

**Baltic East Project - INTRODUCTION**

as part of the procurement procedure entitled:

**“Inter-Array cables and Export cables (Onshore and Offshore) including Landfall with associated EPCI scope: design, engineering, manufacture, supply, installation, commissioning for the Baltic East Offshore Wind Farm Project.”**

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1. **ORLEN S.A. and ORLEN Neptun as the investor**

ORLEN is an integrated, multi-utility corporation primarily active in Central Europe. We supply energy and fuel   
to over 100 million Europeans, and our advanced products are sold in over 100 countries across six continents.

We are involved in the upstream and downstream sectors of the oil and gas industry, as well as in power generation and distribution. Central to ORLEN’s mission is the commitment to lead the regional energy transition. The company is dedicated to adopting innovative, clean, and sustainable technologies, focusing particularly on low- and zero-emission power generation. This forward-thinking approach is part of ORLEN's strategic goal to achieve emission neutrality by the year 2050.

We plan to invest over USD 80 billion in strategic projects by the end of 2030, with approximately 40% dedicated to green investments. These include offshore and onshore wind energy, photovoltaics, biogas and biomethane, biofuels, electromobility, CCUS, green hydrogen, and synthetic fuels.

We aim to create new solutions in the fields of power generation and mobility, based on advanced and sustainable technologies. They are the key to the achievement of our long-term goal – reaching emission neutrality by 2050.

Responsible transformation

ORLEN Group’s transition path is determined by renewable energy and modern petrochemicals. The key pillars   
of our strategic development are complemented by the new approach to retail sales, which will enable us to meet a variety of customer needs comprehensively. The search for innovative solutions in the areas of new mobility, hydrogen energy and recycling is our response to the long-term trends.

The future starts now

We are fully aware that the future starts now. For this reason the maximization of profits and reconstruction of current activity drive the development of new business areas. We consider it crucial to increase efficiency and develop sustainability of our core business segments, including more environmentally-friendly biofuels and biocomponents.

We believe that gas energy is a valuable bridge to the energy transition in our region. For this reason, we are currently reconstructing our upstream assets portfolio and keep investing in power generation infrastructure. In addition, we are dynamically developing our retail network across Central Europe.

New energy

The global shift in approach to the use of natural resources redefines the challenges which our business faces. We believe that strong, integrated, multi-utility companies will be able to respond to them. They are the ones to create new, efficient and sustainable technologies, and the ones to become partners in a process of a profound socio-economic transition.

We've completed an acquisition of two leading Polish energy companies, LOTOS Group and PGNiG. The finalization of these acquisitions allowed us to become a regional leader shaping an entirely new appearance of the Central European economy.

ORLEN Neptun VIII Sp. z o.o. – member of ORLEN capital group – shall be considered as SPV, founded by ORLEN (via 100% owned subsidiary ORLEN Neptun) to develop, construct, operate and maintain offshore wind farm Baltic East.

More information about ORLEN and Baltic East Project is available on the following websites: <https://www.orlen.pl/en> and <https://neptun.orlen.pl/pl/o-spolce/inwestycje/Baltic-East>.

1. **Project business environment**

It is estimated that the combined size of areas with favourable conditions for offshore wind energy projects development in the Polish maritime areas is approximately 3500 km2.

Potential of offshore wind energy development in Poland has been officially confirmed by two major milestones achieved on national level in Poland in the year 2021: official approval of Maritime Spatial Plan of the Polish Sea Areas (“MSP”) (more info here: [link](https://www.gov.pl/web/morska-energetyka-wiatrowa/plan-zagospodarowania-przestrzennego-polskich-obszarow-morskich) and [here](https://dziennikustaw.gov.pl/D2021000093501.pdf)) and official approval of „Energy Policy of Poland until 2040” (“PEP 2040”) (more info here: [link](https://www.gov.pl/web/klimat/polityka-energetyczna-polski)).

MSP define zones where construction of offshore wind farms will be permissible and will have priority over other ways of utilization of that part of the Baltic Sea. Aforementioned zones have favourable conditions for offshore wind farms development (estimated water depth: 25-50 m, estimated average annual wind speed at hub height:   
9-10 m/s, negligible tides, low salinity) and combined size of around 2300 km2, which is around 10% of Polish Exclusive Economic Zone of the Baltic Sea. Additionally MSP defined areas, where export cables will be permissible.

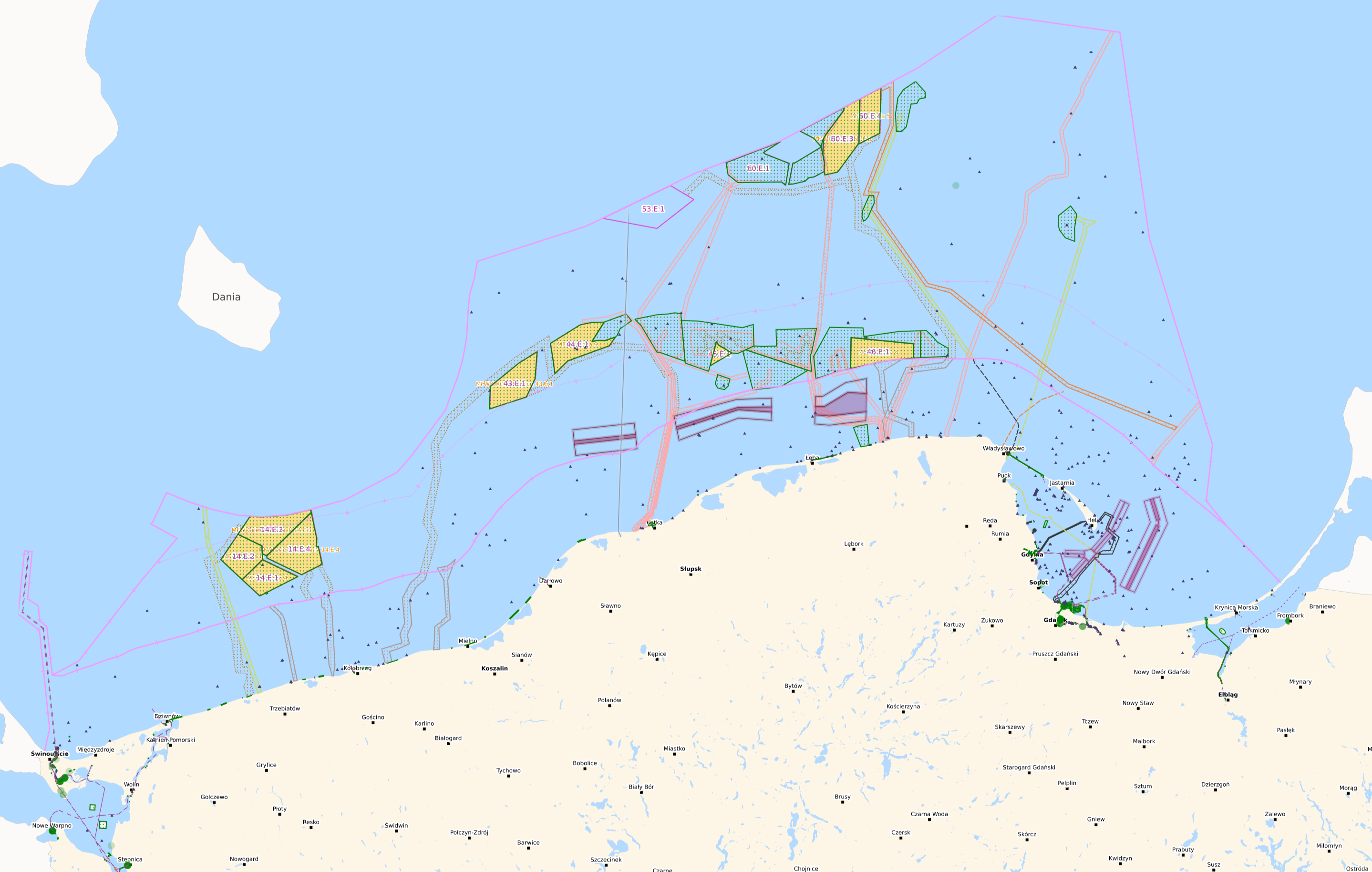


Figure 1 Maritime Spatial Plan of Polish Sea Areas

According to approved PEP 2040, offshore wind energy will be one of the three pillars of polish energy mix by year 2040. It is expected that there will be almost 5,9 GWe of generation capacity installed on polish waters in offshore wind farms until 2030 and more than 10 GWe until 2040. Abovementioned declaration is based on the size of areas, dedicated to offshore wind energy development and average offshore wind farm’s power density and it’s already being confirmed by projects being under development and construction. Expected area reductions caused by legal or environmental constraints were taken into account as well.

1. **Project support system**

Given the potential of offshore wind energy in Poland, thanks to the industry coordinated works and efforts, a legal framework for further development of offshore wind projects in Poland has been developed and new “offshore wind act” has been approved by Polish government and polish authorities. Full text of this act is available here: <https://isap.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU20210000234>.

The above-mentioned act created a support system for offshore wind farm projects and divided it into 2 stages:

* stage 1 – support is allocated to limited and defined projects in the form of “direct” CfD (Contract for Difference);
* stage 2 – projects compete for state support by declaring maximum electricity price in the auctions organized every other year, first of them due to being organized in December 2025. Based on the auction result CfD is granter to the winners.

Stage 1 of polish offshore wind farm projects consist of nine projects. All of them have valid location permits and already are in construction or in advance development stages.

Stage 2 of polish offshore wind farm projects has been organized in the form of competition, where investors and developers from all over the world were allowed to submit their applications for ‘location permits’ for areas of future offshore wind farms, defined in the MSP. Dozens of applications were submitted and evaluated. As a result of this process, 10 new ‘location permits’ were granted – 5 permits for ORLEN capital group (including Baltic East Project considered herein).

1. **Location of Baltic East project**

Future offshore wind farms in ORLEN capital group’s portfolio presented below. The Baltic East project, being subject of this RFI, is marked with grey rectangle.



Figure 2 Development of offshore wind projects in ORLEN Group: 2nd phase

The Baltic East offshore wind farm is a future development in the Baltic Sea, located in the Polish Exclusive Economic Zone (Figure 2). The ‘location permit’ covers a total area of approximately 110 km2, located around   
23 km north from the coastline of Poland. The project is located next to another offshore wind farm project in ORLEN capital group – Baltic Power, being under construction at the moment.

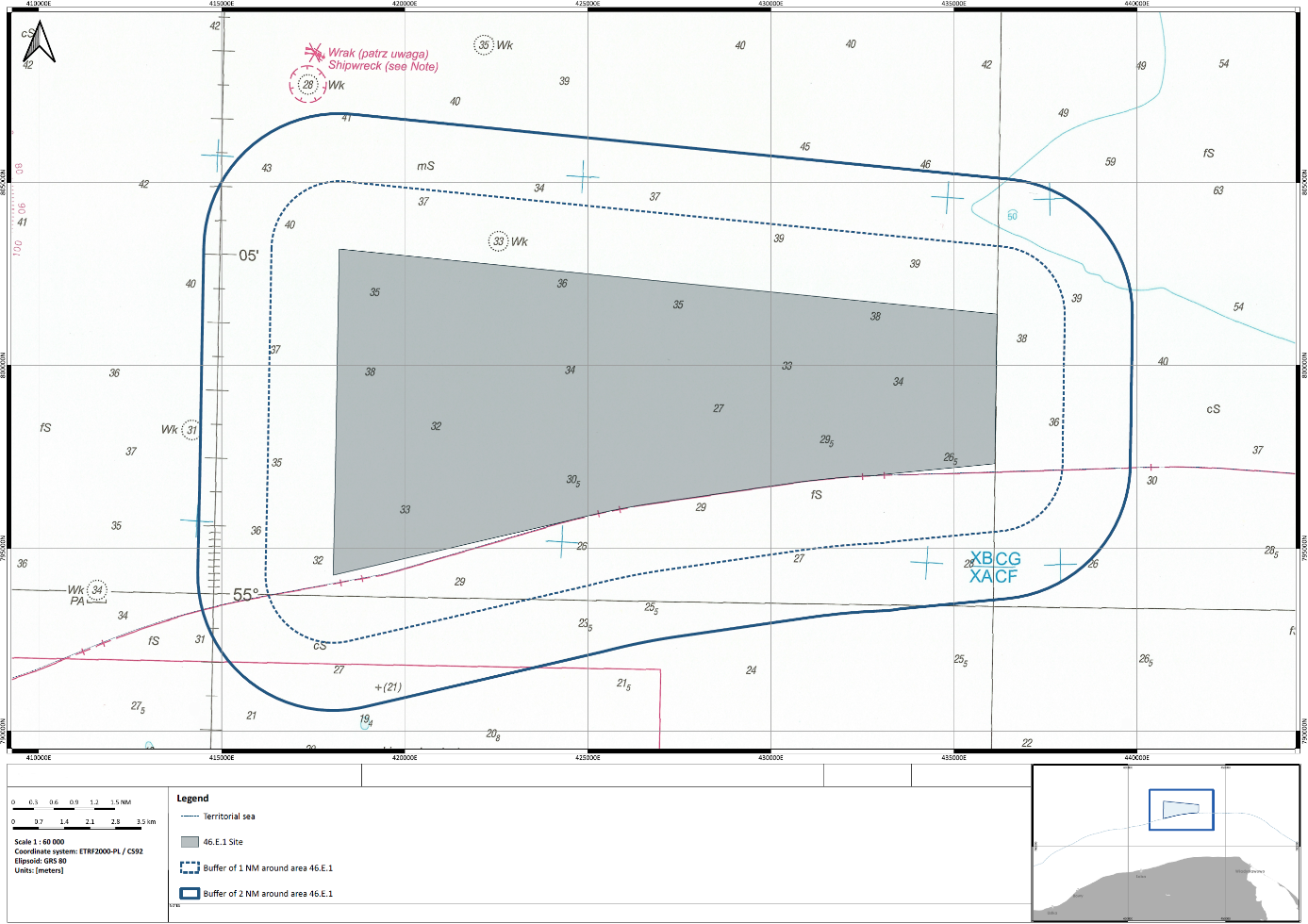


Figure 3 Baltic East Project boundaries

1. **Project Status and Key Dates**

ORLEN Neptun owns the ‘location permit’ for Baltic East project (“Concession”) (pol. “*pozwolenie na wznoszenie i wykorzystywanie sztucznych wysp, konstrukcji i urządzeń w polskich obszarach morskich*” – permit to erect and operate artificial islands, structures and devices in the Polish maritime area) for an offshore wind farm on the Baltic Sea with a total power output up to 966 MWe.

The abovementioned Concession is not related in any way to an offshore nor onshore export cable route, which will require separate permits.

Within the project area, defined by the Concession, since 2024 Baltic East has been developing the project to construct an offshore wind farm with a total power output up to 966 MWe (“Project”) and preparing it for final investment decision (“FID”). Given its current status, the Project may be assessed as being in the stage of early development.

Status of the Project development comprises the following:

* development:
  + 2024 Q3 – geotechnical project (pol. “*PRG – Projekt Robót Geologicznych*”) for 2D seismic and initial geotechnical campaign within the Concession area has been prepared and submitted for approval by the applicable authorities; approval decision was been obtained in March 2025;
  + 2024 Q4 – environmental surveys within the Concession area have been completed and the final report is being prepared; application for the environmental impact assessment has been submitted and obtaining of the environmental impact assessment decision for the offshore wind farm including OSS is expected in 2025 Q3;
  + 2024 Q4 – procurement process for execution of environmental surveys within the export cable and onshore power infrastructure area has been commenced; environmental surveys (aimed to obtain the environmental impact assessment decision) are expected to be conducted between 2025 Q2 and 2026 Q3 with aim to obtain environmental impact assessment decision before 2027 Q2;
  + 2025 Q1 – wind measurement data has been acquired from neighbouring OWF project, the additional campaign dedicated for the Concession area is expected to be contracted as an option, the additional campaign may be scheduled for 2026;
  + 2025 Q3 – 2D seismic survey and initial geotechnical survey within the Concession area are expected to commence with planned completion is 2025 Q4 and delivery of final documentation planned in 2026 Q1;
  + 2025 Q3 – initialization of multi-step procurement processes for selection of the contractors responsible for detailed seismic surveys focusing on subsurface boulders and “main” geotechnical campaign within the Concession area will be commenced with execution of “main” geotechnical campaign expected in 2027 Q3;
  + 2026 Q2 – considered initialization of multi-step procurement process for selection of the contractor responsible for geotechnical campaign within the export cable area will be commenced with execution of geotechnical campaign expected between 2026 Q3 and 2027 Q2;
* grid connection:
  + 2024 Q3 – preliminary terms and conditions for the connection of the offshore wind farm to the national grid have been obtained; technical and legal negotiations with the Polish Transmission System Operator regarding a grid connection agreement are planned after the auction in 2025 in which the Project will take part;
* design
  + 2025 Q1 – procurement process for concept design and preliminary technical design (“FEED”) as well as electrical design and advanced design and building permit design for the offshore wind farm including grid connection has been commenced (2025 Q3 – expected agreement conclusion);
* procurement:
  + 2025-2028 – procurement processes for main components supply and installation are planned;
* construction phase:
  + 2029 – Final Investment Decision is expected;
  + 2030 – Foundation installation;
  + 2030/2031 – turbine installation is expected (it is expected to install turbines with grid available);
  + 2032 – commencement of commercial operation.

The Baltic East offshore wind farm has been granted a maximum capacity of up to 966 MW (grid connection capacity – 960 MW). The final offshore wind farm capacity (not higher than the above) is still to be determined, but at this stage one may expect that the value will be maximised unless there will be justified commercial or technical factors to reduce it. The type of the turbine is still to be determined and depends – among others – also on potential contractors answers to this RFI and business case for the Project with different offerings. The Project target is to utilise the latest turbine technology available, so one may expect that any potential future order may consist of 60+ WTGs in case of ordering turbines already commonly known or a few less if any potential contractor is able to offer turbines with higher power output. The WTG substructure types are also under evaluation with the most probable substructure types being Monopiles (MPs) or pre-piled jackets. The Inter-Array Cables (IAC) network will connect each WTG in strings or loops to the project’s Offshore Substations (OSSs). It is expected that the IAC voltage level will be 66 kV. The number of OSSs and the High Voltage (HV) level of the electricity export system has not been determined, however, there are generally expected one or two OSS (depending on received offers) and 275 kV AC power export system, connected to onshore 275/400 kV substation (220 kV AC for offshore export cables still under investigation). In case solution of two offshore substations it is expected to have 2 export cables per substation. For one offshore substation solution from 2 to 3 export cables are still considered.

1. **Project wind, current, tidal, environmental and soil conditions**

At the moment the met-ocean and geological conditions for Baltic East offshore wind farm are only partially known with studies, analysis and surveys being done in the near future in order to gain significantly more knowledge about the site specific conditions. Given, however, the surveys completed to date and knowledge neighbouring site, site conditions may be estimated with enough certainty for the potential suppliers to submit their RFI responses.

1. **Wind Speed Rose**

The prevailing wind directions in the offshore Baltic East site is expected to be West and South West with 15-20% of time being covered by wind from this direction. Other wind directions are expected to be quite evenly distributed in time.

The average wind speed in the offshore Baltic East site is expected to be between 9 m/s and 11 m/s. The maximum wind speed should not exceed 50 m/s.

Above-mentioned values are expected to be confirmed / verified by measurement campaign expected to commence in 2025.

1. **Waves**

It is expected that majority of waves on site will have westerly direction.

Waves directions are expected to be confirmed / verified by measurement campaign commenced in 2025.

1. **Soils Initial Information**

In the region of Baltic Sea, where the Project is located, the seabed is expected to consist of sand and clay so use of monopiles are preferred option, however use of jackets is also possible as foundations for turbines. However, in this region of the Baltic Sea, high local variability in ground conditions is also expected, therefore the Project will conduct a variety of surveys (among others: geophysical survey, seismic survey, initial and main geotechnical survey including CPTs and boreholes sampling, UXO surveys, boulder survey etc.) in order to better understand ground conditions and jacking restrictions at specific turbines’ locations.