Green Energy

Export Day 2024

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WORKSHOP #3

POLAND

MINISTRY OF FOREIGN AFFAIRS OF DENMARK

DBDH

DI Energi

Danish Energy Agency

GREEN POWER DENMARK

STATE OF GREEN

GREEN ENERGY EXPORT DAY – POLAND

Poland, Denmark's neighbour, is a top energy export destinations and attracts many Danish energy companies for exports, project development, investment, manufacturing and development. Poland is connected to Denmark via Baltic Pipe and our countries have much to gain by further common infrastructure.

Poland's green energy ambitions have never been stronger, and billions of euros are being released for Poland's green energy transition, e.g. through EU's Recovery Programme which has just been activated in Poland. Denmark is well positioned, through the Energy Governance Programme and other initiatives, to reap the benefits from a growing green energy collaboration.

- Introduction to Energy in Poland, by Niels Malskær, Senior Energy Advisor, Danish Embassy in Warsaw
- EU Funds for Green Investments, by Izabela Jakobsen, Energy Team Leader, Danish Embassy in Warsaw
- Wind Energy – Plans and Prospects, by Jeppe Johansen, Chief Advisor, Danish Energy Agency
- District Heating – Upcoming National Strategy, by Bue Rømer Tidemann, Energy Advisor, Danish Energy Agency
- Energy Infrastructure, by Bothilde Benedikt Nielsen, International economist, Energinet
- Dialogue and conclusions

EU FUNDS FOR GREEN INVESTMENTS

- Key figures
- Plans for national recovery funds
- External and internal funds for the green investment

ENERGY SECTOR IN POLAND – FINANCING PROGRAMS

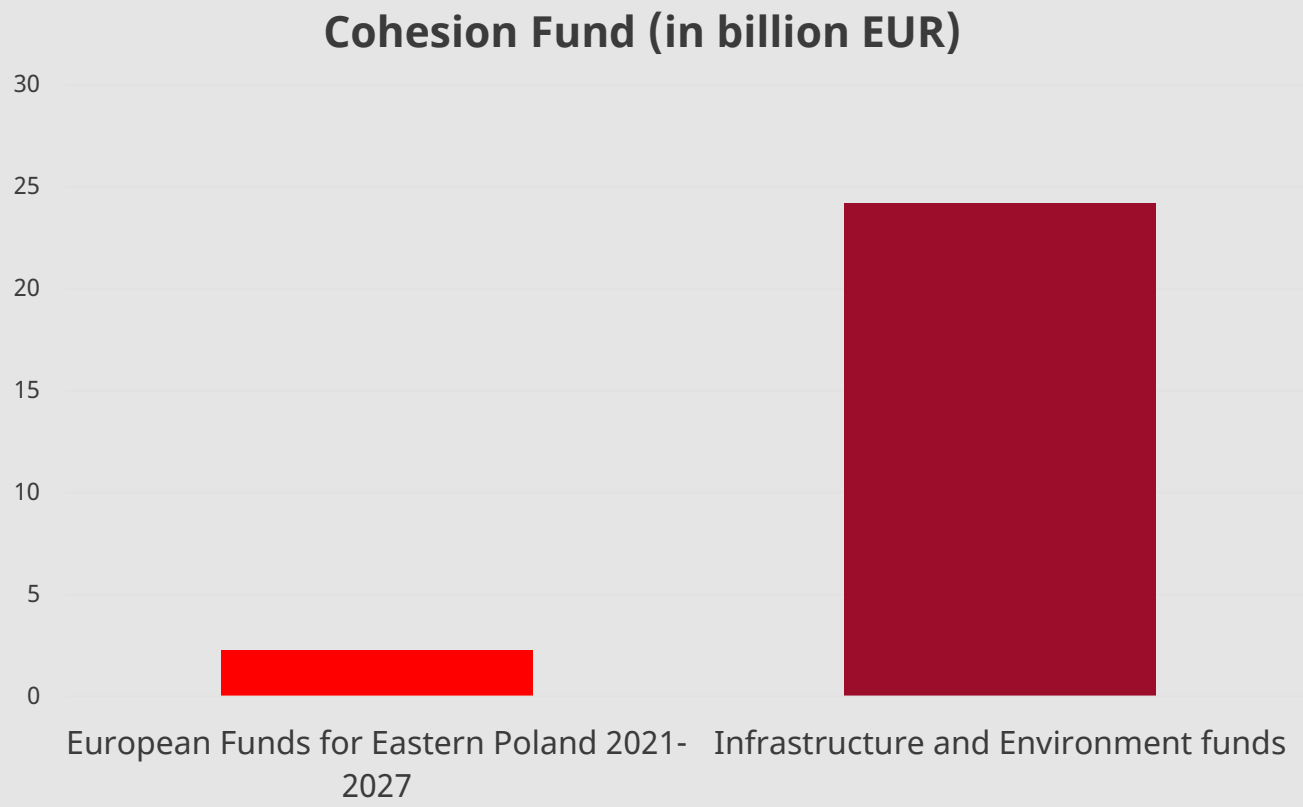
About PLN 260 billion from EU and national funds under various mechanisms will be allocated to the national energy and climate transformation by 2030, including:

- Cohesion Policy (approx. PLN 79 billion),
- Recovery and Resilience Facility (approx. PLN 97.8 billion),
- Just Transition Fund (approx. PLN 15.6 billion),
- ReactEU (approx. PLN 1.8 billion),
- Other instruments (e.g. priority programs of the National Fund for Environmental Protection and Water Management and funds from the Common Agricultural Policy, approx. PLN 20 billion).
- New instruments that will support the transformation of the energy system in Poland, e.g. the Modernization Fund and the national special purpose fund, supplied with funds from the sale of CO2 emission allowances, i.e. the Energy Transformation Fund (for which preliminary estimations indicate over PLN 47.6 billion) .

EUROPEAN COHESION FUND

- There are two funds that are a part of Cohesion Fund that involve Energy transformation.

1. European Funds for Eastern Poland 2021-2027 (**2,3 billion EUR**). Focuses on Energy distribution networks and adaptation of cities to climate change.
2. Infrastructure and Environment funds (24,2 billion EUR). **6 bilion EUR** allocated for the Energy sector and **3,6 billion** – environment.



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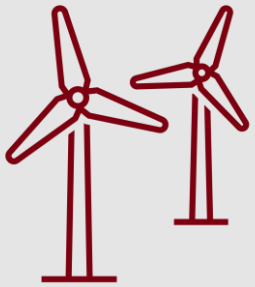
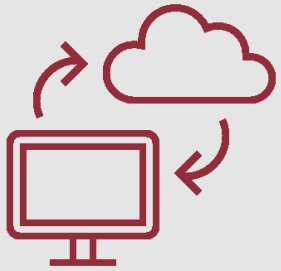
KEY FIGURES – POLISH NATIONAL RECOVERY PLAN (KPO)

SUBSIDIES:
25.3 bil. euro in subsidies/grants
34.5 bil. Euro in loans
In total: 59.8 bil. euro

ALLOCATIONS:



46,6% for the green transformation



21,3% for the digital transition

BENEFICIARIES:
- **ENTERPRENEURS**
- **PUBLIC INSTITUTIONS**
- **CITIES, MUNICIPALITIES**

Source: KPO.GOV.PL

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NATIONAL RECOVERY PLAN
ENERGY EFFICIENCY

Economic resilience and competitiveness
- In total 4.7 bil. euro

Green energy and reduction of energy intensity
- In total 14.3 bil. euro

Efficiency, accessibility and quality of the health care system
- In total 4.5 bil. euro

Digital transformation
- In total 4.9 bil. euro

Green, intelligent mobility
- In total 7.5 bil. euro

- **Energy efficiency in residential buildings**
  - ”Clean Air Program”
  - Both single- and multi-family houses.
  - Thermal modernizations, RES installations and replacement of inefficient sources for heat.
  - Total 3,201 mil. euro.

- **Investment in heat sources in district heating systems.**
  - Heat and energy management with the use of modern technologies in district heating.
  - Incinerations, district heating and heat pumps.
  - Total 300 mil. euro.

- **Thermal modernization of schools**
  - Deep, comprehensive thermo modernization including insulation, replacement of windows etc.
  - Modernization of internal heating systems.
  - Total 290 mil. euro.

- **Passive buildings for social activity**
  - Energy renovations of social buildings like libraries and community centers.
  - Identification of the buildings with the lowest energy efficiency.
  - Total 67 mil. euro

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INVESTMENTS IN THE RECOVERY PLAN
- GREEN ENERGY

Economic resilience and competitiveness
- In total 4.7 bil. euro

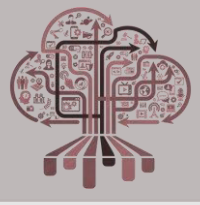
Green energy and reduction of energy intensity
- In total 14.3 bil. euro

Efficiency, accessibility and quality of the health care system
- In total 4.5 bil. euro

Digital transformation
- In total 4.9 bil. euro

Green, intelligent mobility
- In total 7.5 bil. euro

- **Investment in hydrogen technologies, production, storage and transportation of hydrogen**
  - Total 800 mil. euro.
- **Development of transmission networks, intelligent electricity infrastructure**
  - Total 300 mil. euro.
- **Energy Storage**
  - Total 200 mil. euro



- **Energy efficiency and RES in enterprises - investments with the highest GHG reduction potential**
  - Total 300 mil. euro.
- **Construction of offshore terminal infrastructure**
  - Total 437 mil. euro.
- **Construction of offshore wind farms**
  - Total 3,250 mil. Euro

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INVESTMENTS IN THE RECOVERY PLAN
- ENVIRONMENT ETC.

Economic resilience and competitiveness
- In total 4.7 bil. euro

Green energy and reduction of energy intensity
- In total 14.3 bil. euro

Efficiency, accessibility and quality of the health care system
- In total 4.5 bil. euro

Digital transformation
- In total 4.9 bil. euro

Green, intelligent mobility
- In total 7.5 bil. euro

Water

- **Investments in sustainable water and wastewater management in rural areas.**
  - Total 204 mil. euro.
- **Investments in enhancing sustainable water management potential in rural areas, involving multifunctional hydro technical investments**
  - Total 667 mil. euro.
- **Investment in risk neutralization and rehabilitation of large-scale degraded areas and the Baltic Sea**
  - Total 200 mil. euro.

Transport

- **Support for low-carbon economy (environmentally friendly transport)**
  - Total 1,114 mil. euro.
- **Zero and low emission public transport (purchase of buses)**
  - 1131 mil. Euro

Green transformation of cities

- **Investments for a comprehensive green transformation of cities**
  - Total 2,800 mil. euro.

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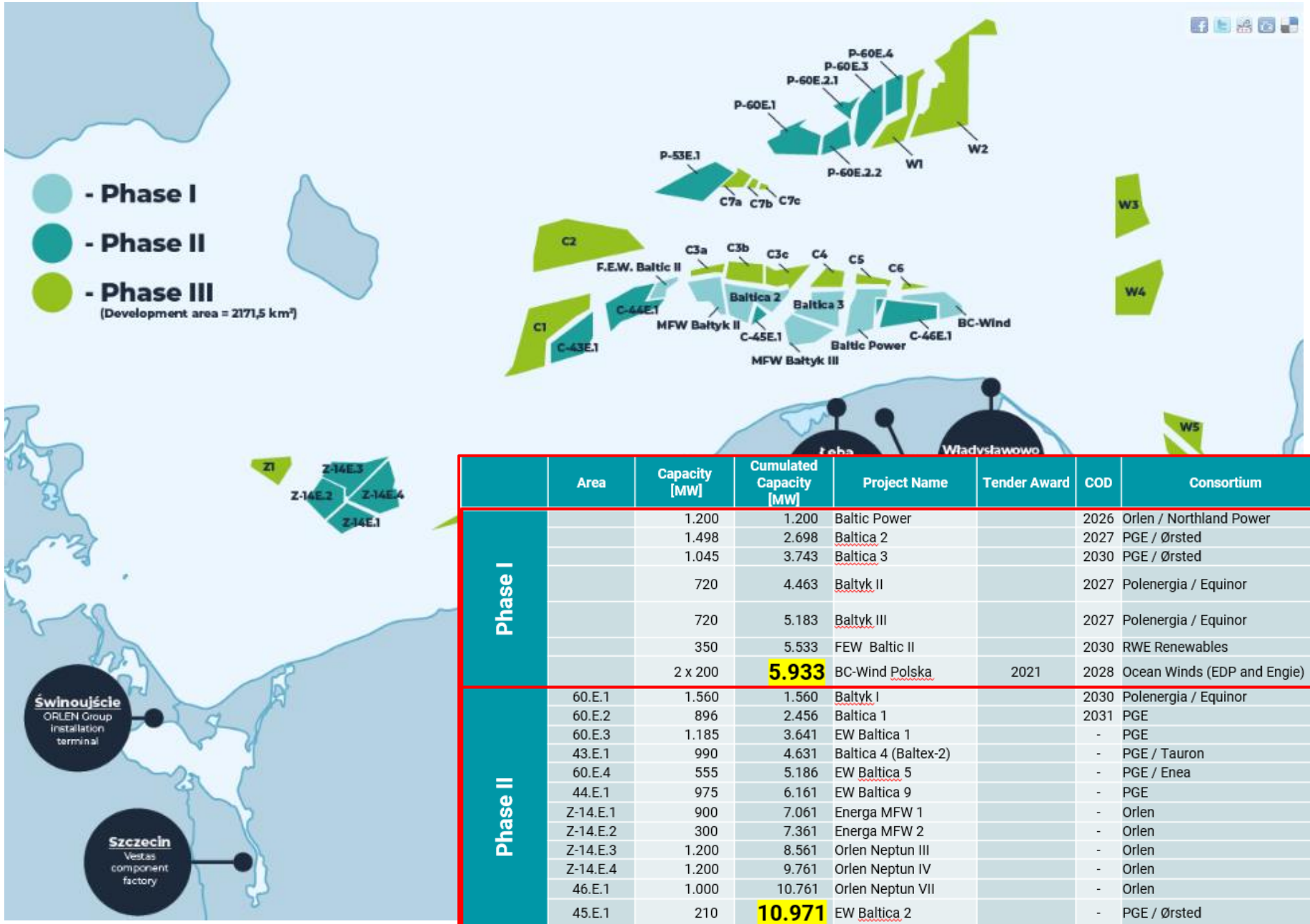
Polish Offshore Wind Energy – Plans & Prospects

Jeppe Johansen, Chief Advisor, Centre for Global Cooperation / DEA

23. August, 2024

Danish Energy Agency



	Area	Capacity [MW]	Cumulated Capacity [MW]	Project Name	Tender Award	COD	Consortium	Number of WTG	WTG Type / [MW]
Phase I		1.200	1.200	Baltic Power		2026	Orlen / Northland Power	76	Vestas / 15
		1.498	2.698	Baltica 2		2027	PGE / Ørsted	107	SG / 14
		1.045	3.743	Baltica 3		2030	PGE / Ørsted	80-105	
		720	4.463	Bałtyk II		2027	Polenergia / Equinor	45	SG 14-236 DD / 14.4
		720	5.183	Bałtyk III		2027	Polenergia / Equinor	45	SG 14-236 DD / 14.4
		350	5.533	FEW Baltic II		2030	RWE Renewables	25	
		2 x 200	**5.933**	BC-Wind Polska	2021	2028	Ocean Winds (EDP and Engie)	up to 34	
Phase II	60.E.1	1.560	1.560	Bałtyk I		2030	Polenergia / Equinor	-	
	60.E.2	896	2.456	Baltica 1		2031	PGE	-	
	60.E.3	1.185	3.641	EW Baltica 1		-	PGE	-	
	43.E.1	990	4.631	Baltica 4 (Baltex-2)		-	PGE / Tauron	-	
	60.E.4	555	5.186	EW Baltica 5		-	PGE / Enea	-	
	44.E.1	975	6.161	EW Baltica 9		-	PGE	-	
	Z-14.E.1	900	7.061	Energa MFW 1		-	Orlen	-	
	Z-14.E.2	300	7.361	Energa MFW 2		-	Orlen	-	
	Z-14.E.3	1.200	8.561	Orlen Neptun III		-	Orlen	-	
	Z-14.E.4	1.200	9.761	Orlen Neptun IV		-	Orlen	-	
	46.E.1	1.000	10.761	Orlen Neptun VII		-	Orlen	-	
	45.E.1	210	**10.971**	EW Baltica 2		-	PGE / Ørsted	-	
	53.E.1	?		-		-	-	-	

Danish Energy Agency

PLANS FOR POLISH WIND INDUSTRY

PWEA & WIND INDUSTRY HUB

Political targets – Offshore wind

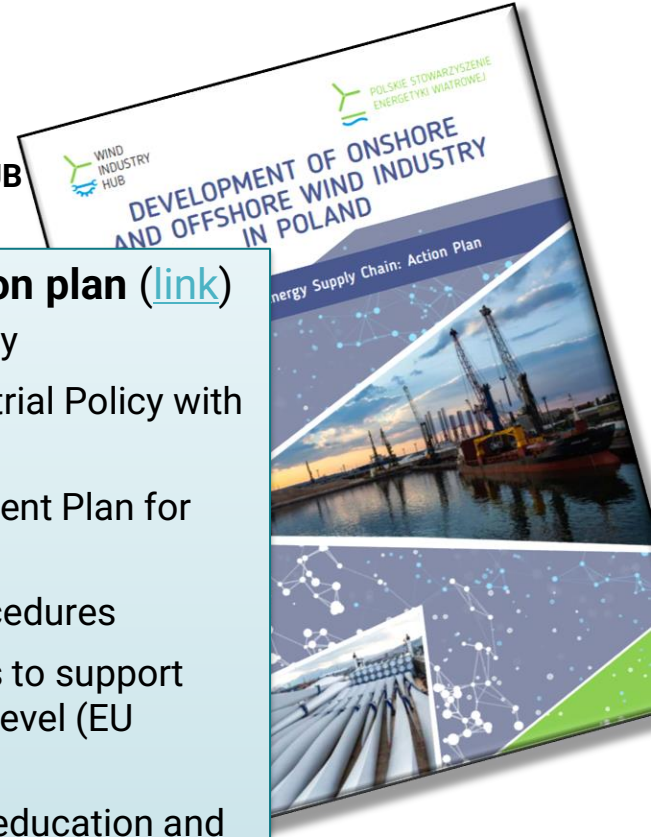
- Increased security of supply and energy independence
- Strengthening supply chain industry
- Improved regulation and administrative processes
- Training of skilled workforce
- Infrastructure – ports, grids, hydrogen, vessels
- National security and defense
- Comply with EU policy
  - NZIA, European wind power package, …

Potential for Danish companies

- Current Danish presence – 700 companies employing ~100.000 employees
- Additional 200.000 new jobs is expected
- Skilled employees

Polish Wind Industri Hub – action plan (link)

1. Updating Poland's energy policy
2. Supplementing Poland's Industrial Policy with provisions
3. Updating the Spatial Development Plan for Polish Marine Areas (MSP)
4. Simplifying administrative procedures
5. Creating financial mechanisms to support Polish wind industry at the EU level (EU funding)
6. Training of personnel through education and reskilling programmes.
7. Establishment of schemes promoting involvement of local producers within EU regulatory framework
8. Implementation of NZIA to national legislation.
9. Implementing the European Wind Charter in Poland
10. Establishing appropriate administrative base (institutional capacity) and coordinate work within Ministries



District heating in Poland

From a Danish perspective

BUE RØMER TIDEMANN, ENERGY ADVISOR, CENTRE FOR GLOBAL COOPERATION / DEA

23. August, 2024

Danish Energy Agency

State of affairs

- More focus on green transition after the change of government
- EU financing are becoming available
- Widespread engagement from local heating companies to go green
- New heat strategy expected in September
- Extensive collaboration between DEA and relevant partners.

Forum Energii

Ministry of Climate and Environment
Republic of Poland

Challenges

- Lack of standardized project assessment tools
- Need for coordinated heat planning
- Need for revised tariff regulation
- Need better understanding of the roadmap and process of going green
- Need for better understanding of new business cases in decentralized DH

POLAND AS AN ENERGY PARTNER

- Baltic Pipe
- Biogas and biomethane cooperation agreement
- Potential partnership on electricity