POWERTY

Renewable energies for vulnerable groups

STATE OF ART & SWOT ANALYSIS

Opole (Poland) – January 2020

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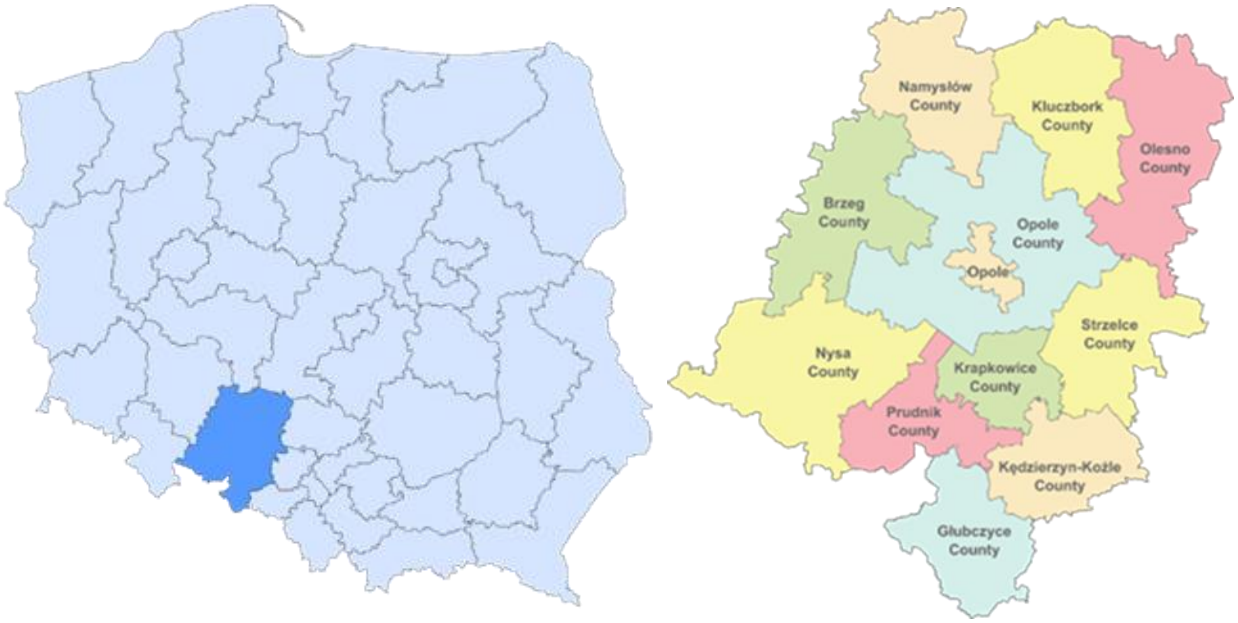
STATE OF ART: ENERGY POVERTY AND RENEWABLE ENERGY

Objective: to describe the starting scenario and the scope of energy poverty and renewable energy in your region, focusing on regional needs.

1. Brief Picture of the Region

The Opolskie Voivodeship lies in southwestern Poland, bordering on the Czech Republic and four Polish provinces of Lower Silesia, Wielkopolska, Łódź and Silesia. Convenient location on major transit routes by rail, road and Odra River inland waterway is an important asset to the region[1].



Demographics

About 15% of the one million inhabitants of this voivodeship are ethnic Germans, which constitutes 90% of all ethnic Germans in Poland. As a result, many areas are officially bilingual and the German language and culture play a significant role in education in the region. Ethnic Germans first came to this region during the Late Middle Ages. The area was once part of the Prussian province of Silesia.

[1] https://www.opolskie.pl/opole-voivodeship/?lang=en

Country	Poland
Capital **Counties**	Opole **1 city, 11 land counties** [show] **further divided into 71 gminas**
Government • **Voivode** • **Marshal**	 Adrian Czubak (PiS) Andrzej Buła (PO)
Area • **Total**	 9,412.5 km² (3,634.2 sq mi)
Population (2019-06-30[1]) • **Total** • **Density** • **Urban** • **Rural**	 984,345 100/km² (270/sq mi) 524,473 459,872
Languages • **Languages**	 Polish (official) German (co-official in 28 communes)
ISO 3166 code **Vehicle registration**	PL-16 O
HDI (2017)	0.841[2] very high · 11th
Website	http://www.umwo.opole.pl/

Extensive sectoral structure[2]:

- well-developed food processing and cement and lime industry facilities
- modern, advanced furniture and timber industry
- employment in private sector constitutes 79% of the total employment in industry
- number of businesses in the region totals about 93,000
- number two in Poland in terms of the rate of growth of the number of businesses

The majority are micro-enterprises (95.4%) with up to 9 employees. It shows development of entrepreneurship and activity of the inhabitants. Small and medium enterprises are one of the most important elements of the local economy. This sector reacts most quickly and eff ectively to the changing reality of markets, recognizes and satisfi es the needs of customers and serves as the essential competitive challenge for big companies motivating them to change.

Natural resources, particularly the deposits of marls and limestone have a great influence on the economy of the region. Thanks to these mineral resources, the Strzelce- Górażdże region has developed, especially regarding cement-lime sector. The most significant companies are Górażdże Group (owned by HeidelbergCement consortium) and Lhoist Poland. The Opolskie Province is the place, which attracts foreign investors. The coefficient of a number of companies

[2] https://www.opolskie.pl/region/infrastructure/?lang=en,https://www.opolskie.pl/wp-content/uploads/2016/06/Economy-of-the-region.pdf

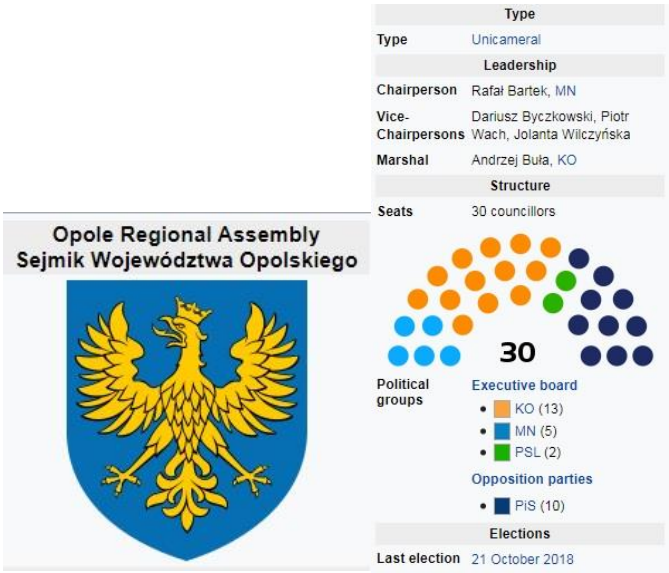
with foreign capital is 4.0 per 10,000 inhabitants, which gives the region a high ranking in Poland.

Within the Opolskie Province, a dozen of branches of industry have been developed and among them there are:

- Food processing
- Fuel-power
- Chemical
- Cement-lime
- Electromechanical
- Metallurgic and metal
- Furniture
- IT
- automotive

The Opolskie province has excellent investment sites (especially along the A4 motorway) – such as the Economic Activity Zone at Olszowa or sites in Ujazd and Krapkowice municipalities. There are also subzones of special economic zones: Wałbrzych Special Economic Zone "Invest-Park" in Nysa, Skarbimierz, Opole, Namysłów, Praszka and Kluczbork and Starachowice Special Economic Zone in Tułowice. One of the well-prepared investment sites in Poland belongs to the commune of Skarbimierz. It was distinguished during the competition 'Grunt na medal' and is included in the 'golden sixteen' of well-prepared grounds in Poland. In this area, Cadbury Schweppes plans to establish its factory -a €100 million investment project. This chewing gum factory is the greatest investment in the food industry in Poland.

The **Opole Regional Assembly** (Polish: *Sejmik Województwa Opolskiego*) is the regional legislature of the Voivodeship of Opole in Poland. It is a unicameral parliamentary body consisting of thirty councillors elected to a five-year term. The current chairperson of the assembly is Rafał Bartek of the German Minority. The assembly elects the executive board that acts as the collective executive for the provincial government, headed by the voivodeship marshal. The current Executive Board of Opole is a coalition government between the Civic Coalition, German Minority party and the Polish People's Party. The current marshal is Andrzej Buła of the KO. The assembly convenes within the Marshal's Office in Opole.



The Gross domestic product (GDP) of the province was 10.1 billion euros in 2018, accounting for 2.0% of Polish economic output. GDP per capita adjusted for purchasing power was 17,000 euros or 56% of the EU27 average in the same year. The GDP per employee was 66% of the EU average[3]. The Opole Voivodeship is an industrial as well as an agricultural region. With respect to mineral resources, of major importance are deposits of raw materials for building: limestone (Strzelce Opolskie), marl (near Opole), marble, and basalt. The favourable climate, fertile soils, and high farming culture contribute to the development of agriculture, which is among the most productive in the country.

2. Renewable energy sector. Brief Description

The Opolskie Voivodeship has the natural potential of renewable energy sources, enabling it to obtain energy from modern unconventional energy sources[4].

Biomass. In the Opolskie Voivodeship, mainly biomass from waste wood, straw and purposeful energy plantations is used. The basic direction of biomass energy use in the Opolskie Voivodeship is its combustion in the production of process heat and for living needs. In carpentry plants, which are particularly numerous in the Communes of Dobrodziń, Kluczbork and Olesno, virtually 100% of waste from wood production is used for own needs. In the southern regions of the province, mainly in the region of Nysa, Lewin Brzeski, Gogolin straw burning dominates. In addition to wood waste and energy crops, biomass from agricultural origin and waste from the processing industry are used for co-firing. Forests cover about 27% of the province.

[3] *"Regional GDP per capita ranged from 30% to 263% of the EU average in 2018". Eurostat.*
[4] own study by the author Dariusz Grabowiecki from the Voivodeship Fund for Environmental Protection and Water Management in Opole

Biogas. In the Opolskie Voivodeship, biogas from sewage treatment plants and landfills is used to the greatest extent for the company's own needs. In addition, there is one biogas plant (in Zalesie Śląskie) with a capacity of 2 MWe where manure is used for production. Despite the fact that the energy production potential using biogas plants is very large (the total number of farms in the Opolskie Voivodeship is 26,919 (26,025 are individual farms with an area above 1 ha), plans to build further facilities are met with considerable social resistance.

Water energy. About 30 hydropower plants work in the Opolskie Voivodeship. The largest facilities were built on the Odra and Nysa Kłodzka rivers. The working turbine sets are in the vast majority units <1 MW, although in 8 power plants there are units with a capacity of N = 1.4-3.4 MW. The total power of installed, working turbine sets is about 25.5 MW, and the amount of energy obtained, per year, from flowing water was estimated at about 107 GWh/ year. Given technical limitationsand environmental, in the Opolskie Voivodeship it is possible to use the energy of the dammed water for energy purposes at the tributaries of the Odra River in several places.

Examples:

- Nysa hydro power plant - installed power 760 kW,

- Głębinów hydroelectric power plant - installed power 3.040 MW,

- Kopin hydro power plant - installed power 1.152 k.

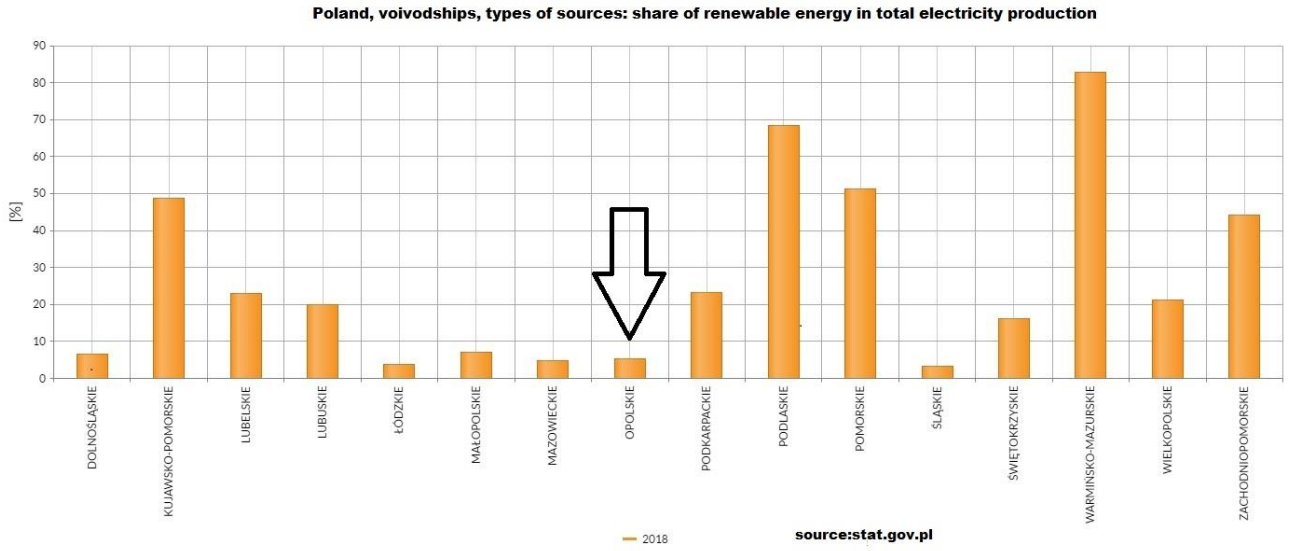
Geothermal Energy. Interest in geothermal energy in the Opolskie Voivodeship is mainly focused on the installation of heat pumps using this energy for heating purposes. The municipalities of Nysa and Wołczyn already have studies on the assessment of hydrothermal conditions, which show that it is possible to exploit geothermal waters for heating purposes.

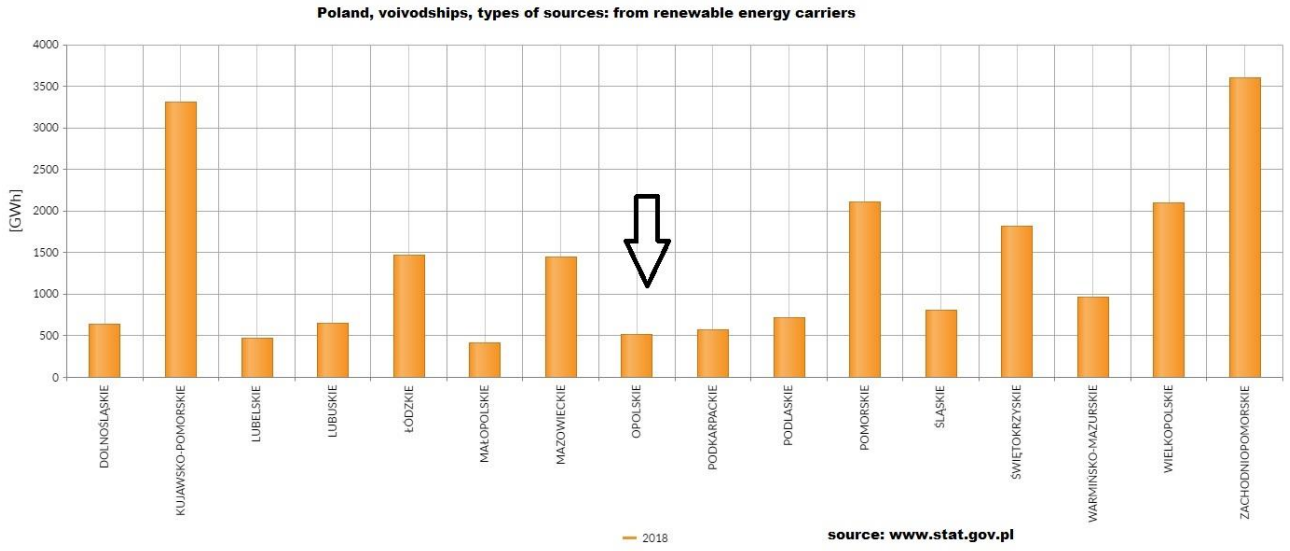
Insolation. The Opolskie Voivodeship has average insolation values from 1022 - 1048 kWh / m2 / year. In addition, in the southern part of the voivodship there is insolation of about 1050 kWh / m2 / year. In the Opolskie Voivodeship, solar energy is mainly used in individual households and public buildings as well as heating plants.

Sample installations:
- Rehabilitation and Recreation Complex Kamień Śląski - 500 kWp solar farm (additional energy storage, windmill and two micro installations)
- ECO in Kluczbork 24 kWp,
- Solar installation for the needs of the Poviat Eldership in Opole with a capacity of 18.75 kWp.

Of wind. Despite the fact that the Opolskie Voivodeship belongs to the less favorable zone in terms of wind energy resources, the following wind farms operate in the Opolskie Voivodeship:

1. FW "Pągów" commune Wilków, Namysłowski poviat - 17 x 3 MW - total installed capacity - 51MW,
2. WF "Lipniki" commune Kamiennik, Nyski poviat - 15 x 2.05MW - total installed power - 30.75MW,
3. FW "Unikowice" commune Paczków, poviat of Nysa - 3 turbines with a total installed capacity of 6.5 MW,
4. Pawłowiczki - 3 small turbines with a total capacity of 0.45 MW,
5. Jemielnica - 3 turbines with a total power of 0.45MW,
6. The complex of four wind micro power plants is located in Zdzieszowice - 0.004 MW,
7. FW "Zopowy" - Głubczycki poviat - 15 turbines x 2.5MW of power - total installed power 37.5MW,
8. FW "Kietrz" - 3 turbines x 2.5MW,
9. Kluczbork poviat - 2 turbines x 2MW





3. State of Play of energy poverty in your region

We do not have a defined vulnerable group (e.g. in terms of energy poverty) and we are at completely different level in this range than Western European countries. We can refer to technologies covered by renewable energy sources, new financing formulas or civic participation in social groups in terms of 'normal' social groups. Recently we are working on determining the vulnerable group in our region but it`s a long term process. We need to have many information from many institution and at `Coronavirus time` it`s harder than anytime.

4. Link to the RIS3

The renewable Energy sector is a part of The Opolskie RIS3 Strategy priorities. Regional Innovation Strategy for Smart Specialisation (RIS 3) indicates especially the fallowing subjects: Renewable Energy technologies, fuel production technologies, energy. It`s included in few strategy documents but the most in: Regional Innovation Strategy of the Opolskie Voivodeship until 2020[5], Plan for the Development of Renewable Energy sources in the Opolskie Voivodeship[6]. It`s also included in previous one like (the documents are not accepted yet) Regional Innovation Strategy of the Opolskie Voivodeship until 2027[7] ,

[5] https://rpo.opolskie.pl/wpcontent/uploads/Regionalna_Strategia_Innowacji_Wojew%C3%B3dztwa_Opolskiego_do_roku_2020.pdf page 93.

[6] http://www.odnowawsi.eu/docs/plan_rozwoju_oze_woj_opol.pdf

[7] https://www.opolskie.pl/wp-content/uploads/2019/11/RSIWO2027_projekt.pdf

5. Policy Instruments. Regional and National Plans and Policies on renewable energies and energy poverty

National Policy instrument and plans:

Long-term development strategy for Poland[8]till 2030 , Polish Energy Policy till 2030[9]. National Environmental Protection Program[10]

Regional Policy instruments:

Regional Operational Programme of the Voivodeship of Opolskie 2014-2020[11], Development Strategy of the Opolskie Voivodeship until 2020[12], Regional Innovation Strategy of the Opolskie Voivodeship until 2020[13], Plan for the Development of Renewable Energy sources in the Opolskie Voivodeship[14]. It`s also included in previous one like (the documents are not accepted yet) Regional Innovation Strategy of the Opolskie Voivodeship until 2027[15], Regional Operational Programme of the Voivodeship of Opolskie 2021-2027 (project in progress), Air Protection Program Opole 2020 (in progress) [16], Opole Low-Carbon Economy Plan[17]

[8] http://kigeit.org.pl/FTP/PRCIP/Literatura/002_Strategia_DSRK_PL2030_RM.pdf

[9] http://www.pigeor.pl/media/js/kcfinder/upload/files/Polityka-energetyczna-Polski-do-2030r.pdf

[10]

[11] https://rpo.opolskie.pl/wp-content/uploads/2015/10/Regionalny-Program-Operacyjny-Wojew%C3%B3dztwa-Opolskiego-na-lata-2014-20202.pdf

[12] https://budzet.opolskie.pl/wp-content/uploads/2017/02/Strategia-Rozwoju-Wojew%C3%B3dztwa-Opolskiego-do-2020-r..pdf

[13] https://rpo.opolskie.pl/wpcontent/uploads/Regionalna_Strategia_Innowacji_Wojew%C3%B3dztwa_Opolskiego_do_roku_2020.pdf page 93.

[14] http://www.odnowawsi.eu/docs/plan_rozwoju_oze_woj_opol.pdf

[15] https://www.opolskie.pl/wp-content/uploads/2019/11/RSIWO2027_projekt.pdf

[16] https://bip.opolskie.pl/wp-content/uploads/2020/03/Projekt-uchwa%C5%82y-SWO-z-za%C5%82%C4%85cznikiem-1.pdf

[17] https://www.niskaemisjaopole.pl/media/Uchwala_zmieniajaca_uchwale_w_sprawie_przyjecia_PGN_15.12.2016_r..pdf

6. Legislation, Regulation

Renewable Energy Sources Law[18], Energy Law [19], Energy Efficiency Law[20]

Environmental Protection Law [21], Spatial Planning and Development Law[22], Electromobility and Alternative Fuels Law [23] Regulations :

Regulation on the detailed scope of the obligation and technical conditions for the purchase of heatfrom renewable energy sources and conditions for connecting the installation to the network[24] Regulation on air protection programs and short-term action plans[25]

As for the scope covered, it has a direct impact on our region in the marked scope to the Renewable Energy Sources Law[26];

Art. 2 of the Law said:

Renewable energy prosumer - final recipient generating electricity exclusively from renewable energy sources for own needs in micro-installations, provided that in the case of an end recipient who is not a consumer of electricity in the household, this is not the subject of the prevailing economic activity determined in accordance with the provisions issued pursuant to art. . 40 clause 2 of the Act. The rules for accounting for energy can be found in Chapter 2, Article 4.

Production of energy for own needs is allowed,

It is not possible to share energy between consumers (this results, among others, from the definition of a prosumer).

[18] http://prawo.sejm.gov.pl/isap.nsf/download.xsp/WDU20150000478/U/D20150478Lj.pdf

[19] http://prawo.sejm.gov.pl/isap.nsf/download.xsp/WDU19970540348/U/D19970348Lj.pdf
[20] http://prawo.sejm.gov.pl/isap.nsf/download.xsp/WDU20160000831/U/D20160831Lj.pdf
[21] http://isap.sejm.gov.pl/isap.nsf/download.xsp/WDU20190001396/U/D20191396Lj.pdf

[22] http://prawo.sejm.gov.pl/isap.nsf/download.xsp/WDU20030800717/U/D20030717Lj.pdf
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[24] http://prawo.sejm.gov.pl/isap.nsf/download.xsp/WDU20170001084/O/D20171084.pdf
[25] http://prawo.sejm.gov.pl/isap.nsf/download.xsp/WDU20190001159/O/D20191159.pdf
[26] http://prawo.sejm.gov.pl/isap.nsf/download.xsp/WDU20150000478/U/D20150478Lj.pdf

7. Financial Support and Instruments

Instruments for preventing energy poverty used in Poland

Instruments currently implemented in Poland in the area of social policy, housing or environmental protection, to a small extent go to families affected by energy poverty. In particular, this applies to families living in single-family homes or having income slightly above the official poverty line. According to the WK-ND criterion (LiHC Low Income High Costs), these families often suffer from energy poverty.

Currently, individual instruments do not reach energy poor families for various reasons:

1. **Housing and energy allowance** (paid by Communes as a rule by Social Assistance Centers) - they use the criterion of the maximum area per person, which excludes the majority of residents of single-family homes,
2. **An energy lump sum** (paid by municipalities as a rule through Social Assistance Centers) is granted to war veterans, therefore, it applies only to a specific group of recipients,
3. **Targeted fuel allowance** (paid by municipalities usually through Social Assistance Centers) - goes to people who meet the restrictive income criterion for social assistance, thus excluding energy-poor households with slightly higher incomes.
4. as part of the Opole Voivodship **Regional Operational Program for 2014-2020**, priority axis V Environmental protection, cultural and natural heritage, Measure 5.5 Air protection - subsidized in 2019. for replacing coal stoves. The cost of the grant was 33% of the eligible costs. 77% of investment costs were on participant. Action excluding poor people because of too much investment.
5. We have financial support and instruments dedicated particularly to vulnerable groups. It`s called **STOP SMOG**. Is a government program targeted at owners of single-family homes, which aims to reduce air pollution emissions by financially supporting thermo-modernization projects. It`s started in october 2018 and will last till 2024. The "Stop Smog" program is targeted at the lowest paid, affected by energy poverty, i.e. those for whom the heating of the building consumes a huge part of the household budget. Unfortunately, complicated procedures and a lack of financial resources in the municipalities' budgets meant that so far only 3 out of 2477 municipalities in Poland have decided to participate in the program. Work is currently underway to amend the Act so that the STOP SMOG program can be implemented by a larger number of municipalities in Poland. Due to the fact that there is no definite definition of energy poverty in the Polish law and a defined group of people who are energy poor in a given area, it is difficult for municipal

authorities to decide to whom such assistance should be granted. Across Poland[27], about 12% of people are affected by energy poverty. The group most affected by energy poverty are those who are both energy and income poor at 6.6%. However, there is a large percentage of people (in the country it is about 6%) who are energy poor but not income poor.Instruments currently used in Poland do not solve the problem of energy poverty.

6. "**My Current"** is a new government program addressed to households throughout Poland. (managing body National Fund for Environmental Protection and Water) The project provides funding for solar installations with a maximum of 5,000. zł. My Electricity co-financing, under which the owner of each new solar installation can count on a non-returnable grant of PLN 5,000.The most important assumptions of the program: 5000 PLN non-returnable subsidy for the installation, the total budget of PLN 1 billion, which means some 200,000 families will benefit. Management The call for applications started on 30.08.2019. Action excluding poor people because of too much investment.

7. **Clean Air Program**- The flagship government support program for thermomodernization of single-family units was launched in 2018. In this case, applications should be submitted to the Voivodship Fund For Environmental Protection and Water Management (WFOŚiGW), The project runs from September 19, 2018 to June 30, 2027. The Clean Air Program co-finances all expenses related to building insulation and replacement of the heating device. The funds from the Clean Air program consist partly of non-returnable subsidies and partly of loans. The amount of subsidy depends on the income per person in the family. At present, households with an income of up to 120 Euro/ month can count on a subsidy covering 90% of the costs - this is below the extreme poverty threshold. Solar subsidies are excluded from the subsidy - these can only be financed with a loan. A quick calculation shows that only really low-income households can count on large amounts of subsidies. Groups seeking the highest subsidies are very narrow and limited to the poorest. Such people even have difficulty buying fuel and don't think about investing. 80% of subsidies is a lot, but the remaining 20% can also be a lot - even 10,000 PLN,(2100 euro) and this can be an insurmountable amount for someone with minimal income and savings close to zero. Yes, the program offers a loan for the remainder of the costs, but you need creditworthiness to receive it. This can be a block for some people. Not to mention the usual fear of getting into debt.

[27] https://ibs.org.pl/publications/ubostwo-energetyczne-w-polsce-2012-2016-zmiany-w-czasie-i-charakterystyka-zjawiska/

8. **Thermomodernization bonus** (paid by National Economy Bank) -
   The amount of thermo-modernization bonus is 16% of the costs of the thermomodernization project, 21% of the costs of the thermomodernization project together with the assembly of micro-installations of renewable energy sources (RES), - works as a preventive instrument that prevents the emergence of energy poverty by improving housing tissue, however, the requirement of costly energy audit and loan financing makes this mechanism unattractive for poorer residents of single-family homes. For this type of property, the costs of meeting formal requirements offset the benefits of obtaining a bonus.

9. **Revitalization** is a mechanism with great potential in preventing energy poverty and in removing its causes through thermomodernization of residential buildings. At the same time, revitalization activities are better in cities than in villages where scattered buildings make it difficult to identify problem areas and undertake revitalization. (a subsidy consisting of a refund is possible from the Rural Development Program for 2014-2020). Unfortunately, projects co-financed from the RDP 2014-2020 rely on reimbursement, so they eliminate poor people at the outset.

8. Preliminary Good Practices

The following were considered the best examples of best practices in the Opolskie Voivodeship:

Energy Consulting organized by the Voivodship Fund for Environmental Protection and Water Management in Opole

Project "A nationwide advisory support system for the public and housing sectors as well as enterprises in the field of energy efficiency and renewable energy" in short Energy consulting. It is financed under the Operational Program Infrastructure and Environment for the years 2014-2020 under the First Priority Axis "Reducing the emission of the economy".

The project contains a lot of professional consultancy activities for more information:

promotional video with an English language version

https://www.youtube.com/watch?v=rw5e3ZoV1XE

https://www.wfosigw.opole.pl/doradztwoenergetyczne/informacja-o-projekcie.

We will focus solely on describing good practices for vulnerable groups affected by energy poverty.

As part of the above-mentioned project, 42 people who have been Community Energy Advisors and 422 employees of Municipal Social Assistance Centers have already been trained. Municipal Energy Advisors' training so far took place twice. The first in 2018 and the second in 2019.

Subsequent editions were suspended due to the coronavirus pandemic. In turn, the full cycle of training of social workers (422 people were trained) lasted from November 2017 to December 2019. Thanks to these trainings, municipal employees and social workers have acquired new skills and successfully provide consultancy services to the poorest residents of municipalities. The task of colloquially called energy engineers is to provide consultancy services consisting in finding solutions dedicated exclusively to them. Their work in the first stage consists of:

1) Viewing the property and becoming familiar with the specifics of the building.

2) Make a list of small improvements to save energy.

3) Checking after some time whether the proposed improvements have achieved the intended effect.

"Renewable energy for the health and life of our planet."organized by the Voivodship Fund for Environmental Protection and Water Management in Opole.

The Voivodship Fund for Environmental Protection and Water Management in Opole conducts conferences and trainings dedicated to each age group. Renewable energy education, started from an early age, gives the best results in the long run as an action against energy poverty. Children often talk at home about what they have learned and this often causes positive

changes. "Renewable energy for the health and life of our planet." It is a series of conferences for preschoolers thanks to which young people will learn about renewable energy sources and the benefits of using them. They learn how to care for the health of loved ones and the whole planet.

Solar farm in Kamień Śląski - 500 kWp solar farm (additional energy storage, windmill and two micro installations).

The Scientific and Research Institute - Father Sebastian Kneipp The Rehabilitation and Recreation Complex - Sebastianeum Silesiacum in Kamień Śląski is a modern rehabilitation and recreation center. They offer a wide range of services in the field of rehabilitation, wellness, psycho-spiritual and medical. Despite the fact that the center is fully private, a supplement from the Poviat Family Support Center (PCPR) or the State Fund for the Rehabilitation of the Disabled is honored. There is therefore a good chance that this center would be largely used by people from the vulnerable group.

A solar farm with a total capacity of 500 kW was launched in the center together with the first energy storage in Poland in lithium-ion technology with a capacity of 670 kWh. The main designer and contractor was MEB Technical Sp. z o.o. specializing in the implementation of modern technologies in the field of renewable energy sources, storage of electricity and management of electricity.

The entire investment includes:
Modernization of the MV / LV transformer station
Construction of a 500 kWP solar farm
The installations of the container industrial energy storage with a capacity of 670 kWh and 300 kW charging and discharging power
Installation of a vertical wind turbine with a capacity of 2.8 kW of Polish production
Measurement of energy flow
At the connection of the transformer station and solar installation for energy storage control
Installation of publicly accessible Polish rapid charging stations for 100 kW and 22 kW electric vehicles
Electric bicycle charging point installations
Purchase of three battery-operated, electric slow-moving vehicles of Polish production for internal transport
Purchase of bicycles with electric drive
The construction of the installation uses:
1562 Axitec solar panels
9 SMA inverters.

9. References

I attached bibliography signatures under each of the fragments of the texts. Every photo an references also include it.

SWOT analysis

TOPIC 1. INNOVATIVE RENEWABLE ENERGY TECHNOLOGIES AIMED AT VULNERABLE GROUPS, INCLUDING COLLECTIVE AND URBAN ENERGY SYSTEMS.

WEAKNESSES

- high costs of renewable energy sources.
- no identified solutions for vulnerable groups.

THREATS

-
- no possibility of implementing new technologies due to lack of financial. resources, focus of large companies on profitable investments.

STRENGTHS

- Clean Air Program.
- Stop Smog Program.
- warm up your business – competition.
- UE founds from Regional Opperative Program and others, community power.

OPPORTUNITIES

- local energy communities
- development of social care
- easy access to renewable energy sources

TOPIC 2. NEW FINANCING FORMULAS FOR RENEWABLE ENERGIES SUITABLE FOR VULNERABLE GROUPS.

WEAKNESSES

- no definition of energy poverty and no precise definition of what we mean by a vulnerable group.

THREATS

- For many companies, vulnerable groups are not attractive
- economic viability that discourages innovation and the creation of a tailored technological offer.
- Public funding is insufficient to meet the energy needs of all vulnerable groups.
- a small number of people want changes,
- funding does not cover 100% of the costs

STRENGTHS

- Clean Air Program ,
- Stop Smog Program,
- warm up your business – competition.,
- UE founds from Regional Operative Program and others, community power

OPPORTUNITIES

- with the involvement of several institutions, there is a chance to replace ineffective heat sources in 100%
- local energy communities
- social responsibility
- easy access to renewable energy

TOPIC 3 IMPROVEMENTS IN THE REGULATORY FRAMEWORK FOR RENEWABLE ENERGIES AND VULNERABLE GROUPS

WEAKNESSES

- Lack of explicit definition of a sensitive group, i.e. energy poor
- An area requiring significant financial support,
- Very little possibility of providing "own contribution", eg for implemented tasks / projects or when applying for funding
- Very low tendency to change life situation

THREATS

- Convince persons / institutions financing the appropriateness of allocating funds for this purpose
- Convincing the indicated social group to change behavior and the legitimacy of saving
- Opposition from other stakeholders to the need to transfer significant resources to this social group

STRENGTHS

- High potential for cost savings
- Implementation of pro-social goals by central and regional persons / institution

OPPORTUNITIES

- Reduction of expenses incurred, for example, by the State and Municipalities through subsidies, permanent and targeted benefits, maintenance of social housing, etc.
- Reducing the number of people affected by energy poverty,
- The option of reinvesting the saved financial resources or allocating them to support other vulnerable groups,
- Public education ultimately contributing to changing behavior in the vulnerable group,

TOPIC 4 EMPOWERMENT OF VULNERABLE GROUPS AND SOCIAL INNOVATION TO STIMULATE CITIZEN PARTICIPATION OF THESE SOCIAL GROUPS

WEAKNESSES

- Vulnerable groups are very heterogeneous: elderly people, unemployed people, single-parent families, etc. This requires a different approach depending on the economic, social and cultural situation of
  each type of household, a factor that makes tackling energy poverty more complex.
  • The socio-economic vulnerability of vulnerable groups is a serious difficulty in accessing these groups and
  promoting their participation.
- The lack of cohesion and structuring of the neighbourhood communities

THREATS

- The lack of trust and risk-taking that is needed to promote science and technological innovation
- Such practices would be new to vulnerable groups and may also create difficulties in the implementation process
- Difficulty involving and empowering citizens, especially vulnerable groups

STRENGTHS

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OPPORTUNITIES

- With the EU currently engaged in a new growth strategy for a smart, sustainable and inclusive Europe by 2020, social issues are being brought to the fore
- The new social innovation models are still to be developed in near future in our country (products, services and models)
- Social innovation simultaneously meet social needs in a more effective manner.
- Social challenges are also opportunities