FOCUS ON OFFSHORE WIND ENERGY IN POLAND AND POMERANIA 2020

Invest in Pomerania

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Introduction

The current pandemic and related restrictions have had a major impact on global energy consumption. According to the Global Energy Review 2020 (International Energy Agency), energy demand decreased by 3.8% on average in Q1 2020. The production of energy from sources like coal and oil declined by 8% and 5% respectively. Renewables were the only sources of energy to have seen an increased demand during the pandemic lockdown.

Global use of renewable energy grew by ca. 1.5% in Q1 2020 as compared to Q1 2019 mainly due to new wind and solar PV projects completed in the last year and the faster time of energy dispatch compared to other energy sources (lower operating costs and preferential legal regulations).

The growth reflects the trend towards greener energy predicted for years in expert forecasts. The COVID-19 pandemic will accelerate the shift, and the importance of fossil fuels will decline while the importance of renewable energy will grow. This shift is expected to receive more support by positive regulations in EU countries (European Green Deal implementation). One of the main efforts leading to the total decarbonization necessary to keep global warming below 1.5°C is the development of offshore wind energy.

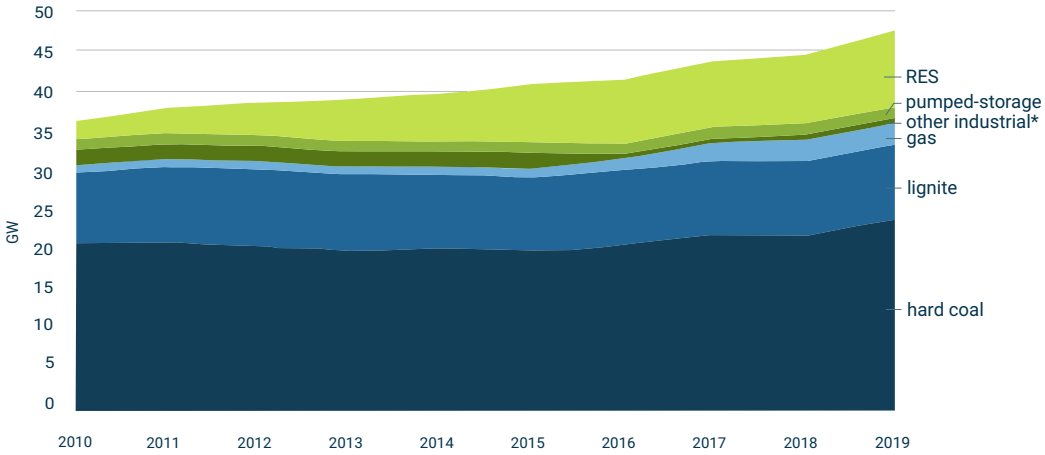
According to Global Offshore Wind Report 2020, the global offshore market has been growing by approximately 24% every year since 2013, reaching 29.1 GW of combined installation power in 2019. Incidentally, 2019 was the best year in the history of the offshore wind industry with 6.1 GW new capacity added. The prospects for the development of this industry over the next ten years look promising. Relatively low operating costs and minor social and environmental conflicts make this sector one of the fastest-growing in the world energy sector.

Europe remains the leader in terms of the number of offshore installations (75% worldwide). The European Commission estimates that offshore wind energy will become one of the key pillars of electricity generation in Europe by 2050. According to The Global Wind Energy Council, Poland is becoming one of the biggest and most promising markets in Europe for offshore wind in the coming decades. As stated in the Polish Energy Policy 2040, the south Baltic Sea area is expected to reach between 8 and 11 GW by 2040. Offshore wind energy can provide a cost-competitive and efficient solution on a large scale and offshore wind farms will be the main driver of green energy development in Poland.

Growing share of Renewable Energy Sources in Poland

The installed capacity[1] of Renewable Energy Sources (RES) in Poland has been steadily growing since 2010. Compared to other energy sources such as hard coal, lignite, gas, pumped-storage, only RES has experienced such significant growth in recent years. RES installed capacity increased almost four times over the past decade and accounts for nearly 20% of the total power output.

Installed power capacity over last decade in Poland

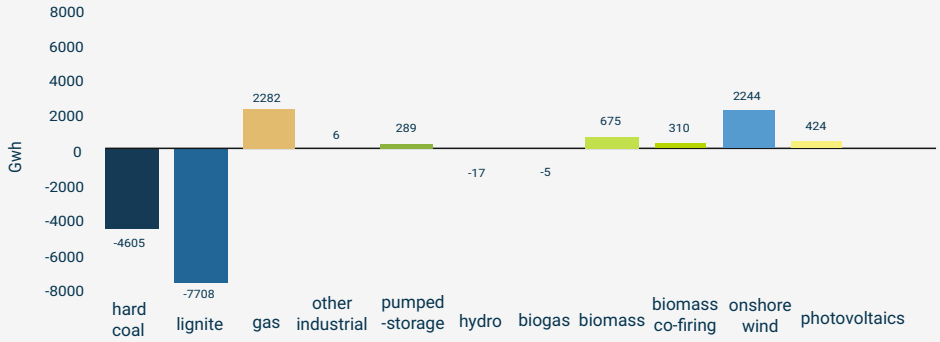


Source: Forum Energii, based on data of ARE, 31.12.2019

* Since 2016, the "industrial" category has been disaggregated by fuel type

The share of RES in electricity production[2] is the highest in history (15.4%), but still just a fraction of the production capabilities. Hard coal and lignite lost their importance in the energy mix by 4.8% as compared to the previous year. The increase in electricity production by wind farms was further aided by favorable weather conditions.

Change in electricity production in 2019 as compared to 2018 in Poland



Source: Forum Energii, based on data of ARE

In recent years there has been a significant increase in photovoltaics and onshore wind farms in the overall share of RES. Over the last two years the growth of RES in Poland has been driven by prosumer photovoltaics installations, along with government stimulation and reduced cost of technology.

Onshore wind energy contributes most to the development of RES in Poland. Its growth has been inhibited by the restrictive 10H principle legislation. According to the principle, the distance between a wind farm and a residential building must be equal to or greater than ten times the height of the wind farm (measured from ground level to the rotor blade's highest point). Obtaining new permits for the construction of onshore wind farms was practically impossible. It is anticipated that the 10H principle will be lifted or liberalised in the coming months. Current plans related to the development of RES include changing the distance between the wind farm and the residential area to 500 meters. Such changes would effectively unlock investments in wind farms and increase the share of RES in energy production in Poland.

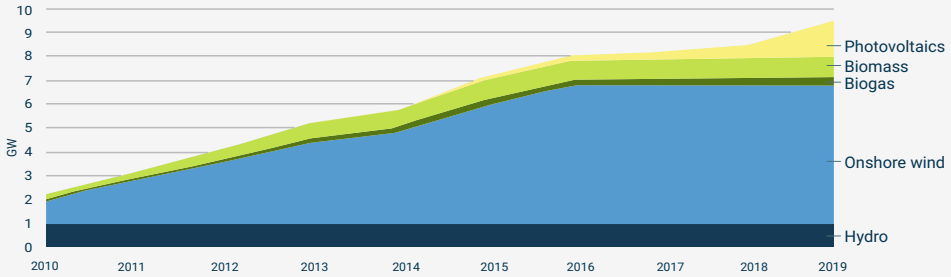
According to the updated Polish Energy Policy, RES should account for at least 23% of total gross energy consumption in 2030.

[1] The maximum output of electricity that a generator can produce under ideal conditions

[2] Amount of electricity that is produced over a specific period of time (usually measured in kilowatt-hours, megawatt-hours, or terawatt-hours)

Growing share of Renewable Energy Sources in Poland

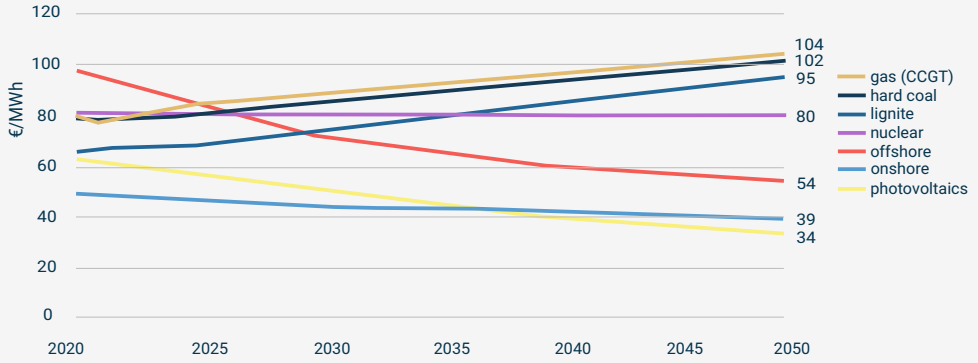
Installed RES power capacity over last decade in Poland



Source: ARE 31.12.2019

According to the analysis and forecasts conducted by the Energy Forum think tank, the cost of producing electricity from traditional sources will increase over the years. The development of new technologies and their popularization will significantly reduce the costs of producing electricity from photovoltaics and offshore and onshore wind farms.

Change in costs by 2050



Source: Economic and environmental impacts of PEP2040, Forum Energii

Change in costs by 2050

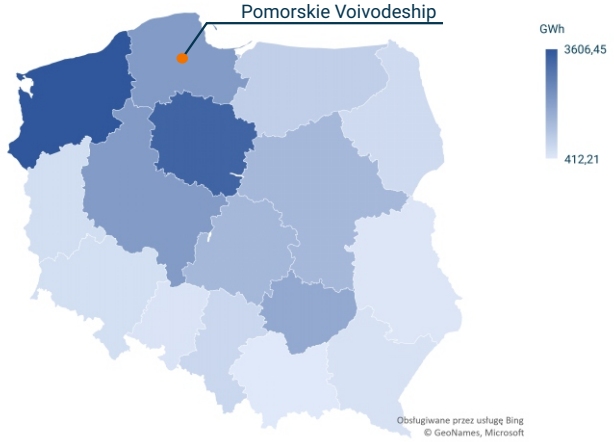
PV **45%** ↓ Offshore **45%** ↓ Onshore **21%** ↓ Nuclear **no change** Gas **30%** ↑

Hard coal **29%** ↑ Lignite **46%** ↑

Pomerania is one of the leaders in RES production in Poland with a share of over 50% of total energy production. However, the demand for energy consumption is nearly two times higher than overall energy production in the region.

Wind farms have the largest share in the production of renewable electricity (they generate over 90% of "green" electricity). The share of hydroelectric power plants is below 4%, and other sources have a share of about 4%.

RES production by voivodeships in 2018



Top 5 Voivodships in the production of energy from renewable sources in 2018 (GWh)

Zachodniopomorskie	3606,45
Kujawsko-Pomorskie	3311,02
Pomorskie	**2105,81**
Wielkopolskie	2096,07
Świętokrzyskie	1816,52

Source: Central Statistic Office, Fuel, Energy and Materials Market

Growing share of Renewable Energy Sources in Poland

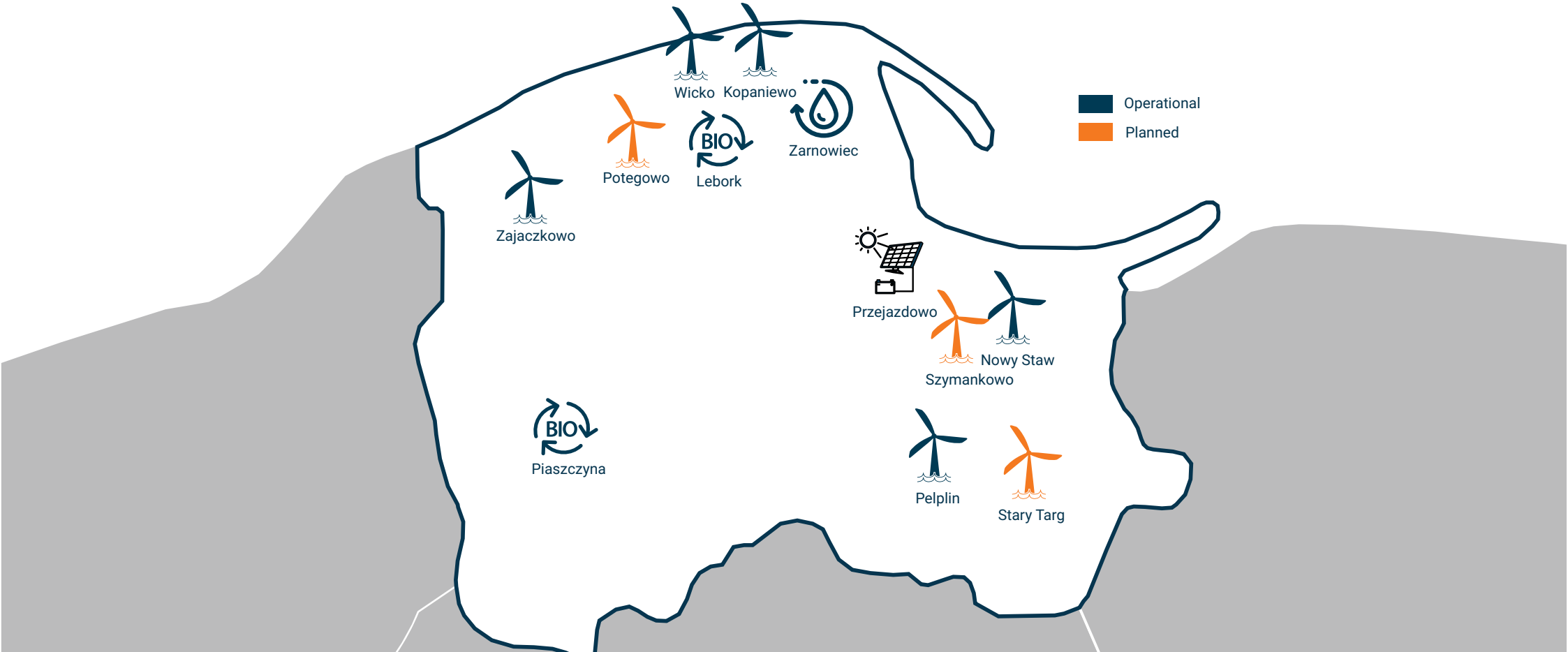
The largest wind farms in the Pomeranian Voivodeship are located in the vicinity of Pelplin, Nowy Staw, Kopaniewo, Wicko and Zajączkowo. There are more wind power plants planned in the region:

- The largest wind farm in Poland and one of the largest in Europe is being built in Potęgowo. It will consist of 81 General Electric turbines with a capacity of 2.5 MW and 2.75 MW. The whole investment will amount to 1.25 billion PLN. The project is being implemented jointly by GE Renewable Energy and Potegowo Mashav Sp. z o.o.
- One of the largest in Poland, Pomerania Wind Farm is being built in the Stary Targ and Dzierzgoń communes. The farm will include 29 turbines with a total capacity of 94 MW. This means that the turbines will be able to generate 300 GWh of electricity per year, which corresponds to the demand of about 75 thousand households.

The investor of this project is Ignitis Group from Lithuania and the total cost of construction of the farm will be 127 million Euros. Electricity generation from the Pomerania Wind Farm will start in spring 2021. Regional planning documents also indicate potential areas of wind turbine development both on land and at sea.

- Currently the largest Photovoltaic power plant in Pomerania (and at the time of its construction the largest in Poland) is located in Przejazdowo. The farm has 6,292 PV panels with a capacity of 260 W each, a total area of 25,000 sq m and an energy capacity of 1.64 MW.

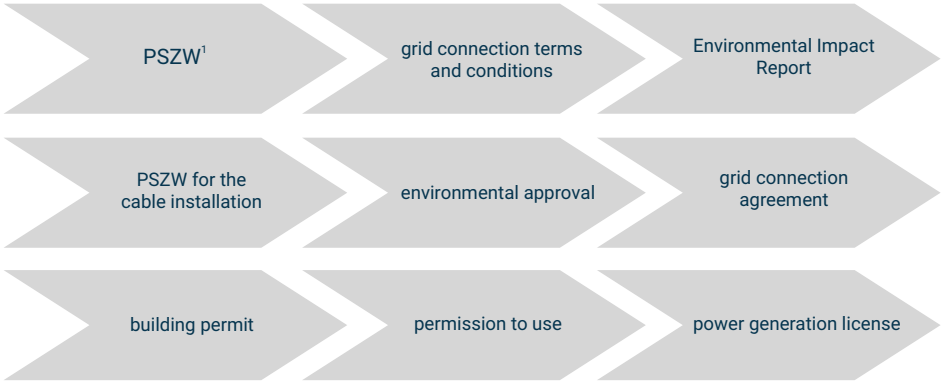
The Pomeranian Voivodeship also produces clean energy in biogas plants (the biggest ones in Piaszczyna and Lebork) and using the drop force of water (pumped-storage power plant in Zarnowiec, which function is to store electricity in order to mitigate the curve of daily load of the National Power System and to cover sudden losses and increases in power consumption).



Legal framework for the Polish offshore market

Current legislation in Poland highly restricts installations in the southern part of the Baltic Sea. The regulations governing the investment process of offshore wind farms are dispersed over many legal acts such as the Act on the Marine Areas of the Republic of Poland and Maritime Administration, the Act on Renewable Energy Sources, the Energy Law, and several other legal acts concerning the principles of the investment process. Their comprehensive analysis creates a complete picture of the legal situation of offshore wind investments.

Investment process for offshore wind farms in Poland



Source: Brysiewicz i Wspólnicy Law Firm

There is an urgent need to pass new legislation rules along with the public support scheme for offshore investments and include a new timeline for offshore development in Poland.These expectations are met by two new documents aimed at regulating legal issues related to this industry. These are currently in the course of legislative work.

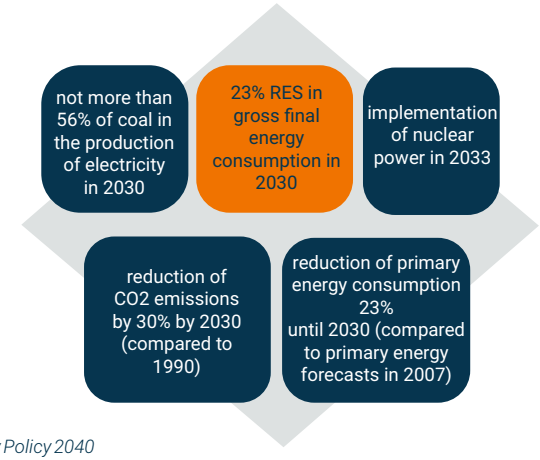
[1]permission to erect or use artificial islands, structures and equipment in Polish maritime areas

Legal framework for the Polish offshore market

Polish Energy Policy 2040

The project of the Polish Energy Policy 2040 is a strategic document indicating the directions in which the Polish energy sector will be heading. The document is going to be a compass for entrepreneurs, local governments, and citizens in the transformation of the Polish economy towards a low-carbon one. PEP 2040 will be based on three pillars: a fair transition, a zero-emission energy system, and care for the environment. The Polish energy mix is going to be made up of the nuclear system and offshore wind farms. These are going to be the two new strategic areas to be developed in Poland.

Polish Energy Policy 2040 target achievement indicators



Source: Polish Energy Policy 2040

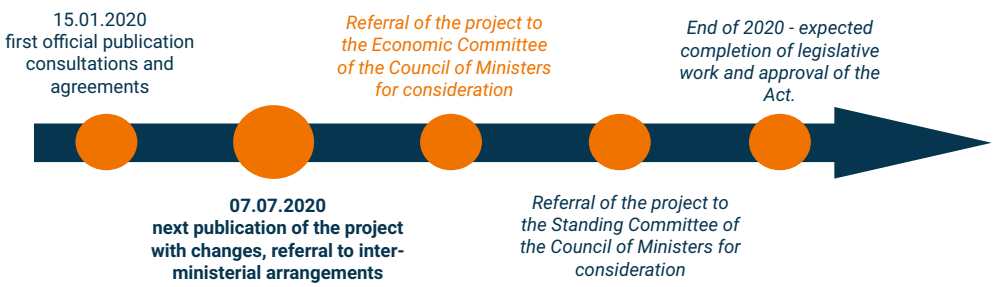
The Minister of Climate also pointed out that parallel to large-scale power engineering, distributed and individual power engineering will expand. These changes will lead to a significant improvement in air quality, and thus improve the quality of life of the society.

The Polish energy policy also assumes mechanisms to support and promote energy production from RES. With regard to offshore wind energy, these include priority access to the network and assistance mechanisms aimed at specific critical technologies.

The Offshore Bill

The long-awaited Offshore Bill is planned to be passed by the end of 2020 along with the publication of the final version of Polish Energy Policy 2040. The draft of the Offshore Bill was released in January 2020.

The estimated legislative process

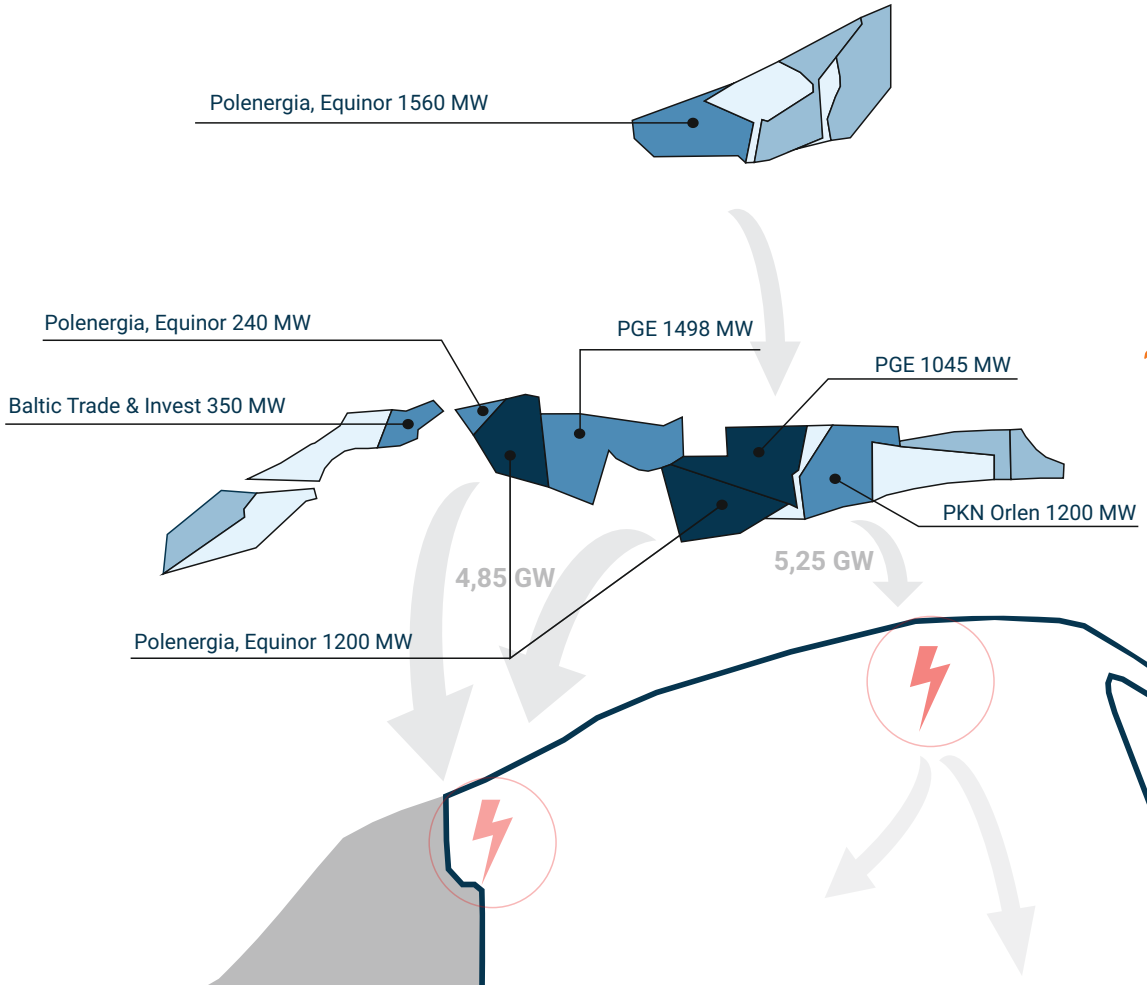


Source: Own forecast based on Government Legislative Center

- In the first phase only advanced wind farm projects will be supported (until June 2021, up to 5.9 GW power capacity):
  - The process of subsidizing electricity production from offshore farms will involve a Contract for Difference, the difference between the market value of the energy and its value arising from the individual decision issued by the regulator;
  - A negative balance will be covered by the subsidy.
- Further subsidies will be distributed via the auction system (up to 2.5 GW for at least two tenders in 2025, 2027, possibly 2028):
  - Support will be offered to tenders who offer the lowest price under the differential contract
  - Winning bids will have seven years to generate energy from the investment
  - Subsidies will be granted for 25 years (10 years more as compared to onshore energy bids)
- Investors will be obligated to prepare a "Supply chain plan for materials and services" to ensure competitiveness and transparency:
  - The involvement of local actors in the supply chain is recommended. However, the support would not be dependent on actually including Polish suppliers in the investment.
- The connection between investment and existing onshore power grid will receive a "strategic investment" status:
  - An investor will be able to use an accelerated path to obtain some administrative decisions.
- A special offshore tax will be introduced:
  - Offshore investments will not be subject to property tax (unlike onshore investments);
  - The indexed annual amount of tax: 23,000 PLN per 1MW in four quarterly instalments: 1 GW offshore plan = 23 million PLN per year in tax.

Planned offshore investments

Low salinity and shallow waters of the Baltic Sea are conducive to the construction of wind farms. Current offshore wind farm projects will be located within the Exclusive Economic Zone. The draft plan of the spatial development of the Polish Maritime Areas in the scale 1:200000 additionally indicates a total area of about 2.5 thousand sq m available for development. According to the Polish Wind Energy Association's report, taking into account the experience of Denmark and Germany as well as wind energy estimates in the Baltic Sea, it can be assumed that the capacity potential of the Polish Exclusive Economic Zone is at least 10-12 GW with production potential of 50 TWh per year. This is almost one-third of the current annual energy consumption in Poland. In the maximum variant, this ratio reaches 80 TWh with 20 GW of installed capacity. Some of the first and currently the most advanced projects are the Baltic II and the Baltic III, implemented by Polenergia in cooperation with Equinor.



Equinor will be responsible for the preparation and individual stages of the construction of offshore farms, and later, their operation.

Polenergia has two legally binding environmental decisions to build the OWF Baltic II (April 2017) and the OWF Baltic III (July 2016), connection agreements and environmental decision to build the infrastructure transmission (March 2019).

In January 2019 PGE Polska Grupa Energetyczna established the company PGE Baltica, responsible for the Maritime Programme of the PGE Capital Group. Currently, PGE is working on three offshore wind farm projects, two of which are at an advanced stage of implementation:

Baltica III - with a connection agreement for maximum 1045 MW

Baltica II - has received a proposal of technical conditions for connections to the NPS (National Power System) for 1489 MW in January 2019.

In 2019 PGE Polska Grupa Energetyczna and Ørsted signed a preliminary agreement describing the framework for cooperation in the transaction of 50% shares in the above mentioned projects. PGE Baltica is currently looking for a seabed geotechnical survey contractor.

The project of offshore wind farms of the PKN Orlen through the company Baltic Power is also at an advanced stage of development. PKN Orlen already received the conditions to be connected to the grid, has completed preliminary geotechnical tests of the seabed, and is continuing with wind measurements.

The Polish Power System Development Plan 2030 provides for the connection of offshore wind farms with a total capacity of 10.1 GW, including 5.25 GW - the Zarnowiec station area and the new Zarnowiec II station and 4.85 GW - the Słupsk Wierzbiecin station area and the new Slupsk Wierzbiecino II station.

Planned offshore investments

	permission to erect artificial islands	environmental approval	seabed exploration	technical conditions for connection	connection agreement
Polenergia, Equinor Baltic II and Baltic III	**2x 1,2 GW**	yes	yes	1,44 GW	**1,2 GW**
PGE Baltica 3	**1,0 GW**	yes	in the process	1,0 GW	**1,0 GW**
PGE Baltica 2	**1,5 GW**	yes	in the process	1,5 GW	in the process
Orlen Baltic Power	**1,2 GW**	in the process	yes	1,2 GW	in the process
RWE (BTI) FEW Baltic-2	**0,35 GW**	in the process	in the process	0,35 GW	in the process

	permission to erect artificial islands	environmental approval	seabed exploration	technical conditions for connection	connection agreement
EDPR B-Wind & C-Wind	**0,4 GW**	in the process	in the process	in the process	no
Polenergia and Equinor MFW Bałtyk I	**1,56 GW**	no	no	1,56 GW	in the process
PGE Baltica 1	**0,9 GW**	no	no	0,9 GW	no
Baltex 2	**0,8 GW**	no	no	no	no
Baltex 5	**1,5 GW**	no	no	no	no

Source: BiznesAlert.com

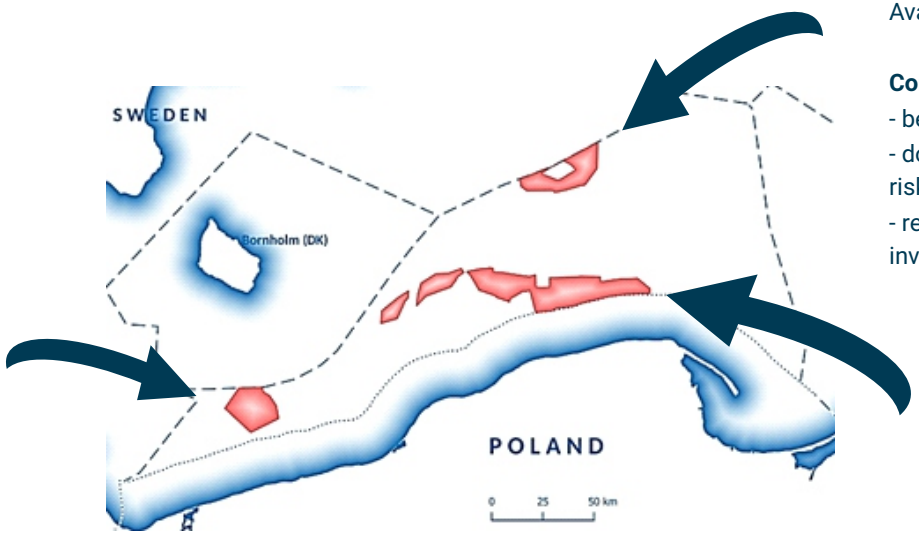
Planned offshore investments

In the draft of the Polish Maritime Spatial Plan in the scale of 1:200000, one can see the different potential areas of development in the offshore sector.

Oder Bank

Projected market area: 420 km2
Available power potential at first stage: 1,8 GW

Conditions:
- near ports in Swinoujscie and Szczecin with good facilities;
- potential problems with connection to existing onshore grid;
- intensive use of the area by fishermen.



Source: Polish Maritime Spatial Plan in the scale of 1:200000

Central Bank

Projected market area: 360 km2
Available power potential at first stage: 1,8 GW

Conditions:
- best wind conditions;
- does not generate social and environmental risks;
- relatively far from the coast which affects cost of investment and future maintenance.

Slupsk Bank

Projected market area: 1100 km2
Available power potential at first stage: 4,4 GW

Conditions:
- near coast and ports;
- good connection potential to the coast;
- in direct neighbourhood of Natura 2000 protected area and fishermen routes.

Educational facilities

According to McKinsey&Company, 77 thousand people will be employed in the Polish offshore energy industry, related to the development of offshore wind energy. Educational facilities in Pomerania have the potential to service the demand for processing offshore investments in the coming decades. It is estimated that currently there are ca. 7,400 students in core degrees at Pomeranian universities. However, it is important to develop and implement educational programs for vocational schools and new faculties at universities, including the production of components and support for the development and implementation of offshore wind farm projects.

POLITECHNIKA GDAŃSKA

Mechanical Engineering	758
Electronics &Telecommunications	743
Ocean Engineering	694
Electrical Engineering	643
Power Engineering	542
Environmental Engineering	520
Chemical Engineering	337
Biomedical Engineering	258
Green Technologies	99
Biomedical Engineering	42
Corrosion	37

UNIVERSITY OF GDANSK

Environmental Protection	119
Chemical Business	101
Management&Protection of Water Resources	69
Business & Environmental Technology	27
Aquaculture	17

GDYNIA MARITIME UNIVERSITY · POLAND · 1920

Mechanical Engineering	830
Electronics	575
Electronics &Telecommunications	288

Navigation	424
Mechanical Engineering	153

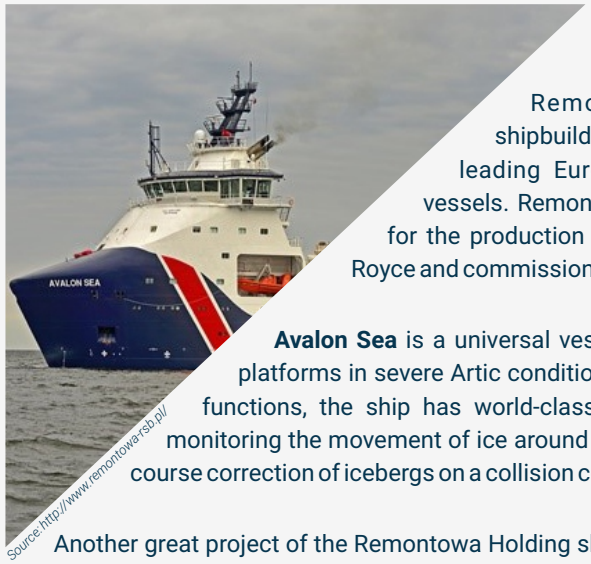
Akademia Pomorska w Słupsku

Environmental Protection	62

Major offshore manufacturers

Although the offshore industry in Poland is only just spreading its wings, the Pomeranian Voivodeship has developed this expertise for years. The region boasts of companies that are producers for the global offshore industry and in addition to the production of ships and installations for the offshore sector, the Pomeranian Voivodeship also has a vast number of ship design offices working on innovative projects.

REMONTOWA HOLDING



Source: http://www.remontowa-rsb.pl/

Remontowa Holding is the largest shipbuilding group in Poland as well as a leading European manufacturer of offshore vessels. Remontowa Shipbuilding was responsible for the production of "Avalon Sea", designed by Rolls Royce and commissioned by Secunda Canada.

Avalon Sea is a universal vessel designed to operate extraction platforms in severe Artic conditions. Along with basic transportation functions, the ship has world-class capabilities for anchor handling, monitoring the movement of ice around the platforms and the possibility of course correction of icebergs on a collision course with the offshore structure.

Another great project of the Remontowa Holding shipyard was the production of **Siem Aimery**. It is a unique cable carrier designed for laying, lifting and maintenance of submarine cables. Manufactured entirely in Poland, It is the most expensive and modern ship produced in the history of the Polish shipbuilding industry.

The Remontowa Ship repair Yard is the only one in Poland to offer comprehensive repair services, and modernization and reconstruction of all types of offshore platforms. It has been successfully operating drilling rigs and platforms since 2000. It was also responsible for the largest offshore project in Europe - reconstruction of the FPF1 production platform, equipped with most modern refinery installation for processing and transmission of both oil and gas obtained from the seabed.

The capital group also includes Marine Design, which designs for the offshore industry. Its portfolio involves, among others, 1674 Anchor Handling Towing Supply Vessel units that are used to operate oil fields and oil platforms.

Pomerania's potential in the development of the offshore industry

Source: www.crist.com.pl

CRIST

CRIST shipyard in Gdynia is responsible for the production of specialist INNOVATION and VOLE AU VENT (VIDAR) vessels. These heavy-lift jack-up type vessels are used to install and operate offshore wind farms. Crist Shipyard was also responsible for the production of partially equipped hulls for SOV (Service Operation Vessel) to operate offshore wind farms. It is the third such project for Bernhard Schulte Offshore GmbH, whose hulls were produced by Crist Shipyard.

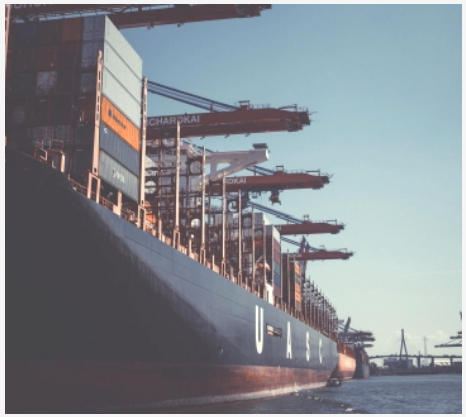
Source: pomorzesa.com.pl

MOSTOSTAL POMORZE

Mostostal has traditionally been a supplier of installations for underwater oil and gas extraction, as well as parts of the drilling platforms for leading contractors in the petrochemical and oil processing industries. Now they have added offshore projects to their portfolio, mainly for the Scandinavian market. In 2019 the company started the Johan Sverdrup Riser Platform (JSRP) project for Kværner AS. In the scope of the company's work, there were two platform modules, each of about 400 tons.

Since the beginning of 2019, the company has additionally signed three contracts with the Norwegian company Aker Solutions. These contracts are related to the prefabrication of steel structures for the expansion of various Norwegian installations: an oil and gas field drilling platform.

Source: trojmiasto.pl



Source: trojmiasto.pl

GRUPA PRZEMYSŁOWA BALTIC

In 2020 the Industrial Development Agency decided to establish the Baltic Industrial Group (Grupa Przemysłowa Baltic) - it includes Gdańsk Shipyard (former GSG Towers), Baltic Operator, and Energomontaż-Północ Gdynia.

The integration of the companies was to increase their chance to participate in the supply chain necessary for the implementation of Polish investments in the field of offshore wind energy.

The company aims to develop in various areas of activity, among others, it plans to start production of wind towers for offshore wind farms. The companies that are now a part of the Baltic Industrial group brought extensive experience in the offshore industry.

At the end of 2019, Energomontaż Północ Gdynia built structures weighing over 850 tons, consisting of a tower for laying underwater pipelines. The tower for laying pipelines from a reel on the seabed to a depth of 3 thousand meters will be installed on the ship Seven Vega. The vessel was ordered in 2017 and is a reel-lay unit.

In 2019, Gdansk Shipyard (former GSG Towers) executed a contract for Aker Solutions for the assembly of large steel structures. As the Vice President of the Management Board of Gdańsk Shipyard informed at that time, the cooperation with such an important client as Aker "opens up new opportunities for cooperation in the offshore sector and confirms the production capacity in the field of advanced steel structures".

Source: Nava Ship Design Office promotional materials

NAVA SHIP DESIGN

In early 2020, the Nava Ship Design Office based in Gdansk presented its latest Nava WFSV 22 catamaran project. This crew transfer vessel is meant to be used in the offshore wind farms investments.

STOGDA SHIP DESIGN

StoGda Ship Design Office, which has been operating for nearly 25 years, carries out many unusual offshore projects such as wave and tidal power plants, fish farms, oil vessels, jack-up vessels and other projects with CRIST Shipyard

Source: stogda.pl

POLISH REGISTER OF SHIPPING

PRS (Polish Register of Shipping) is an institution based on the classification and supervision of compliance of manufactured ships, warships, industrial installations, steel structures, etc. with the requirements of its own classification regulations, international conventions and state regulations. PRS has been supervising offshore facilities since the end of the seventies. The first facility was the self-elevating PETROBALTIC drilling rig. Gradually expanding the scope of equipment and systems covered by the supervision PRS supervises a significant part of infrastructure related to oil and gas extraction from the seabed.

In the area of offshore wind farms, PRS offers primarily:

- Certification of organizations, processes, personnel and products in the offshore wind farms value-added chain,
- Independent technical support,
- Capital management consulting,
- Independent Third Party supervision,
- Support in understanding and interpreting construction law

MARITIME ADVANCED RESEARCH CENTRE (CTO)

For nearly 50 years CTO has been conducting research and development activities for the shipbuilding, yachting, offshore and energy industries. CTO S.A. designs and delivers unique research equipment and performs product certification. CTO implements a number of programs, including those related to the offshore and RES industry. These programs include the following activities:

- experimental model tests and computational analysis being the basis for forecasting power demand and properties of offshore units,
- predicting environmental loads and interactions with the environment of offshore facilities,
- numerical MES analysis of structure strength and vibration and noise on offshore units and offshore facilities,
- model tests of multi-propulsor dynamic positioning systems,
- tests of fire resistance, sound insulation, resistance on vibrations and impacts of structures and equipment of offshore facilities,
- design of devices and mechanisms of on-board equipment of vessels serving offshore facilities,
- measurements of physical quantities on real offshore objects,
- research of models and prototypes of devices for energy conversion of seas, rivers and atmosphere,
- forecasting and verification of utility of renewable energy devices in their environment,
- numerical analysis of the flow and mechanics of equipment construction for energy conversion (e.g. wind turbines),
- field tests of wind and hydroelectric power plants.

Pomerania's potential in the development of the offshore industry

Existing supply chain

A majority of the 100 Polish companies with the right expertise to construct offshore wind farms operate out of Pomerania*. But, some parts of the regional value chain still need to be developed, i.e nacelle rotor and blades production, some installation processes etc. The Polish Government via Invest in Pomerania is encouraging companies with these expertise to come invest in the region.

Pomerania-based companies

Generpol companies that may potencially take part in the specified proccess as sub-supplier

Development and project management	Turbine supply			Shipbuilding industry	
	Nacelle	Tower	Rotor / blades	Vessels design	Vessels construction, service and rental
Baltex EiGM	*Grupa Przemysłowa Baltic (Energomontaż Północ Gdynia)*	Grupa Przemysłowa Baltic (former GSG Towers)	Grupa Przemyslowa Baltic	NED Project	CRIST
Baltic Trade and Invest	*KK Wind Solutions*	*Mostostal Chojnice*	*Alushіp Technology*	Nelton	Remontowa Holding
PGE EO			LM Wind Power Blades (GE)	StoGda Ship Design & Engineering	Stocznia Remontowa NAUTA
PKN Orlen			Euros	MARS Design & Solution	Technical Ship Management
Polenergia			*Energop*		Morska Stocznia Remontowa GRYFIA
AOS					Poltramp Yard
Generpol					
MEWO					

*The table does not exhaust the list of companies operating in the offshore sector in Poland

Source: Sawulski, Gałczyński, Zajdler: A review of the offshore wind innovation system in Poland, 2018/ own forecast

Pomerania's potential in the development of the offshore industry

Foundation and connection infrastructure supply			Installation					Operations, maintenance and service
Foundations	**Cables**	**Substations**	**Construction Port**	**Foundation installation**	**Cable laying**	**Offshore substation installation**	**Turbine installation**	KK Wind Solutions
Aarslef	Nexans	Bladt Industries	Port of Gdansk	Aersleff	*MEWO*	Bladt Industries	ROBUR Baltic	MEWO
Bladt Industries	Tele-Fonika Kable	Grupa Przemyslowa Baltic (Energomontaż Północ Gdynia, former GSG Towers)	Port of Gdynia	GS Seacon			Total Wind	ROBUR Baltic
Grupa Przemyslowa Baltic (Energomontaż Północ Gdynia)		Ormazabal	Szczecin and Swinoujscie Seaports					Total Wind
GS Seacon		Spomasz Żary						
Spomasz Żary								
St3 Offshore								
Vistal Gdynia								
ZAMET Industry / Mostostal Chojnice								
Finomar								
Makromor								

Port of Gdynia - offshore development hub in Poland

Gdynia will be one of the major beneficiaries of the development of offshore wind farms on the Baltic Sea. Port of Gdynia will become the main point of picking and transporting wind farm components thanks to its extensive experience in oversize transshipments, excellent navigation conditions for jack-up vessels, and dynamic positioning installation vessels. The Port has been working on the Outer Port project for years, and soon, they will also work on the construction of an installation terminal for the construction of wind farms. All this will also contribute to the development of railroad routes (planned development of rail route 201) and road network. Besides, the city is working closely with neighbouring municipalities to provide adequate investment areas to support offshore development in the region. The project will contribute not only to the creation of new jobs but also to provide significant revenue for the city.

Due to the development of the offshore industry in Poland, Port of Gdynia Authority S.A. has become a member of the WindEurope organization with over 400 members in 30 countries, thus creating the largest organization related to the offshore industry in the world.

Installation terminal

According to the Government's announcements, the Port of Gdynia will be officially indicated as a site for the construction of an installation terminal for the Polish offshore industry. The Polish parliament is already proceeding the adequate resolution. The investment will cost 500 million PLN and will be co-financed from government funds. Taking into account that the first Polish wind farms on the Baltic Sea will start working in 2025, the terminal must be built by 2024 at the latest to handle the first farm installation works.

Fot. T. Urbaniak

Port of Gdynia - offshore development hub in Poland

Outer Port with offshore terminal

The construction of the Outer Port is the driving force behind the development of the port of Gdynia and the significant increase in the port's reloading capacity. The new investment will increase the handling capacity by 2.5 million TEU and will allow serving of 430-meter ocean-going vessels. The works are to be completed by 2028. The Port of Gdynia Authority plans to apply for an environmental decision in Q4 2020.

Designed wharf parameters

total area	**180 ha**
length	**2500 m**
width	**700 m**
maximum size of handled container vessels	**30 000 TEU**
estimated construction costs	**787 mil €**

Source: Port of Gdynia Authority S.A.

The announcement of recruitment of entities to participate in the Competitive Dialouge is planned at the end of 2020. During the process, the potential private partners will help developethe final scope and shape of the project. The planned location of the offshore terminal is at the end of the pier, however, taking into account the flexibility of the project, it can also be built in the western part located closer to the currently existing main breakwater of the Port of Gdynia.

Q1/ Q2 2028 completion of construction work

Q1 2022
building permit

Q2 2021
environmental approval

Q1 2021
signing the contract for public-private partnership will measure the Port of Gdynia Authority and a private partner

Q4 2020
report on the impact of the investment on the environment

Q4 2020
report on the impact of the investment on the environment

Q3 2020
completion of environmental research and analysis

Q1 2020
final feasibility study

Q4 2019 - Q1 2020
public consultations

Q4 2019
preliminary feasibility study

Q4 2019
selection of a transaction advisor within the conducted PPP procedure

Source: Port of Gdynia Authority S.A.

Port of Gdansk - port expansion concept

The concept of building a Central Port is being prepared by the The Port of Gdansk Authority. It would be the largest Polish maritime investment in the 21st century, which would make the Port of Gdansk the largest port in the Baltic Sea basin and one of the leading ports in Europe. The undertaking is at the stage of design works.

The project of the Central Port provides for the construction of an offshore terminal and securing areas for new shipyards for the offshore industry.

The investment is to include, among others, two new container terminals, an offshore terminal, an LNG terminal and dedicated space for new shipyards for the development of the offshore industry. The Central Port in Gdansk is to be built on the formula of Public-Private Partnership. The project has received governmental support from the Ministry of Maritime Economy and Inland Navigation.

Source: Port of Gdansk Authority S.A.

Key facts	
total area	**400 ha inland and 1400 ha of the Gulf of Gdansk**
length of service wharf	**19 km**
total number of new terminals	**9**
estimated construction costs	**ca. 2.5 bln €**

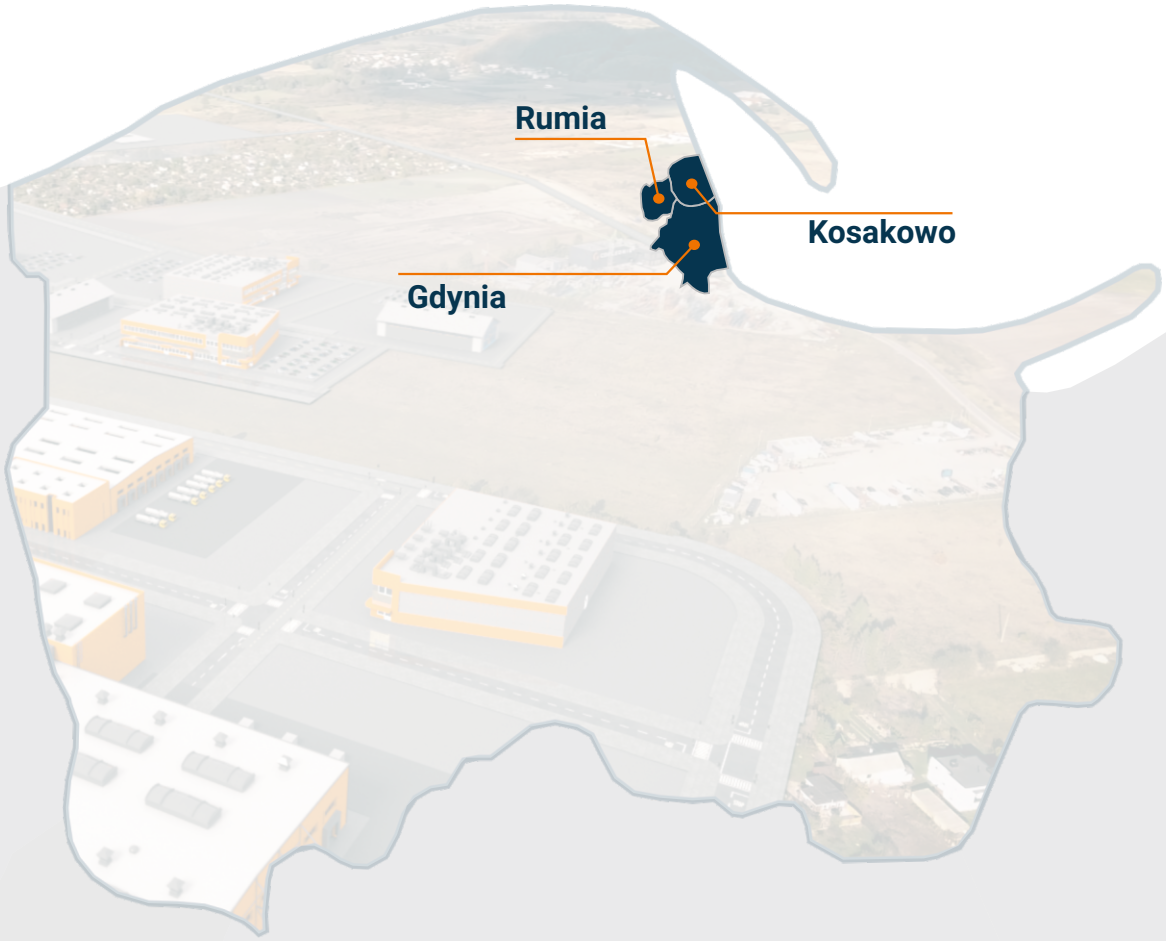
Port of Gdynia Logistics and manufactuirng backyard

In 2019, the City of Gdynia, the Port of Gdynia Authority and the municipalities of Rumia and Kosakowo signed a letter of intent to build onshore facilities for offshore wind farms on the southern coast of the Baltic Sea. In the areas belonging to the Port and investment areas of the municipalities, logistic, production and handling facilities for the construction and operation of offshore wind farms on the Baltic Sea will be built.

The signed letter of intent is one of the elements of the overall cooperation between the municipalities within the Logistic Valley. The development of this joint venture of neighbouring communes is one of the elements of building a wide range of facilities not only for the offshore industry in Poland but also for the service of the Outer Port.
Attracting offshore companies to the communes' areas, increasing the number of jobs, inflow of new residents, including those performing contracts for the aforementioned companies, are some of the greater benefits that the development of the Logistic Valley will bring to the communes. Both Rumia and Kosakowo municipalities have numerous investment areas, which are in progress or being looked at for new investments.

Pomeranian Platform for Offshore Wind Energy Development in the Baltic Sea

In 2020 Marshall Office of the Pomeranian Voivodeship together with Invest in Pomerania and other institutions in the region, signed a letter of intent on the establishment of the initiative called "Pomeranian Platform for Offshore Wind Energy Development in the Baltic Sea". The agreement aims to undertake joint activities for offshore development in the region and comprehensive support in such areas as supporting Pomeranian entrepreneurs, developing economic contacts (local content), preparing staff, supporting the development and use of regional research and development potential, conducting information activities, as well as supporting the building of public awareness.



Conclusion

The development of offshore wind energy in the Pomeranian Voivodeship will contribute to the development of many other sectors of the economy and will positively affect the labour market. Construction of wind farms in the southern part of the Baltic Sea will result in the inflow of new domestic and foreign investments in the region and create new jobs. Here are a few examples of the planned sectoral development:

Shipyards

- Construction and building of new specialized vessels for transporting and installing wind farms;
- operating production lines for towers, foundations and other steel elements.

Ports

- Logistics, transshipment and transport services for the construction and maintenance of offshore wind farms.
- The Port of Gdynia is already preparing plans for installation and service terminals for the offshore sector.

Warehouses

- Storage for generators, towers and foundations;
- crane services;
- communication with ports and shipyards

Offshore power plant equipment and components

- Design and production of equipment and components such as foundations, nacelles, blades, towers, platforms etc.

Cables

- Production, storage, transport, laying

Education

- Introduction of training programmes for industries which contribute to offshore wind farms development

Technology

- Creating effective marine technologies for the offshore construction and operation purpose;
- participation in environmental analysis;
- monitoring of the marine environment

Offshore project preparation and management

- Environmental analysis;
- conducting administrative procedures;
- supply chain management, risk assesment; construction supervision;
- project management;

Tourism

- Promotion of offshore wind farms as a tourist attraction;
- organisation of cruises to the wind farms areas

Financing and insurance

- specialised financing and insurance services;
- risk analysis;
- financial instruments implementation;
- audits

Safety

- installation and management of monitoring systems for offshore wind farms

Invest in Pomerania is a regional non-profit initiative that supports Foreign Direct Investment projects in Pomerania. It acts as a 'one-stop-shop', providing help and services at every stage of the investment process.

Invest in Pomerania undertakes numerous promotional activities to show the potential for development of various industries in the region, including participation in international maritime events such as **Offshore Technology Conference in Houston, Texas**, **Nor Shipping in Oslo** and events organized in the region such as **International Conference & Exhibition Offshore Wind - Logistics & Supplies in Gdynia**.

For all the investors we provide the following services:

STAGE I

Information: providing reports, analysis, information on selected economic factors such as talent pool and employment costs, renting/purchasing costs of properties as well as legal regulations on conducting business in Poland and Pomerania, current situation of the given industry and conditions of development in the region, along with local best practices.
Study visits: organising study visits in Tricity and Pomerania, location scouting, reference visits to multinational companies established in the region, ports, technology parks, presenting available plots, warehousing and production facilities.

STAGE II

Matchmaking: connecting the investor to potential business partners interested in cooperating with the investor i.e. media houses, local authorities, real estate, HR agencies etc. Temporary office space: providing temporary office space for the setup phase (2-4 people) in the Invest in Pomerania location for the period of maximum 3 months.

STAGE III

After-care: a broad range of post-investment support according to future needs of the investor i.e. developing the scope, training, hiring, participation in educational and business events, troubleshooting and investor's spokesman services that facilitate assistance in work permits & visas for foreigners. Reinvestment support: in case the company would like to develop the scale of its operations (over the initial FTE cap), Invest in Pomerania is open for further discussions on the future support – as well as facilitate contact with the Polish Trade and Investment Agency on state incentives for hiring purposes.

Invest in Pomerania at OTC

Since 2019 Invest in Pomerania has been organising a regional stand of the Pomeranian region at the international Offshore Technology Conference in Houston. The Offshore Technology Conference is the world's leading offshore conference held since 1969 in Houston, Texas, the capital of the global energy sector. Pomeranian companies from the offshore sector joined the economic mission. The stand included space for talks with business partners.

Invest in Pomerania plans to participate in the following years and promote Pomerania and Poland as a place of dynamic development of the offshore sector.

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