ENERGY PERFORMANCE SHEET FOR THE WEST POMERANIAN VOIVODESHIP IN RESPECT OF RES USE FOR ELECTRICITY GENERATION

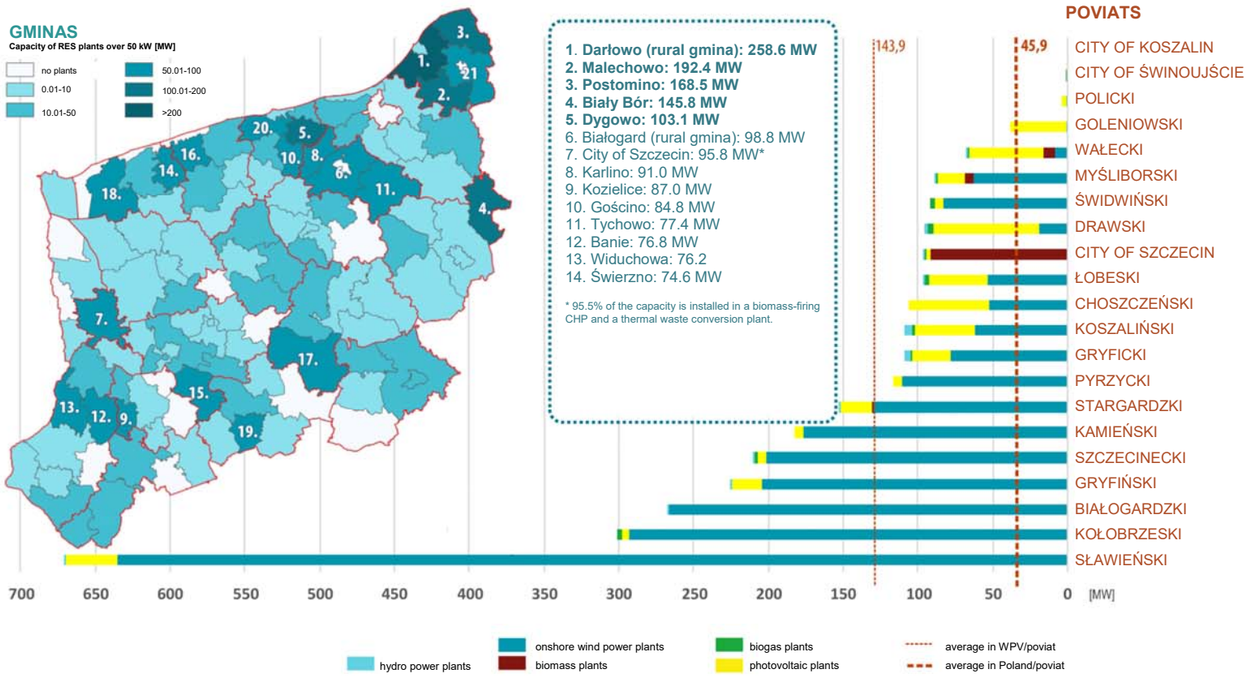
2023

This sheet contains information on the spatial distribution of renewable energy sources (RES) in the West Pomeranian Voivodeship (WPV), their capacity and the amount of energy generated. The sheet also shows the development of renewable energy in the WPV compared to other voivodeships and the state of the energy sector in individual gminas and poviats in the voivodeship. This presentation has been made possible thanks to collaboration with ENEA Operator Sp. z o.o., ENERGA-OPERATOR SA and the URE (Energy Regulatory Office). The energy information sheet and selected infographics are available on the website of the RBGPWZ: http://rbgp.pl/publikacje/energetyka/

RES PLANTS IN THE GMINAS AND POVIATS OF THE VOIVODESHIP: CAPACITY OF PLANTS ABOVE 50 kW, as at 31/12/2023

The rural gmina of Darłowo is the clear leader, with a capacity of 258.6 MW, followed by the gminas Malechowo (192.4 MW) and Postomino (168.5 MW). The leaders in biomass and photovoltaic plants are the gminas of Szczecin (91.5 MW) and Kalisz Pomorski (64.8 MW) respectively. The Sławieński poviat is the clear leader among the poviats, with an installed capacity of 669.9 MW, followed by the Kołobrzeski (300.4 MW) and Białogardzki poviats (267.2 MW). Both rankings are led by entities with a clear dominance of wind turbine plants.

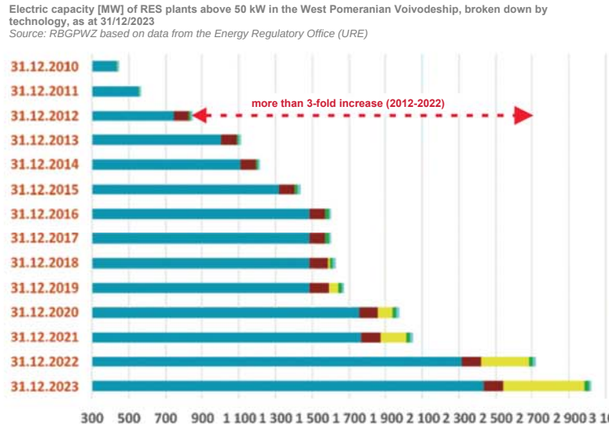
Electricity capacity of RES plants over 50 kW: ranking of gminas and poviats of West Pomeranian Voivodeship [MW], as at 31/12/2023
Source: RBGPWZ based on data from the Energy Regulatory Office (URE)



RES PLANTS IN THE VOIVODESHIP AND THROUGHOUT THE COUNTRY: CAPACITY OF PLANTS OVER 50 kW, as at 31/12/2023

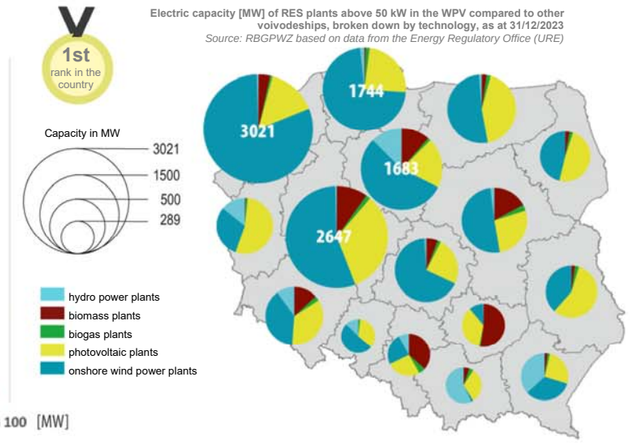
In 2023, plants with a total capacity of 307.2 MW were commissioned in WPV, comprising 117 photovoltaic plants with a total capacity of 183.4 MW (including the Stara Korytnica PV Farm with a capacity of 60 MW), 6 wind farms with a total capacity of 123.2 MW and 1 agricultural biogas plant with a capacity of 0.5 MW. This was the first year not dominated by onshore wind farm launches, which is a direct consequence of the introduction of restrictions on the development of this technology in Poland in 2016. As a result of the investments, the total capacity of plants above 50 kW reached **3,021.4 MW**, accounting for 17.3% of the installed capacity across the country. The region still remains the leader in terms of the total installed capacity of licensed and registered RES plants (excluding micro-plants), ahead of the Wielkopolskie (2,647 MW) and Pomorskie (1,744 MW) voivodeships. The region's growth potential of onshore wind power and photovoltaics as well as water resources make it an ideal place for hydrogen production. Continued growth of renewable energy will primarily depend on the development of hydrogen technologies.

Electric capacity [MW] of RES plants above 50 kW in the West Pomeranian Voivodeship, broken down by technology, as at 31/12/2023
Source: RBGPWZ based on data from the Energy Regulatory Office (URE)



1st rank in the country

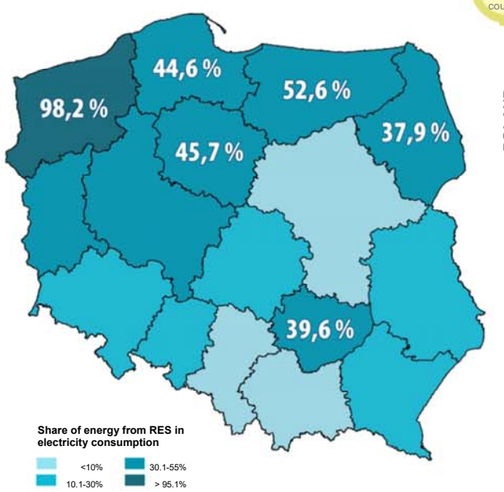
Electric capacity [MW] of RES plants above 50 kW in the WPV compared to other voivodeships, broken down by technology, as at 31/12/2023
Source: RBGPWZ based on data from the Energy Regulatory Office (URE)



ELECTRICITY FROM RES: GENERATION AND SHARE OF TOTAL CONSUMPTION

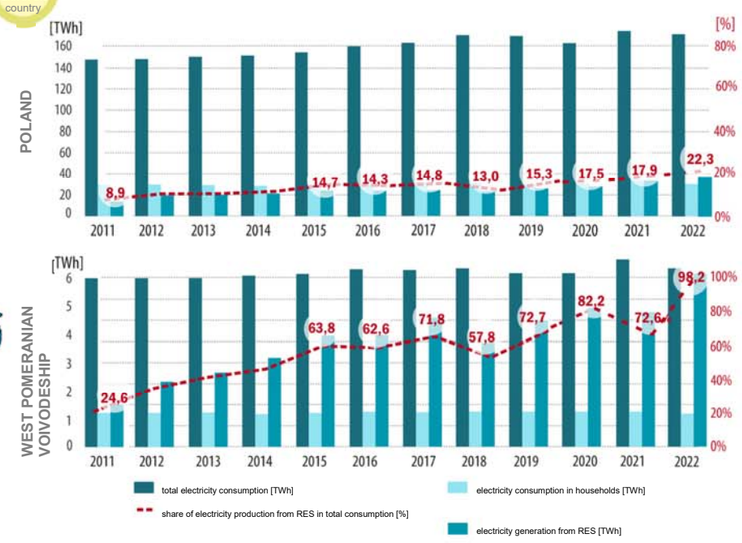
The West Pomeranian Voivodeship is a renewable energy leader. The voivodeship once again generated the largest amount of electricity from RES in the country in 2022. In 2022, the voivodeship generated **6,100 GWh** (Poland: 37,671 GWh), representing **16.2%** of national production. Energy consumption was slightly lower than in 2022 and stood at 6,210 GWh (Poland: 169,260 GWh), accounting for only 3.7% of national consumption. Considering these data, the **West Pomeranian Voivodeship already produces almost as much renewable energy (98.2;, the national average is 22.3%) as it consumes in total, which means that with a steadily increasing production potential in 2023, renewable energy generation will exceed electricity consumption in the voivodeship.** The following ranks were taken by the Warmińsko-Mazurskie (52.6%), Kujawsko-Pomorskie (45.7%) and Pomorskie (44.6%) voivodeships.

Share of electricity generation from RES in total electricity consumption in the WPV compared to other voivodeships in 2022
Source: RBGPWZ based on data from Statistics Poland – Local Data Bank (GUS-BDL)



1st rank in the country

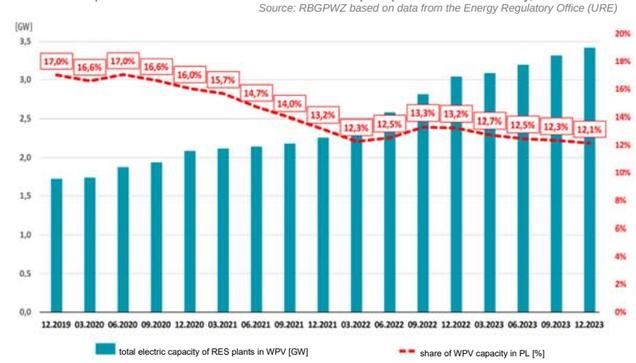
Generation of electricity from RES compared to total electricity consumption in 2011-2022
Source: RBGPWZ based on data from Statistics Poland – Local Data Bank (GUS-BDL)



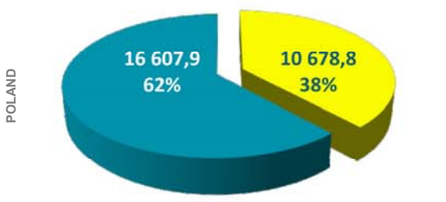
RES PLANTS IN THE VOIVODESHIP AND THROUGHOUT THE COUNTRY: TOTAL PLANT CAPACITY, as at 31/12/2023

The total capacity of electricity-generating RES plants in the West Pomeranian Voivodeship increased to **3,414 MW**, of which 3,021.4 MW is attributable to plants of more than 50 kW and 392.8 MW to micro-plants. The total plant capacity in Poland was **28,118 MW** (17,439 MW and 10,679 MW respectively). The share of micro-plants in the energy mix has increased significantly over the past few years and, nationally, micro-plant capacity already accounts for **38.0%** of all RES capacity, while the West Pomeranian Voivodeship accounts for 11.5%. The ongoing changes make a strong case for reviewing the national energy policy to enable regional and local policies to be adapted accordingly. In parallel, the change dynamics require continuous monitoring of the process and more frequent revision of the documents.

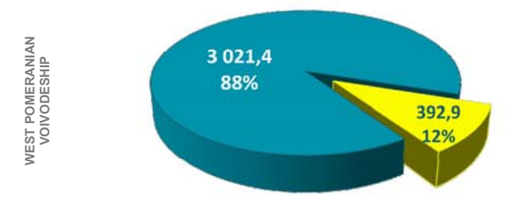
Power of RES plants installed in the West Pomeranian Voivodeship compared to the whole country, as at 31/12/2023
Source: RBGPWZ based on data from the Energy Regulatory Office (URE)



Capacity [MW] and share [%] of micro-plants in the total capacity of RES plants in Poland, as at 31/12/2023
Source: RBGPWZ based on data from URE and ARE



Capacity [MW] and share [%] of micro-plants in the total capacity of RES plants in the West Pomeranian Voivodeship, as at 31/12/2023
Source: RBGPWZ based on data from URE, ENEA Operator Sp. z o. o. and ENERGA-OPERATOR SA



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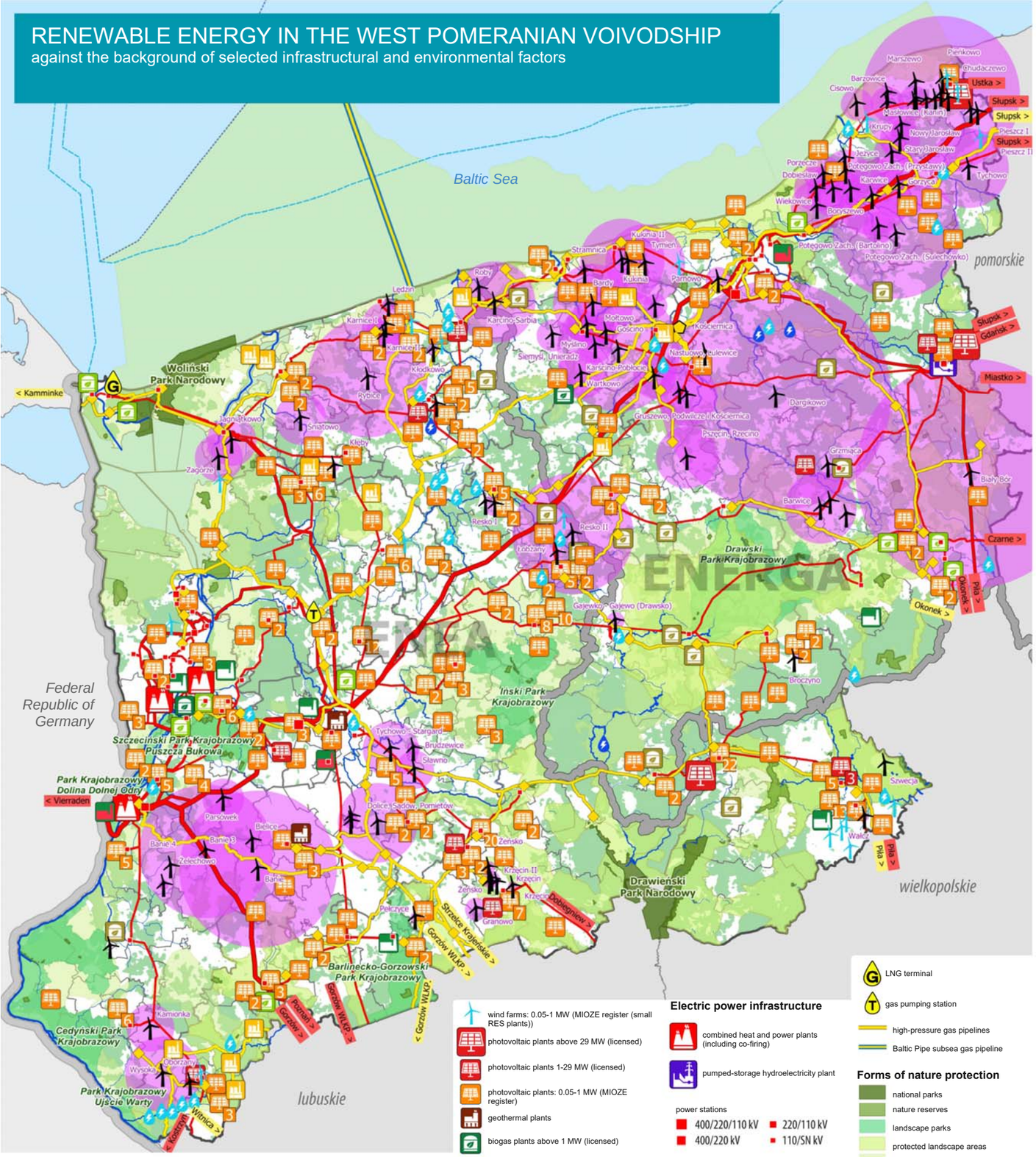
RENEWABLE ENERGY IN THE WEST POMERANIAN VOIVODSHIP

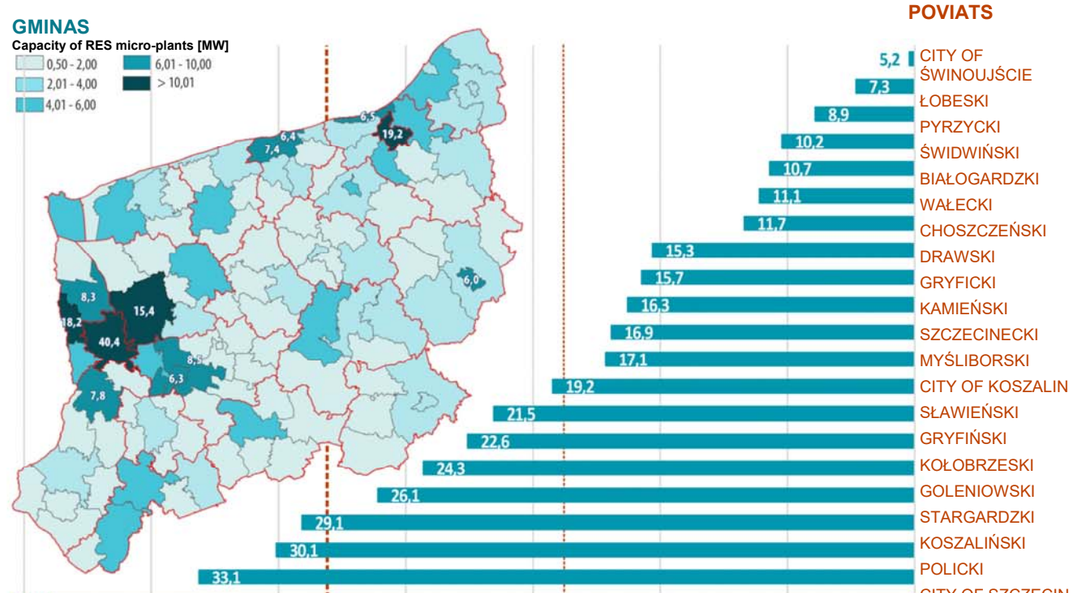
against the background of selected infrastructural and environmental factors



MICRO-PLANTS IN THE WEST POMERANIAN VOIVODSHIP

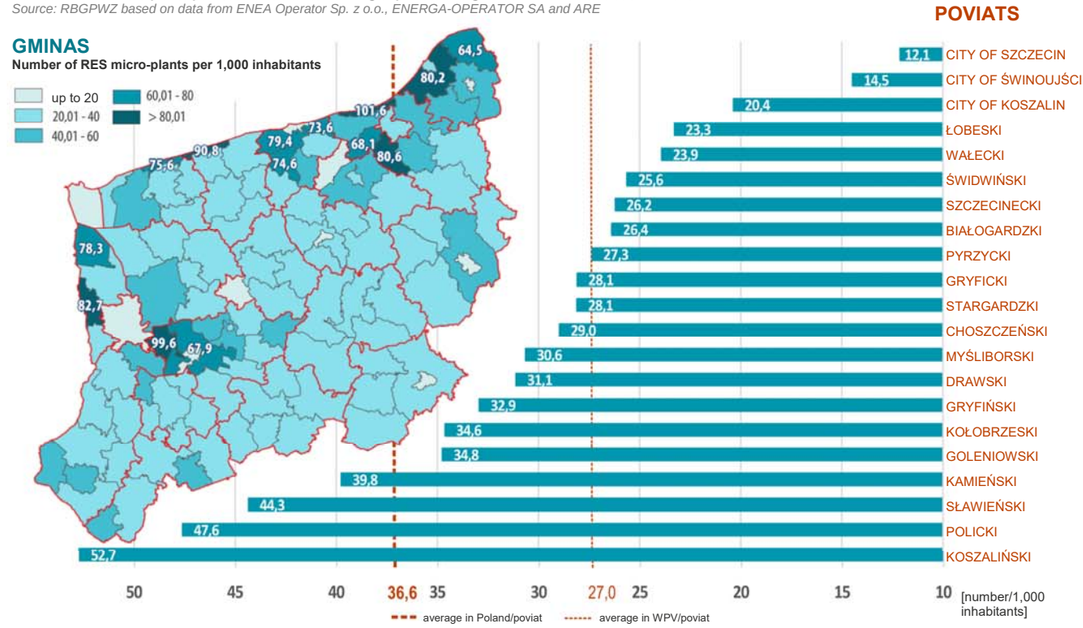
The total capacity of micro-plants in the WPV increased to **392.8 MW** (in Poland: to 10,678.8 MW). The share of capacity of micro-plants installed in the voivodship in the installed capacity in the country is **3.7%**. The installed capacity of plants per inhabitant is 0.24 kW, accounting for 84.7% of the national average (0.28 kW).
The WPV's leader in installed micro-plant capacity is Szczecin (40.4 MW), followed by Koszalin (19.2 MW), and the gminas Dobra (Szczecin) (18.2 MW) and Goleniów (15.4 MW). In 26 gminas, the plant capacity was above the national average.

Capacity of electrical RES micro-plants [MW]: ranking of poviats and gminas in the West Pomeranian Voivodeship, as at 31/12/2023
Source: RBGPWZ based on data from ENEA Operator Sp. z o.o., ENERGA-OPERATOR SA and ARE

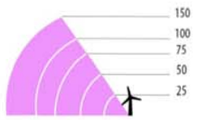


Micro-plants are mainly aimed at households and small businesses. The number of micro-plants per 1,000 inhabitants can be considered as a measure of the involvement of local communities in RES development. As at 31/12/2023, this figure was 27.0 plants per 1,000 inhabitants in the WPV (Poland: 36.6). **The gmina of Mielno was the leader (101.6), followed by the gminas: Kobylanka (99.6), Rewal (90.8), Dobra (Szczecińska)(82.7), Świeszyno (80.6), Darłowo (rural gmina) (80.2), Kołobrzeg (rural gmina) (79.4) and Nowe Warpno (78.3).**
40 gminas in the WPV achieved a higher rate than the national average.

Number of RES micro-plants per 1,000 inhabitants: ranking of poviats and gminas in the WPV, as at 31/12/2023
Source: RBGPWZ based on data from ENEA Operator Sp. z o.o., ENERGA-OPERATOR SA and ARE



LEGEND:
RES plants



wind farms above 1 MW (licensed): installed capacity [MW]

- wind farms: 0.05-1 MW (MIOZE register (small RES plants))
- photovoltaic plants above 29 MW (licensed)
- photovoltaic plants 1-29 MW (licensed)
- photovoltaic plants: 0.05-1 MW (MIOZE register)
- geothermal plants
- biogas plants above 1 MW (licensed)
- biogas plants below 1 MW (MIOZE register)
- agricultural biogas plants
- biomass co-firing plants
- biomass firing plants
- small hydropower plants above 1 MW (licensed)
- small hydropower plants below 1 MW (MIOZE register)

Electric power infrastructure

- combined heat and power plants (including co-firing)
- pumped-storage hydroelectricity plant

power stations
400/220/110 kV · 220/110 kV · 400/220 kV · 110/SN kV

power transmission lines
220 kV / 400 kV

power distribution lines
110 kV

Gas infrastructure

- facilities exploiting gas, oil and oil/gas fields
- underground gas storage facility
- gas stations
- LNG terminal
- gas pumping station
- high-pressure gas pipelines
- Baltic Pipe subsea gas pipeline

Forms of nature protection

- national parks
- nature reserves
- landscape parks
- protected landscape areas
- Natura 2000 (special bird protection and habitat protection areas) forests

Other markings

- limits of areas covered by distribution network operators (ENEA Operator Sp. z o.o., ENERGA-OPERATOR SA)
- Poland's territorial sea border
- Poland's exclusive economic zone border

Pomorze Zachodnie

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