinafter referred to as the “Environmental Decision”), issued by the Regional Director for Environmental Protection in Gdańsk for the project entitled: “Construction of the Polenergia Bałtyk II Offshore Wind Farm” – current name of the project: **“Construction of the Bałtyk II OWF Offshore Wind Farm”**, as follows:

**1) point I.1. entitled Type and location of project implementation, reading as follows:**

*The subject of the project is the construction of the Polenergia Bałtyk II offshore wind farm with a power output of 1200 MW. The project will be located in the southern part of the Baltic Sea, in the Polish Exclusive Economic Zone ("EEZ"), approximately 37 km north of the coastline, at the level of Smołdzino Borough (Pomeranian Voivodship). The total area of the Polenergia Bałtyk II OWF is about 122 km<sup>2</sup>. The geographical coordinates of the project are presented in the table below:*

*Table 1. Geographical coordinates of the project*

Point	WGS 84 DD°MM'SS.sss"	
	Latitude	Longitude
A	55°00'50.524"	16°58'30.687"
B	55°02'06.260"	16°51'35.533"
C	55°02'07.171"	16°50'52.962"
D	55°06'08.711"	16°46'23.733"
E	55°06'11.836"	16°46'19.179"
F	55°07'06.218"	16°44'36.995"
G	55°07'25.002"	16°47'08.284"
H	55°07'54.264"	16°50'28.666"
I	55°08'05.318"	16°53'34.432"
J	55°08'17.668"	16°55'19.642"
K	55°08'12.077"	16°56'59.967"

*The Polenergia Bałtyk II OWF will consist of:*

- 1) up to 120 wind turbines ("WT"), the basic components of which are: foundation, tower, nacelle with a power generator, and rotor,*
- 2) up to 6 internal offshore substations ("OS"),*
- 3) up to 200 km of submarine power and telecommunication cables connecting:*
  - a. individual WT together (into cable circuits),*
  - b. WT groups with internal offshore substations,*
  - c. internal offshore substations with one another,*
  - d. internal OSs with an external (being a part of another project) offshore substation (optional).*

*The Investor holds a permit for erection and use of artificial islands, structures and devices in the Polish maritime areas (PSZW) for the Bałtyk Środkowy II OWF project – decision of the Minister of Transport, Construction and Maritime Economy No. MFW/2/2013 of January 15, 2013, amended by decision No. MFW/2a/13 of April 29, 2013.*

*In the course of the administrative procedure aimed at the issuance of this decision on environmental conditions, the name of the project in question was changed from "Bałtyk Środkowy II" to "Polenergia Bałtyk II". Parameters, location and the entire submitted documentation for the planned offshore wind farm remain unchanged.*

*The area intended for implementation of the Polenergia Bałtyk II OWF is, according to the PSZW permit, about 122 km<sup>2</sup>. Components of the OWF may not be located in the buffer of 500 m from the internal border of the area intended for the farm construction. All structural components of the farm have to be located within the boundaries of the specified area, so it determines the maximum external range of the rotor, which additionally limits the area where foundations can be laid. The size of this limitation depends on the rotor*

radius. This means that, according to the PSZW permit, the area where the farm facilities may be located is the area specified in the PSZW permit, reduced by the buffer zone of the rotor width in a given option of the project ("development area").

Moreover, as a result of the analysis of potential impacts of the project on the environment, additional restrictions were made on the use of the development area according to the PSZW permit:

- 1) due to the possibility of the negative impact of the project on seabirds, the southern part of the area, directly adjacent to the Słupsk Bank, of approx. 16.59 km<sup>2</sup> in the option selected for implementation and approx. 16.89 km<sup>2</sup> in the reasonable alternative option, was excluded from the construction plans, while maintaining the possibility of including other components of the farm, e.g. cables or substations,
- 2) due to the necessity to protect two shipwrecks discovered within the project area, a further 0.3–1 km<sup>2</sup> of its surface will be excluded from the construction plans.

Moreover, the provisions of the PSZW permit indicate that the building permit design have to include the layout of internal structures and cables guaranteeing that none of the planned structures or cables is located closer than 2 nautical miles from the existing navigation routes.

Considering all of the above, the report on the impact of the said project on the environment (hereinafter referred to as EIA Report – Environmental Impact Assessment Report) assumes that:

- the total area of the farm is approx. 122 km<sup>2</sup>, but:
- buffer area No. 1 (500 m) covers approx. 23 km<sup>2</sup>,
- buffer area No. 2 (500 m + rotor radius) covers from approx. 26.5 km<sup>2</sup> (500 m + 100 m in the alternative option) to approx. 27.5 km<sup>2</sup> (500 m + 125 m in the option selected for implementation), so:
- the area actually possible to be built up is approx. 94–95 km<sup>2</sup>, of which the area for the wind turbine foundation is approx. 77–78 km<sup>2</sup> (depending on the option).

At this stage of the project, it is not possible to present the final layout of the wind turbines. It will be prepared at the stage of the building permit design.

The wind turbines will be laid out with the objective to obtain the maximum possible energy yield, particularly considering such factors as:

- data on the seabed structure from geotechnical surveys,
- wind speed test results (available after wind measurements),
- dimensions of the selected wind farm model and type of foundations,
- the need to avoid the "wake effect".

The Polenergia Bałtyk II OWF does not include the infrastructure for transmitting electricity generated by the farm to the shore. A separate project, the Offshore Transmission Infrastructure ("OTI"), will serve this purpose. It is subject to a separate procedure for the issuance of a decision on environmental conditions. This project will consist in construction and operation of the electricity transmission grid between onshore substations, being components of the National Power System ("NPS") and offshore substations, constituting elements technologically related to offshore wind farms.

The WT parameters will depend on the selected capacity (the higher the power output,

the higher the tower and the longer the turbine blade span is required). The basic boundary parameters of the wind turbines planned for installation at the Polenergia Bałtyk II OWF are presented in the table below.

Table 2. Basic boundary technical parameters of wind turbines according to the option selected for implementation

Parameter	Option selected for implementation
Maximum total height of the wind turbine a.s.l. [m]	300 m
Minimum clearance between the lower wing position and the sea surface (defined as the mean sea level) [m]	20 m
Maximum rotor diameter [m]	250 m
Maximum zone for a single rotor [m <sup>2</sup> ]	49,087 m <sup>2</sup>

One or more wind turbine models can be installed on the farm.

The arrangement of wind turbines is not known yet. The specific locations will be determined after the seabed geotechnical surveys and wind speed measurements to be carried out at the building permit design stage. Nevertheless, it was decided to reduce the number of wind turbines and their area, while maintaining the maximum power output of the farm by using turbines with a higher unit capacity, which requires a certain increase in their structure. This resulted in the most environmentally-friendly option. It assumes the construction of up to 120 wind turbines with a maximum rotor diameter of up to 250 m, scattered over an area of approx. 77–78 km<sup>2</sup>. Approximately 16.59 km<sup>2</sup> of the farm area, located in the immediate vicinity of the Słupsk Bank Natura 2000 site, has been excluded from the wind farm construction plans (the remaining components of the farm infrastructure – offshore substations, cables, etc. – will be allowed in this area).

The wind turbine towers will be constructed of steel, concrete or reinforced concrete rings, joined together. The basic structural material of the turbine blades will be plastics (fiberglass).

The wind turbine towers will be mounted on foundations which, in turn, will be placed on the seabed. Currently, it is possible to use 4 types of foundations: monopiles, gravity-base foundations, jacket foundations (truss foundations) and tripod foundations (tripods). The towers will be connected to the foundation with a steel sleeve, known as the transition piece, protruding approx. 10 m above the water surface and reaching approx. 10 m below the water surface.

A steel monopile is made of steel, welded cylinders. A monopile usually protrudes 5 to 12.5 m above the sea surface (defined as the mean sea level) and is connected to the tower with a transition piece/connector of varying length, mounted outside the monopile (the most common solution) or inside it. At the connector, there are also additional elements, such as the place of anchoring of service vessels, ladders, intermediate platform, working platform, as well as elements of power infrastructure (flexible cable shields, so-called J-tubes, and power and telecommunication cables). Monopiles are up to 120 m long. They are currently the most popular type of foundations used at the OWF. Reinforced concrete monopiles have also appeared on the market.

A jacket foundation is made of four steel legs connected and reinforced with

brackets made of cross-mounted pipes. In its upper part, there is a connector (transition piece), which enables the connection of the foundation with the wind turbine tower. These foundations are usually fixed to the seabed using 4 piles with a diameter of 1.8–3 m and a length of up to 70 m. In the above-surface part of the jacket foundation, there are also additional elements such as the place of anchoring of service vessels, ladder, intermediate platform, working platform as well as elements of power infrastructure (J-tubes, cables).

The structure of the tripod foundation consists of 3 legs supporting one central leg which forms the basis for the connector and the tower. The tripod legs are equipped with sleeves for pile fixing. In the bottom part of each leg of the foundation, there are also special mats (mud mats) to keep the structure in the right position on the seabed and prevent the structure from settling before it is fixed to the seabed with 3 piles with a diameter of up to 2.5 m and a length of up to 60 m. There are also additional elements on the foundation, such as J-tubes, places of anchoring of boats, intermediate platform, ladder, etc.

A gravity-base foundation is a structure made of reinforced concrete. It consists of a main body and a base. The base can be conical or flat (in the shape of an octagon, hexagon, circle, etc.) and it will have a maximum diameter of 50 m. The gravity-base foundation is filled with ballast. During its installation, cement mortar is injected below the base of the foundation in order to ensure constant contact between the foundation and the bearing surface.

For all types of foundations (especially for gravity-base and monopile foundations, less often for other types of foundations) a protective layer against washing out can be applied. It is usually a layer of stones with a width of a few to several meters, laid around the foundation.

Wind turbines will be connected by means of a grid of 33 kV or 66 kV power cables to the substations. It is planned to lay up to 200 km of cables inside the farm. Their length will depend on the number of turbines and their layout inside the farm. Cables will be buried in the seabed up to a depth of 3 m. If the technical conditions do not allow for them to be buried, they will be covered with a layer of stones or other specially adapted loads.

Electricity generated by the wind turbines belonging to the Polenergia Bałtyk II OWF will be prepared on the farm for further transmission. For this purpose, a maximum of 6 internal offshore substations ("OS") will be built within the boundaries of the farm. Construction of substations allows for the reduction of the number of export cables carrying electricity from the wind farm to the shore, and significantly reduces transmission losses.

The following types of the OS can be built within the framework of the Polenergia Bałtyk II OWF:

- 1) transformer – receiving alternating current (AC) from wind turbines and then converting its voltage (33 or 66 kV) to a correspondingly higher level, enabling its further transmission in the alternating current technology;
- 2) converter (AC/DC) – converting alternating current (AC) into direct current (DC), enabling its further transmission in the direct current technology;
- 3) combining both these functions.

At the present stage of the project, no decision has yet been taken on whether to transmit electricity to the shore in the direct current or alternating current technology.

*All internal OSs will be located within the borders of the Polenergia Bałtyk II OWF. At the present stage of the project, their exact location is unknown.*

*Infrastructure for the transmission of electricity to the shore (i.e. offshore and onshore export cables, onshore substation and possible additional OSs) will form a separate, independent project to construct the offshore transmission infrastructure ("OTI"), subject to a separate environmental impact assessment procedure.*

*AC offshore transformer station will be built on a platform based on monopile, jacket, tripod or gravity-base foundations. The necessary power and staff welfare infrastructure will be installed on the working platform. A typical capacity of the station is 150 to 350 MW. Typical parameters of the station with the above-mentioned capacity are 30 x 30 m, 15–20 m in height, and weight of 1000–1500 Mg.*

*Typical OS AC equipment consists of the following components: an indoor switchgear, power transformers, MV and HV switchgears, reactive power compensation reactors and capacitors, transformers or power generators to provide backup power, earthing system, control panel of internal systems, low-voltage distribution equipment for auxiliary equipment and protection, control and instrumentation systems, UPS uninterruptible power supply, SCADA equipment, service staff accommodation, rest and welfare rooms, material storage, workshop, boat landing, helideck, occupational health and safety as well as emergency equipment including Diesel generators, emergency lighting, lifeboats. The substation can also be used as a place of installation of equipment for environmental measurements and monitoring, e.g. meteorological data or wave information.*

*Offshore AC/DC converter station will be built as an additional station, in addition to the transformer stations described above, if the Investor decides to use DC transmission technology. The station can be constructed as a separate facility or as an additional element of an AC station. The AC/DC converter station will be built on a platform based on monopile, jacket, tripod or gravity-base foundations. The necessary power infrastructure, in particular equipment for converting alternating current into direct current, will be installed on the working platform. The main components of the converter station include: converter transformers, converter thyristors, harmonic filters, capacitor batteries, reactive power compensation reactors, and a cooling system. A typical transmission capacity of the station is 600 to 900 MW. The working platform will be 70–100 m long, 40–60 m wide and up to 40 m high.*

*Implementation of the Polenergia Bałtyk II OWF project is planned in stages, which results primarily from the connection agreement concluded by the Investor and enabling the connection of 600 MW to the National Power System by 2025 in the area of the Polenergia Bałtyk II OWF. However, after 2025 it is possible to obtain additional connection capacity and extension of the Polenergia Bałtyk II OWF. However, it depends on the wind measurement campaign, geotechnical surveys of the seabed, and obtaining financing for connection projects. As the offshore wind energy industry is developing very dynamically, and new models of wind turbines and other equipment appear every year, so the project may use models of turbines that are not currently available on the market. For the above reasons, the environmental impact assessment was carried out on the basis of the envelope of technical parameters, which defined the worst case scenarios of environmental impacts of particular technological solutions. Also, the final technical parameters of every individual piece of farm equipment cannot be specified at this stage of issuing the decision on environmental conditions, but only upon issuing the building*

*permit. However, the authority responsible for issuing the building permit shall be bound by the provisions of this decision on environmental conditions.*

**to be replaced with:**

The subject of the project is the construction of the **Bałtyk II OWF** with a power output of 1200 MW. The project will be located in the southern part of the Baltic Sea, in the Polish Exclusive Economic Zone ("EEZ"), approximately 37 km north of the coastline, at the level of Smołdzino Borough (Pomeranian Voivodship). The total area of the **Bałtyk II OWF** is approx. 122 km<sup>2</sup>. The geographical coordinates of the project are presented in the table below:

Table 1. Geographical coordinates of the project

Point	WGS 84 DD°MM'SS.sss"	
	Latitude	Longitude
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I	55°08'05.318"	16°53'34.432"
J	55°08'17.668"	16°55'19.642"
K	55°08'12.077"	16°56'59.967"

**The Bałtyk II OWF** will consist of:

- 4) up to **60** wind turbines ("WT"), the basic components of which are: foundation, tower, nacelle with a generator, and rotor,
- 5) **1 internal offshore** substation ("OS"),
- 6) up to 200 km of submarine power and telecommunication cables connecting:
  - a. individual WT together (into cable circuits),
  - b. WT groups with an internal offshore substation
  - c. an internal OS with an external (being a part of another project) offshore substation (optional).

The Investor holds a permit for erection and use of artificial islands, structures and devices in the Polish maritime areas (PSZW) for the Bałtyk Środkowy II OWF project – decision of the Minister of Transport, Construction and Maritime Economy No. MFW/2/2013 of January 15, 2013, amended by decision No. MFW/2a/13 of April 29, 2013.

**Together with submission of the application for the change of the environmental decision on January 19, 2021, the Investor informed that due to corporate reasons the name of the project had been changed to "Construction of the Bałtyk II OWF Offshore Wind Farm".**

The area intended for implementation of the **Bałtyk II OWF** is, according to the PSZW, approx. 122 km<sup>2</sup>. Components of the OWF may not be located in the buffer of 500 m from the internal border of the area intended for the farm construction. All structural components of the farm have to be located within the boundaries of the specified area, so

it determines the maximum external range of the rotor, which additionally limits the area where foundations can be laid. The size of this limitation depends on the rotor radius. This means that the area where, according to the PSZW, the foundations of wind turbines can be located is the area determined in the PSZW, reduced by the buffer area with a total width of 500 m and rotor radius length in a given project option (the so-called wind turbine development area).

Moreover, as a result of the analysis of potential impacts of the project on the environment, additional restrictions were made on the use of the development area according to the PSZW permit:

- 1) due to the possibility of generation of a negative impact of the project on seabirds, the area to be developed with wind turbines, while maintaining the possibility of construction of other farm elements, excludes the southern part of the area, adjacent directly to the Słupsk Bank, with the area of **approx. 15.6 km<sup>2</sup> (depending on the final rotor diameter of selected wind turbines, while maintaining the condition specified in point I.3.7 of the Environmental Decision)**,
- 2) **in order to minimize cumulative impacts on birds, the area to be developed with Bałtyk II OWF elements excludes the north-western corner of the area intended for its implementation, which allowed for widening the undeveloped water area located between the said farm and the FEW Baltic II Offshore Wind Farm.**

Moreover, the provisions of the PSZW permit indicate that the building permit design have to include the layout of internal structures and cables guaranteeing that none of the planned structures or cables is located closer than 2 nautical miles from the existing navigation routes.

Considering all of the above, the report on the impact of the said project on the environment (hereinafter referred to as EIA Report – Environmental Impact Assessment Report) assumes that:

- the total area of the farm is approx. 122 km<sup>2</sup>, but:
- the area actually available for development is approx. **98.9 km<sup>2</sup>**, including the area where the wind turbines can be founded being **approx. 83.2 km<sup>2</sup> (depending on the final rotor diameter of selected wind turbines, while maintaining the condition specified in point I.3.7 of the Environmental Decision)**.

**The wind turbines will be arranged so as to maintain the minimum distances between individual wind turbines of 1200 m x 800 m. The substation will be located in the central part of the water area intended for development.**

The wind turbines will be laid out with the objective to obtain the maximum possible energy yield, particularly considering such factors as:

- data on the seabed structure from geotechnical surveys,
- wind speed test results (available after wind measurements),
- dimensions of the selected wind farm model and type of foundations,
- the need to avoid the "wake effect".

The **Bałtyk II OWF** does not include the infrastructure for transmitting electricity generated by the farm to the shore. A separate project, the Offshore Transmission Infrastructure



(“OTI”), will serve this purpose. It is subject to a separate procedure for the issuance of a decision on environmental conditions. This project will consist in construction and operation of the electricity transmission grid between onshore substations, being components of the National Power System (“NPS”) and offshore substations, constituting elements technologically related to offshore wind farms.

The WT parameters will depend on the selected capacity (the higher the power output, the higher the tower and the longer the turbine blade span is required). The basic boundary parameters of the wind turbines planned for installation at the **Bałyk II OWF** are presented in the table below.

Table 2. Basic boundary technical parameters of wind turbines according to the option selected for implementation

Parameter	Option selected for implementation
Maximum total height of the wind turbine a.s.l. [m]	300 m
Minimum clearance between the lower wing position and the sea surface (defined as the mean sea level) [m]	20 m
Maximum rotor diameter [m]	250 m
Maximum zone for a single rotor [m <sup>2</sup> ]	<b>49,087.4 m<sup>2</sup></b>

One or more wind turbine models can be installed on the farm.

The wind turbine towers will be constructed of steel, concrete or reinforced concrete rings, joined together. The basic structural material of the turbine blades will be plastics (fiberglass).

The wind turbine towers will be mounted on foundations which, in turn, will be placed on the seabed. Currently, it is planned to use **2 types of foundations: monopile or jacket foundations**. The towers will be connected to the foundation with a steel sleeve, known as the transition piece, protruding approx. 10 m above the water surface and reaching approx. 10 m below the water surface. For the foundation for the substation, it is possible to use one of four types of foundations: monopiles, gravity-base foundations, jacket or tripod foundations.

A steel monopile is made of steel, welded cylinders. A monopile usually protrudes 5 to 12.5 m above the sea surface (defined as the mean sea level) and is connected to the tower with a transition piece/connector of varying length, mounted outside the monopile (the most common solution) or inside it. At the connector, there are also additional elements, such as the place of anchoring of service vessels, ladders, intermediate platform, working platform, as well as elements of power infrastructure (flexible cable shields, so-called J-tubes, and power and telecommunication cables). Monopiles are up to 120 m long. They are currently the most popular type of foundations used at the OWF. Reinforced concrete monopiles have also appeared on the market.

A jacket foundation is made of four steel legs connected and reinforced with brackets made of cross-mounted pipes. In its upper part, there is a connector (transition piece), which enables the connection of the foundation with the wind turbine tower. These foundations are usually fixed to the seabed using 4 piles with a diameter of 1.8–3 m and a length of up to 70 m. In the above-surface part of the jacket foundation, there are also additional elements such as the place of anchoring of service vessels, ladder, intermediate platform, working platform as well as elements of power infrastructure (J-tubes, cables).

The structure of the tripod foundation consists of 3 legs supporting one central leg which forms the basis for the connector and the tower. The tripod legs are equipped with sleeves for pile fixing. In the bottom part of each leg of the foundation, there are also special mats (mud mats) to keep the structure in the right position on the seabed and prevent the structure from settling before it is fixed to the seabed with 3 piles with a diameter of up to 2.5 m and a length of up to 60 m. There are also additional elements on the foundation, such as J-tubes, places of anchoring of boats, intermediate platform, ladder, etc.

A gravity-base foundation is a structure made of reinforced concrete. It consists of a main body and a base. The base can be conical or flat (in the shape of an octagon, hexagon, circle, etc.) and it will have a maximum diameter of 50 m. The gravity-base foundation is filled with ballast. During its installation, cement mortar is injected below the base of the foundation in order to ensure constant contact between the foundation and the bearing surface.

For all types of foundations (especially for gravity-base and monopile foundations, less often for other types of foundations) a protective layer against washing out can be applied. It is usually a layer of stones with a width of a few to several meters, laid around the foundation.

Wind turbines will be connected by means of a grid of 33 kV or 66 kV power cables to the substation. It is planned to lay up to 200 km of cables inside the farm. Their length will depend on the number of turbines and their layout inside the farm. Cables will be buried in the seabed up to a depth of 3 m. If the technical conditions do not allow for their burying, they will be **provided with permanent protections, in accordance with § 45 section 7 point 4 letter b of the Regulation of the Council of Ministers of April 14, 2021 on the adoption of a spatial development plan for internal sea waters, territorial sea and exclusive economic zone at a scale of 1:200,000 (Journal of Laws, item 935) (Appendix No. 2 to the Regulation – Detailed Decisions).**

Electricity generated by the wind turbines belonging to the **Bałtyk II OWF** will be prepared on the farm for further transmission. For this purpose, **1 internal offshore substation (OS)** will be built within the boundaries of the farm. The construction of the substation will allow for the reduction of the number of export cables carrying electricity from the wind farm to the shore, and will significantly reduce transmission losses.

The following types of the OS can be built within the framework of the **Bałtyk II OWF**:

- 1) transformer – receiving alternating current (AC) from wind turbines and then converting its voltage (33 or 66 kV) to a correspondingly higher level, enabling its further transmission in the alternating current technology;
- 2) converter (AC/DC) – converting alternating current (AC) into direct current (DC), enabling its further transmission in the direct current technology;
- 3) combining both these functions.

At the present stage of the project, no decision has yet been taken on whether to transmit electricity to the shore in the direct current or alternating current technology.

Infrastructure for the transmission of electricity to the shore (i.e. offshore and onshore export cables, onshore substation and possible additional OSs) will form a separate, independent project to construct the offshore transmission infrastructure ("OTI"),

subject to a separate environmental impact assessment procedure.

AC offshore transformer station will be built on a platform based on monopile, jacket, tripod or gravity-base foundations. The necessary power and staff welfare infrastructure will be installed on the working platform.

Typical OS AC equipment consists of the following components: an indoor switchgear, power transformers, MV and HV switchgears, reactive power compensation reactors and capacitors, transformers or power generators to provide backup power, earthing system, control panel of internal systems, low-voltage distribution equipment for auxiliary equipment and protection, control and instrumentation systems, UPS uninterruptible power supply, SCADA equipment, service staff accommodation, rest and welfare rooms, material storage, workshop, boat landing, helideck, occupational health and safety as well as emergency equipment including Diesel generators, emergency lighting, lifeboats. The substation can also be used as a place of installation of equipment for environmental measurements and monitoring, e.g. meteorological data or wave information.

Offshore AC/DC converter station will be built as an additional station, in addition to the transformer stations described above, if the Investor decides to use DC transmission technology. The station can be constructed as a separate facility or as an additional element of an AC station. The AC/DC converter station will be built on a platform based on monopile, jacket, tripod or gravity-base foundations. The necessary power infrastructure, in particular equipment for converting alternating current into direct current, will be installed on the working platform. The main components of the converter station include: converter transformers, converter thyristors, harmonic filters, capacitor batteries, reactive power compensation reactors, and a cooling system.

The **Baltyk II OWF** project may be implemented in stages, of which the first stage will cover the power output between 600 and 720 MW. The first stage is planned for implementation in the years 2023–2026. Implementation of subsequent stages will depend on the investment decisions made based on the current market conditions. The total construction time for the first stage will be up to 3.5 years. The time of construction of subsequent stages will depend on the decision regarding their size (number of wind turbines) and available technologies and equipment for the construction of offshore wind farms.

As the offshore wind energy industry is developing very dynamically, and new models of wind turbines and other equipment appear every year, so the project may use models of turbines that are not currently available on the market. For the above reasons, the environmental impact assessment was carried out on the basis of the envelope of technical parameters, which defined the worst case scenarios of environmental impacts of particular technological solutions. Also, the final technical parameters of every individual piece of farm equipment cannot be specified at this stage of issuing the decision on environmental conditions, but only upon issuing the building permit. However, the authority responsible for issuing the building permit shall be bound by the provisions of this decision on environmental conditions.

**2) in point I.3. Requirements regarding environmental protection necessary to be taken into account in the building permit design:**

**a) point I.3.1.,** reading as follows: *design up to 120 wind turbines with a minimum*

*clearance between the lower position of the rotor wing and the sea surface (mean sea level) of no less than 20 m, rotor diameter of no more than 250 m, and total structure height of no more than 300 m above the sea level;*

**to be replaced with:**

design up to **60** wind turbines with a minimum clearance between the lower position of the rotor wing and the sea surface (mean sea level) of no less than 20 m, rotor diameter of no more than 250 m, and total structure height of no more than 300 m above the sea level;

**b) pkt I.3.2.,** reading as follows: *design up to 6 internal offshore substations and up to 200 km of internal sections of power and telecommunication cables;*

**to be replaced with:**

design no more than **1 internal offshore substation** and up to 200 km of internal sections of power and telecommunication cables;

**c) point I.3.3.,** reading as follows: *maximum density of the wind turbines shall be assumed at the level of 1.56 pcs./km<sup>2</sup>;*

**to be replaced with:**

**maintain minimum distances between individual wind turbines of 1200 m x 800 m;**

**d) point I.3.4.,** reading as follows: *maximum zone for a single rotor shall be assumed at the level of no more than 49,087 m<sup>2</sup> and a total maximum zone for all rotors of no more than 5,890,440 m<sup>2</sup>;*

**to be replaced with:**

maximum zone for a single rotor shall be assumed at the level of no more than **49,087.4 m<sup>2</sup>** and a total maximum zone for all rotors of no more than **2,945,244 m<sup>2</sup>;**

**e) point I.3.5.,** reading as follows: *in the design, the possibility of using four types of foundations shall be assumed: monopiles, gravity-base foundations, jacket or tripod foundations. The selected type of foundations should be justified in detail;*

**to be replaced with:**

in the design, the possibility of using **two types of foundations shall be assumed: monopiles or jacket foundations**, whereas for the foundation for the substation it is possible to use one of four types of foundations: **monopiles, gravity-base foundations, jacket or tripod foundations**. The selected type of foundations should be justified in detail;

**f) point I.3.6.,** reading as follows: *the maximum seabed area occupied by one foundation (without any possible washout protection layer) may not exceed 1964 m<sup>2</sup>, and the total maximum seabed area occupied by all foundations – may not exceed 247,464 m<sup>2</sup>;*

**to be replaced with:**

the maximum seabed area occupied by one foundation (without any possible washout protection layer), **for a wind turbine may not exceed 78.5 m<sup>2</sup> and for an offshore substation may not exceed 1963.5 m<sup>2</sup>**, and the total maximum seabed area occupied by all foundations may not exceed **6673.5 m<sup>2</sup>;**

3) in point II.1. entitled: **To impose on the Applicant the following obligations: Obligations of the applicant in the scope of actions minimizing and mitigating negative environmental impact:**

- a) **point II.1.A (...) related to the need to reduce the noise generated during piling works**, reading as follows: design and apply technical solutions in the form of air curtain or other technology, minimizing the impact of underwater noise on fish and marine mammals, guaranteeing such reduction of its level so that at the boundary of the nearest Natura 2000 site, protecting marine mammals, i.e. Słowińska Refuge PLH220023, is not higher than 171 dB re 1  $\mu$ Pa<sup>2</sup> s (SEL, in water). In the event that the noise measurements result in exceeding the above-mentioned threshold, the pile driving should be interrupted and additional minimizing measures should be taken to achieve the above-mentioned limit noise level. Incidental exceeding of this level should be reported to the Regional Director for Environmental Protection in Gdańsk within 7 days from its occurrence. In the notification, it is essential to indicate the minimizing measures taken by the Applicant and their effectiveness should be confirmed;

**to be replaced with:**

**during the driving of piles fixing the wind turbines to the seabed, measures limiting the noise emission should be applied, e.g. in the form of an air/bubble curtain or another technology ensuring that the noise level causing the temporary hearing threshold shift (TTS) is not exceeded: not higher than 140 dB re 1  $\mu$ Pa<sup>2</sup>s SELcum and weighted with weighting function for cetaceans with high sensitivity to very high frequency noise (VHF) for porpoise and not higher than 170 dB re 1  $\mu$ Pa<sup>2</sup>s SELcum and weighted with weighting function for earless seals (PCW) for seals at the boundary of the Natura 2000 site: Słowińska Refuge PLH220023. In the event that the noise measurements result in exceeding the above-mentioned threshold, the pile driving should be interrupted and additional minimizing measures should be taken to achieve the above-mentioned limit noise level. The Regional Director for Environmental Protection in Gdańsk shall be immediately informed about such situation and further measures applied, not later than 7 days after the occurrence of the event;**

- b) **point II.1.B. (...) related to the need to limit the impact on birds**, reading as follows: *allow construction of up to 120 wind turbines with a minimum clearance between the lower position of the rotor wing and the sea surface (mean sea level) of 20 m, rotor diameter of no more than 250 m, and total structure height of no more than 300 m above sea level;*

**to be replaced with:**

allow construction of up to 60 wind turbines with a minimum clearance between the lower position of the rotor wing and the sea surface (mean sea level) of 20 m, rotor diameter of no more than 250 m, and total structure height of no more than 300 m above sea level.

- c) **in point II.1.B. (...) related to the need to limit the impact on birds**, after letter f) letter g) shall be added reading as follows:

**g) leave the possibility of locating the elements of the farm in the north-western boundary of the water region intended for the farm construction; assume the area approved for development in accordance with the coordinates presented in the table below:**

**Table 3. Geographical coordinates of the boundaries of the Bałtyk II OWF development area**

Point	ETRS89_Poland_CS92	
	Longitude	Latitude
1	368,896.38	809,641.19
2	370,002.87	797,126.03
3	363,435.88	799,428.80
4	363,304.37	799,455.82
5	362,811.20	799,489.37
6	358,406.13	806,876.17
7	358,370.43	806,928.25
8	358,292.85	807,027.37
9	358,250.88	807,074.52
10	357,850.51	807,470.90
11	357,970.21	808,284.01
12	358,930.79	808,460.13
13	358,948.87	808,463.79
14	362,488.99	809,248.83
15	365,751.29	809,487.21
16	365,800.49	809,493.27
17	367,599.96	809,806.11

- d) in point II.1.E.1. (...) related to the need to ensure environmental safety in the event of unplanned events at the construction and decommissioning stage, after letter m) letters n) and o) shall be added reading as follows:

**n) perform visual observations of the presence of marine mammals in the period of preparation and performance of operations of removing the unexploded ordnance from the seabed (detonation) – unplanned event; observations should be performed from appropriate monitoring platforms on vessels with a wide field of observation in the direction in front of the vessel; observations should be performed in periods of good visibility; if marine mammals are recorded in the potential impact zone, the operations should be suspended until the recorded individuals leave the zone;**

**o) use scaring devices prior to the commencement of seabed cleaning operations by a controlled explosion of unexploded ordnance by authorized entities; the range and effectiveness of the devices should be adapted to the range of potential impacts associated with the explosive detonation, the detonation location and the time of the year; allow for effective dispersal in an area subject to PTS in porpoises and seals;**

- 4) point IV. entitled: To find it necessary to carry out a reassessment of the environmental impact as part of the procedure for the issuance of the building permit decision, with particular emphasis on the following reading as follows:

*To find it necessary to carry out a reassessment of the environmental impact as part of the procedure for the issuance of the building permit decision, with particular emphasis on the following:*

*A. Determination of the width and significance of the designated safety zones*

- around individual wind turbines for migration of birds and bats;*
- B. Determination of the width and significance of migration corridors for birds and bats between the water areas designated for the implementation of offshore wind farms of various investors. If the results of the analyses indicate a scientifically justified need to designate migration corridors along the boundary between the water areas designated for the implementation of offshore wind farms of various investors, the proposed solutions of this corridor included in the reassessment of the environmental impact assessment report should be based on the guideline that the centerline of the indicated corridor should coincide with the line that separates these water areas. If, due to scientific reasons, the course of the corridor should be different, the centerline of that corridor should be defined in such a way that it has similar and comparable economic effects on the farms in those water areas, at the lowest possible environmental cost;*
  - C. Analyses of adopted methods of foundation and assessment of the process impact on individual components of the natural environment;*
  - D. Determination of the impact of individual turbines and other farm elements' layout on the surface, on the availability of this area for animals, including, in particular, seabirds and marine mammals, and determination of the impact on long-distance and local bird flight paths;*
  - E. Proposed solutions to minimize the impact of noise and to reduce its impact range, adequate to the adopted foundation methods;*
  - F. Analysis and selection of the maintenance method of the farm structural elements.*

**to be replaced with:**

**IV. It shall be pointed out that the environmental impact assessment of the project does not indicate the need to conduct an environmental impact assessment as part of the procedure for issuing a building permit.**

**The local authority does not deem it necessary to reassess the environmental impact of the project in question. The information contained in the environmental impact assessment report is sufficient to determine the conditions for the building permit design.**

**The above does not preclude a reassessment of the project environmental impact if:**

- an authority planning to undertake the project submits an application to the authority competent to issue a decision (referred to in Article 72 section 1 point 1, 10, 14 and 18 of the EIA Act);**
- the authority competent to issue the aforementioned decision determines that the application for the decision has been amended in relation to the requirements specified in the decision on environmental conditions.**

- II. The Project characteristics shall constitute Appendix No. 1 to this decision.**
- III. Render this decision immediately enforceable pursuant to Article 111 in conjunction with Article 76 section 1 point 1 of the Act of December 17, 2020, on promoting electricity generation in offshore wind farms (Journal of Laws of 2021, item 234, as amended).**
- IV. The remaining part of the decision of the Regional Director for Environmental Protection in Gdańsk of March 27, 2017, ref. No.: RDOŚ-Gd-WOO.4211.26.2015.KSZ.20 shall**

remain unchanged.

## GROUND

On January 26, 2021, the Regional Director for Environmental Protection in Gdańsk received an application without a number of January 19, 2021 of MFW Bałtyk II Spółka z o.o. with its registered office in Warsaw, acting through the representative of Ms. Marta Porzuczek, for the change of the decision on environmental conditions, ref. No.: RDOŚ-Gd-WOO.4211.26.2015.KSZ.20 of March 27, 2017, issued by the Regional Director for Environmental Protection in Gdańsk, for the project entitled **“Construction of the Polenergia Bałtyk II Offshore Wind Farm”**.

In the above-mentioned application, the Investor informed that due to corporate reasons, the name of the project in question has been changed to **“Construction of the Bałtyk II OWF Offshore Wind Farm”**.

The application was enclosed with an appropriate number of copies, required by Article 74 section 1 of the Act of October 3, 2008, on access to information on the environment and its protection, public participation in environmental protection and on environmental impact assessments (*consolidated text, Journal of Laws of 2021, item 247, as amended*) – hereinafter referred to as the EIA Act:

- 1) environmental impact assessment report for the change of the decision on environmental conditions, Bałtyk II OWF Offshore Wind Farm prepared by ODJT Kancelaria Radców Prawnych Otawski, Dziura, Jędrzejewski i Troszyński Sp. p., Warsaw, January 2021, hereinafter referred to as the EIA Report;
- 2) map in the scale guaranteeing the legibility of the presented data, with a marked planned area where the project will be implemented and with a marked planned area on which the project will have an impact, together with a record of the map in an electronic form.

The subject of the project is the construction of the Bałtyk II OWF offshore wind farm with a power output of 1200 MW. The project will be located in the southern part of the Baltic Sea, in the Polish Exclusive Economic Zone (**“EEZ”**), approximately 37 km north of the coastline, at the level of the municipality of Smołdzino (Pomeranian Voivodship).

While justifying the need to change the above-mentioned Environmental Decision, the Investor explained that the proposed changes do not preclude any provision of law and that these changes do not lead to a violation of the public interest. The applied-for changes take into account the minimization of the occurrence of negative effects on people and the environment related to the project implementation and operation. In the above-mentioned application, the Investor emphasized that the proposed change to the Environmental Decision does not, in any respect, lead to a reduction of the protection level in relation to any aspect of the environment related to the principles established by the previous content of this decision, but, on the contrary, it ensures a higher level of protection against potential impacts.

Moreover, the Investor indicated that the proposed change is fully compliant with the social interest related to the need of urgent provision of new generating capacities in the Polish power system, as well as fulfillment of the requirements of the European Union law related to the increase in the share of renewable sources in the entire energy mix of Poland and reduction of greenhouse gas emissions. In addition, as highlighted by the Investor, the justification for the change to the Environmental Decision is not only the public interest but also the legitimate interest of the party. Conducting the procedure for the change of the decision will enable to



specify the implementation conditions of the Bałtyk II OWF project to such an extent that it will allow for modifying the conditions imposed by the Environmental Decision, including the condition related to the need to reassess the environmental impact in the course of the procedure for issuing the building permit decision. This activity will allow for the optimization of the Project implementation process, significantly shortening the stage of its preparation for implementation and operation, while respecting the natural and social environment and in accordance with the principles of sustainable development. As indicated by the Investor, shortening of the entire process will allow for increasing the cost-effectiveness of the project and will allow for quicker commencement of the project operation stage, shortening the period during which the project does not allow for generating profit and entails costs. First of all, however, as indicated by the Investor, the proposed changes to the Environmental Decision will contribute entirely to the reduction of impacts caused during the implementation, operation and decommissioning of the planned project.

In view of the above, acting on the basis of Article 155 of the Code of Administrative Procedure, in conjunction with Article 87 of the EIA Act, the Regional Director for Environmental Protection in Gdańsk, by virtue of the letter ref. No.: RDOŚ-Gd-W00.420.3.2021.KSZ.1 of January 29, 2021, notified the parties to the procedure about the submission of an application for the change of the environmental decision and initiation of the said procedure, as well as about the possibility to read the case documents and submit comments and applications if any. The Applicant did not request to cover any of the documents presented with the submission or during the procedure with confidentiality clause.

Information about the submitted application has been posted in the publicly available *Ekoportal* data list ([www.ekoportal.pl](http://www.ekoportal.pl)), maintained on the basis of Article 22 of the EIA Act, under number 41/2021.

The planned project is qualified in accordance with **§ 2 section 1 point 5 b)** of the Regulation of the Council of Ministers of September 10, 2019, on projects that may have a significant impact on the environment (Journal of Laws of 2019, item 1839) as: *“plants using wind energy for the generation of electricity with a total nominal power output of the farm of not less than 100 MW and located in the maritime areas of the Republic of Poland”*.

The project will be located *in the southern part of the Baltic Sea, in the Polish Exclusive Economic Zone (“EEZ”), approximately 37 km north of the coastline, at the level of the municipality of Smołdzino (Pomeranian Voivodship)*. Bearing in mind that the project may exert a permanent impact on the environment and due to its location in a maritime area, pursuant to Article 75 section 1 point 1), subpoint c) of the EIA Act, the authority competent to analyze the case is the Regional Director for Environmental Protection in Gdańsk. Pursuant to Article 59 section 1 point 1) of the EIA Act, the implementation of the planned project likely to create a permanent significant environmental impact, requires mandatory performance of the project environmental impact assessment.

Since the provisions of Article 155 of the Code of Administrative Procedure and Article 87 of the EIA Act apply to the change to the decision on environmental conditions, therefore, pursuant to them, the provisions on obtaining the decision on environmental conditions shall apply accordingly to the change of the decision on environmental conditions. Consequently, a change to the decision on environmental conditions for a project for which an environmental impact assessment is required requires an environmental impact assessment to assess the impact of the updated conditions of project implementation and operation on the previously

assessed environmental impacts.

Therefore, in view of the above, in the case in question, it is required, among others, to approve the conditions of implementation of the project in question with the Director of the Maritime Office in Gdynia pursuant to Article 77 section 1 point 1) of the EIA Act and to seek the opinion of the State Border Sanitary Inspector in Gdynia pursuant to Article 77 section 1 point 2) of the EIA Act. Pursuant to Article 6 of the EIA Act, the requirement for approval or providing opinion does not apply if the authority in charge of the procedure is also the approving authority or authority providing the opinion.

In view of the above, by virtue of the letter ref. No.: RDOŚ-Gd-WOO.420.3.2021.KSZ.2 of January 29, 2021, the local authority applied to the Director of the Maritime Office in Gdynia for approval of the implementation conditions of the project in question. Director of the Maritime Office in Gdynia, by virtue of decision ref. No.: INZ.8103.8.3.2021.AD of June 28, 2021, rectified by the decision ref. No.: INZ.8103.8.4.2021.AD of July 21, 2021, approved the conditions of implementation of the project in question in the scope of the changes applied for by the Investor, except for the resignation from the condition specified in point I 3.13. of the Environmental Decision concerning the need for short-term shutdown of wind turbines in particularly difficult weather conditions. Moreover, the Director of the Maritime Office in Gdynia approved that the provision concerning cable protection, specified in point I.1. of the Environmental Decision shall be unambiguously compliant with § 45 section 7 point 4 letter b of the Regulation of the Council of Ministers of April 14, 2021, on the adoption of the spatial development plan for internal sea waters, territorial sea and exclusive economic zone in a scale of 1:200 000 (Journal of Laws, item 935) (Appendix No. 2 to the Regulation – Detailed Decisions).

The above was taken into account in the content of the decision.

By virtue of the letter ref. No.: RDOŚ-Gd-WOO.420.3.2021.KSZ.2 of January 29, 2021, in turn, the Regional Director for Environmental Protection in Gdańsk applied also for an opinion from the State Border Sanitary Inspector in Gdynia, who provided the opinion about the implementation conditions of the project in question in letter ref. No.: SE.ZNS.80.4912.3.21 of March 2, 2021.

In the course of the procedure, the local authority has requested clarifications to the submitted EIA Report, which the Investor provided in the letter ref. No.: BII-8/04/2021 of April 23, 2021. The report has been listed in the publicly available Ekoportal list (<http://www.ekoportal.pl>) under the number 384/2021.

The environmental impact assessment report for the project in question, submitted together with the application for the change of the Environmental Decision, was prepared for the needs of the procedure conducted under Article 87 of the EIA Act in conjunction with Article 155 of the Code of Administrative Procedure, and thus it focuses on the changes planned to be implemented in the project, i.e. the Bałtyk II OWF, and consequently on the modifications that must be implemented into the decision on environmental conditions in order for the planned changes in the Bałtyk II OWF to take place.

The environmental impact assessment of the Project update carried out in the submitted EIA Report takes into account, among others, changes in the actual state, including, in particular, changes related to the new knowledge in the scope of impacts of offshore wind farms and related to the development of other offshore wind farm projects in the Polish maritime areas. The update of the Project parameters is related primarily to the development

of the project, which allows to significantly specify the technical parameters of the Project.

Pursuant to Article 79 of the EIA Act, prior to issuing the decision on environmental conditions, the authority competent to issue this decision ensures the possibility for the public to participate in the procedure under which the environmental impact assessment is to be conducted.

Consequently, the local authority posted for the public information, information in the form of an announcement ref. No.: RDOŚ-Gd-WOO.420.3.2021.KSZ.9 of July 15, 2021, information specified in Article 33 of the EIA Act, in particular, on the possibility of submitting comments and applications, indicating the place and a 30-day deadline for their submission (from July 26, 2021 to August 24, 2021 inclusive). The announcement was posted on the local authority's website ([www.gov.pl/web/rdos-gdansk](http://www.gov.pl/web/rdos-gdansk)) and on the notice board in the authority's headquarters. In addition, the aforementioned announcement was submitted to the following officials for publication: the Director of the Maritime Office in Gdynia, the Mayor of Gdańsk, the Mayor of Gdynia, the Mayor of Sopot, the Head of Ustka Borough, the Mayor of Ustka, the Head of Smołdzino Borough, the Mayor of Łeba, the Head of Wicko Borough, the Head of Choczewo Borough, the Head of Krokowa Borough, the Mayor of Władysławowo, the Mayor of Jastarnia, the Mayor of Hel, the Head of Puck Borough, the Mayor of Puck, the Head of Kosakowo Borough, the Head of Stegna Borough, the Head of Sztutowo Borough, and the Mayor of Krynica Morska.

In each of the above-mentioned places, the announcement of public disclosure of information about the project in question was posted for 30 days. No requests or comments from the public were submitted for the procedure with the participation of the public within the specified time limit.

**Having analyzed the evidence gathered in this case, the local authority found and considered as follows:**

The project in question consists in the construction of the Bałtyk II OWF offshore wind farm in modified parameters proposed as part of the procedure in question for amending the decision on environmental conditions. The option approved by the Environmental Decision included the construction of 120 wind turbines, whereas the option being the subject of this procedure provides for the construction of **60** wind turbines. In view of the above, changes in the description of the project are related mainly to the specification of the option selected for implementation, resulting from the progress of design works, including the preparation of the preliminary development plan and selection of the foundation technology.

The option selected for implementation by the Investor is the one based on the turbines with the highest capacity, which are planned to be introduced to the market in the years 2023–2025, when the Bałtyk II OWF is planned to be constructed. These will be 12+ MW class turbines. Taking into account the maximum allowable power output of the project, there will be no more than 60 wind turbines. The justification for the selection of this option is that it ensures the maximum degree of achieving the objective of the project in question, i.e. the highest efficiency of electricity generation, while optimizing the costs related to the construction of a smaller number of wind turbines, shorter construction time, demand for a smaller number of vessels, construction back-up facilities and, at the operation stage, lower maintenance needs. Also, the decommissioning of a farm with a smaller number of wind turbines will be less expensive. Higher electricity generation also means achieving a greater environmental effect of replacing fossil fuels and reducing CO<sub>2</sub> emissions by the energy sector. At the same time, thanks to the reduction in the number of wind turbines, the parameters of the project essential for the scale of environmental impacts, such as the total area of rotors and occupation of the

seabed, will be reduced.

The detailed implementation option ("IO") for the Bałtyk II OWF will consist of the following elements:

- 60 wind turbines of 12 MW plus class, the basic components of which are: foundation, tower, nacelle with a power generator, and rotor;
- 1 internal offshore substation ("OS");
- submarine power and telecommunication cables connecting: the wind turbines with each other (into cable circuits), and groups of wind turbines with the internal offshore substation.

In the option selected for implementation, the application of monopile foundations is planned for all wind turbines as part of the Project. If it is not technically possible to construct such foundations for any of the planned wind turbines, it is planned to use jacket foundations. In the case of the internal offshore substation, at the current stage it is not possible to limit the type of the considered foundations. In view of it, the internal offshore substation may be founded on a monopile, tripod, jacket (truss) or gravity-base foundation. The final decision on the foundation method will be specified in the building permit design, based on verified surveys of geotechnical conditions adapted to the selected types of generators and substations.

The parameters of the proposed option selected for implementation of the Bałtyk II OWF, in comparison with the parameters of the Project approved by the Environmental Decision, were presented in the table below (the values of the parameters concerning the area, such as the zone of a single rotor or occupation of the seabed for the foundation, have been calculated to one decimal place).

The most significant difference in the option selected for implementation, compared to the reasonable alternative option, is the reduction in the number of wind turbines by 50%, i.e. to a maximum of 60 units, compared to the 120 units initially envisaged for implementation in the Environmental Decision.

Reduction in the number of wind turbines and limitation of the types of their foundations (monopile and jacket (truss) foundations) in the implementation option is essential from the point of view of the farm's impact on key elements of the environment, as the following is reduced along with it:

- the area of the seabed occupied by the foundations in relation to the option approved by the Environmental Decision, by approx. 97.3%, as well as the volume of seabed sediments disturbed during construction and moving together with sea currents as well as destruction of benthic organisms during installation works;
- the total rotor surface area in relation to the option approved by the Environmental Decision, by about 50%, and thus the estimated bird and bat mortality resulting from collisions with the operating wind turbines;
- the total time of the foundation installation and, consequently, the period during which underwater noise will be emitted which may cause hearing damage and scaring (in extreme cases, even death) of fish and marine mammals.

Thus, the option selected for implementation is safer for the environment than the original implementation option approved by the Environmental Decision.

Table 4. Parameters of the proposed option selected for implementation of the Bałtyk II OWF, compared to the parameters of the option approved by the Environmental Decision.

Parameter	Option selected for implementation	Option approved in the DEC*
Maximum total height of the wind turbine a.s.l. [m]	300	300
Minimum clearance between the lower wing position and the sea surface [m]	20	20
Maximum rotor diameter [m]	250	250
Number of wind turbines [pcs.]	60	max. 120
Maximum zone for a single rotor [m <sup>2</sup> ]	49,087.4	49,087.4
Maximum total zone for the rotors [m <sup>2</sup> ]	2,945,244.0	5,890,488.0
Maximum number of foundations of accompanying infrastructure [pcs.]	1	6
Types of wind turbine foundations considered	Foundations: monopile and jacket (truss) foundations	Foundations: monopile, tripod, jacket (truss) foundations and gravity-base foundations
Maximum seabed area occupied by 1 foundation of a wind turbine [m <sup>2</sup> ]	78.5	1,963.5
Types of accompanying infrastructure foundations considered	Foundations: monopile, tripod, jacket (truss) foundations and gravity-base foundations	Foundations: monopile, tripod, jacket (truss) foundations and gravity-base foundations
Maximum seabed area occupied by 1 foundation of accompanying infrastructure [m <sup>2</sup> ]	1,963.5	1,963.5
Maximum seabed area occupied by all foundations [m <sup>2</sup> ]	6,673.5	247,401.0
Maximum cable length of the farm internal connection infrastructure [km]	200	200

\* differences in the values of the parameters concerning the area of the original option preferred in relation to the values indicated in the decision on environmental conditions result from the adopted rounding.

As indicated in the submitted EIA Report in connection with the performance of design works and due to environmental procedures and decisions in the form of issued decisions on environmental conditions for other offshore wind farms located in the vicinity, the Investor specified in detail the area intended for the implementation of the Bałtyk II OWF. The north-western corner of the area intended for its implementation was excluded from the development with elements of the project in question, thanks to which the undeveloped water area located between the planned farm and the neighboring FEW Baltic II Offshore Wind Farm will be extended. Therefore, the area intended for the implementation of the Bałtyk II OWF has changed and will amount to approx. 98.9 km<sup>2</sup>, whereas the area within which it will be possible to found the wind turbines (wind turbine development area) – approx. 83.2 km<sup>2</sup>. In practice, since the wind turbine development area should contain all their structural elements, including rotors, the area where the wind turbine foundations may be located will be additionally reduced by the rotor radius widths.

As indicated in the submitted EIA report, contrary to the environmental impact report prepared for the purposes of the procedure on the decision on environmental conditions, during which the Environmental Decision was issued, the development area is understood as the area inside which all elements of the Project will be located, in the case of wind turbines it

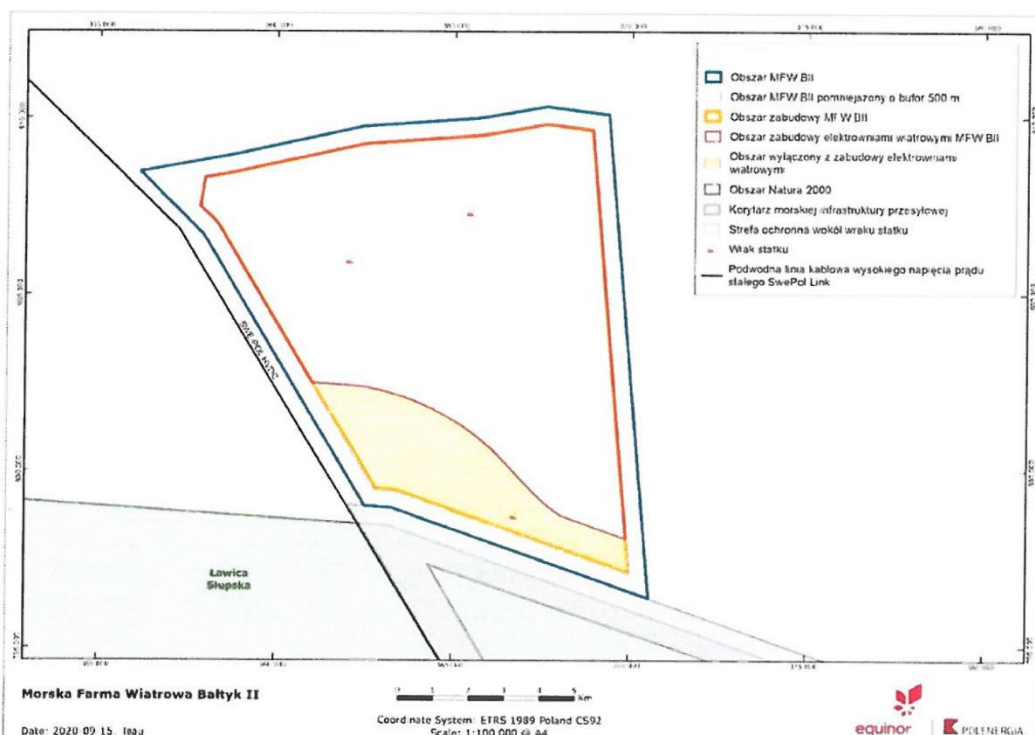
is determined by the range of rotors, and not only the area which may be used for installing the foundations for wind turbines. The consequence of adopting such an understanding (compliant with the requirements of the Construction Law) of the development area is the change in the area indicated as the development area in the EIA report in question in relation to the area indicated for the option approved by the Environmental Decision. The development area indicated in the option specified in the Environmental Decision and determined taking into account the provisions of the permit for erection and use of artificial islands, structures and devices in the Polish maritime areas issued for the Project ("PSZW") (500 m buffer from the farm boundary without development) and the necessity to protect two shipwrecks discovered in the farm area, as well as taking into account an additional buffer with a width of 125 m (corresponding to the rotor radius) amounted to approx. 94 - 95 km<sup>2</sup>. The development area proposed in the Investor's application of January 19, 2021 for the change in the Environmental Decision is approx. 98.9 km<sup>2</sup>, however, it is the total area taking into account not only the foundations of wind turbines, but also superficial elements of wind turbines, including rotors, and without excluding the area of safety zones around the shipwrecks. As explained in the submitted EIA report, this change results from the adaptation of the nomenclature to the one used under the Construction Law, and it does not result in the actual change in the area occupied by all elements of the offshore wind farm.

Moreover, as a result of the analysis of potential impacts, the area of the southern part of the farm area, adjacent directly to the Słupsk Bank, excluded from development with wind turbines, was verified while maintaining the possibility of constructing other elements of the farm, due to the possibility of creating a negative impact of the project on sea birds, from approx. 16.59 km<sup>2</sup> indicated in the Environmental Decision, to not less than 15.6 km<sup>2</sup>, provided that no structural elements of the wind turbines, including their rotors, will be located in the area excluded from development.

The above-mentioned changes also have an impact on the area within which it will be possible to found the wind turbines. This area was determined by the range of the rotors, excluding the southern part of the area, adjacent directly to the Słupsk Bank, but without prior limitation of the development area by an additional buffer of 125 m. Therefore, the area was changed from approx. 77 - 78 km<sup>2</sup> to approx. 83.2 km<sup>2</sup>, provided that the foundations of wind turbines cannot be located closer than 2 km from the boundaries of the Natura 2000 site Słupsk Bank (in the eastern part of the farm area), extending the zone excluded from development in the western direction to the width of 4 km. As indicated in the EIA Report, the change in this area will not, in practice, cause any changes in the area occupied by the foundations of the power plant, nor does it mean that the wind turbines may be located in the area which was not indicated as possible to include the elements of the wind turbine in the Environmental Decision.

The boundaries of the development area of the Bałtyk II OWF and the wind turbine development area as well as the geographical coordinates of the development area of the Bałtyk II OWF are presented respectively in Figure 1 and Table 5 below.

Figure 1. Boundaries of the development area of the Bałtyk II OWF and the wind turbine development area (source: EIA Report)



EN	PL
Obszar MFW BII	BII OWF area
Obszar MFW BII pomniejszony o bufor 500 m	BII OWF area minus 500 m buffer
Obszar zabudowy MFW BII	BII OWF development area
Obszar zabudowy elektrowniami wiatrowymi MFW BII	BII OWF wind turbine development area
Obszar wyłączony z zabudowy elektrowniami wiatrowymi	Area excluded from wind turbine development
Obszar Natura 2000	Natura 2000 sites
Korytarz morskiej infrastruktury przesyłowej	Offshore grid connection infrastructure corridor
Strefa ochronna wokół statku	Protection zone around the ship
Wrak statku	Shipwreck
Podwodna linia kablowa wysokiego napięcia prądu stałego SwePol Link	Underwater HVDC cable line SwePol Link
Ławica Słupska	Słupsk Bank
Morska Farma Wiatrowa Bałtyk II	Bałtyk II Offshore Wind Farm

Table 5. Geographical coordinates of the boundaries of the development area of the Bałtyk II OWF (source: EIA Report)

Point	ETRS89_Poland_CS92	
	Longitude	Latitude
1	368,896.38	809,641.19
2	370,002.87	797,126.03
3	363,435.88	799,428.80
4	363,304.37	799,455.82
5	362,811.20	799,489.37

6	358,406.13	806,876.17
7	358,370.43	806,928.25
8	358,292.85	807,027.37
9	358,250.88	807,074.52
10	357,850.51	807,470.90
11	357,970.21	808,284.01
12	358,930.79	808,460.13
13	358,948.87	808,463.79
14	362,488.99	809,248.83
15	365,751.29	809,487.21
16	365,800.49	809,493.27
17	367,599.96	809,806.11

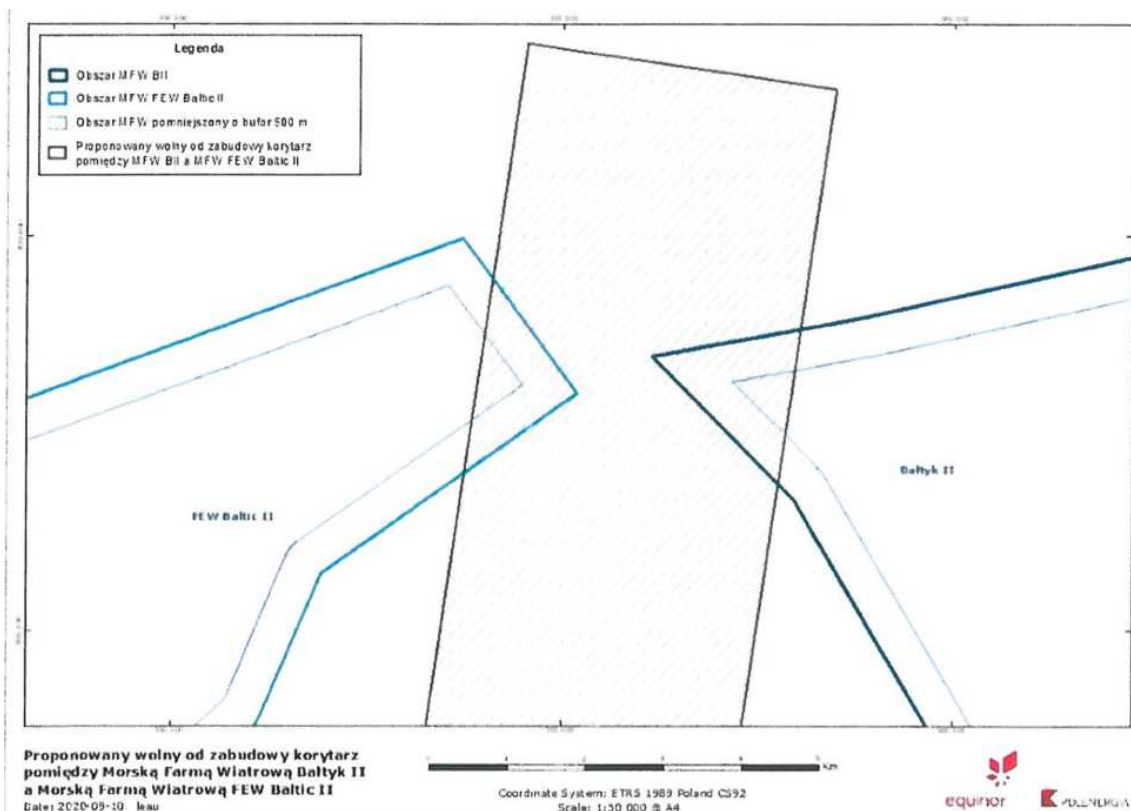
The reasons for excluding the north-western corner of the area intended for its implementation from development with the elements of the Bałtyk II OWF are mostly:

- the fact that the routes of fishing vessels from the ports and fishing bases to the fisheries run through the above-mentioned water area. The significance of this water area for the traffic of vessels is confirmed by the spatial development plan for internal sea waters, territorial sea and exclusive economic zone ("PZPOM"), determining, between the area of the project in question and the area of the Baltic II Offshore Wind Farm, the water area POM.93.T with the basic transport function;
- indication, in the environmental impact report of the FEW Baltic II Offshore Wind Farm of September 2019, of the necessity to leave the corridor free from wind turbines between the neighboring farms, which will enable passages of migratory birds and local movements between feeding grounds, as a condition for avoiding a significant negative cumulative impact.

Taking into account the above-mentioned conditions, apart from excluding the north-western corner of the Bałtyk II OWF area from development, the Investor also proposed to extend approx. 3 km of the corridor between the areas permitted for development in accordance with PSZW issued for the Bałtyk II OWF and the FEW Baltic II Offshore Wind Farm, to the width of about 4 km. As indicated in the submitted EIA Report, relevant exclusions are agreed with the Investor of the FEW Baltic II project. The location of the proposed widened undeveloped corridor is shown in Figure 2.

Figure 2 Proposal for the undeveloped corridor between the Bałtyk II OWF and FEW Baltic II Offshore Wind Farm (source: EIA Report)

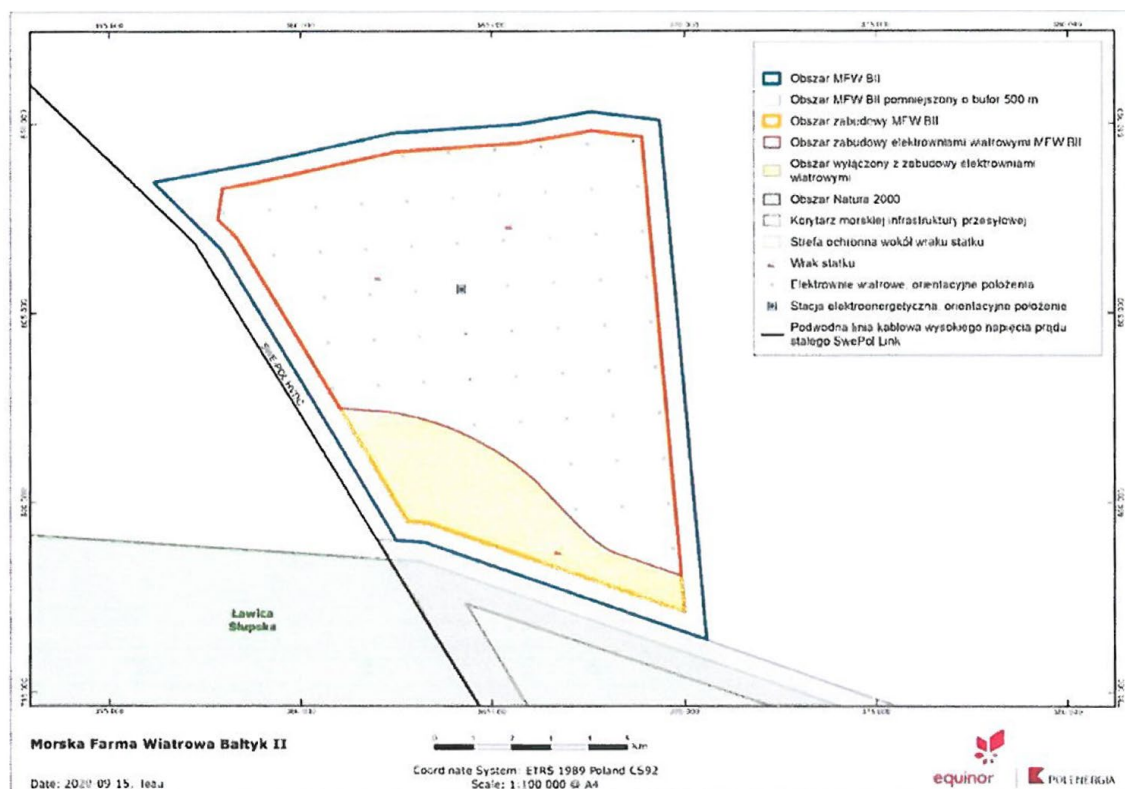




PL	EN
Legenda	Legend
Obszar MFW BII	BII OWF area
Obszar MFW FEW Baltic II	FEW Baltic II OWF area
Obszar MFW pomniejszony o bufor 500 m	OWF area minus 500 m buffer
Proponowany wolny od zabudowy korytarz pomiędzy MFW BII a FEW Baltic II	Proposed undeveloped corridor between the BII OWF and FEW Baltic II OWF
FEW Baltic II	FEW Baltic II
Bałtyk II	Bałtyk II
Proponowany wolny od zabudowy korytarz pomiędzy Morską Farmą Wiatrową Bałtyk II a Morską Farmą Wiatrową FEW Baltic II	Proposed undeveloped corridor between the Bałtyk II Offshore Wind Farm and FEW Baltic II Offshore Wind Farm

Moreover, for the project in question, in the option selected for implementation, consisting in the construction of 60 wind turbines, a preliminary spacing of wind farm elements (development plan) was prepared, which is presented in Figure 3 below.

Figure 3. Planned spacing of the Bałtyk II OWF elements in the option selected for implementation (development plan), (source: EIA Report)



EN	PL
Obszar MFW BII	BII OWF area
Obszar MFW BII pomniejszony o bufor 500 m	BII OWF area minus 500 m buffer
Obszar zabudowy MFW BII	BII OWF development area
Obszar zabudowy elektrowniami wiatrowymi MFW BII	BII OWF wind turbine development area
Obszar wyłączony z zabudowy elektrowniami wiatrowymi	Area excluded from wind turbine development
Obszar Natura 2000	Natura 2000 sites
Korytarz morskiej infrastruktury przesyłowej	Offshore grid connection infrastructure corridor
Strefa ochronna wokół statku	Protection zone around the ship
Wrak statku	Shipwreck
Podwodna linia kablowa wysokiego napięcia prądu stałego SwePol Link	Underwater HVDC cable line SwePol Link
Ławica Słupska	Słupsk Bank
Morska Farma Wiatrowa Bałtyk II	Bałtyk II Offshore Wind Farm

When preparing the preliminary development plan, the results of the performed: wind measurements and productivity analyses, preliminary geological surveys, preliminary technical analyses, previous results of environmental impact assessments carried out in the area of the Bałtyk II OWF and on neighboring projects were taken into account.

The development plan was based on the following key assumptions:

- planned number of wind turbines – 60;
- minimum distances between wind turbines specified in the PSZW – 800 m x 1200 m;

- distribution of wind turbines in a manner ensuring the creation of corridors for the safe movement of vessels, service and rescue vessels through the farm;
- location of internal offshore substation ("OS") in the central part of the farm;
- laying of inner array export cables along 10–12 corridors radiating from the OS to individual wind turbines, whereas these cables will connect from 5 to 6 wind turbines within one corridor; laying the export cable in corridors connecting the internal OS with the crossing points of the corridor created for the export cable (permit for laying and maintaining submarine cables in the exclusive economic zone for the project named "External grid connection infrastructure of the Bałtyk Środkowy III offshore wind farm" issued by decision No. MFWK/1/13 of July 19, 2013, ref. No. GT7pb/62/14823/decyzja/2013) with the Bałtyk II OWF's boundary specified by the PSZW, without crossing the export cable with the inner array cables of the farm;
- leaving the north-western corner of the area allocated for the Project implementation and undeveloped with its elements, widening the undeveloped water area located between the planned farm and the FEW Baltic II Offshore Wind Farm.

In developing the plan, account was also taken of the result of the consultation with the Maritime Search and Rescue Service in order to provide safe corridors for sailing and flying maritime rescue vessels.

As indicated in the presented EIA Report, the above-mentioned development plan for the Bałtyk II OWF may be subject to addition of further details and modifications, due to the specific requirements of adjusting the project to the selected generators, to the geotechnical conditions of the foundations in the locations of the planned farm elements as set forth in the complete geological survey, to the arrangements on the building permit design with competent authorities and institutions, including technical expert opinions in terms of maritime safety. As indicated in the EIA Report, the key assumptions for the farm's elements distribution, as specified above, will be maintained, and the changes may concern necessary shifts of the wind turbines or resignation from certain locations, which are insignificant for the EIA results.

The implementation of the Project in question may be carried out in stages, of which the first stage will cover the capacity in the range of 600–720 MW. The first stage is planned for implementation in the years 2023–2026. Implementation of subsequent stages will depend on the investment decisions made based on the current market conditions. The total construction time for the first stage will be up to 3.5 years. The time of construction of subsequent stages will depend on the decision regarding their size (number of wind turbines) and available technologies and equipment for the construction of offshore wind farms.

In the course of the impact assessment carried out in the documentation submitted together with the application for issuing the Environmental Decision, the possibility of impact of the Bałtyk II OWF on bird and mammal species being the subject of protection of Natura 2000 sites, located within the boundaries of potential impact areas related to the implementation, operation or decommissioning of the Bałtyk II OWF, was assessed. The proper assessment was conducted in relation to 6 bird species, i.e. razorbill, black guillemot, long-tailed duck, velvet scoter, common scoter and European herring gull subject to protection in at least one of the nearby Natura 2000 sites (Słowińska Refuge, Słupsk Bank, Coastal Waters of the Baltic Sea or the Pomorska Bay) and 2 mammal species protected by the Natura 2000 site Słowińska Refuge.

As indicated in the submitted EIA Report, the changes proposed in the conditions of

the Environmental Decision do not lead to changes in the conditions specified in the Environmental Decision and aimed at minimizing and mitigating environmental impacts. None of the proposed modifications results in the increased significance of the impact on the aforementioned subjects of protection of Natura 2000 sites (but also on any other subjects of protection of Natura 2000 sites), while some of them have a positive impact through reducing impacts or introducing solutions which will have an additional action to mitigate the resulting impacts.

In particular, it should be indicated that:

- a) reduction in the number of wind turbines will lead to:
  - shortening the time of exposure of mammals to noise emission related to piling of foundations at the construction stage;
  - reduction in the probability of bird collision with wind turbines at the operation stage;
- b) limitation of the types of foundations used for the foundation of turbines to monopile or jacket foundations will lead to:
  - reduction in the area of destroyed benthic habitats;
  - reduction in the significance of impacts related to disturbance of seabed sediments and increased concentration of suspended matter in water caused by this action.

Moreover, it should be pointed out that the proposed additional mitigation actions in the form of widening the corridor free from development of elements of wind turbines to the width of approx. 4 km between the infrastructure of the Bałtyk II OWF and the FEW Baltic II will lead to mitigation of the barrier effect for migratory birds.

The assessment performed before the Environmental Decision was issued concluded that there is no significant negative impact on the objects of the Natura 2000 sites protection, whereas the proposed modifications to the conditions of the Environmental Decision contribute to further reduction of the impact related to the implementation, operation and decommissioning of the Bałtyk II OWF. Thus, in the assessment of the local authority, the proposed modifications will not result in the possibility of a significant adverse impact on the Natura 2000 sites.

Due to the nature of the proposed changes of the conditions of the Environmental Decision, in particular, as a result of a significant reduction in the number of wind turbines, i.e. up to 60 compared to 120 in the case of the parameters approved by the Environmental Decision, as well as due to the limitation of the acceptable types of foundations for the wind turbines, in the assessment of the local authority, the cumulative impact with other projects, especially offshore wind farms, will be reduced in relation to the set of parameters of the project in question approved by the Environmental Decision. An additional element that further affects the mitigation of the cumulative impact is the introduction of solutions ensuring a minimum 4 km wide corridor free from any development with elements of wind farms between the Bałtyk II OWF and the FEW Baltic II infrastructure. Consequently, the proposed parameter changes of the project in question should be considered as contributing to the mitigation of the cumulative impact of the implementation, operation and decommissioning of the Bałtyk II OWF.

When analyzing the validity of the change to the content of point IV of the Environmental Decision, the local authority took into account the scope of specification of the Project's parameters and the results of the environmental impact assessment of the detailed parameters of the Project and, at the same time, the validity of the preconditions indicated as the grounds for imposing the obligation to perform the reassessment.

As indicated in the submitted EIA Report, the introduced modifications of the project in question not only fall within the previously defined environmental conditions of its implementation, but lead to a reduction of the impact by significantly reducing the number of infrastructure elements comprising the project, both for the wind turbines and substations, but also to further specifying the remaining project parameters (the types of foundations possible to be applied for the wind turbines have been specified, i.e. monopiles and jacket foundation). Due to the span of the seabed depths in the water area intended for the implementation of the Bałtyk II OWF and the diversified geological conditions of the seabed, the Investor takes into account the possibility of using both monopile and jacket foundations. However, as indicated in the EIA Report, the conducted environmental impact assessment took into account the impact of the technology with more far-reaching impact, i.e. monopile foundations. Leaving it possible to use one of four types of foundations in relation to the substation foundation, i.e. apart from monopile and jacket foundations, also gravity-base foundations and tripod foundations, in combination with the reduction of the number of substations from 6 pieces to one, is irrelevant from the point of view of the results of the environmental impact assessment of the entire Bałtyk II OWF.

Among the specific parameters of the project, there are also those used to determine spatial distribution of individual infrastructure elements of the Bałtyk II OWF, both above-surface and subsurface elements – this applies both to the wind turbines, substation and cables connecting individual elements of the Bałtyk II OWF. As indicated in the submitted EIA Report, the spatial arrangement of individual farm elements within the water area intended for the implementation of the OWF is irrelevant from the point of view of the impact on the size and impact significance. What is important in this case is the number of wind turbines, which in the case of the proposed modifications was reduced by 50% in relation to the parameters of the project approved in the Environmental Decision. In this case, the occupation of areas for the location of above-surface OWF infrastructure elements significant as feeding grounds for seabird species is also significant. The proposed updated conditions of the Project implementation specify the manner of implementing the condition I.3.7. of the Environmental Decision and present the boundary route of the area excluded from the foundation of the wind turbines along the northern boundary of the Natura 2000 site – Słupsk Bank.

When analyzing the issues of significance of migration corridors for birds between the water areas intended for the implementation of offshore wind farms of various investors, as well as their widths, the submitted EIA Report indicates that as additional actions mitigating the barrier effect during bird migration, it is proposed to introduce a modification which would exclude the north-western corner of the water area intended for the implementation of the Bałtyk II OWF from development with elements of the Bałtyk II OWF. The exclusion of this section of the water area together with appropriate arrangements with the investor of the Baltic II FEW project will allow to widen the approx. 3 km corridor between the areas permitted for development in accordance with the PSZW issued for the planned farm and the Baltic II FEW offshore wind farm up to the width of approx. 4 km. Moreover, the cumulative barrier effect will be mitigated by creating corridors free of development with wind turbines planned as part of the Baltic Power OWF and Baltica OWF projects.

As indicated in the submitted EIA Report, both the analyses performed for the purpose of preparing the EIA Report and the documentation submitted in the course of other procedures concerning the decision on environmental conditions for the OWF planned on the north-eastern slope of the Słupsk Bank fail to indicate that the boundaries of the water area intended for the implementation of the Bałtyk II OWF contain migration corridors for bats.

Therefore, in the Investor's opinion, further investigation of the impact of the planned Bałtyk II OWF on the migration of bats is pointless, it will not lead to the acquisition of new knowledge, nor will it contribute to the determination of other conditions for the implementation, operation and decommissioning of the Bałtyk II OWF. In view of the above, it is not justified or even possible to determine the safety zones around the wind turbines and their significance for the migration of bats. In relation to bird migration, however, none of the environmental impact assessment reports prepared for the OWF in the Polish maritime areas confirmed the significance and possibility of determining zones around the individual wind turbines due to the perception of the entire farm as a barrier on the route.

For the purpose of preparing the EIA Report, taking into account the specific parameters of the project in question, the modeling of the noise impact related to the foundation piling was repeated. The performed modeling was used to verify the effectiveness of the proposed solutions minimizing the noise impact. As indicated in the submitted EIA Report, they confirm the effectiveness and sufficiency of the proposed methods. Moreover, since the 2015 Report, new publications containing guidelines have appeared, which include threshold values for the assessment of noise impact on marine mammals. The submitted EIA Report indicates the extensive review performed by the US NOAA (National Oceanic and Atmospheric Administration), and, in particular, the latest publication (Southall et al. 2019), containing verified threshold values for potential hearing damage in marine mammals. In the submitted EIA Report, the noise propagation modeling uses new threshold values for the sensitivity of porpoises to noise and, as explained, it is not possible to compare these modeling results with the results presented in the 2015 Report on a methodological basis. The acceptance by the local authority of the noise limit parameters indicated in the application at the boundary of the Natura 2000 site PLH220023 – Ostoja Słowińska – is aimed at not exceeding the noise mode causing temporary hearing threshold shift (TTS) in marine mammals, and the indicated parameters take into account different noise sensitivity levels in porpoises and seals.

Among the changes applied for by the Investor, there was also a change consisting in adding a condition related to the need to perform visual observations of the presence of marine mammals during the removal of unexploded ordnance from the seabed and related to the necessity to use scaring devices prior to the start of the seabed cleaning operations. In the opinion of the local authority, due to the difficulty of observation of marine mammals in the environment, and porpoises in particular, it should be assumed that individuals of these species may be present in the area exposed to the effects of detonation and, therefore, it is necessary to use a system for scaring marine mammals, ensuring the movement of animals to a distance safe for individual species, where no permanent hearing threshold shift will occur.

The submitted EIA Report also includes an analysis related to the maintenance of the farm elements, in particular, in the form of corrosion protection of steel structures. As indicated in the EIA Report, for the parameters of this project after the proposed modifications, only monopile and jacket foundations may be used for the installation of wind turbines. If a galvanic cathodic protection is used, a significant reduction in the number of foundations of the Bałtyk II OWF, as well as the exclusion of the possibility of foundation of wind turbines using tripod foundations (which require potentially the largest number of anodes), will allow to reduce the total necessary amount of the anode material, and thus the emission to the marine environment, and the impact in this respect will remain insignificant.

In view of the above, in the opinion of the local authority, the updated conditions of implementation and operation of the project in question together with the environmental impact

assessment of the proposed changes to the conditions of the Environmental Decision and the new knowledge gathered in the scope of the environmental condition in the Polish maritime areas and the impact caused by the OWF cause that the preconditions which decided on the obligation to perform the reassessment of the environmental impact in the course of the building permit procedure for the Bałtyk II OWF project were fulfilled and the doubts of the authority concerning the environmental impact of the project in question were eliminated. Therefore, with the content of this decision, the local authority accepted the Investor's request to waive the obligation to perform a reassessment of the environmental impact of the project.

As indicated in the submitted EIA Report, the update of the parameters of the project in question does not result in an increase in the significance of any identified impact related to the implementation, operation or decommissioning of the Bałtyk II OWF. On the contrary, in the case of a significant part of the types of impact, their significance is reduced, while in some of them, it is significantly reduced. The situation is analogous in relation to the assessment of the cumulative impact, as the project in question causes either no change or a decrease in the parameters approved in the Environmental Decision in relation to the types of impact identified for the project. Thus, the base for cumulation with other types of impact is reduced or remains unchanged. As a consequence, also the impact in the form of cumulative impact of the project in question, in the proposed modified parameters, is reduced. As indicated in the EIA Report, there are also no new circumstances, changes in the factual situation that would result in the occurrence of new impact receptors or scientific knowledge that would indicate a greater sensitivity of the identified receptors to impact, the source of which may be the implementation, operation or decommissioning of the Bałtyk II OWF. Thus, in the opinion of the local authority, the project in question in the updated parameters does not create the obligation to perform the environmental impact assessment of the proposed change to the conditions of the Environmental Decision, in a cross-border context, nor will it contribute to the increase of the cumulative impact which was analyzed and assessed in the Environmental Decision.

In conclusion, the Regional Director for Environmental Protection in Gdańsk, in accordance with the Investor's application, made changes to the Environmental Decision as per point I hereof. The applied changes lead either to the limitation of the maximum scope of the conditions specified in the Environmental Decision or to the limitation of the scope of methods of the project implementation or technical solutions. None of the changes in the parameters of the project in question exceed the boundary conditions specified in the Environmental Decision. The local authority agreed to all the changes proposed by the Investor, apart from one, which concerned abandoning the system allowing a short-term shutdown of the wind turbines in particularly difficult weather conditions, imposed in point I.3.13. of the Environmental Decision.

The Regional Director for Environmental Protection would like to emphasize that by imposing the condition of a temporary shutdown of turbines in the period of the most intensive bird migrations, the local authority aimed at minimizing the collision with the project in question. A greater probability of collision is expected in the migration period due to the size of flights. Higher exposure occurs during night flights, under adverse weather conditions. It should be emphasized that collisions may occur even under good weather conditions, therefore the condition imposed in the Environmental Decision assumed that the indicated system allowing a short-term shutdown of the wind turbines *"shall ensure continuous observation and registration of the stream of birds migrating through the farm area"*.

In addition, the Director of the Maritime Office in Gdynia, by virtue of the decision ref.

No.: INZ.8103.8.3.2021.AD of June 28, 2021, indicated, among others, that due to the close vicinity of the Natura 2000 sites and short- and long-distance migrations of protected bird species, regardless of the boundaries of the protected areas in the water area, the design of a system enabling a short-term shutdown of the wind turbines will allow to react adequately to the results of the post-implementation monitoring imposed by the Environmental Decision. In view of the above, the local authority finds it justified to **maintain** the condition imposed in point I.3.13 of the Environmental Decision, which imposes the obligation of a temporary shutdown of the wind turbines in the event of an increased risk of collision.

Taking into account the changes in the parameters of the project in question, the local authority considered it justified to update the Project characteristics constituting Appendix No. 1 to the Environmental Decision, ref. No.: RDOŚ-Gd-WOO.4211.26.2015.KSZ.20 of March 27, 2017. The updated Characteristics of the project in question constitutes Appendix No. 1 to the decision.

The Regional Director for Environmental Protection in Gdańsk, by virtue of the letter ref. No.: RDOŚ-Gd-W00.420.3.2021.KSZ.11 of September 28, 2021, acting on the basis of Article 10 of the Code of Administrative Procedure, notified the parties to the procedure about the completion of the collection of evidence in the case and about the possibility to read and comment on the collected evidence and materials, indicating that the decision terminating the procedure in question will be issued not earlier than 7 days from the date of delivery.

On October 6, 2021, the local authority received an application from the Grand Agro Environmental Protection Foundation for admission of the organization to the procedure in question as a party. Pursuant to Article 44 section 1 of the EIA Act, the environmental organizations which, invoking their statutory objectives, report their willingness to participate in the procedure requiring the participation of public, participate in the procedure as a party. Considering the above-mentioned application, after becoming familiar with the objectives of the association included in the Articles of Association of the Grand Agro Environmental Protection Foundation submitted to the local authority, the local authority stated that the statutory objectives justify the participation of the organization in the procedure in question.

In view of the above, the Regional Director for Environmental Protection in Gdańsk, by virtue of the letter ref. No.: RDOŚ-Gd-WOO.420.3.2021.KSZ.12 of October 7, 2021, acting pursuant to Article 10 of the Code of Administrative Procedure, once again informed the parties to the procedure about the completion of the collection of evidence in the case and about the possibility to read and comment on the collected evidence and materials, indicating that the decision terminating the procedure in question will be issued not earlier than 7 days from the date of delivery.

No comments or requests have been submitted within the set time frame.

Therefore, it shall be decided as stated in the introduction herein.

The decision is subject to announcement on publicly accessible data list.

For the issuance of this decision, a stamp duty in the amount of PLN 205 was paid (Appendix No. 1, part I, item 45 *of the Act of November 16, 2006, on Stamp Duty – Journal of Laws of 2020, item 1546*).

## INSTRUCTION

This decision may be appealed against to the General Director for Environmental Protection through the Regional Director for Environmental Protection in Gdańsk within 14 days following



its receipt, pursuant to Articles 127 and 129 of the Act of June 14, 1960, *Code of Administrative Procedure*.

In the course of the time period for lodging an appeal, a party may waive the right to lodge an appeal against the public administration authority which issued the decision. The decision shall become final and valid on the date on which the last party to the procedure has served on the public administration authority its representation on waiver of the right to appeal.

Regional Director for  
Environmental Protection  
in Gdańsk

*Radosław Iwiński*

To be received by:

1. Management Board of MFW Bałtyk II Sp. z o.o. through the representative, Ms. Marta Porzuczek, MFW Bałtyk II Sp. z o.o., ul. Krucza 24/26, 00-526 Warsaw
2. Grand Agro Fundacja Ochrony Środowiska Naturalnego [Grand Agro Environmental Protection Foundation], Przasnysz 142, 06-300 Przasnysz, - epuap
3. to files

For the attention of:

1. Director of the Maritime Office in Gdynia, ul. Chrzanowskiego 10, 81-338 Gdynia
2. State Border Sanitary Inspector in Gdynia, ul. Kontenerowa 69, 81-155 Gdynia



**REGIONAL DIRECTOR  
FOR ENVIRONMENTAL  
PROTECTION IN GDAŃSK**

Appendix No. 1 to decision ref. No.  
RDOŚ-Gd-WOO.420.3.2021.KSZ. 14

*pursuant to Article 84 section 2 of the Act of October 3, 2008 on access to information on the environment and its protection, public participation in environmental protection and on environmental impact assessments (consolidated text, Journal of Laws of 2021, item 247, as amended)*

**CHARACTERISTICS OF THE PROJECT**

The subject of the project is the construction of the Bałtyk II OWF with a power output of 1200 MW. The project will be located in the southern part of the Baltic Sea, in the Polish Exclusive Economic Zone ("EEZ"), approximately 37 km north of the coastline, at the level of Smołdzino Borough (Pomeranian Voivodship). The total area of the Bałtyk II OWF is approx. 122 km<sup>2</sup>. The geographical coordinates of the project are presented in the table below:

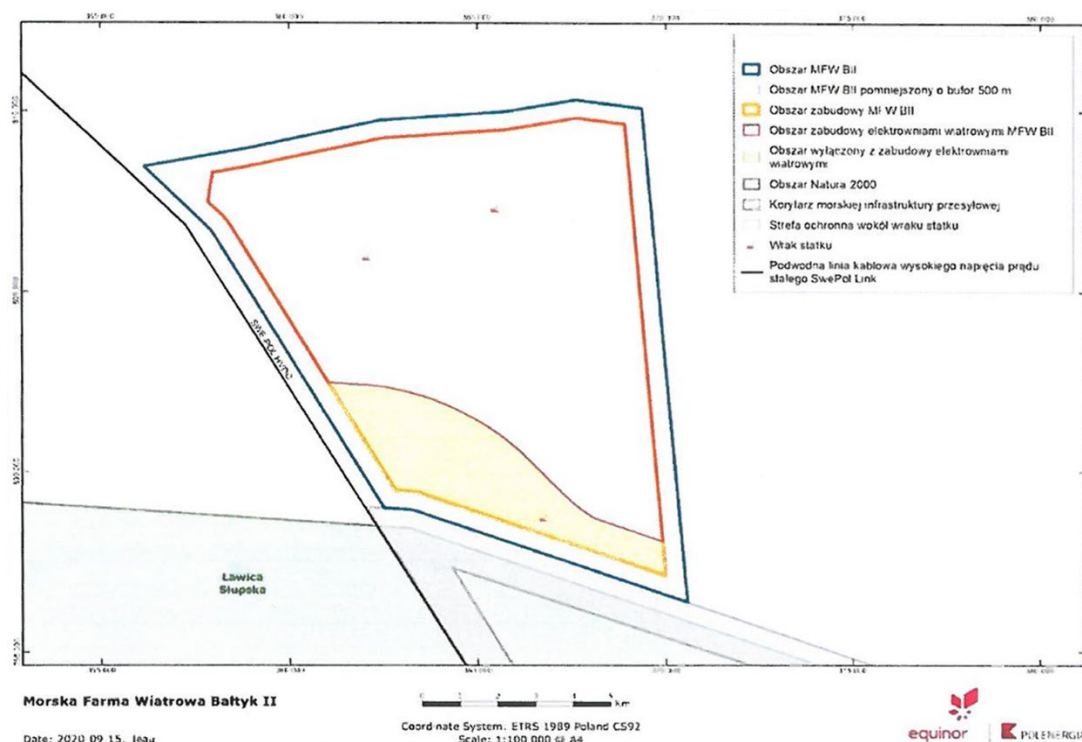
Table 1. Geographical coordinates of the project

Point	WGS 84 DD°MM'SS.sss"	
	Latitude	Longitude
A	55°00'50.524"	16°58'30.687"
B	55°02'06.260"	16°51'35.533"
C	55°02'07.171"	16°50'52.962"
D	55°06'08.711"	16°46'23.733"
E	55°06'11.836"	16°46'19.179"
F	55°07'06.218"	16°44'36.995"
G	55°07'25.002"	16°47'08.284"
H	55°07'54.264"	16°50'28.666"
I	55°08'05.318"	16°53'34.432"
J	55°08'17.668"	16°55'19.642"
K	55°08'12.077"	16°56'59.967"

The Investor holds a permit for erection and use of artificial islands, structures and devices in the Polish maritime areas (PSZW) for the Bałtyk Środkowy II OWF project – decision of the Minister of Transport, Construction and Maritime Economy No. MFW/2/2013 of January 15, 2013, amended by decision No. MFW/2a/13 of April 29, 2013.

The boundaries of the development area of the Bałtyk II OWF and the area to be developed with wind turbines and the geographical coordinates of the development area of the Bałtyk II OWF are presented in the below Figure 1 and Table 2, respectively.

Figure 1. Boundaries of the development area of the Bałtyk II OWF and the area to be developed with wind turbines (source: EIA Report)



EN	PL
Obszar MFW BII	BII OWF area
Obszar MFW BII pomniejszony o bufor 500 m	BII OWF area minus 500 m buffer
Obszar zabudowy MFW BII	BII OWF development area
Obszar zabudowy elektrowniami wiatrowymi MFW BII	BII OWF wind turbine development area
Obszar wyłączony z zabudowy elektrowniami wiatrowymi	Area excluded from wind turbine development
Obszar Natura 2000	Natura 2000 site
Korytarz morskiej infrastruktury przesyłowej	Offshore grid connection infrastructure corridor
Strefa ochronna wokół statku	Protection zone around the ship
Wrak statku	Shipwreck
Podwodna linia kablowa wysokiego napięcia prądu stałego SwePol Link	Underwater HVDC cable line SwePol Link
Ławica Słupska	Słupsk Bank
Morska Farma Wiatrowa Bałtyk II	Bałtyk II Offshore Wind Farm

Table 2. Geographical coordinates of the boundaries of the development area of the Bałtyk II OWF (source: EIA Report)

Point	ETRS89_Poland_CS92	
	Longitude	Latitude
1	368,896.38	809,641.19
2	370,002.87	797,126.03
3	363,435.88	799,428.80
4	363,304.37	799,455.82
5	362,811.20	799,489.37
6	358,406.13	806,876.17

7	358,370.43	806,928.25
8	358,292.85	807,027.37
9	358,250.88	807,074.52
10	357,850.51	807,470.90
11	357,970.21	808,284.01
12	358,930.79	808,460.13
13	358,948.87	808,463.79
14	362,488.99	809,248.83
15	365,751.29	809,487.21
16	365,800.49	809,493.27
17	367,599.96	809,806.11

The Bałtyk II OWF will consist of:

- 1) up to **60** wind turbines ("WT"), the basic components of which are: foundation, tower, nacelle with a generator, and rotor,
- 2) **1 internal offshore** substation ("OS"),
- 3) up to 200 km of submarine power and telecommunication cables connecting:
  - a. individual WT together (into cable circuits),
  - b. WT groups with an internal offshore substation,
  - c. an internal OS with an external (being a part of another project) offshore substation (optional).

The area intended for implementation of the Bałtyk II OWF is, according to the PSZW, approx. 122 km<sup>2</sup>. Components of the OWF may not be located in the buffer of 500 m from the internal border of the area intended for the farm construction. All structural components of the farm have to be located within the boundaries of the specified area, so it determines the maximum external range of the rotor, which additionally limits the area where foundations can be laid. The size of this limitation depends on the rotor radius. This means that the area where, according to the PSZW, the foundations of wind turbines can be located is the area determined in the PSZW, reduced by the buffer area with a total width of 500 m and rotor radius length in a given project option (the so-called wind turbine development area).

Moreover, as a result of the analysis of potential impacts of the project on the environment, additional restrictions were made on the use of the development area according to the PSZW permit:

- 1) due to the possibility of generation of a negative impact of the project on seabirds, the area to be developed with wind turbines, while maintaining the possibility of construction of other farm elements, excludes the southern part of the area, adjacent directly to the Słupsk Bank, with the area of **approx. 15.6 km<sup>2</sup> (depending on the final rotor diameter of selected wind turbines, while maintaining the condition specified in point I.3.7 of the Environmental Decision)**,
- 2) in order to minimize cumulative impacts on birds, the area to be developed with Bałtyk II OWF elements excludes the north-western corner of the area intended for its implementation, which allowed for widening the undeveloped water area located between the said farm and the FEW Baltic II Offshore Wind Farm.

Moreover, the provisions of the PSZW permit indicate that the building permit design

have to include the layout of internal structures and cables guaranteeing that none of the planned structures or cables is located closer than 2 nautical miles from the existing navigation routes.

Considering all of the above, the report on the impact of the said project on the environment (hereinafter referred to as EIA Report – Environmental Impact Assessment Report) assumes that:

- the total area of the farm is approx. 122 km<sup>2</sup>, but:
- the area actually available for development is approx. **98.9 km<sup>2</sup>**, including the area where the wind turbines can be founded being **approx. 83.2 km<sup>2</sup> (depending on the final rotor diameter of selected wind turbines, while maintaining the condition specified in point I.3.7 of the Environmental Decision)**.

The **Bałyk II OWF** does not include the infrastructure for transmitting electricity generated by the farm to the shore. A separate project, the Offshore Transmission Infrastructure ("OTI"), will serve this purpose. It is subject to a separate procedure for the issuance of a decision on environmental conditions. This project will consist in construction and operation of the electricity transmission grid between onshore substations, being components of the National Power System ("NPS") and offshore substations, constituting elements technologically related to offshore wind farms.

The WT parameters will depend on the selected capacity (the higher the power output, the higher the tower and the longer the turbine blade span is required). The basic boundary parameters of the wind turbines planned for installation at the **Bałyk II OWF** are presented in the table below.

Table 3. Basic boundary technical parameters of wind turbines according to the option selected for implementation

Parameter	Option selected for implementation
Maximum total height of the wind turbine a.s.l. [m]	300 m
Minimum clearance between the lower wing position and the sea surface (defined as the mean sea level) [m]	20 m
Maximum rotor diameter [m]	250 m
Maximum zone for a single rotor [m <sup>2</sup> ]	<b>49,087.4 m<sup>2</sup></b>

One or more wind turbine models can be installed on the farm.

**The wind turbines will be arranged so as to maintain the minimum distances between individual wind turbines of 1200 m x 800 m. The substation will be located in the central part of the water area intended for development.**

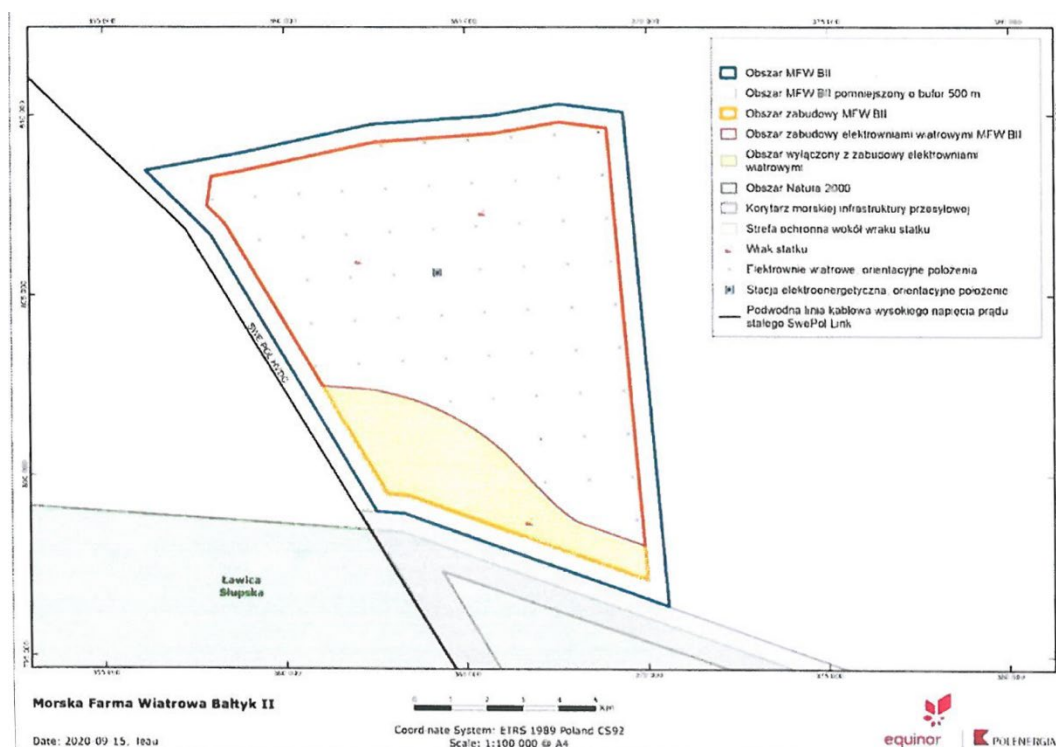
The wind turbines will be laid out with the objective to obtain the maximum possible energy yield, particularly considering such factors as:

- data on the seabed structure from geotechnical surveys,
- wind speed test results (available after wind measurements),
- dimensions of the selected wind farm model and type of foundations,
- the need to avoid the "wake effect".

When preparing the preliminary development plan, the results of the performed: wind measurements and productivity analyses, preliminary geological surveys, preliminary technical analyses, previous results of environmental impact assessments carried out in the area of the Bałtyk II OWF and on neighboring projects were taken into account.

As indicated in the presented EIA Report, the below development plan for the Bałtyk II OWF may be subject to addition of further details and modifications, due to the specific requirements of adjusting the project to the selected generators, to the geotechnical conditions of the foundations in the locations of the planned farm elements as set forth in the complete geological survey, to the arrangements on the building permit design with competent authorities and institutions, including technical expert opinions in terms of maritime safety.

Figure 2. Planned spacing of the Bałtyk II OWF elements in the option selected for implementation (development plan), (source: EIA Report)



EN	PL
Obszar MFW BII	BII OWF area
Obszar MFW BII pomniejszony o bufor 500 m	BII OWF area minus 500 m buffer
Obszar zabudowy MFW BII	BII OWF development area
Obszar zabudowy elektrowniami wiatrowymi MFW BII	BII OWF wind turbine development area
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Obszar Natura 2000	Natura 2000 site
Korytarz morskiej infrastruktury przesyłowej	Offshore grid connection infrastructure corridor
Strefa ochronna wokół statku	Protection zone around the ship
Wrak statku	Shipwreck
Podwodna linia kablowa wysokiego napięcia	Underwater HVDC cable line SwePol Link

prądu stałego SwePol Link	
Ławica Słupska	Słupsk Bank
Morska Farma Wiatrowa Bałtyk II	Bałtyk II Offshore Wind Farm

The wind turbine towers will be constructed of steel, concrete or reinforced concrete rings, joined together. The basic structural material of the turbine blades will be plastics (fiberglass).

The wind turbine towers will be mounted on foundations which, in turn, will be placed on the seabed. Currently, it is planned to use **2 types of foundations: monopile or jacket foundations**. The towers will be connected to the foundation with a steel sleeve, known as the transition piece, protruding approx. 10 m above the water surface and reaching approx. 10 m below the water surface. For one foundation for the substation, it is possible to use one of four types of foundations: monopiles, gravity-base foundations, jacket or tripod foundations.

A steel monopile is made of steel, welded cylinders. A monopile usually protrudes 5 to 12.5 m above the sea surface (defined as the mean sea level) and is connected to the tower with a transition piece/connector of varying length, mounted outside the monopile (the most common solution) or inside it. At the connector, there are also additional elements, such as the place of anchoring of service vessels, ladders, intermediate platform, working platform, as well as elements of power infrastructure (flexible cable shields, so-called J-tubes, and power and telecommunication cables). Monopiles are up to 120 m long. They are currently the most popular type of foundations used at the OWF. Reinforced concrete monopiles have also appeared on the market.

A jacket foundation is made of four steel legs connected and reinforced with brackets made of cross-mounted pipes. In its upper part, there is a connector (transition piece), which enables the connection of the foundation with the wind turbine tower. These foundations are usually fixed to the seabed using 4 piles with a diameter of 1.8–3 m and a length of up to 70 m. In the above-surface part of the jacket foundation, there are also additional elements such as the place of anchoring of service vessels, ladder, intermediate platform, working platform as well as elements of power infrastructure (J-tubes, cables).

The structure of the tripod foundation consists of 3 legs supporting one central leg which forms the basis for the connector and the tower. The tripod legs are equipped with sleeves for pile fixing. In the bottom part of each leg of the foundation, there are also special mats (mud mats) to keep the structure in the right position on the seabed and prevent the structure from settling before it is fixed to the seabed with 3 piles with a diameter of up to 2.5 m and a length of up to 60 m. There are also additional elements on the foundation, such as J-tubes, places of anchoring of boats, intermediate platform, ladder, etc.

Gravity-base foundation is a structure made of reinforced concrete. It consists of a main body and a base. The base can be conical or flat (in the shape of an octagon, hexagon, circle, etc.) and it will have a maximum diameter of 50 m. The gravity-base foundation is filled with ballast. During its installation, cement mortar is injected below the base of the foundation in order to ensure constant contact between the foundation and the bearing surface.

For all types of foundations (especially for gravity-base and monopile foundations, less often for other types of foundations) a protective layer against washing out can be applied. It is usually a layer of stones with a width of a few to several meters, laid around the foundation.

Wind turbines will be connected by means of a grid of 33 kV or 66 kV power cables to

the substation. It is planned to lay up to 200 km of cables inside the farm. Their length will depend on the number of turbines and their layout inside the farm. Cables will be buried in the seabed up to a depth of 3 m. If the technical conditions do not allow for their burying, they will be **provided with permanent protections, in accordance with § 45 section 7 point 4 letter b of the Regulation of the Council of Ministers of April 14, 2021 on the adoption of a spatial development plan for internal sea waters, territorial sea and exclusive economic zone at a scale of 1:200,000 (Journal of Laws, item 935) (Appendix No. 2 to the Regulation – Detailed Decisions).**

Electricity generated by the wind turbines belonging to the **Bałtyk II OWF** will be prepared on the farm for further transmission. For this purpose, **1 internal offshore substation (OS)** will be built within the boundaries of the farm. The construction of the substation will allow for the reduction of the number of export cables carrying electricity from the wind farm to the shore, and will significantly reduce transmission losses.

The following types of the OS can be built within the framework of the **Bałtyk II OWF**:

- 1) transformer – receiving alternating current (AC) from wind turbines and then converting its voltage (33 or 66 kV) to a correspondingly higher level, enabling its further transmission in the alternating current technology;
- 2) converter (AC/DC) – converting alternating current (AC) into direct current (DC), enabling its further transmission in the direct current technology;
- 3) combining both these functions.

At the present stage of the project, no decision has yet been taken on whether to transmit electricity to the shore in the direct current or alternating current technology.

Infrastructure for the transmission of electricity to the shore (i.e. offshore and onshore export cables, onshore substation and possible additional OSs) will form a separate, independent project to construct the offshore transmission infrastructure (“OTI”), subject to a separate environmental impact assessment procedure.

AC offshore transformer station will be built on a platform based on monopile, jacket, tripod or gravity-base foundations. The necessary power and staff welfare infrastructure will be installed on the working platform. Typical OS AC equipment consists of the following components: an indoor switchgear, power transformers, MV and HV switchgears, reactive power compensation reactors and capacitors, transformers or power generators to provide backup power, earthing system, control panel of internal systems, low-voltage distribution equipment for auxiliary equipment and protection, control and instrumentation systems, UPS uninterruptible power supply, SCADA equipment, service staff accommodation, rest and welfare rooms, material storage, workshop, boat landing, helideck, occupational health and safety as well as emergency equipment including Diesel generators, emergency lighting, lifeboats. The substation can also be used as a place of installation of equipment for environmental measurements and monitoring, e.g. meteorological data or wave information.

Offshore AC/DC converter station will be built as an additional station, in addition to the transformer stations described above, if the Investor decides to use DC transmission technology. The station can be constructed as a separate facility or as an additional element of an AC station. The AC/DC converter station will be built on a platform based on monopile, jacket, tripod or gravity-base foundations. The necessary power infrastructure, in particular equipment for converting alternating current into direct current, will be installed on the working platform. The main components of the converter station include: converter transformers,



converter thyristors, harmonic filters, capacitor batteries, reactive power compensation reactors, and a cooling system.

The Bałtyk II OWF project may be implemented in stages, of which the first stage will cover the power output between 600 and 720 MW. The first stage is planned for implementation in the years 2023–2026. Implementation of subsequent stages will depend on the investment decisions made based on the current market conditions. The total construction time for the first stage will be up to 3.5 years. The time of construction of subsequent stages will depend on the decision regarding their size (number of wind turbines) and available technologies and equipment for the construction of offshore wind farms.

As the offshore wind energy industry is developing very dynamically, and new models of wind turbines and other equipment appear every year, so the project may use models of turbines that are not currently available on the market. For the above reasons, the environmental impact assessment was carried out on the basis of the envelope of technical parameters, which defined the worst case scenarios of environmental impacts of particular technological solutions. Also, the final technical parameters of every individual piece of farm equipment cannot be specified at this stage of issuing the decision on environmental conditions, but only upon issuing the building permit. However, the authority responsible for issuing the building permit shall be bound by the provisions of this decision on environmental conditions.

Regional Director for  
Environmental Protection  
in Gdańsk

*Radosław Iwiński*