

THE REGIONAL CONCEPT FOR THE DEVELOPMENT OF RENEWABLE ENERGY SOURCES FOR THE MUNICIPALITIES OF THE CENTRAL FUNCTIONAL ZONE IN THE WESTPOMERANIAN VOIVODESHIP -SUMMARY-

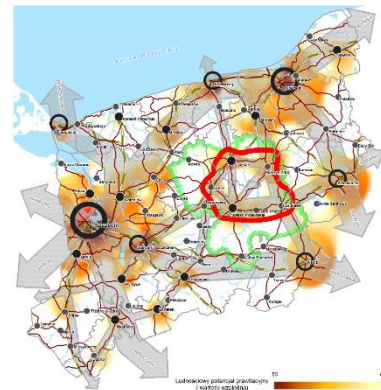


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1. Selection of the research area

The Central Functional Zone of the Westpomeranian Voivodeship (CSF WZ) includes the following three counties: Drawsko, Łobez and Świdwin. There are 17 municipalities, which were indicated in the Spatial Development Plan of the Westpomeranian Voivodeship, as an area in the integration of the 6 main cities: Czaplinek, Drawsko Pomorskie, Łobez, Połczyn-Zdrój, Świdwin and Złocieniec. The subject area is characterized by accumulation of deficits in: demographics, technical infrastructure, access to public services, economic potential, agricultural economy and poverty. According to information published by the Local Data Bank of the Central Statistical Office, by 2016 it was also one of the regions with the highest unemployment registered in Poland, exceeding 20%. Among other things, for these reasons, the Central Functional Zone of the West Pomeranian Voivodeship is additionally supported by the regional authorities in the regional policy framework.



CSF WZ covers an area of appx. 392 200 ha, with over 140 thousand inhabitants. The short distance between the core cities allows for the use of the full potential in the creation of common, complementary offer of investment, education and tourism services, as well as creating a complementary labour market, including a sector of energy production from renewable sources.

2. Aim of the document, methods used in development and the scope of stakeholder engagement.

The Regional Concept for the Development of Renewable Energy Sources for the municipalities of the Central Functional Zone in the West Pomeranian Voivodeship aims to determine the directions of development of renewable energy sources in the subject area. The process of its preparation consisted of three stages:

- Diagnosis of the energy sector taking into account the existing strategic documents (characteristics and energy balance).
- Development of individual recommendations for CSF WZ municipalities relating to energy planning, transition to a low-carbon economy and improvement of air quality.
- Final elaboration of the "Concept" document containing the results of the first two stages, extended by development scenarios for a sustainable energy approach by the 2030 time frame (a total of 61 pages plus attachments).

Work on the Regional Concept was initiated on 13 July 2017, the letter of intent between the Marshal of the Westpomeranian Voivodeship and representatives of local authorities of CSF WZ was signed.

While working on the Concept, active participation of local stakeholders was implemented and the materials and results of the analyses were the subject of regular consultative meetings. During the project, six such meetings took place: two at the diagnosis stage, three at the recommendation stage and one at the stage of scenario development. Each of the consultation meetings were made up in part by a lecture, during which the results of the work stages were presented. After the lecture stakeholders submitted their comments to the current results. The meetings were mainly attended by representatives of local government units, as well as non-governmental organizations, institutions related to the broadly understood electricity and heat market, owners of biogas plants and hydroelectric plants, representatives of heating plants, vocational schools and employees of State Forests. The results of the meetings had a significant impact on the recommendations at both the local and the national level. Consultation meetings also played an educational role, raising the awareness of local government representatives in the field of renewable energy sources.

3. Results of the work.

The study begins with the diagnostic part containing a description of the energy system, including the power and gas grid, as well as, system and distributed heat characteristics for the CSF WZ area. In the next phase, an inventory of RES installations in the area was made and the potential of particular renewable sources was determined. Based on the above actions, recommendations regarding the use of renewable energy in the municipalities were developed. The next part of the study consisted of renewable energy development scenarios – both active and passive. The final aspects of the study are recommendations for institutions at the national, regional and local level aimed at supporting an active development of renewable energy sources. An integral part of the Concept are individual energy performance cards prepared for municipalities, counties and the entire CSF WZ (an example card is placed at the end of this summary).

The carried analyses indicated that the development of heat production from renewable sources was much less visible than electricity. This is due to the fact that transformation in this area is more difficult due to the limited financial capabilities of enterprises offering district heating in cities and for rural residents. Currently, the development of renewable

energy has been stopped, due to new law provisions for installations in the field of renewable energy sources significantly hindering the use of the existing energy potential of the area. Another limitation is the occurrence of significant amount of areas in CSF WZ covered by some forms of nature protection.

When considering **the passive scenario**, if we assume that fossil fuels will continue to play a major role in Poland's energy policy, which in turn weakens the importance of climate policy in the European Union, then by basing the main development of the Central Functional Zone in the West Pomeranian Voivodeship will threaten the production of energy from renewable sources. The implementation of such a scenario will result in minor increments over the following years in the scope of energy production from RES in CSF WZ. In addition, the investments which would be implemented will be strictly commercial, and their scale will cause most of the energy produced to be transferred to the national network without any possibility of local and/or individual needs. These investments will mainly consist of wind and biogas energy, as smaller solar installations will be marginalized. These conditions primarily attract investors from outside the CSF WZ area, thereby all profits will be taken out of the CSF WZ region and the only tangible local benefits will be local taxes and jobs. These investments will contribute to a minor improvement in the standard of living of local residents, and the cooperation of local stakeholders will be limited.

The second possible situation outlined in the Concept is **the active scenario**. In this case, the climate and energy policy at the European level will take on a progressive character. The energy policy of Poland regarding renewable energy, especially prosumer approach, will gain significant importance. This will create the possibility for the funding for a low-carbon economy in the next EU financing period to remain at the current level. National policy will no longer focus on the use of fossil fuels, but will take on more RES commitments and will allocate resources to support the development of renewable energy sources. Moreover, the conditions to implement these external financial resources will be created at the local level. As a result, both large and small investments in all types of renewable energy sources will be able to further develop. The largest growth will be characterized by solar energy, the use of which would be the most beneficial for development of the local economy and improvement of inhabitants' well-being in the CSF WZ area.

Due to the results of the work carried out, individual recommendations for local governments in the Central Functional Zone of the West Pomeranian Voivodeship were formulated. They contain, among others, the potential directions of development for individual RES in an individualized form for each municipality, including diagnosed potentials.

4. Planning criteria implementation

Recommendations for the municipalities of the Central Functional Zone included potential localisation of new RES installations and were designated including spatial

planning criteria. For each municipality a set of general spatial planning criteria were adopted, in the context of localisation of new RES infrastructure. Moreover, during the project life time, the set of overall recommendations including guidelines according to implementation of criteria in areas of planning, natural conditions, technical aspects, society, economy, as well as other aspects in an acceptable format at the local, regional and national level were developed.

Below is the summary of some chosen planning criteria of the BEA-APP project included in the Regional Concept:

PLANNING CRITERIA:

Designated areas for renewable energies:

The Regional Concept proposes areas designated for renewable energy installations. Other selected areas are predisposed due to the lack of legal and planning restrictions as well as limited spatial and social conflicts related to localisation of new RES infrastructure.

Standard planning processes:

Different RES installations and different scenarios of RES development requires implementation of different spatial planning conditions. These issues according to the CFZ area, are also included in the regional concept. In addition, various groups of stakeholders and social participants were engaged, depending on the type of scenario and installation method. (*chapter 4. Recommendation of using RES in municipalities of CFZ and chapter 6.2 institutional structure of the use of renewable energy according to stakeholders*)

SOCIETY:

Models for participation in spatial planning.

During the project implementation, two documents were signed by representatives of communes, poviats and voivodships enabling cooperation and its further continuation in the form of written agreements regarding on creating and supporting conditions for development of local renewable energy.

The Regional Concept is proposing initiation of activities related to identifying households affected by energy poverty and preparation of a support program (not only financial) for these cases. The final result of the actions could be the development of a strategy to reduce energy poverty and support vulnerable consumers.

ECONOMY:

A compendium of information according to the economic aspects of the functioning of RES installation is presented in section 6.4 of the Regional Concept. In addition, two scenarios were presented - active and passive, presenting the forecasted economic consequences of active and passive participation in energy transformation.

Economic participation models

The Regional Concept included recommendations on a national, regional and local level in order to institutionalize local activities such as: Functioning of energy clusters in the context of the Distribution of electricity, heat and fuels as part of their own distribution system. This includes the sale of energy or fuels to end users, production and distribution

or sale of cold, energy storage, management of agricultural waste from the food, households and forestry industries among others.

OTHER AND CROSSCUTTING ASPECTS:

Natural renewable energy sources:

During the process of preparing the Regional Concept - natural renewable energy resources were evaluated. For this purpose renewable energy resource data provided information on e.g. raw materials for bio-energy and solar energy characteristics were collected. For a holistic view of regenerative energy generation, the different potentials of natural energy sources were taken into account.

Network capacity considered in spatial planning

Preparing the RES Concept included an analysis of the existing network state using GIS data and materials from operators.

It is also recommended to build horizontal cooperation with regional authorities in order to formulate postulates and opinions on energy policy on the level of national and European policy. Regarding the Central Functional Zone of the West Pomeranian Region, it is important to use the development potential of renewable energy sources. Clean energy sources will also preserve existing natural resources in this area, as well as reduce air pollution. According to the annual assessment of air quality of the Regional Inspectorate for Environmental Protection in Szczecin in 2017, the annual concentration of benzo (a) pyrene was in excess in the CSF WZ region, especially in the following cities: Świdwin, Połczyn, Łobez, Drawsko, Czaplnek and Złocieniec. Due to the limited financial resources of residents and local authorities, independent development in this area is a crucial problem. From the national and EU level, this problem should be noted and support programs should be designed so that the CSF WZ can improve its economic, social and infrastructural situation using renewable energy sources.

The implementation of the Concept will result in the continuation of cooperation between local and regional authorities in the development of a common formula for supporting RES investments for deficit areas in the region using the Regional Operational Program, as well as the development of regional RES monitoring system.

The result of the above works is also a joint statement of regional and local authorities participating in the project on creating and supporting conditions conducive to the development of local renewable energy (signing of the statement took place in Siemczyno on 27 September 2018, West Pomeranian Voivodeship)

Photos 1 and 2, Regional conference summarizing the BEA-APP project in Siemczyno (4th Dialogue Meeting)



Source: ROFSPW

5. Attachments:

- Energy map for the CSF WZ area
- An example of municipal energy card



ŁOBEZ

Opis gminy


gmina miejsko-wiejska położona we wschodniej części powiatu tobeskiego, przez którą przepływa rzeka Rega, tereny leśne zajmują 37%, a użytki rolne 52%

 14 345
MIESZKAŃCÓW


 228 km²
POWIERZCHNIA
GMINY

 52%
UŻYTKI ROLNE

 37%
LESISTOŚĆ

 9%
OBSZARY
CHRONIONE

 52%
STOPIEŃ
GAZYFIKACJI

 51 683GJ
SPRZEDAŻ CIEPŁA
SYSTEMOWEGO

w odniesieniu do powierzchni gminy

Inwentaryzacja OZE

ENERGIA WODY

Prusinowo (rzeka Rega) - 80 kW
Łobez (rzeka Rega) - 75 kW
Łobez (rzeka Łoźnica) - 5-8 kW
Łobez (rzeka Łoźnica) - 5-8 kW
Suliszewice (rzeka Łoźnica) - 5-8 kW
Tarnowo (rzeka Stara Rega) - 20 kW

ENERGIA WIATRU

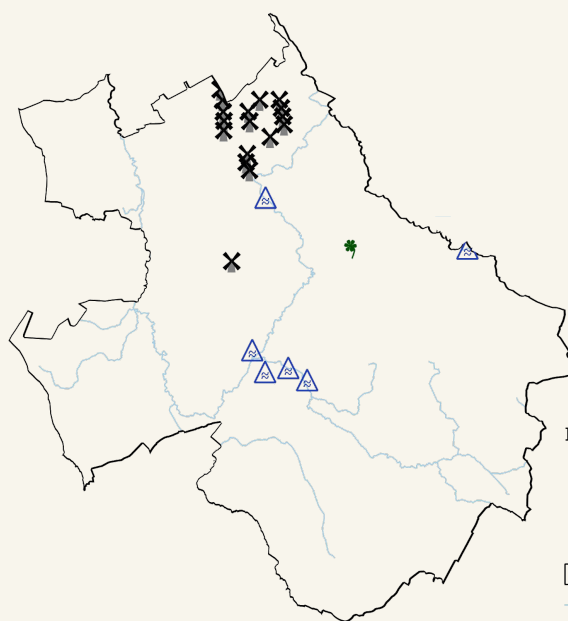
Farma Wiatrowa Resko II - 16 turbin
o mocy 32 MW
Łobżany - 2 turbiny o mocy 4 MW

BIOGAZOWNIE






Byszewo - 1 MW

POZOSTAŁE OZE




Pojedyncze instalacje paneli fotowoltaicznych
oraz kolektorów słonecznych



Legenda

- Istniejące instalacje OZE
-  małe elektrownie wodne
 -  elektrownie wiatrowe
 -  biogazownie
 -  granice gminy
 -  rzeki

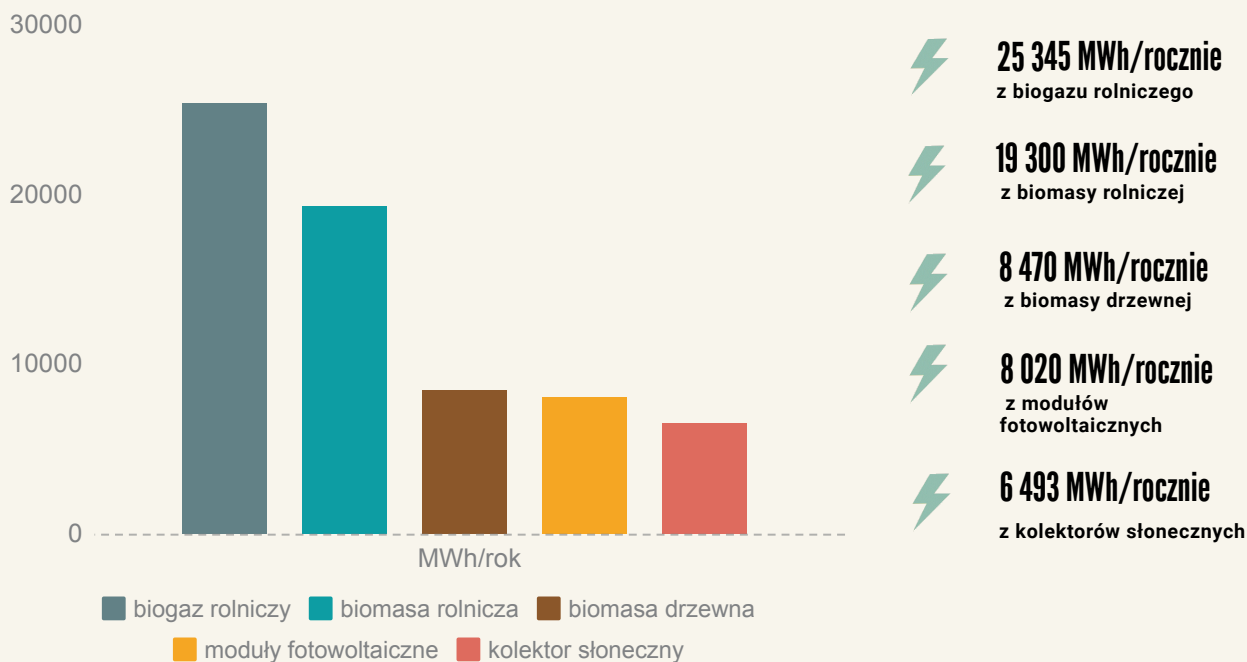
Szanse rozwoju OZE

-  wysoki potencjał biogazu rolniczego
-  wysoki potencjał biomasy rolniczej w stosunku do powierzchni gminy, co jest związane ze znaczącą powierzchnią upraw rolnych
-  niewielka powierzchnia obszarów objętych ochroną przyrody

Bariery

- brak funduszy przeznaczonych na cele związane z rozwojem OZE dedykowanych indywidualnym gospodarstwom domowym
- niepełna/niedostateczna wiedza mieszkańców w zakresie możliwości wykorzystania OZE w celu podniesienia komfortu energetycznego i obniżenia kosztów eksploatacyjnych budynków mieszkalnych
- niesprzyjające regulacje, skomplikowane procedury udzielania pomocy finansowej

Potencjał OZE na terenie gminy

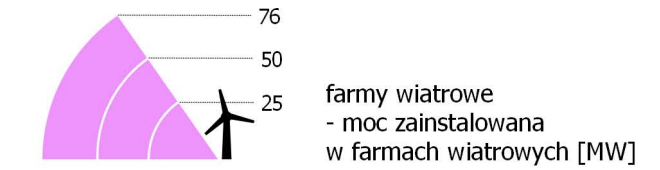


Rekomendacje indywidualne w zakresie rozwoju OZE

- + przeprowadzenie analizy celowości budowy biogazowni w Suliszewicach, w związku z wysokim potencjałem biogazu rolniczego w przeliczeniu na jednostkę powierzchni
- + wymiana kotłowni węglowych na nowoczesne, niskoemisyjne kotłownie opalane biomasą w obiektach publicznych znajdujących się poza zasięgiem sieci gazowej i ciepowniczej
- + dofinansowanie zakupu i montażu instalacji fotowoltaicznych oraz słonecznych podgrzewaczy ciepłej wody użytkowej na budynkach mieszkalnych oraz obiektach publicznych (wzorcowa rola instalacji na budynkach publicznych stanowiących zachętę dla właścicieli budynków prywatnych)

Odnawialne źródła energii w Centralnej Strefie Funkcjonalnej WZ

Odnawialne źródła energii



instalacje istniejące

- instalacje biogazowe
- farmy fotowoltaiczne
- małe elektrownie wodne
- instalacje biogazowe
- farmy fotowoltaiczne

potencjał

- gospodarstwa hodowlane - biogaz rolniczy
- lasy - biomasa drzewna
- użytki rolne - energia wiatru
- strefa potencjalnych ograniczeń wynikających z lokalizacji radaru meteorologicznego
- użytki rolne - energia słońca / biomasa rolnicza
- rzeki - energia wody

instalacje w budowie

- instalacje biogazowe
- farmy fotowoltaiczne

Infrastruktura systemu elektroenergetycznego

stacje elektroenergetyczne

- 110/SN kV
- linie elektroenergetyczne dystrybucyjne
- 110 kV
- linie elektroenergetyczne przesyłowe
- 400 kV

Infrastruktura gazownicza

- stacja gazowa
- gazociąg wysokiego ciśnienia

Formy ochrony przyrody

- parki krajobrazowe
- rezerваты przyrody
- obszary chronionego krajobrazu
- Natura 2000 (OSO i SOO)

Pozostałe oznaczenia

- granice zasięgu działalności operatorów sieci dystrybucyjnej (ENEA Operator Sp. z o.o., ENERGA-OPERATOR SA)
- granica gminy
- granica powiatu
- granica CSF
- grunty antropogeniczne
- lasy
- jeziora

