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European Union | European Regional Development Fund

Sharing solutions for better regional policies

Tips Learned

4th Interregional Event

ENERSELVES

Policy instruments for energy self-consumption in buildings

ENERSELVES
Interreg Europe

European Union
European Regional
Development Fund

Country: **Poland**
Region: **Świętokrzyskie**
Host partner: **Marshal Office of the Świętokrzyskie Region**
Dates: **12th – 13th September 2017**

Objectives of the event

The objective of the 4th interregional meeting in Poland was to exchange experience and increase the capacity of projects concerning self-sufficient solutions in buildings. The meeting in Poland was aimed at improving regional policies for promoting using energy efficient solutions regionally and show examples already existing e.g. ENERGIS building in Kielce where the dissemination event was organised. It was attended by regional authorities, those responsible for creating regional policy concerning self-sufficiency in public building, stakeholders, entrepreneurs and representatives of Kielce University of Technology. The objective was to increase the knowledge about the potential and technology solutions concerning self-sufficiency in the buildings and promote the application of such solutions in other public buildings. Apart from the dissemination event several field study visits were made to show good examples.

Day 1, 12th of September 2017

Public seminar on self-sufficiency in public buildlings

Agenda for the seminar on the 12th September

09:30 Registration

10:00 Introduction, Grzegorz Orawiec, Director of Regional Policy Department in Marshal Office of the Świętokrzyskie Region

10:15 Grzegorz Gałuszka, President of regional policy committee in the Marshal Office of the Świętokrzyskie Region

- Regional policy presentation of self-sufficiency in public buildings in the Świętokrzyskie Region
- Regional Operational Programme in the Świętokrzyskie Region, good practice already implemented

10:30 Zbigniew Jerzy Piotrowski, ENERGIS BUILDING presentation, Kielce University of Technology

- ENERGIS – construction of an energy efficient, intelligent didactic and laboratory facility powered by RES for the Department of Environmental Engineering
- Details of the technology and its functioning

11:00 Coffee break

11:30 Practical presentation of ENERGIS building

- Self-sufficient solutions in the building – presentation of boilers, solar panel system and RES solutions

12:00 Presentation of companies using RES solutions

- Marek Popowicz, Ekovoltaika (http://www.ecovoltaika.eu/)
- Łukasz Kalina, Enerko Energy (http://enerko.pl/)
- Łukasz Koziołek, Bikoserwis (http://bikoserwis.pl/)
- Paweł Woyczyński, 4Industry (http://4industry.pl/)
- Łukasz Dziedzic, EkoEnergia (http://www.energia-eko.com/)

- Michał Zatorski, Akademia Przedsiębiorczości (http://www.ap.org.pl/)
- Wiesław Skiepko, EkoPalnik (eco-palnik.pl/)

13:30 Lunch

14:00 Presentation of the bus with solar panels installed on the roof, Marek Popowicz, EcoVoltaika

TIPS LEARNED

In the last several years the attitude towards passive building has changed rapidly due to new technological solutions. What once used to be costly and ineffective has, has now become economical and possible to realise. The provisions of the Kyoto Protocol (1997), an international treaty which extends the 1992 United Nations Framework Convention on Climate Change (UNFCCC) commits State Parties to reduce greenhouse gas emissions, based on the scientific consensus that global warming is occurring and it is extremely likely that human-made CO2 emissions have predominantly caused it. In the face of increasing air pollution and people's greater awareness of the effects industry has on our climate there was a demand for passive construction. The Kielce University of Technology was a natural party to implement such a project, because of their experience in developing innovations, professionals equipment, highly qualified specialists in the field of environment protection. Low costs of maintenance of such a building were a key factor, too.

The practice has reached the planned inner microclimate conditions by the use of different construction and installation solutions. The four above mentioned laboratories have been built.

The ENERGIS Building contributed to extending educational offer among students of Kielce University of Technology by giving student a chance to earn by practical oepration of RES in the building. Thanks to ENERGUIS Bulding the University of Technology the following has been achieved :

- 22 newly built classrooms and educational facilities,
- 4 fully equipped laboratories,
- The area of the new educational facilities – 5,121.24 m^2
- Construction volume of the new educational facilities - 23,366.51 m^3
- 1 club and lounge hall of 462 m^2
- Widely used ICT technologies in teaching and coaching (lectures, seminars, workshops);
- Workshops run with the use of energy systems and intelligent systems of the ENERGIS building;
- Newly created specialist subjects conducted in the facility: RES, heat accumulation, heat pumps, air pumps, solar installations, photovoltaic installations, energy-active coverings, energy efficient construction, passive construction, intelligent buildings, intelligent systems, air-conditioning, designing, modelling and simulation, heat exchangers, nanomaterials, absorption and accumulations of gases;

Owing to the newly built facility, 3 new courses have been initiated.

The objective of the ENERGIS building is as follows:

1. To conduct lessons, lectures, workshops and current research by students, postgraduate students (PhD students).
2. To make the facility a cross-disciplinary laboratory encompassing the latest energy saving solutions for delivering power, water, gas, innovative solutions for acquiring and accumulating heat and modern IT technologies for monitoring and control.
3. To make 4 state-of-the-art science laboratories such as an RES laboratory, IT laboratory, heat recycling and a laboratory for nanotechnology ecoengineering of issues affecting global problems with decreasing climate warming and reduction of CO_2 intensity.

4. Laboratories will be used for educational and research purposes especially for MSc and PhD students and scholars of such courses as environmental engineering, construction, power electronics, automatics and robotics. Moreover, they will be open to students and scholars of all the courses.
5. Significant self-sufficiency of the building in terms of energy and reduction of energy loss.

Minimising pollutants emission to the environment and maintenance and control of the equipment and installation which will enable flow of energy carriers.

Presentation of the self-sufficient car

ECO VOLTAIKA and its owner Mr Marek Popowicz exhibited an energy-efficient van with photovoltaic panels installed on the roof. The panels consist of 2 modules, 255 W each and batteries which are connected. The capacity of each battery is 40 Ah. The installation includes a converter of 800 W with cell balancing. The whole system is used to power different kinds of portable equipment on deck such as electric drills, screwdrivers, and the like.

Day 2, 13th of September 2017

Agenda

09.00 – 10.00	Project meeting Enerselves Brief summary on next tasks and activities
10.00 – 10.30	Coffee break
10.30 – 12.00	Steering Committee Enerselves (project statistics per partner, financial management, report preparation, project documentation) Next Interregional Event in Romania (Scheduling 23-26 January 2018)
12.30 – 13.30	Lunch
13.30 – 15.30	Study visit – Krystyna Building in Busko-Zdrój, thermodernisation of the building, presentation of cogenerated boilers.
15.10 – 17.30	Study visit – school powered by hot springs in Kazimierza Wielka

Thermomodernisation of the buildings in Busko-Zdrój. Data and Key Performance Indicators

Thermomodernization of SPA Resort Buildings in Busko-Zdrój" was performed thanks to the co-financing from the European Regional Development Fund under Measure 4.2 Development of local environmental protection and energy infrastructure systems Priority Axis 4 "Development of environmental and energy infrastructure" of the Regional Operational Program of the Świętokrzyskie Voivodeship for 2007-2013.

The project covered the 12 premises within Spa Resort in Busko-Zdrój:
1) Specialized Orthopedics and Rehabilitation Hospital "Górka", ul. S. Starkiewicz 1,
2) Hospital "Krystyna" - Pavilion A and Cardiology Department, ul. Rzewuskiego 3,
3) The building in which business activity is carried out. Victoria Café, ul. 1st Maja 6 (building in the Spa Park)
4) Sanatorium "Willa Zielona", ul. 1st May 39,
5) Zakład irodoleczniczy Branches II and III, ul. May 16th and 18th
6) Department of Infertility Branch IV together with the wing in which is the Pharmacy and Laboratory, Rzewuskiego 2,
7) Company archive, Zbludowice,

8) ZTS building, ul. Rzewuskiego 2,
9) Sanatorium "Marconi", ul. 1st May 10: replacement of window and door joinery, finishing of exterior plasters, renovation plasters, flashing, ceiling insulation, partial replacement of central heating and radiators
10) The building where the business is conducted, so called. Imosówka, ul. Waryńskiego 1, building in the area of Zdrojowy Park,
11) Sanatorium Uzdrowiskowe "Oblęgorek", ul. 1st May 19,
12) Sanatorium "Mikolaj", ul. 1st May 3rd.

The implementation period of the project realisation was: 27 March 2014 to 30 September 2015. Contract value with the Contractor PLN 5 400 000,00 gross.
In the years 2016 - 2020 ie the project aims to achieve the following indicator - The amount of energy saved as a result of the realization of thermo-modernization project with the value: 1,697.17 MWh / year
In 2016 the index was reached.

School powered by hot springs in Cudzynowice

During the study visit the group also visited the School powered by hot springs in Cudzynowice, POLAND.

Building 1: School in Cudzynowice, powered by hot waters.	
Installed renewable power (kW):	Electricity from the photovoltaic cells is 5 kWp entirely for individual consumption Heating generated by heat pumps is 78 kW
Type of energy generated:	Electricity Heat
Energy generated per year (kWh):	Entirely for self-consumption, no records are available
Energy Self-consumed per year (kWh):	No records are available