Hungary-Croatia
Cross-border Co-operation Programme

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RuRES

Renewable energy sources and energy efficiency in the function of rural development – RuRES

Interreg
European Regional Development Fund

EUROPEAN UNION

RuRES

Financed by:
Interreg V-A HU-HR Co-operation Programme 2014-2020

Lead Beneficiary:
Josip Juraj Strossmayer University of Osijek, Faculty of Electrical Engineering, Computer Science and Information Technology Osijek

Beneficiaries:

- Centre for Economic and Regional Studies, Hungarian Academy of Sciences
- Kaposvar University

Total project value: 226 838.86 EUR

EU contribution: 192 813.03 EUR

Start date: September 1st, 2017

End date: December 31st, 2018

FERIT
FAKULTET ELEKTROTEHNIKE, RAČUNARSTVA I INFORMACIJSKIH TEHNOLOGIJA OSIJEK

MAGYAR TUDOMÁNYOS AKADÉMIA
KÖZGAZDASÁG- ÉS REGIONÁLIS TUDOMÁNYI KUTATÓKÖZPONT
REGIONÁLIS KUTATÁSOK INTÉZETE

KAPOSVÁRI EGYETEM

FERIT project team:

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Faculty of Electrical Engineering, Computer Science and Information Technology Osijek and can under no circumstances be regarded as reflecting the position of the European Union and/or the Managing Authority.

Overall objectives of the project

- Set of recommendations for EE improvement and waste management in the rural area
- Investigation of economic, social and environmental impacts of RES and EE in the rural area of the cross-border region
- Development of a typical RES system for energy supply in rural areas

"The vision of this project is to perform scientific research and propose RES and EE measures in the function of rural development in the cross-border region"

Usage of RES and EE measures in a rural area are very important in achieving targets of EU 2020 climate and energy package.

Regional research in the field of PV has been conducted, and substantial knowledge in the field of PV systems in the cross-border area of Croatia and Hungary has been acquired within FERIT and MTA KRTK project REPHOSYS.

RuRES project continued co-operation between FERIT and MTA KRTK in the field of RES and EE measures in the function of rural development in the cross-border area of Croatia and Hungary and involved a new partner - Kaposvar University (Kaposvar UNI).

Duration of a project is 16 months.

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KAPOSVÁRI EGYETEM

Training for local stakeholders in Törökkoppány, Hungary

Training for local stakeholders in Törökkoppány, Hungary

Problem, challenge to be addressed

According to EU energy statistics, the share of renewable energy sources in final energy consumption in Croatia at the end of 2014 was 27.9 %, while the national target accounting for RES in 2020 is set to 20 %. Hungary is a RES underachieving country with 14.20 % (2016) of RES share in final energy consumption, while the national target for RES in 2020 is set to 14.65 % with most of the heat and power coming from fossil and nuclear fuels.

The cross-border area of Croatia and Hungary have great potential of RES, especially of the sun, geothermal and biomass energy in rural areas that can be used for power and heat generation.

- Solar energy potential with global irradiation on optimally inclined surface of approximately 1,400 kWh/m2 yearly.
- Geothermal temperature gradient in the Pannonian basin is significantly higher (approx. 0.049 K/m) than the world average with hot dry rocks and geothermal reservoirs present.

Project meeting

Objectives of the project

There are three overall objectives of the project:

1. Development of a typical RES system for energy supply in rural areas
2. Set of recommendations for EE improvement and waste management in the rural area
3. Investigation of economic, social and environmental impacts of RES and EE in the rural area of the cross-border region.

Training for local stakeholders in Törökkoppány, Hungary

"Project results are helpful in fossil fuels consumption and CO2 emissions reduction and in improvement of waste management".

Publication of scientific papers on international conferences:

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Roles of the beneficiaries

The role of lead beneficiary FERIT:

- to develop and propose small energy systems based on RES and EE in rural areas according to regional conditions
- testing the proposed systems in the Laboratory for RES
- implementation of one typical demonstration system in the rural area and to give recommendations of EE measures for rural development.

The role of MTA KRTK:

- to elaborate a model - for Baranya, Somogy and Osijek-Baranja counties
- survey the attitude, the socio-cultural circumstances and environmental consciousness of the citizens of rural areas regarding RES and EE.

The role of Kaposvar UNI:

- to give recommendations for sustainable waste management in rural areas.
- to investigate the potential of biomass for energy purposes on micro-region level
- to investigate the potential of waste for energy purposes
- to analyse the biogas potential on a small scale in the rural area.

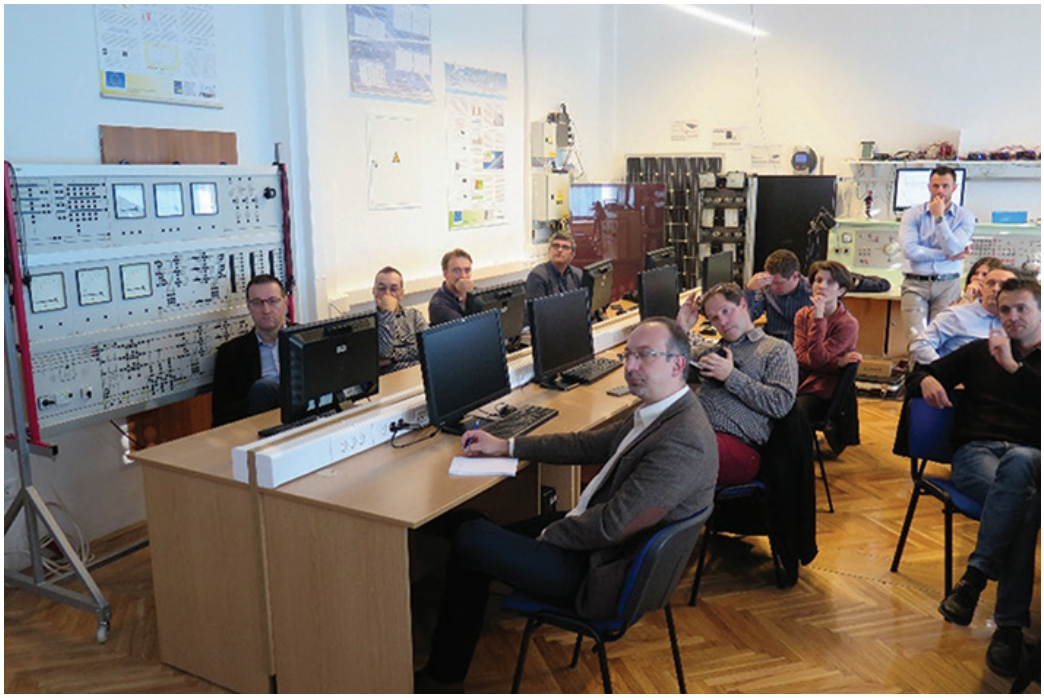
Renewable energy sources and energy efficiency in the function of rural development

Target groups influenced by the project

Direct target groups are the members of FERIT, MTA KRTK and Kaposvar UNI project research teams. Project team members benefited from the project in terms of getting new research equipment, continuing and enhancing research programme in the cross-border area.

Indirect target groups are members of scientific communities and stakeholders in the field of EE and RES, local authorities responsible for rural development and particularly small agricultural economies that could be stimulated by project results to invest in the field of RES and EE.

Study visits



Project meetings

Project meetings

Study visits

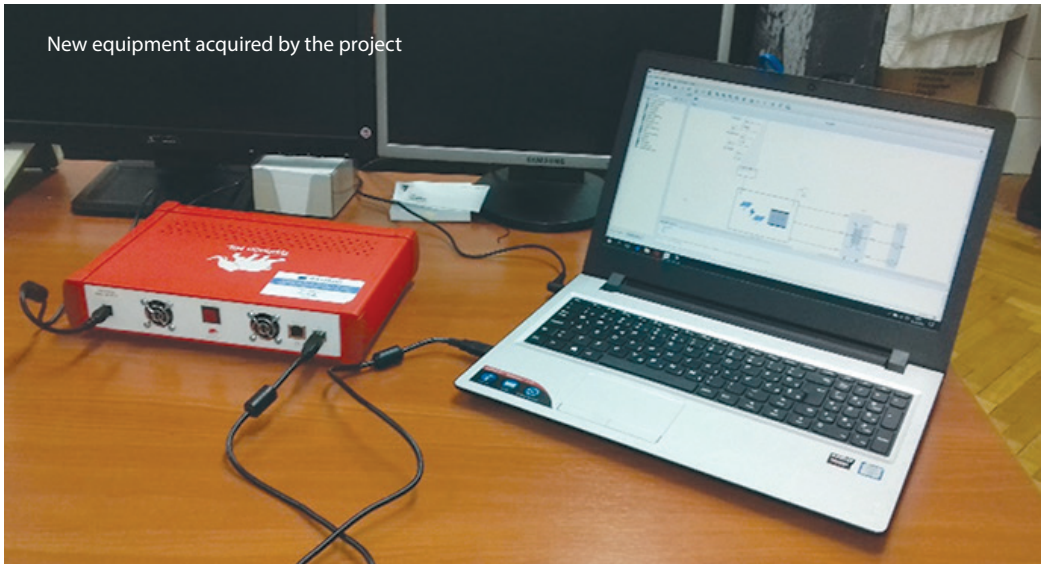
Publication of scientific papers
on international conferences:

Results of the project

- Members of scientific communities in the field of EE and RES, local authorities responsible for rural development and particularly small agricultural economies got valuable data and information about RES systems and EE implementation in rural areas from developed model.
- Trainings for local stakeholders in rural areas are organized for the purpose of raising awareness and knowledge of local stakeholders in the field of RES, EE and proper bio waste management.
- A website, where stakeholders can be informed on the most recent results of our measurements and research to be used for their purposes.
- A book in three languages, which summarizes the most important results of the project for the scientific audience and for stakeholders.
- Newly purchased equipment which help demonstrate how to build a small-scale proper RES system in the rural area.
- Scientific papers published in international scientific journals or conference proceedings
- A demonstration system is installed, and data gained from the demonstration system is publicly available.
- The final conference at which the results will be discussed with both the scientific audience and stakeholders and when research findings will be disseminated.

New equipment acquired by the project

New equipment acquired by the project


New equipment acquired by the project

Methodological approach

Project included a multidisciplinary approach which includes various activities for reaching expected and measurable outcomes like:

- networking
- collecting relevant data about RES and EE (technical, geographical, environmental, economic, social, etc.)
- field work
- research and testing in a laboratory
- investigation of economic, social and environmental impacts and constraints
- a research-based selection of micro-location and installation of a demonstration system
- trainings for stakeholders based on research results and documentation
- dissemination of project results
- study visits

New equipment acquired by the project


New equipment acquired by the project

Project benefits for the influenced target groups

- As an example of good practice, this project could be applied in other areas in Croatia and Hungary or even wider
- The project can indirectly stimulate local authorities responsible for rural development and particularly small agricultural economies to invest in RES, EE and sustainable waste management.
- The established cross-border co-operation among project partners can be continued in future in the field of RES and EE in a wider area.
- The project will enable further development of the Laboratory for RES at FERIT, as well as Bachelor and Master degree course curricula, which in turn will result in raising awareness and knowledge in RES and EE engineering.