



PROFESSIONALIZATION OF THE CONSTRUCTION SECTOR

TOPIC REPORT — SEVILLA, 30th SEPTEMBER 2017

**BUILD2LC Project
Boosting Low Carbon
Innovative Building
Rehabilitation in
European Regions**

The topic report is a communication action for the general public to show the main conclusions and results of the events being held with stakeholders in relation with BUILD2LC topics.

More info: interreurope.eu/build2lc

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ABOUT BUILD2LC

The recent framework strategy of the “Energy Union” of the European Commission indicates that 75% of European households are energy inefficient. There is also great potential for energy savings in public buildings of the EU. The BUILD2LC project will contribute decisively to achieve the EU energy goals, with its overall objective to increase the energy rehabilitation of buildings, and pave the path that facilitates the transit towards the new standard of nearly Zero Energy Buildings (nZEB).

The key innovative aspect of BUILD2LC is its multidisciplinary approach, that counting on different complementary expertise at Local (Gloucestershire County UK, and Gorenjska SI), Regional (Andalusia ES, Rzeszow PL, NorthWest Croatia HR and Jämtland-Härjedalen Region SE) and National (Lithuania LT) level, will allow achieving the energy goals and a sustainable development of the construction sector, based on improving the competitiveness, generating qualified employment, promoting innovation, and alleviating fuel poverty, in line with the European objectives for smart, sustainable and inclusive growth.

The project, with a high replicability impact will design innovative financial instruments, adapted to the needs of citizens, new mechanisms that contribute to a more competitive business network, special programmes to support innovation, and innovative collaboration actions, focusing on vulnerable groups. Homeowners, business sector, policy makers, local authorities, knowledge institutes and vulnerable groups will benefit from the project.

BUILD2LC will develop a complete learning process to facilitate an effective knowledge flow among regions, with a bottom-up approach methodology, counting on the regional stakeholder groups. More than 70 best practices and almost 70 events involving nearly 400 stakeholders, will establish 7 different Regional Action Plans covering a population of more than 15 million inhabitants and improving energy efficiency over 25% at the participating regions.

— AIMS

The main objective of the BUILD2LC is **to increase the energy rehabilitation of buildings to reduce energy consumption and enhance policies to favour the creation of a market of specialised companies in this sector.** To achieve this objective, it is necessary to reinforce the competences of partners in the following sub-objectives:

1. Encourage the demand and promotion of investments, facilitating that citizens undertake energy rehabilitation activities.
2. **Promoting the competitiveness of the business network: reformulating business models (ESCOS) and integrating all actors in the value chain of the energy rehabilitation sector.**

3. **Improve the skills of workers aimed at new market niches of energy rehabilitation of buildings.**
4. Encourage innovative solutions, the use of new materials, boosting public procurement, and the cooperation between companies and knowledge institutes.
5. Eliminate barriers that impede the rehabilitation of buildings, especially those of a normative or administrative nature.

Therefore, the exchange of experiences between partners, some of them occurred during this Interregional Thematic Seminar will be aimed at:

- Designing new, more flexible, transparent and innovative financial instruments, adapted to the needs and expectations of society, and considering the cost-benefit effectiveness of the measures, accompanied by innovative collaboration actions with citizens.

- Enhancing public private partnership for higher leverage of public funds.
- **Promoting guarantee and operating mechanisms that contribute to the development of a higher quality and more competitive business network.**
- Boosting mechanisms to support innovation in equipment and systems of higher energy efficiency in buildings with special relevance to the role of public administration and promotion of innovative strategic projects, demonstration projects and pilot projects in buildings.

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INTRODUCTION TO THE TOPIC PROFESSIONALIZATION OF THE CONSTRUCTION SECTOR

The construction sector plays an important role in the European economy. It generates almost 10 % of GDP and provides 20 million jobs, mainly in micro and small enterprises. Construction is also a major consumer of intermediate products (raw materials, chemicals, electrical and electronic equipment, etc.) and related services. Because of its economic importance, the performance of the construction sector can significantly influence the development of the overall economy.

The quality of construction works also has a direct impact on the quality of life of Europeans. Not least, the energy performance of buildings and resource efficiency in manufacturing, transport and the use of products for the construction of buildings and infrastructures have an important impact on energy, climate change and the environment.

The competitiveness of construction companies is therefore an important issue not only for growth and employment in general but also to ensure the sustainability of the sector.

The sector could contribute significantly to job creation¹ by increasing its activity in some very promising areas, such as the renovation of buildings and in infrastructure, with support through, for example, appropriate policies to promote demand but also to encourage investment. Thus, the construction sector plays an important role in the delivery of the Europe 2020 Strategy on smart, sustainable and inclusive growth. Furthermore, the Commission's Communication on the [Energy Roadmap 2050](#) points out that higher energy efficiency in new and existing buildings is key for the transformation of the EU's energy system.

A sustainable construction sector plays a crucial role for reaching the EU's long term 80-95% greenhouse gas emission reduction objective. According to the [Roadmap for moving to a competitive low carbon economy in 2050](#) the cost-efficient contribution of the buildings sector would be around 40 to 50% reduction in 2030 and around 90% in 2050. The needed investments would contribute substantially to the competitiveness of the European construction sector.

¹ It is estimated that 275 000 new jobs could be created in the sector by 2020. CEDEFOP *Skills, Demand and Supply 2010*, p. 96

The sector has also an important role to play in adaptation to climate change and resilience to natural and man-made disasters by promoting long term disaster proofed investments.

However, the construction sector is confronted by a number of structural problems, such as a shortfall of skilled workers in many companies, low attractiveness to young people due to the working conditions, limited capacity for innovation and the phenomenon of undeclared work. More widely, the current situation of this industry can be characterized by three basic elements:

1. The construction sector is one of the hardest hit by the financial and economic crisis.
2. There is increased competition from non-European operators not only in international markets, but also within the internal market, particularly with regard to infrastructure projects. This external competition does not always operate fairly; EU companies are often faced with far greater costs than non-European companies.

3. Finally, the energy and environmental issues have created a new dynamic among companies and stimulated various public-sector initiatives which have become key factors in market competition. Significant progress has already been made by construction enterprises but achieving the EU's climate, energy and environmental objectives will require significant changes that will be difficult for the sector to tackle without appropriate policy support.

The construction value chain includes a wide range of economic activities, going from the extraction of raw materials, the manufacturing and distribution of construction products up to the design, construction, management and control of construction works, their maintenance, renovation and demolition, as well as the recycling of construction and demolition waste. As such, the construction sector plays an important role in the delivery of the [European Union's Europe 2020 goals](#) for smart, sustainable and inclusive growth. It has a direct impact on the safety of workers and on the quality of life. Buildings, infrastructure

and construction products have an important impact on energy and resource efficiency, the fight against climate change and in the environment in general.

The main objective of the BUILD2LC project is **to increase the energy rehabilitation of buildings enhancing the implementation and change of policies**. The project is focused on four different topics:

- New financial instruments
- Professionalization of the construction sector
- Activation of demand and combating energy poverty
- Innovation



BUILD2LC addresses in this report the topic **Professionalization of the Construction Sector** which means:

- Supporting a specialised, competitive and innovative business sector linked to energy rehabilitation, fostering the regional cooperation and a greater interaction between clusters and business associations in the project regions.
- Increase the number of qualified workers with enhanced professional skills across Europe in relation to energy efficiency and renewable energy systems and measures in buildings to deliver building renovations which offer high-energy performance as well as new, nearly zero-energy buildings.

All this contributes to the creation and consolidation of quality employment, in line with the provisions of the Regional Strategies for Smart Specialisation (S3) and other strategic planning tools of the regions involved in the project.

Participating regions currently faces specific problems concerning setting up 2020 objectives at the construction sector. Taking a transnational approach is essential to address an issue of such strategic relevance for the European Union as the energy rehabilitation of buildings. This interregional cooperation will enhance greater interaction between clusters and business associations in the project regions, which will facilitate the coordination of interregional strategies to increase their capacities for innovation and market development.

The BUILD2LC project is completely aligned with the EU policies regarding the professionalization of the constructions sector. It shall be highlighted two essential papers defining the EU cornerstone policy structure, the **Roadmap to a Resource Efficient Europe** and the **Agenda for New Skills and Jobs**.

The **Roadmap to a Resource Efficient Europe** outlines how we can transform Europe's economy into a sustainable one by 2050. It proposes ways to increase resource productivity and decouple economic growth from resource use and its environmental impact. It illustrates how policies interrelate and build on each other.

Areas where policy action can make a real difference are a particular focus, and specific bottlenecks like inconsistencies in policy and market failures are tackled to ensure that policies are all going in the same direction. Cross-cutting themes such as addressing prices that do not reflect the real costs of resource use and the need for more long-term innovative thinking are also in the spotlight.

Key resources are analysed from a life-cycle and value-chain perspective. Nutrition, housing and mobility are the sectors responsible for most environmental impacts; actions in these areas are being proposed to complement existing measures since their combined effects account for 70-80 % of all environmental impacts.

The Roadmap states how urgent is improving buildings given that a better construction and use of buildings in the EU would influence 42% of our final energy consumption, about 35% of our greenhouse gas emissions[and more than 50% of all extracted materials; it could also help us save up to 30% water.

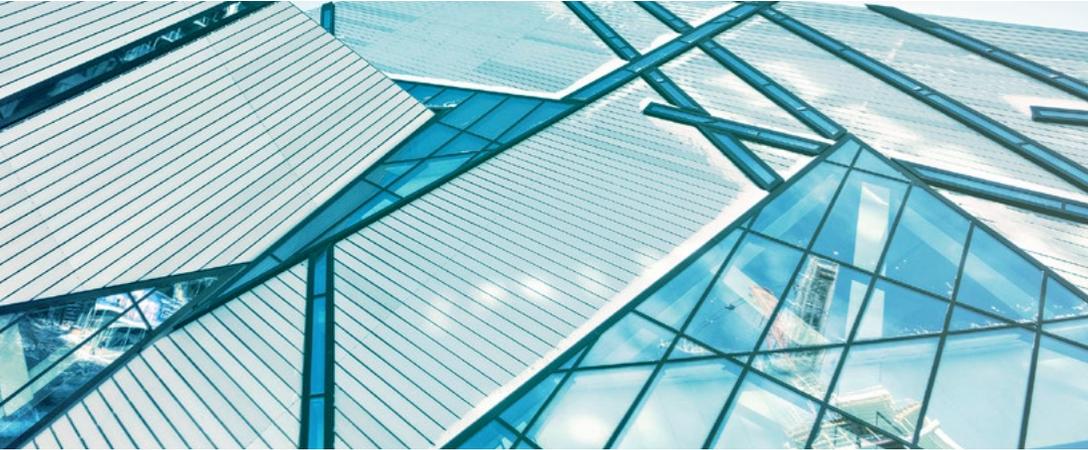
The significant improvements in resource and energy use during the life-cycle mean an effort that will contribute to a competitive construction sector and the development of a resource efficient building stock. This requires the active engagement of the whole value chain in the construction sector. Specific policies are needed to stimulate SMEs, which make up the vast majority of construction companies – to train and invest in resource efficient building methods and practices.

The Commission, with Member States, will assess how to support skills investment plans, apprentice schemes and communication on the best resource efficiency practices in the industry (continuous), take measures, using an ‘SME test’ where appropriate:

- to stimulate demand and uptake of resource efficient building practices through life-cycle costing and suitable financing arrangements.
- to further widen the scope of the Eurocodes to design criteria related to sustainability.
- to develop incentives to reward resource efficient buildings.
- to promote the sustainable use of wood in construction, (Communication on the sustainable competitiveness of the construction sector, 2011, Communication on sustainable buildings, 2013);

The EU assesses how best to encourage private sector innovation in construction.

On the other hand, the **Agenda for New Skills and Jobs** seeks how to get an employment rate target of 75% for the 20-64 years age group by 2020: an ambitious commitment to the sustainability of Europe’s social model, welfare systems, economic growth and public finances. Building workforce is particularly sensitive to unemployment and under-qualification issues to the seasonal work patterns and traditional low skilled workers. Nowadays, there is a significant shortfall of qualified workers for on-site construction enterprises and to a lesser extent for the construction products’ industry. Moreover, education and training systems across Europe display great variety in the degree of centralisation or decentralisation, the structure of training provision, the role of the social partners, financial structures and curriculum content.



It is necessary to better anticipate future skills and qualification needs, to attract a sufficient number of students to relevant construction professions and to create the conditions for a better working environment and career management, for a greater mobility of construction workers and for wider provision of cross-border services. This has to take account of the impact of the ageing of the EU workforce and of the specific occupational health and safety situation of the sector.

The EU can meet this challenge and raise employment rates substantially, but only with resolute action focussing on four key priorities:

1. First, better functioning labour markets. Structural, chronically high unemployment rates represent an unacceptable loss of human capital, especially in the construction sector: they discourage workers and lead to premature withdrawal from the labour market and to social exclusion.

2. Second, a more skilled workforce, capable of contributing and adjusting to technological change with new patterns of work organisation. This is a considerable challenge, given the rapidly-changing skills needed, and the persistent skills mismatches in EU labour market, especially regarding to buildings associate technologies and energy efficiency knowledge. Investment in education and training systems, anticipation of skills needs, matching and guidance services are the fundamentals to raise productivity, competitiveness, economic growth and ultimately employment.
3. Third, better job quality and working conditions. There is no trade-off between quality and quantity of employment: high levels of job quality in the EU are associated with equally high labour productivity and employment participation. Working conditions and workers' physical and mental health need to be taken into account to address the demands of today's working careers, which are characterised by more transitions between more intense and demanding jobs and by new forms of work organisation.
4. Fourth, stronger policies to promote job creation and demand for labour. It is not enough to ensure that people remain active and acquire the right skills to get a job: the recovery must be based on job-creating growth. The right conditions to create more jobs must be put in place, including in companies operating with high skills and R&D intensive business models. Policies to exploit key sources of job creation and to promote entrepreneurship and self-employment are also essential to increase employment rates.

Furthermore, the **EU strategy for the sustainable competitiveness of the construction sector** focuses on five objectives: investments, jobs, resource efficiency, regulation and market access. The EU has put in place a comprehensive legislative and regulatory framework, including corresponding European standards as well as financial tools, information platforms, labelling schemes and other instruments. The EU is a major actor in world trade and supports open markets, clear regulatory frameworks and the removal of barriers to trade. The EU is engaged internationally to open opportunities for sustainable construction, cooperate with its partners in areas of mutual interest and share its expertise.

In light of these policy statements it is mandatory to make better use of EU funds. Cohesion policy contributes already to the development of new skills and to job creation, including in the expanding area of the green economy, but more can be done to fully exploit the potential of the EU financial instruments and regulations that support reforms in the fields of employment, education and training: this means the European Social Fund (ESF) in the first place, but also especially the European Regional Development Fund (ERDF).

The transition to a resource-efficient and low-carbon economy will bring important structural changes in the construction sector: on-site construction and product manufacturers will be confronted with the need for skilled labour, especially regarding near zero-energy buildings. The European Social Fund provides funding for training and education schemes.

For instance, on skills upgrading and matching the ESF can invest in the forecasting and development of qualifications and competences, and support the reform of education and training systems to strengthen their labour market relevance. The exchange of experiences and networking between higher education, research and business centres to address new skills requirements can also be funded. ERDF, on the other hand, supports investments in education infrastructure.

Regarding job creation, the ESF and other EU funds can support the promotion of entrepreneurship, business start-ups and self-employment. Financial engineering can provide the missing link between financial markets and small entrepreneurs.

The **New skills for new jobs agenda**, the Green Employment Initiative: **Tapping into the job creation potential of the green economy** and the Green Action Plan for SMEs - **Enabling SMEs to turn environmental challenges into business opportunities** address skills gaps, anticipate future labour market needs and help people to better exploit job opportunities provided by the green economy.

It shall be mentioned the **Build Up Skills programme**, a strategic initiative which started under the Intelligent Energy Europe (IEE) programme to boost continuing or further education and training of craftsmen and other on-site construction workers and systems installers in the building sector. Build Up's final aim is to increase the number of qualified workers across Europe to deliver building renovations which offer high-energy performance as well as new, nearly zero-energy buildings. The initiative addresses skills in relation to energy efficiency and renewable energy systems and measures in buildings.

— CONCLUSIONS

Given the importance of the construction sector for the EU's GDP and employment, as well as its role in the achievement of some of the critical climate, environmental and energy-related objectives, the competitiveness of this sector is a permanent political priority.

Furthermore, especially in times of financial and economic crisis, EU policies in the areas of climate change, energy efficiency and renewable energies, in particular in the context of a policy for sustained encouragement of building renovation, should be seen as an opportunity to revitalise business and employment in the construction sector.



3 INTERRE- GIONAL SEMINAR IN RZESZÓW, POLAND

The Interregional Thematic Seminar on **Professionalization of the Construction Sector** was organized in Rzeszów, in Poland from 21th to 22nd of March 2017 in the frame of BUILD2LC project.

The first day was dedicated to the open Conference, press conference and Pitching Session and B2B for clusters, associations and other entities from partners' regions. The second day, the following study visits presenting best practices on buildings energy efficiency took place:

- The University of Law and Public Administration (energy modernization of the university's didactic buildings)
- The Technology Transfer Center in The University of Rzeszów (functioning of the center and its laboratories)
- ML SYSTEM company – R&D Photovoltaic Research and Development Center.



The conference was attended by 69 people, including representatives of BUILD2LC partners from Spain, Lithuania, the United Kingdom, Croatia, Sweden, Slovenia and Poland, stakeholders from these countries, representatives of Podkarpackie local government authorities, public administration, media, universities, clusters, associations and entrepreneurs operating in the construction sector. Examples of good practices in this area were presented, including various proposals for solutions, threats and dangers, functioning of clusters as examples of cross-sectoral cooperation for the construction industry and renewable energy sources, as well as possibilities of financing actions for the professionalization of the construction sector.

— SUMMARY

The second BUILD2LC Interregional Seminar titled **Professionalization of the Construction Sector** was held in Rzeszów, Poland on 21-22 of March 2017 in accordance with the annexed Agenda. The Seminar attracted 69 attendants, speakers and stakeholders from different regions and various institutions, agencies, ministries, the European Commission, companies, professional and business associations, NGOs, municipalities and the other institutions, as well as some representatives from non-partner regions, as from Slovakia, and even non-EU countries as Ukraine.

The following summary collects the main conclusions and outcomes of the seminar, split by sessions and roundtables.

— SUMMARY OF THE SESSION 1 welcome opening



Mr Waldemar Szumny

Waldemar Szumny from the Podkarpackie Region Marshall's Office speaks on behalf of the Marshall of Podkarpackie Region, Władysław Ortyl. He welcomes all guests from all over Europe and expresses gratitude and his happiness that Rzeszów had a chance to host a meeting on a topic so close to all citizens, namely energy efficiency. BUILD2LC project is relevant for all EU as it will help to create and identify new financial means of efficient energy, encourage innovative solutions and investment in the construction sector, as well as significantly increase public awareness in the field of energy. He wishes all participants a fruitful and inspiring meeting.



Mr Piotr Zawada

Piotr Zawada, Rzeszow Regional Development Agency (RRDA) member of The Board welcomed guests on RRDA's behalf – the host project partner. He welcomes the participants, introduces the topic of the seminar and stresses the importance of long-term investments into energy efficiency.

Also, Mr Zawada explains RRDA's priorities, goals, and mission. He encourages the participants to ask questions during the workshop, establish contacts, communicate, to share information with each other and to use time productively.



Mr Joaquín Villar Rodríguez

Joaquín Villar Rodríguez, BUILD2LC Project Co-ordinator from the Andalusian Energy Agency, Spain, shows a general view of BUILD2LC, explains the background and aims of the project, and how the partnership is going to work during the project lifetime to achieve them.

— SUMMARY OF THE SESSION 2 "Professionalization of the European Construction Sector"



Ms Agata Kotkowska

Agata Kotkowska, Head of Buildings and Heating/Cooling Sector Horizon 2020 Energy Unit, EASME (European Commission) gives a presentation titled *Professionalization of the Construction Sector from the European Energy Efficiency Perspective*.

Mrs Kotkowska starts by explaining EASME's role within the European Commission. She tells about the initiative *Clean Energy for All Europeans*: a focus on building smartness as a proposal for amending the Energy Performance of Buildings Directive.

The following topics about future trends were showed:

- Smart homes.
- e-mobility becoming mainstream
- The need for improved skills across the building sector, there is an expected shortage of qualified building workers by 2020 in most European countries.
- A need for training of the current workforce is much stronger than the estimated need for additional workers, more than 3 million workers would require up-skilling on energy efficiency or renewable energy sources by 2020, so it is very important to design and deploy transferable and cross-trade knowledge and skills.



Mr Włodzimierz Grochal

Włodzimierz Grochal from Swietokrzysko-Podkarpacki Energy Cluster presents *Cooperation of Universities and Public and Private Sector in the Frame of Construction Clusters – Challenges, Objectives and Benefits*.

Mr. Włodzimierz stresses that the main goal of the Cluster is building a interregional cooperation platform up in the range of widely understood energy efficiency, and especially on promotion, implementation and spreading of EU energy policy goals on local, regional and superregional levels. The main objective is to use energy in an effective way and especially in the construction branch. Members of this cluster include local governments, businesses, universities and institutions from Eastern Poland working on the promotion of innovation.

Activities accomplished within Cluster answers the demands of its members to act as a platform for business based on research and expert's knowledge on following fields:

- Transfer of knowledge and technology from EU countries and wide-spreading good examples benchmarking.
- Support development of combined heat and power based on local renewable resources,
- Using innovative technology and raising awareness to decrease the energy demand in buildings and industrial production processes.
- Promotion of innovative solutions to reduce CO₂ emissions.
- Development of education and training to effectively manage energy.
- Elimination of barriers that impede the renewable energies deployment.
- Efficient use of energy resources.



Ms Diana Horvat

Diana Horvat, Head of department, Sector for Energy Efficiency in the Buildings Sector, Ministry of Construction and Physical Planning makes the presentation titled *Croatia Croskills: Lifelong training plan for building workers*. Mrs Horvat explains the project purposes, background, participating partners and objectives.

Project main motivation:

- Lack of qualified building sector workers in energy efficient retrofitting and construction.
- Lack of institutional specialized education schemes.
- Weak market demand for low energy buildings.

- Lack of national discussion among the relevant stakeholders on the needs and possibilities about building sector workforce.

Project main objectives:

- Development and testing of comprehensive training materials and training curricula for six priority building professions: bricklayers, plasterers, roofers, carpenters, house-painters and prefabricated construction fitters.
- Establishment of up to six different training schemes and accreditation of training providers - systematic approach to life-long learning of the Croatian building workers, regardless of their previous education and skill levels.
- Establishment of a national certification scheme for six priority professions - proper market evaluation of the qualified workforce and help to increase demand for skilled workers.

— SUMMARY OF THE SESSION 3 "Panel on Good Practices of Professionalization of the European Construction Sector"



Ms Anna Pasierb

Anna Pasierb from Podkarpacka District Chamber of Civil Engineers performs the presentation *The Podkarpackie Low-Energy Consumption Technologies Transfer Centre's Passive House*. She explains how this passive building, the Chamber's headquarters, is being built.

The building, also, will serve the developing the business of the Chamber, the distribution of equipment and renewable energy technologies, and the organization of training course, conferences and workshops connected with renewable sources of energy

to increase skills and knowledge of the workforce from Podkarpackie Region.

The building design conditions are:

- Passive, zero – energy house.
- Class A of LEMUR priority program.
- Design mainly on the basis of Polish components.
- Annual energy consumption for heating max. - 15 kWh / m².
- Projected primary energy consumption less than 120 kWh / m² annually.

The main conclusions by Mrs Pasierb about passive house and the applied design solutions are:

- Compact design of the building
- High air tightness of interior building partitions
- High thermal insulation of all external partitions
- Proper orientation of windows.
- Suitable selection of windows area
- Effective system of external shading and optimal building construction.



Mr Bogusław Kotek

Bogusław Kotek from Association of Owners and Managers Homes in Przemyśl presents *Thermo-modernization of historic buildings within the old town of the city of Przemyśl*. Within the initiative *Revitalization of historical buildings in the town of the old town industry* funded by the ERDF for the Podkarpackie Voivodship (2011-2013), all the buildings included in the project were built before 1900 and have heritage consideration as historic buildings in the register of monuments maintained by the Voivodship Monument Conservator. Through the design of the wall insulation design, the replacement of joinery and the exchange of heat sources, the energy efficiency of buildings have been improved in a really measurable manner. Thanks to the project, a quarter of the buildings on the board received “new life”.



Ms Katarzyna Kowalska and Mr Emilio Rull

Katarzyna Kowalska and Mr Emilio Rull Quesada from UNIMOS Foundation and Podkarpackie Renewable Energy Cluster respectively, presents *Cross-sectoral cooperation for raising qualifications of clusters and associations members*.

As an example, it was explained the successful EU-funded *ADELANTE* project to increase the competitiveness, adaptation, potential and internationalization level of micro, small and medium enterprises (SMEs) of Podkarpackie based on the Spanish experiences related to renewable energies development, transition to a low carbon economy and creation of smart cities.

The partnership relied on a cross-sectoral approach taking into account renewable energies, ITC, architecture, construction and related sectors, clusters, universities and R&D, public administration and regional agencies.

The *ADELANTE* project activities included:

- 3 thematic reports,
- 2 participatory workshops,
- Diagnosis of the situation of Polish SMEs and further elaboration of development plans,
- Advisory services for Polish companies related to management, marketing, financing and internationalization processes,
- Training programmers elaborated by Spanish partner and implemented by Polish partners,
- E-mentoring for Polish companies executed by Spanish experts,
- Elaboration of a final casebook and a closing conference.



Ms Agata Kotkowska

Agata Kotkowska, Head of Buildings and Heating/Cooling Sector Horizon 2020 Energy Unit, EASME (European Commission) performs the next presentation titled *Examples of successful BUILD-UP Skills projects*, an EU-funded initiative aimed at boosting training of craftsmen and other on-site construction workers in the building sector including on-going implementation of national roadmaps, the set up and upgrade of large-scale qualification and training schemes for blue collar workers across 22 projects in 21 EU countries. Mrs Kotkowska mentioned and explained briefly some examples of successful BUILD-UP Skills projects:

1. Construye2020 (Spain)

- Design and implementation of 9 training actions.
- Training simulator: application for mobile devices showing good practices for the different steps in renovation.
- Pilot courses involving 430 workers.
- Outreach campaign in 15 major Spanish cities + national media.
- Campaign: estimated impact: 12 million people.

2. BUILD UP Skills BEEP (Finland)

Innovative training toolbox including:

- Sets of slides and didactic videos in 5 languages (FI, SE, EST, RU, EN).
- Instruction cards for workers self-learning.
- Pilot training for 'change agents' (experienced workers/mentors).
- Training Ambassador: helping to attract workers and companies.

Regarding the Horizon 2020 Projects on Construction Skills, Mrs Kotkowska pointed the blue and white collar professionals and the mainstream topics targeted:

- Training of middle and senior level professionals on energy efficiency and renewables in buildings in the Czech Republic and Slovakia (ingREes).
- Enhancement of skills for engineers and architects to build nearly-zero energy buildings (nZEB) - (MEnS, PROF/TRAC),
- Set-up and upgrade of training curricula for trainers, construction workers, designers and others based on the Passive House concept (Train-to-nZEB),
- Creation and update of qualification and training schemes for the European Qualifications Framework (EQF4), craftsmen and other on-site workers in The Netherlands (BUSToB).

Ms Kotkowska drew attention to the BUILD-UP portal – the EU portal for energy efficiency in buildings – [SKILLS](#).



Mr Paweł Chmura

Paweł Chmura, Podkarpackie District Chamber of Civil Engineers introduces the presentation titled *Professionalization of skills: Comprehensive improvement of qualifications of civil engineers*. The presentation touched upon the current potential of training for engineers who are currently members of the Chamber, with more than 7.000 licensed engineers from 21 counties in 9 different specialties: construction - building construction, sanitary installations, electrical installations, water and land drainage, road construction, bridge construction, railway construction, telecommunication, demolition.



Mr Tomasz Pyszczek

Tomasz Pyszczek, member of Podkarpackie District Chamber of Civil Engineers, architect of the "Passive Architecture Office", presents *Passive Architecture*. His Office has designed and performed 12 passive buildings, has 5 still under construction and more than 30 already designed.

Mr Pyszczek compares the costs of building a passive house in relation to a traditional one and tells about the processes of building passive house, pointing out that such buildings are the future in the building construction industry.

— SUMMARY OF THE SESSION 4 pitching session

The moderator invited the audience to listen to several short presentations of firms/clusters/institutions referring to their activity as a way to break ice before the Technical Committee and to facilitate networking and business opportunities:

1. ML SYSTEM S.A. Innovative Photovoltaic Company from Podkarpackie, by Szczepan Borowy – Sales Director.
2. IDEA – Institute of Good Ecosolutions *Alternative* Ltd., from Podkarpackie by Piotr Pawelec – President.
3. Energy Cluster EKPK, Presov Region, Slovakia by Alexander Tokarcik – Director of organization.
4. ClusterCSA – Cluster of Sustainable Building of Andalusia, Spain, by Enrique Otero – President.
5. Region Jämtland Härjedalen, Sweden. by Elin Nirjens – Competence strategist.
6. Euro-Inversia business facilitator, Warsaw, Poland, by Emilio Rull Quesada – CEO.

7. FADECO Contractors, construction business association from Andalusia, Spain, by Jorge Fernandez-Portillo – Board member.
8. The Ministry of Environment of the Republic of Lithuania by Marius Narmontas – Director of Construction and Territorial Planning Department.
9. Green Building Council (non-for-profit), Slovenia by Irena Hlede – CEO.
10. Ministry of Construction and Physical Planning of Croatia by Diana Horvat – Head of Department.
11. BETA Housing energy efficiency agency of Lithuania by Marius Smaidziunas.
12. Andalusian Cluster of Renewable Energies and Energy Efficiency – CLANER from Andalusia, Spain, by Isaías Rodríguez – R&D Director.
13. Subcarpathian Renewable Energy Cluster PKEO by Grzegorz Wisz – Cluster Manager.

14. UNIMOS Foundation from Poland by Katarzyna Kowalska – Vicepresident.
15. Agency of European Innovations – AEI from Lviv, Ukraine by Ivan Kulchytsky – President.
16. PREDA Ltd. from Wrocław, Poland by Jacek Wal-ski – CEO.

We shall remark the participation from one stakeholder from a non-partner region – Mr Alexander Tokarcik from Presov Region, Slovakia. There was also a very fruitful interchange of opinions with Mr Ivan Kulchytsky representing the Agency of European Innovations – AEI from Lviv, Ukraine. Lviv is a historically and culturally well-connected city to Rzeszów. However, Ukraine does not belong to the EU.

All the stakeholder fiches gathering basic information and contact data are provided as annexes at the end of this document.

— SUMMARY OF THE SESSION 5 dynamic session and B2B meetings

Dynamic sessions. Technical committee

This session was intended to foster the interchange of opportunities among the attendants and the contribution to the BUILD2LC project objectives. This session was split into two different discussion tables:

- **Speeding up the competitiveness**, to debate and get ideas on how to increase business competitiveness in the construction sector
- **Tackling the skills up**, on how to accelerate the skills uptake by the construction workforce.

Speeding up the competitiveness

*DYNAMIC SESSION FROM THE
TECHNICAL COMMITTEE MEETING
RZESZÓW, 21TH MARCH 2017*

FEEDBACK & RECOMMENDATIONS

TECHNOLOGY OPENED A NEW SPACE FOR SMEs TO DEVELOP THE BUILDING SECTOR. WHAT IS THE ROLE OF PUBLIC ADMINISTRATION AND CLUSTERS TO SPEED UP THE COMPETITIVENESS?

Role of public administration:

- **Learning by doing:** inventorizing the value chain to foster clusterization, providing technical assistance and organizing workshops – This process works while acquiring knowledge about clusters, SMEs needs and challenges to boost development rehabilitation sector and create new products and services.
- **Leading by example (Swedish model):** building new houses and renovating old in order to push demand and help companies to create innovative solutions. Also supporting companies in knowl-

edge and advise where they can find financing. Because of local economic reality – territorial distances between companies - holding together companies and stimulating joint growth.

- **Publicity and visibility campaign** to spread energy efficiency issues and raising awareness about innovations in renewable energies in order to help SMEs/clusters to compete with the „old school market” (providing examples of European successful projects, updating knowledge of companies, organization of trainings)
- **Supporting companies and cluster development** - pushing ideas and articulating cooperation, especially at first stage of development

Role of clusters:

- Useful platform to exchange market information
- Appropriate forum to exchange ideas and gather together companies
- Channel to spread innovations and knowledge as they have access to companies

DID CLUSTERIZATION HELP / CONDITIONE THIS PROCESS? EXAMPLES

Clusters could solve technology transfer problems fostering SMEs development in the field of competitiveness and innovativeness. Currently, big project are executed by big companies and small companies are their subcontractors who really do the work. These small companies should be instructed in the area of innovation and new technologies to implement them in construction projects.

INTERREGIONAL COLLABORATION. IS IT POSITIVE? ARE THERE ANY OTHER POSSIBILITIES? IN WHICH WAY IT COULD BE IMPLEMENTED?

[European Cluster Collaboration Platform](#) as a communication tool is very useful

It would be recommended to build an European platform that could organize process of cooperation on a concrete area, for instance unifying regional clusters (at regional level), sharing advantages and disadvantages and catalyzing the information.

WHICH TOOL DOES A CLUSTER NEED TO BUILD FOR INTERREGIONAL COLLABORATION AND IN WHICH TOPICS IS POSSIBLE TO COLLABORATE?

a. SMEs need the following tools to grow:

- Information about the local market, its regulation and public tenders (websites). Translation into English would be an advantage.
- Matchmaking of interregional local partners who can identify tenders, partners and also participate in tenders.
- Sales promotion.
- Organization of networking between clusters.

b. Synchronization of actions between regional clusters (for instance, common calendar).

c. Focus on concrete topics in specific period of time.

PARTICIPANTS & FACILITATORS

Public administration:

- Joaquin Villar / Andalusian Energy Agency (Spain)
- Konrad Fijołek / City of Rzeszów (Poland)
- Elin Nirjens / Region Jämtland Härjedalen (Sweden)
- Dragica Lupić / North-West Croatia Energy Agency

Clusters / Business associations:

- Grzegorz Wisz / Subcarpathian Renewable Energy Cluster (Poland)
- Ivan Kulchytsky / Agency of European Innovations (Ukraine)
- Alexander Tokarcik / Energy Cluster Presov Region (Slovakia)
- Jorge Fernández-Portillo Pardo de Donlebun / FA-DECO Contratistas (Spain)
- Enrique Otero Benet / Cluster CSA – Sustainable Construction of Andalusia (Spain)
- Isaías Rodríguez / Cluster CLANER (Andalusian Cluster of Renewable Energies and Energy Efficiency)
- Grzegorz Łobodziński / Unmanned Systems Cluster (Poland)

Enterprises:

- Ryszard Nowak / Mikno (Poland)
- Szczepan Borowy / ML System (Poland)

Business support:

- Anna Bialik / UNIMOS (Poland)

FACILITATION

International cooperation support:

- Emilio Rull Quesada / Euro-Inversia (Spain)
- Katarzyna Kowalska / UNIMOS (Poland)



Tackling the skills gap

*DYNAMIC SESSION FROM THE
TECHNICAL COMMITTEE MEETING
RZESZÓW, 21TH MARCH 2017*

SUMMARY

DO WE NEED A COMMON EUROPEAN CURRICULUM ON SUSTAINABLE CONSTRUCTION / RENOVATION / REHABILITATION – SUSTAINABLE CONSTRUCTION DEGREE FOR EXAMPLE?

The main points to consider when addressing this challenge:

- That national differences impact on the required skills and therefore necessary training provision.
- We must not re-invent the wheel
- Work needs to address all of the technical and social and human aspects
- How transferrable are qualifications, curriculum, roll out routes etc.

- Which learners do we aim at and how do we accommodate their needs and the needs of employers in order to make training programmes accessible
- There are no current Pan – European Qualifications

WHAT ABOUT A TRAIN THE TRAINER APPROACH?

This became a circular point because... to what standards, competencies, courses would we train them.

Potential Avenues Identified:

- Creating Common Standards (Competency frameworks, private accreditations, awards schemes etc.) that promote skills development
- Creating packages with multiple benefits that generate demand (e.g. Schnider)

RECORD OF DISCUSSION

- (Poland) Those in positions of authority need to have aligned goals to those delivering practical action. However differences between regions need to be accounted for, e.g. legislative, climate zones that impact on the skills needs.

- (Sweden) Consider the European Qualifying System because this is now developing strands and competencies for sustainable development which should feature in any plans.
- (Slovenia) Qualification development is a big piece of work and there are lots of potential levels to work at. It needs a greater level of support so working at a European level could be helpful. In Slovenia the database of knowledge and expertise is being developed as a foundation to this.
- (Poland) Agreed... So, maybe we should look at train the trainers.
- (UK) Transferring best practice for example through train the trainer from one EU region to another is problematic to fund since programmes for this kind of knowledge transfer no longer running, for example Leonardo Da Vinci (lifelong learning).
- (Sweden) There are examples of train the trainer programmes (under BUILD UP) so maybe there is an opportunity to use this as reference for doing this type of work.

- It is probably easier to develop separate courses at national levels. The development of an EU common framework of competencies, could be a useful piece of work.
- (Spain) Need to generate uptake amongst young people and make this accessible to people who are not necessarily academic achievers, so including practical skills should be considered.
- (Poland) Gave example of the Schneider University – they have a range of learning topics and give certification to students for free - Electrical Industry giving vocational training as part of talent spotting.
- (UK) Students choose courses that give them opportunities so building courses into multiple other benefits, such as Schneider and promoting them like this is useful.
- (Slovenia) Courses or competencies need to be kept up to date so it needs a formal process to keep current need to be in place. In our research we find that educational practices have a lot of commonality and understanding these better in order to find common points for development could be a starting point.

- (UK) There is no money to add new courses but schools will modify and adapt existing qualifications to accommodate convincing needs.
- (General) There is a need for both technical and social awareness skills in order to support energy efficiency measures and achievement of savings.
- (Slovenia) How do we address the needs of the building users is a key consideration because of the need to translate technical issues into more basic language?



WOULD A PRIVATE SEAL/ACCREDITATION WORK?
FOR EXAMPLE, PASSIVE HOUSE STANDARD IS THE SAME WHETHER NEEDS ARE FOR HEATING AND COOLING AND THE STANDARDS ARE THE SAME SO WIDELY APPLICABLE, COULD WE CREATE A STANDARD?

Awards can be very motivating so maybe there is potential here but needs to be focused on specific sectors.

THERE ARE LARGE DATABASES OF TRAINING COURSES AND INFORMATION, MUCH OF IT IS FREE, I.E. THROUGH BUILD UP. THERE MAY BE FINANCIAL ASSISTANCE FOR E.G. ELENA. IS THERE A REALISTIC OPPORTUNITY TO TAKE ADVANTAGE OF THESE MATERIALS? COULD THERE BE A QUALITY MARK, TO HELP OTHERS TAKE ADVANTAGE OF THIS?

There will be a framework for Sustainable Construction that is wider than energy efficiency and so this will need to be included in training so the provision would need review before being given a mark of suitability. The future is actually looking to sustainable construction PLUS health, well-being, humanistic influence.

There are certifications BREAM for example, they all include similar things and are useful as analytic tools but this is very process based and it is not the same as giving basic knowledge.

WHERE IS THE FOCUS – WHICH AGE GROUP?

EASME placed focus on improving skills of existing workers. So we should be thinking of this. However, this needs to be cost effective and accessible for companies to sponsor their employees through this or for the self-employed to be engaged with.

The roll out of qualifications for existing employees is eased by imposing a requirement for the qualification in order to continue to work. Particularly effective as an incentive for the self-employed e.g. MSs for renewable installers.

PARTICIPANTS

Public administration:

- Carlos Serra / Andalusian Energy Agency (Spain)
- Marius Smaidžiūnas / Housing energy efficiency agency (Lithuania)

- Diana Horvat / Ministry of Construction and Physical Planning (Croatia)
- Elin Nirjens / Region Jämtland Härjedalen (Sweden)
- Anneli Kamb / Region Jämtland Härjedalen (Sweden)
- Milda Misanovaite / The Public Investment Development Agency of Lithuania (Lithuania)

Non-profit bodies:

- Rachel Brain / Severn Wye Energy Agency (UK)
- Victoria Boynton / Severn Wye Energy Agency (UK)
- Irena Hlede / Green Building Council (Slovenia)

Enterprises:

- Piotr Pawelec / IDEA Institute of Good Ecosolutions “Alternative” Ltd. (Poland)

FACILITATION

- Rachel Brain / Severn Wye Energy Agency (UK)
- Carlos Serra / Andalusian Energy Agency (Spain)

B2B meetings

Any cluster, association or other entity interested in increasing cooperation activities had the chance to hold bilateral meetings during this session.



4 STUDY VISITS

During the interregional seminar in Rzeszów, the BUILD2LC project partners also accomplished two study visits.

— UNIVERSITY OF LAW AND PUBLIC ADMINISTRATION



The first study visit was held in the University of Law and Public Administration (Rzeszów).

Comprehensive use of renewable energy sources. The University of Law and Public Administration (Rzeszów).



During the visit at the University, participants had the opportunity to get acquainted with the scope of works related to the energy modernization of the university's didactic buildings, co-financed by the ERDF in the framework of the Regional Operational Program 2007 - 2013. Group was guided by the University's administrative director - Marek Rogalski.



The innovative energy facilities are based on two different renewable energy sources:

- The first energy source is the heat extracted from the ground, from a depth of over 125 meters (30 wells) of which specialized probe connected to the pump allow the absorption of heat from the ground. This is known as “very low enthalpy geothermal energy” and it is used to reduce greatly de power requirements of heating and cooling given that the heat exchange is performed underground with the soil at a more stable temperature
- The second one is the processing of solar energy - photovoltaics to power low voltage - in total, about 1200 square meters of mono-crystalline panels.

Important elements of this project are the first **electric vehicle charging stations** in Rzeszów, which allow currently for simultaneous charging of up to four vehicles. A total of 40 charging points supported by 840 sq meters PV modules (170 kW) in the main university's car park itself will be deployed.

Participants of the study visit could check on public screens “in situ” the energy savings generated by the energy modernization investments, showing details of the production and use of electricity generated by the University.

The presentation led to a lively discussion and a series of questions to the representatives of the university in terms of financing, construction and operation of the system.

This investment in sustainable energy has two important functions - said the University's Administrative Director - Mr Marek Rogalski.

- a. First one is the economic function, because with the photovoltaic panels the University can reduce the cost of maintaining buildings in Rzeszów. It is worth noting, that according to the preliminary calculations, the own University contribution to the system will paid back in 5 years. Some subsidies were put in addition to reach this objective.
- b. The second function - paradoxically at the humanities university - is the promotion of innovative technologies. According to the administrative director, this technology gives the University a certain energy independence.

Then, as an additional element of the agenda, the participants visited the nearby University of Rzeszów and its modern *Technology Transfer Centre*, by its and also the President of Podkarpackie Renewable Energy Cluster - Dr. Grzegorz Wisz. The attendants had an opportunity to become familiar with the functioning of the centre, visit the building and its laboratories.

— ML SYSTEM



The second study visit was held in the headquarters of the Company ML SYSTEM – R&D Photovoltaic Research and Development Center.

The next place of the visit was one of the most modern and innovative Polish companies operating in the field of energy modernization of buildings and production of photovoltaic panels - ML SYSTEM located in Podkarpackie Science and Technology Park AEROPOLIS, managed by RRDA - organizer of the meeting in Rzeszów.

The group was hosted and guided by the Director Mr Szczepan Borowy. During the meeting the participants divided into two groups visited various parts of the company, accessible to the visitors. ML System manufactures BIPV (Building Integrated Photovoltaic) cells and modules and develops an intense R&D activity.

Participants learned more about ML SYSTEM product innovations, company's R&D center, design and prototype center, product development cycle and the entire production chain (from idea to final product sales) and latest trends in the photovoltaic market with examples of ready-made products available on the market.

The presentation of the company's activities and its R&D department aroused significant interest among participants and resulted in a number of questions and additional explanations. The meeting enabled the establishment of contacts between the company and the participants, in particular those representing clusters.

The last part of the study visit took place in the **AEROPOLIS Technology Incubator**, owned by RRDA. Participants had an opportunity to listen to a presentation on the functioning of the Podkarpackie Science and Technology Park and Technology Incubator carried out by the Manager Mr David Adamski. As a final phase of the study visit the group visited main specialized laboratories.

5

BENCH-MARKING FICHES

Benchmarking Fiches are provided by BUILD2LC partners as a consequence of the learning and exchange of common experiences. Based on the effective exchange of Good Practices, partners were asked to identify which practices they are willing to adopt in their region.

A Benchmarking Fiche has been designed in the frame of the project to show the interest of the partner in adopting a specific Good Practice. Hence, partners are required to complete questions about main needs in their region (related to the topic) that the good practice will address, issues that could be improved in the region by adopting the good practice, problems that could arise when adopting or once adopted the good practice or policy instruments in place that could implement the good practice.

The good practices requested by the partners on this *Professionalization of Construction Sector* topic were:

- Reconstructed public buildings in City of Zagreb under the ZagEE project. Specific parts: *capacity building* and *Inducing change in behaviour through energy managers and end-users capacity building*.
- Technical Support & Promotion in Multi-Apartment Building Modernization (BETA Agency).
- Quality in Multi-Apartment Building Modernization.
- ACHIEVE – Actions in low income Households to Improve Energy efficiency through Visits and Energy diagnosis.
- Bračak Energy Centre.
- Target 2050.
- Link to Energy.
- Your Green Future.
- Young Energy People.
- Podkarpackie Academy Certification.

AEA from Andalusia region is interested in one good practice, *Reconstructed public buildings in City of Zagreb under the ZagEE project from Croatia* (on capacity building issues). The AEA states that the convergence of dedicated public funding, experience in managing funds, the alignment with the Andalusian policies and Operational Programme outlines and the existence of a Energy Management Network of the Andalusian Regional Government (REDEJA) as the tool designed to promote the principles of energy saving and diversification in the Andalusian Administration would make the adoption process a likely success, but there is a clear need of increasing competence among the workforce and the professional landscape.

As VIPA partner concerns, Lithuania did not find any good practice to be adopted on this topic this time.

The UK partner, SWEA from Gloucestershire region, has shown interest in adopting two good practices from Lithuania:

- In first place, SWEA is willing to adopt the Lithuanian good practice called: *Technical Support & Promotion in Multi-Apartment Building Modernization (BETA Agency)* to receive support on methods to engage citizens and getting details on the quality assurance processes regarding the financial incentives and retrofit led by the BETA Agency.
- Secondly, SWEA partner is interested in *Quality in Multi-Apartment Building Modernization* from Lithuania as well to develop further their “Link to Energy” installers network, which is well-established, to extend the training provision and quality assurance, further raising the profile of the network and the quality of installations. This way SWEA is willing to count on a greater pool of well-trained installers within the region.

The Polish partner, RRDA from Podkarpackie region shows interest to up to five good practices, most of them from Gloucestershire, UK.

- ACHIEVE – Actions in low income Households to Improve Energy efficiency through Visits and Energy diagnosis.
- Bračak Energy Centre.
- Target 2050.
- Link to Energy.
- Your Green Future.
- Inducing change in behavior through energy managers and end-users capacity building - ZagEE project (Croatia).

RRDA needs to reinforce the training and development of new energy advisors as well as municipal energy auditors and stimulate the job creation for people out of work. With this selection of good practices, Podkarpackie pursues the preparation of well-qualified independent energy advisors, increasing the available number of municipal energy auditors, generating this way new jobs in the green economy. Also this has positive benefits in the construction sector, as a lower energy consumption, good reputation and increased competitiveness. Also, Link to Energy would help to set a an internet search engine to find the installers that are most relevant to a particular social group.

The Croatian partner RGEA did not find any good practice to be adopted on this topic.

The Swedish partner, RJH, would like to incorporate in the Jämtland Härjedalen region:

- *Young Energy People* from Gloucestershire. RJH is particularly interested in how this project engages both youth, schools and companies at the same time educating students in secondary school in energy management and renewable energy technologies. Most businesses in Jämtland are small and have few employees. These companies do not have the time or resources to focus on energy issues, although in many cases there are profitable energy efficiency measures.
- *Inducing change in behavior through energy managers and end-users capacity building - ZagEE project* from Croatia to develop and apply learning tools for building managers and users, so the entire energy efficiency potential can be utilized.

As Slovenia regards, LEAG is interested in:

- *Young Energy People* from Gloucestershire to reduce CO2 emissions through an excellent programme that supports the implementation of Sustainable Energy and Climate Action Plans in a way that the students will have better knowledge of Renewable Energy Sources and the Rational Use of Energy.
- *Podkarpackie Energy Certification* from Podkarpackie to increase the chances of employment for people over 50 years with building qualifications, unemployed people or people of high risk of unemployment with knowledge from the construction sector.
- *Quality in Multi-Apartment Building Modernization* from VIPA for renovation of private multi-apartment buildings in Municipalities that are in wider public interest.

— BENCHMARKING FICHES FOR 'PROFESSIONALIZATION OF THE CONSTRUCTION SECTOR'

	ZagEE - capacity building RGEA	ZagEE - inducing change RGEA	Achieve SWEA	Target 2050 SWEA	Link to Energy SWEA	Your Green Future SWEA	BETA Agency VIPA	Quality in MABR VIPA	Young Energy People SWEA	Podkarpackie Energy Certification RRDA	Bračak Energy Centre RGEA
ANDALUSIA	*										
GLOUCESTER							*	*			
PODKARPACIE		*	*	*	*	*					*
JÄMTLAND		*							*		
SLOVENIA								*	*	*	

BENCHMARKING FICHE REGION: ANDALUSIA



TOPIC: PROFESSIONALIZATION OF THE CONSTRUCTION SECTOR

Good practice to be adopted

Reconstructed public buildings in City of Zagreb under the ZagEE project

Specific parts: Capacity Building.

Main needs to respond to

The existing public building stock of the Regional Administration of Andalusia (Junta de Andalucía) consists of around 4.800 buildings including hospitals, primary and secondary education schools, universities, retirement homes, sport facilities, general office buildings, etc. Only a tiny fraction of them are considered to be energy-efficient. It is noticeable the high potential for energy and economic savings that could be obtained in different public centres, in many cases over 40%.

The exemplary role of the public sector towards the development of future energy sustainable buildings is fundamental. In the context of transforming the public sector, public buildings renovation plays an important role. Most Andalusian public buildings are +30 years-old and, therefore, they are not harmonized with recent energy directives. They possess a high energy-saving potential which can be achieved through the implementation of technical solutions.

Also, the efficiency of public services depends on workers' productivity which is directly affected by indoor comfort and air quality conditions.

For this reason, in 2007 was created *The Energy Management Network of the Andalusian Regional Government* (REDEJA) as the tool designed to promote the principles of energy saving and diversification in the Andalusian Administration, as well as implement renewable energies in their buildings. REDEJA, integrated into the Andalusian Energy Agency (AAE), manages the energy consumption of up to 62 regional public bodies, including the regional ministries and other 49 public entities. As a result, REDEJA conducted and accomplished several energy optimisation programs. However, and after ten years, the retrofitting and energy rehabilitation rate in Andalusian public buildings is still very low due to several existing barriers and, therefore, needs to be accelerated.

One of these barriers is the low collaboration power between public bodies, a key requirement that was fulfilled successfully by ZagEE and from which we can learn how. In addition, it is clear that the REDEJA optimisation and retrofitting projects are extremely dependant on public financing and lump sums subsidies. Most of them reach at least 80% ERDF co-financing, coming the rest of the investment budget from regional or national public sources. The private financing rate in these initiatives is simply zero, and there are nor ESCos involved neither a similar formula of energy securitization to manage the potential energy savings profits. No mention the use of financial vehicles to leverage the available public funds, totally absent. ZagEE tortuous financial path along the project life will help us to identify the different available choices. More innovative methods need to be explored. Therefore, we need to:

- To set a rigorous regional plan of public buildings rehabilitation and retrofitting that involves all the needed public bodies collaboration and estimates the financial requirements and needs to boost our current rehabilitation rate.

- To provide funding mechanisms which target the public sector. If we follow a similar project to ZagEE then any saving made could be directly managed by a third party and the financial burden could be securitized.
- To increase the leverage of the existing public financing, either European either regional or national using financial vehicles. Up to now the leverage level is null.

Main objective to transfer the good practice to your region

The ZagEE initiative was explained by our Croatian colleagues during the good practices exchange meeting in Zagreb, September 2016, where it raised a high interest on us. Andalusia, as the lead partner, detected among the rest of the partnership that ZagEE is very popular too, so we expect to have multi-lateral meeting in this case.

We would like to find out more about:

- Their experience with different and innovative financial mechanisms and how these worked alongside existing structures and mechanisms for

the retrofitting of public buildings.

- The application process to ELENA programme to cover technical spending.
- How the project was planned and developed.
- The development of the buildings stock register and the update of the energy audits.
- How the stakeholders were engaged, particularly how the public bodies were animated, enrolled or enforced to collaborate with each other.
- What were the challenges and how were these overcome?
- The capacity building for facility managers to develop and apply management and learning tools in order to improve energy management of newly renovated buildings.

Factors that might hamper the transfer

- Funding sources and availability
- Engagement of stakeholders, particularly public bodies
- Complexity of technical preparation

Policy instrument

The sustainable construction sector is one of the priorities of Smart Specialization Strategy (S3) of Andalusia. Its strategy in this field passes through the redefinition of sustainable construction in terms of energy rehabilitation of buildings, the physical, social, economical and environmental recovery of urban environments, the reuse of consolidated urban lands and the rehabilitation of cities. The opportunities are based on the development of new designs and materials for construction and the sustainable processes.

AAE has managed the public incentive programme of the Regional Government, *Andalucía A+*. Specifically, in the buildings sector, AAE launched in 2014 a *Programme to Promote Sustainable Construction*, an initiative which is a finalist in the Regio Stars Award 2015, and also has also coordinated a *Plan for Sustainable Construction, Horizon 2020 for the Regional Government*.

➡ REDEJA is perfectly suitable to adopt this good practice.

First REDEJA's tasks were related to the specific, coordinated and effective management of the energy billing of the Andalusian Regional Government, which was highly fragmented and in many cases unknown. [The optimisation of energy supply contracts](#) and the unified management of the energy service allow for economies of larger scale and a greater efficiency in the coordination of the management of the supplies lowering this way the billing costs, though it does not help to save energy.

In addition, REDEJA works on public buildings [energy audits](#) in order to identify energy saving and efficiency measures and the possibility of implementing the use of renewable energy technologies. It offers [advising](#) to the adhered public entities in the contracting of energy supplies and the investments to be undertaken as a result of the audits, as well as in new construction projects to obtain the highest energy rating.

For this reason, REDEJA also has a [training line](#) targeted to the public buildings energy and maintenance managers, aimed to reducing energy demand, the search for a greater rationality in the contracts and in the applicability and use of renewable energy technologies. Regarding specific REDEJA retrofitting projects, we highlight:

- **Agreement between the Budget and Public Administration Regional Ministry and the Economy, Innovation, Science and Employment Regional Ministry** (holding the Andalusian Energy Agency as Technical Secretariat) to conduct the energy rehabilitation of three different administrative buildings. Based on a 6,2 million Euros budget, coming totally from public authorities and with a +80% ERDF contribution, +428 toe and 357k€ are saved per year.
- **Agreement between the Andalusian Energy Agency and the Andalusian Health Service (Regional Public Health System).**

Energy consumption to maintain the quality requirements in a hospital is very high, both to achieve the thermal levels that are needed in each area, as well as to guarantee the electricity supply necessary for the development of the different activities carried out 24 hours a day, 365 days a year. It is for this reason a few well-designed systems, with efficient technologies and a correct maintenance, are essential to ensure the service without increasing the energy bill of the centre.

It carries out energy saving and efficiency actions and the deployment of renewable energy sources in 14 public hospitals as:

- **Fuel shift from diesel to natural gas** in the boilers to produce hot water more efficiently and with lesser emissions, as well as the replacement of heating and air conditioning equipment of low performance by other more efficient systems.
- **Generation of power and heat of high performance**, covering up to 60% of the hot water, heating and cooling needs.

- **Renewable energy** for the production of hot water through solar thermal installations and use of biomass.

From 20.1 million Euros invested, 17.9 million comes from the Andalusian Energy Agency, most of them ERDF funding, and the remaining 2.2 million Euros were allocated by the Andalusian Health Service. 20 energy audits were previously conducted and estimated a total energy demand of 45.000 toe. The initiative saves 700 toe per year (1.570 ton CO₂) and 3.2 million Euros (simple pay-back period less than 7 years).

Existing financing funds

The main finance policy instrument addressed is the **Andalusian Operational Programme for investments for jobs and growth, 2014 – 2020**, a Structural Funds operational programme (Objective T.O. 4. Priority Line 4.c: Support the Energy efficiency and use of renewable Energy in public infrastructure, including public buildings and housing to improve energy efficiency and increase the use of renewable energy for electricity production and thermal uses in buildings) whose objective is to improve energy efficiency and

increase the use of renewable energy for electricity production and thermal uses in buildings. Regarding the public field, this programme is allowed to fund:

- Investments in public buildings of the Andalusian Regional Government and municipalities, prior audit and subsequent monitorization.
- High quality energy audits.

In full collaboration with the managing authority of the Operational Programme, AEA will be responsible for the management of funds for energy in the new framework 2014-2020, including among its activities the definition of the regulatory bases of the support programmes, the selection of the projects, and the verification and follow-up. Equally, AEA is also actively involved in national ERDF monitoring committees, contributing to the adaptation and monitoring of the ERDF OP Andalusia for AEA.

AAE has managed the public incentive programme of the Regional Government, *Andalucía A+*. Specifically, in the buildings sector, AAE launched in 2014 a *Programme to Promote Sustainable Construction*.

The incentive model used at present in Andalusia has been based on incentives aimed at stimulating the demand of energy projects. However, the new framework requires a reorientation of the previous model that together with energy saving and the reduction of emissions, allows better exploiting the opportunities of employment generation associated with energy rehabilitation and, this way, to obtain a greater leverage of public funding. This might be achieved by introducing new financing instrument that facilitate the development of energy efficiency projects, besides other additional measures.

Relevant stakeholders

Andalusian Energy Agency – To plan and coordinate and promote the objectives established. Collaboration with public administration in the design of planes and programmes and management of energy incentives.

The Energy Management Network of the Andalusian Regional Government (REDEJA)

Directorate General of European Funds – Operational Programme managing authority.

Andalusian Regional Government – Decision-making body.

The General Administration of Andalusia and other public bodies – Holding the potentially target public buildings.

Main beneficiaries

Communities and taxpayers – Savings made by the public sector are direct benefits for them.

The General Administration of Andalusia and other public bodies – Improved building stock; financial savings which can be redirected into communities.

Public workers and citizen users – Will enjoy the benefits of an increased comfort and better cooling and heating conditions.

Businesses – Dinamization of the sustainable building sector.

Further information

We are interested to work with REGEA for a bi-lateral meeting to get more information.

BENCHMARKING FICHE REGION: GLOUCESTERSHIRE

TOPIC: PROFESSIONALIZATION OF THE CONSTRUCTION SECTOR

Good practice to be adopted

Technical Support & Promotion in Multi-Apartment Building Modernization (BETA Agency)

Main needs to respond to

The UK project is focused on ensuring there is citizen engagement, trust, and uptake of any initiatives. There is an absence of trust in financial incentives and retrofit in the UK as a result of issues related to the Green Deal and problems with the quality of installations (including cavity wall insulation and external cladding).

Main objective to transfer the good practice to your region

We are interested in this good practice in particular as it provides support about:

- Methods to engage citizens and lessons learned.
- Details about Quality Assurance processes (linked to another good practice we are interested in).

Factors that might hamper the transfer

- Being able to directly replicate QA processes or methods to engage citizens. It is likely that aspects will be taken and adapted.
- The UK project does not focus on multi-apartment blocks so it will need to engage different tenure and building types.
- The UK is not working on a national scale so adaptations will need to be made for more local/regional work.
- Whether funding will directly support the work.

Policy instrument

We already have the **Warm & Well** programme and **Link to Energy** installers network. This GP will support both of these programmes but will also support some new actions which will be incorporated into the action plan surrounding: these actions involve specifically targeting 2 areas within the county and also training and QA processes.

Existing financing funds

There is some money available through the Warm and Well programme and potentially through funds for training and QA which we are in the process of securing.

More funding, or pooling of funding, may be required to roll out larger scale programmes in target areas. Funding for this may be available through the Clinical Commissioning Group once details have been finalised.

Relevant stakeholders

Gloucestershire Clinical Commissioning Group – Lead on engaging doctors and supporting collaboration and finance.

Severn Wye – Providing support through Warm & Well, facilitation, providing installers and possible training.

SGS Berkeley GREEN – Training partners.

Registered Social Landlords – Targeting tenants and planning and financing retrofit. Incorporating QA.

National Landlords Association – Targeting private landlords and tenants.

Cheltenham and Gloucester Local Authorities – Engagement potential financing support.

Link to Energy Installers – Providing installation work and using/developing QA.

Energy suppliers – Potential to target ECO funding.

Schools within the areas – Engagement and education programme.

Community groups – Engagement and education programme.

Main beneficiaries

Vulnerable householders – The targeted areas of Matson and Oakley are areas of high deprivation, therefore, the quality of life, financial situation, and health of residents should be positively impacted.

Installers – Improved skills and reputation. More work will improve the local economy.

Social and Private Landlords – Improved EPC ratings of buildings, training in procurement. Knowledge that work is at a high quality.

Further information

We are keen to pursue a number of GPs from Lithuania so it would be helpful to set up a bi-lateral meeting in Lithuania.

BENCHMARKING FICHE REGION: GLOUCESTERSHIRE

TOPIC: PROFESSIONALIZATION OF THE CONSTRUCTION SECTOR

Good practice to be adopted

Quality in Multi-Apartment Building Modernization

Main needs to respond to

Severn Wye has the Link to Energy installers network which is well-established. If the project could develop further then it would be beneficial to extend the training provision and quality assurance, further raising the profile of the network and the quality of installations. Ideally, there would also be a greater pool of well-trained installers within the region.

Main objective to transfer the good practice to your region

The ensure quality assurance and positive feedback from customers.

To expand the Link to Energy network.

To further develop the skills of the Link to Energy installer.

Factors that might hamper the transfer

Financing additional activities, particularly for Link to Energy may be a challenge.

It is also important to engage installer hence it needs to be worthwhile for them.

Policy instrument

Link to Energy and Warm & Well are already in existence and have some quality assurance checks and feedback mechanisms already in place.

Existing financing funds

Link to Energy was financially totally incorporated into the Warm & Well scheme since April 2017 hence financing now comes from the Warm & Well budget. Any referral fees gathered (3% of the total cost of installations) are now paid into an enablement fund that will be used to provide assistance to vulnerable householders for getting measures installed.

Additional funds may be required for any additional work conducted with the Link to Energy network.

Relevant stakeholders

GREEN –There is potential for collaborative work regarding training of the Link to Energy group.

Link to Energy installers – The needs of the installers need to be established and there needs to be engagement and commitment from the group.

Local Enterprise Partnership (LEP) – GREEN is a priority area for the LEP and the LEP run a construction and energy group who may also be involved. Funding may be secured via the LEP for any additional training.

Main beneficiaries

Residents would receive high quality installations and energy efficient homes.

Installers would have a high level of skills, positive feedback and potentially more work.

The region would have a supply of well-trained installers.

Further information

We would need to find out a little more information before deciding whether a full bi-lateral meeting was appropriate and whether we want to pursue the good practice further.

BENCHMARKING FICHE REGION: PODKARPACIE

TOPIC: PROFESSIONALIZATION OF THE CONSTRUCTION SECTOR

Good practice to be adopted

Bračak Energy Centre

Main needs to respond to

The need for minimizing of the negative buildings impact on the natural environment in the region.

The need for taking actions against climate changing.

The need for reducing of the costs of the exploitation of buildings in region.

The need for respecting of international obligations that Poland has agreed to respect.

Main objective to transfer the best practice to your region

The need for creating an educational energy center that would practically allow to raise awareness, knowledge and skills about energy efficiency and renewable energy sources for the public and private sectors, a multifunctional education and demonstration center in the region.

The need for showing onsite how modern equipment, materials, and ways of using of energy might reduce the costs of energy and improve the environment.

Factors that might hamper the transfer

Problems with financing of some solutions – the most often more advanced and more effective solutions cost much more than those less effective ones.

Other legislations preventing the implementation of certain elements of good practice.

Policy instrument

Regional Operational Program of the Podkarpackie Region for the years 2014-2020.

Own funds of various Associations, Chambers of Commerce or clusters.

Existing financing funds

Regional Operational Program of the Podkarpackie Region for the years 2014-2020.

Own funds of various Associations, Chambers of Commerce or clusters.

Relevant stakeholders

- Marshall Office of Podkarpackie Region.
- Podkarpackie Energy Agency.
- Chamber of Civil Engineers.
- Podkarpackie Renewable Energy Cluster.

Main beneficiaries

- Society
- Public institutions
- Construction companies
- Housing co-operatives
- Schools and universities
- Entrepreneurs

Further information

Too little information at this moment.

Contact details to obtain further information on the adoption of the good practice:

Marek Duda

mduda@rarr.rzeszow.pl

Rzeszow Regional Development Agency
(Public regional government)

rarr.rzeszow.pl

BENCHMARKING FICHE REGION: PODKARPACIE

TOPIC: PROFESSIONALIZATION OF THE CONSTRUCTION SECTOR

Good practice to be adopted

ACHIEVE – Actions in low income Households to Improve Energy efficiency through Visits and Energy diagnosis

Main needs to respond to

Training and development of new energy advisors.

Job creation for people out of work.

Needs of free energy advice for citizens. Individual, independent energy consulting and information education and awareness activities for the promotion of energy efficiency measures and renewable energy sources for citizens in the local environment.

Needs of free tips and interviews assist in the selection, design and implementation of investment measures of energy efficiency and use of renewable energy sources in residential buildings.

Giving advices to the citizens, final customers of energy in the residential sector and offering free and commercially independent advices connected with training services.

Needs of free helping in planning and implementation environmentally friendly investments in the region, helping in identification available sources of funding, organizing training and information and education activities to help prepare, verify and implement low carbon economy plans.

Needs of training of municipal energy auditors.

Needs of different forms of support tailored to specific needs of different groups: the form of informational meetings, consultations in the office and outside of the office, answers by email inquiries, phone counseling, training and information and promotion activities, individual counseling as well as conferences or webinars.

Main objective to transfer the best practice to your region

Support in the planning and implementation of environmentally friendly investments in the region.

Increasing the quality of life and green jobs.

Environmental benefits such as reducing pollutant emissions, improving air quality and reducing the use of non-renewable natural resources.

Increasing energy awareness of citizens, energy savings and reduction of greenhouse gas emissions and RES through providing local and regional information exchange and good practices on the implementation of Directive 2010/31 / EU, 2012/27 / EC and 2009/28 / EC and Directive 2008/50 / EC.

Facilitating the implementation of certain measures and programs related to energy policy.

Systematically combating pollution of the environment, energy poverty and dependency on energy imports.

Preparation of well-qualified independent energy advisors.

Promotion of low carbon economy.

Generating of new jobs in the economy - increasing the number of municipal energy auditors.

Facilitating access to EU and national funds for increasing energy efficiency and using of RES.

Citizens – Lower energy costs, energy efficient investments can become a potential source of revenue.

Business – Lower energy consumption, positive image, increased competitiveness.

Factors that might hamper the transfer

- Problems with financing various activities for the comprehensive implementation of the model of “ACHIEVE”.
- Problems with financing energy auditors.
- Problems with the interest of auditor services.
- Problems with access to car to drive to clients.

Policy instrument

Infrastructure and Environment Operational Program for the years 2014-2020 within the Priority Axis “Reduction of emissivity of the economy”.

Existing financing funds

Regional Operational Program of the Podkarpackie Region for the years 2014-2020.

Infrastructure and Environment Operational Program for the years 2014-2020 within the Priority Axis “Reduction of emissivity of the economy”.

Relevant stakeholders

- Marshall Office of Podkarpackie Region.
- Podkarpackie Energy Agency.

Main beneficiaries

Public institutions, students, unemployed people, universities, civil society, owners of buildings.

Further information

Too little information at this moment.

BENCHMARKING FICHE REGION: PODKARPACIE

TOPIC: PROFESSIONALIZATION OF THE CONSTRUCTION SECTOR

Good practice to be adopted

Target 2050

Main needs to respond to

On site surveys, advice and help with finance for measures to improve energy efficiency and promote renewables in community buildings.

Development of a targeted approach to achieving deep carbon cuts in existing homes.

A need to increase the rate of retrofit in their properties in order to meet the 2050 carbon reduction targets.

Training and development of new energy advisors.

Needs of free energy advice for citizens - individual, independent energy consulting and information education and awareness activities for the promotion of energy efficiency measures and renewable energy sources for citizens in the local environment.

Needs of free tips and interviews assist in the selection, design and implementation of investment measures of energy efficiency and use of renewable energy sources in residential buildings.

Giving advices to the citizens, final customers of energy in the residential sector and offering free and commercially independent advices connected with training services.

Needs of free helping in planning and implementation environmentally friendly investments in the region, helping in identification available sources of funding, organizing training and information and education activities to help prepare, verify and implement low carbon economy plans.

Needs of training of municipal energy auditors.

Needs of different forms of support tailored to specific needs of different groups: the form of informational meetings, consultations in the office and outside of the office, answers by email inquiries, phone counseling, training and information and promotion activities, individual counseling as well as conferences or webinars.

Main objective to transfer the best practice to your region

Providing an effective framework for significantly reducing carbon emissions for the domestic sector.

Providing a significant range of examples of how existing technologies might be used to achieve deep carbon cuts in existing homes, while preserving built heritage and character.

Stimulating the local market for sustainable energy retrofit.

Alleviate fuel poverty by 'future-proofing' local homes.

Support in the planning and implementation of environmentally friendly investments in the region.

Increasing the quality of life and green jobs.

Environmental benefits such as reducing pollutant emissions, improving air quality and reducing the use of non-renewable natural resources.

Increasing energy awareness of citizens, energy savings and reduction of greenhouse gas emissions and RES through providing local and regional information exchange and good practices on the implementation of Directive 2010/31 / EU, 2012/27 / EC and 2009/28 / EC and Directive 2008/50 / EC.

Facilitating the implementation of certain measures and programs related to energy policy.

Systematically combating pollution of the environment, energy poverty and dependency on energy imports.

Preparation of well-qualified independent energy advisors.

Promotion of low carbon economy.

Generating of new jobs in the economy - increasing the number of municipal energy auditors.

Facilitating access to EU and national funds for increasing energy efficiency and using of RES.

Citizens – Lower energy costs, energy efficient investments can become a potential source of revenue.

Business – Lower energy consumption, positive image, increased competitiveness.

Factors that might hamper the transfer

- Problems with financing various activities for the comprehensive implementation of the model of "Target2050".
- Tailored to the practical realities of the existing building stock and its complexity and imperfections.
- Finding reputable installers.
- Negotiating with planners, with regard to heritage buildings.
- Cooperation with the private sector.
- Availability of capital.

Policy instrument

Infrastructure and Environment Operational Program for the years 2014-2020 within the Priority Axis “Reduction of emissivity of the economy”.

Existing financing funds

Regional Operational Program of the Podkarpackie Region for the years 2014-2020.

Infrastructure and Environment Operational Program for the years 2014-2020 within the Priority Axis “Reduction of emissivity of the economy”.

Relevant stakeholders

- Installers.
- SMEs.
- Public institutions.
- Domestic, business and communities users.
- Insulation and heating product manufacturers.
- Podkarpackie Chamber of Civil Engineers.
- Universities.
- National Fund for Environmental Protection and Water Management.
- Regional Fund for Environmental Protection and Water Management in Rzeszow.

Main beneficiaries

- Public institutions.
- Entrepreneurs planning to increase energy efficiency or the use of renewable energy sources in their facilities, especially those representing small and medium-sized enterprises.
- Community and housing co-operatives.
- Universities.
- Civil society.
- Domestic, business and communities users.
- Insulation and heating product manufacturers.

BENCHMARKING FICHE REGION: PODKARPACIE

TOPIC: PROFESSIONALIZATION OF THE CONSTRUCTION SECTOR

Good practice to be adopted

Link to Energy

Main needs to respond to

Our region:

- needs more holistic approach in delivering project funded energy efficiency improvements to householders, businesses and communities in the region, so as to ensure the maximum take up of installed measures.
- needs an **internet search engine to find the installers that are most relevant to a particular social group**. This will allow customers to contact those installers who can meet their criteria. You will also be able to read or download sample surveys of local companies that have already made energy improvements.
- **installer network database** will allow domestic, business and community customers to obtain quotations from installer members, and ultimately have improvement measures installed.

Main objective to transfer the best practice to your region

Environmental benefits such as reducing pollutant emissions, improving air quality and reducing the use of non-renewable natural resources.

Increasing energy awareness of citizens, energy savings and reduction of greenhouse gas emission and RES through providing local and regional information exchange and good practices on the implementation of the Directive 2010/31 / EU, 2012/27 / EC and 2009/28 / EC and Directive 2008/50 / EC.

Facilitating the implementation of certain measures and programs related to energy policy.

Systematically combating pollution of the environment, energy poverty and dependency on energy imports.

Preparation of well-qualified independent energy advisors.

Promotion of low carbon economy.

Generating of new jobs in the economy - increasing the number of municipal energy auditors.

Facilitating access to EU and national funds for increasing energy efficiency and using of RES.

Citizens - lower energy costs, energy efficient investments can become a potential source of revenue.

Business: lower energy consumption, positive image, increased competitiveness.

Support in the planning and implementation of environmentally friendly investments in the region.

Increasing of the quality of life and green jobs.

Factors that might hamper the transfer

Problems with financing various activities for the comprehensive implementation of the model of Link to Energy.

Cooperation with interested registered installer members- lack of agreement or lack of willingness to participate in the project.

Shortage of qualified registered installers.

Policy instrument

Infrastructure and Environment Operational Program 2014-2020 within the Priority Axis "Reduction of emissivity of the economy".

Existing financing funds

Regional Fund for Environmental Protection and Water Management in Rzeszow.

Regional Operational Program of the Podkarpackie Region 2014-2020.

Infrastructure and Environment Operational Program 2014-2020 within the Priority Axis "Reduction of emissivity of the economy".

Relevant stakeholders

- National Fund for Environmental Protection and Water Management.
- Regional Fund for Environmental Protection and Water Management in Rzeszow.
- Marshall Office of Podkarpackie Region.
- Podkarpackie Energy Agency.

Main beneficiaries

- Installers.
- SMEs.
- Public institutions.
- Domestic, business and communities users.
- Insulation and heating product manufacturers.
- Podkarpackie Chamber of Civil Engineers.
- Universities.

Further information

Too little information at this moment.

BENCHMARKING FICHE REGION: PODKARPACIE

TOPIC: PROFESSIONALIZATION OF THE CONSTRUCTION SECTOR

Good practice to be adopted

Your Green Future

Main needs to respond to

Our region needs:

- sustainability events aimed at engaging secondary school students on the role of sustainability in the innovation, retail, energy, construction and waste and how their careers might help to develop a low carbon in the future.
- raise awareness.
- cooperation with schools.
- bottom-up initiatives.
- learn through fun, interactive workshops.
- cooperation of authorities and universities.

Main objective to transfer the best practice to your region

Environmental benefits such as reducing pollutant emissions, improving air quality and reducing the use of non-renewable natural resources.

Increasing energy awareness of citizens, energy savings and reduction of greenhouse gas emission and RES through providing local and regional information exchange and good practices on the implementation of the Directive 2010/31 / EU, 2012/27 / EC and 2009/28 / EC and Directive 2008/50 / EC.

Facilitating the implementation of certain measures and programs related to energy policy.

Systematically combating pollution of the environment, energy poverty and dependency on energy imports.

Preparation of well-qualified independent energy advisors.

Promotion of low carbon economy.

Generating of new jobs in the economy - increasing the number of municipal energy auditors.

Facilitating access to EU and national funds for increasing energy efficiency and using of RES.

Citizens. Lower energy costs, energy efficient investments can become a potential source of revenue.

Business: lower energy consumption, positive image, increased competitiveness.

Support in the planning and implementation of environmentally friendly investments in the region.

Increasing of the quality of life and green jobs.

Factors that might hamper the transfer

Problems with financing various activities for the comprehensive implementation of the model of Your Green Energy.

Cooperation with interested secondary school students and schools – lack of agreement or lack of willingness to participate in the project.

Shortage of qualified teachers.

Policy instrument

Infrastructure and Environment Operational Program 2014-2020 within the Priority Axis “Reduction of emissivity of the economy”.

Existing financing funds

Regional Operational Program of the Podkarpackie Region 2014-2020: 4 priority axis the quality of education and competence in the region.

Infrastructure and Environment Operational Program 2014-2020 within the Priority Axis “Reduction of emissivity of the economy”.

Relevant stakeholders

- National Fund for Environmental Protection and Water Management.
- Regional Fund for Environmental Protection and Water Management in Rzeszow.
- Marshall Office of Podkarpackie Region.
- Podkarpackie Energy Agency.
- Schools and Universities – teachers and students.

Main beneficiaries

- Schools and Universities – teachers and students.
- SMEs.
- Public institutions.
- Podkarpackie Chamber of Civil Engineers.
- Associations.

Further information

Too little information at this moment.

BENCHMARKING FICHE REGION: PODKARPACIE

TOPIC: PROFESSIONALIZATION OF THE CONSTRUCTION SECTOR

Good practice to be adopted

Inducing change in behavior through energy managers and end-users capacity building - ZagEE project

Main needs to respond to

To develop and apply management and learning tools for use by building managers and users in order to improve energy management of newly renovated buildings.

Awareness raise.

Cooperation with building managers among planning process.

Bottom-up initiatives.

Cooperation of authorities and building managers.

Guide for facilities managers.

Main objective to transfer the best practice to your region

Environmental benefits such as reducing pollutant emissions, improving air quality and reducing the use of non-renewable natural resources.

Increasing energy awareness of citizens, energy savings and reduction of greenhouse gas emissions and RES through providing local and regional information exchange and good practices on the implementation of the Directive 2010/31 / EU, 2012/27 / EC and 2009/28 / EC and Directive 2008/50 / EC.

Facilitating the implementation of certain measures and programs related to energy policy.

Systematically combating pollution of the environment, energy poverty and dependency on energy imports.

Preparation of well-qualified independent energy advisors.

Promotion of low carbon economy.

Generating of new jobs in the economy - increasing the number of municipal energy auditors.

Facilitating access to EU and national funds for increasing energy efficiency and using of RES.

Citizens - Lower energy costs, energy efficient investments can become a potential source of revenue.

Business: lower energy consumption, positive image, increased competitiveness.

Support in the planning and implementation of environmentally friendly investments in the region.

Increasing of the quality of life and green jobs.

Factors that might hamper the transfer

Problems with financing various activities for the comprehensive implementation of the Croatian model.

Cooperation with interested facilities managers- lack of agreement or lack of willingness to participate in the project.

Shortage of qualified facilities managers.

Policy instrument

Infrastructure and Environment Operational Program 2014-2020 within the Priority Axis "Reduction of emissivity of the economy".

Existing financing funds

Regional Operational Program of the Podkarpackie Region 2014-2020.

Infrastructure and Environment Operational Program 2014-2020 within the Priority Axis "Reduction of emissivity of the economy".

Relevant stakeholders

- Podkarpackie Chamber of Construction Engineers.
- National Fund for Environmental Protection and Water Management.
- Regional Fund for Environmental Protection and Water Management in Rzeszow.
- Marshall Office of Podkarpackie Region.
- Podkarpackie Energy Agency.
- Schools and Universities.

Main beneficiaries

- Property owners association.
- Facilities managers.
- Schools and universities.
- SMEs.
- Public institutions.
- Podkarpackie chamber of civil engineers.
- Associations.
- Construction companies.

Further information

Too little information at this moment.

BENCHMARKING FICHE REGION: JÄMTLAND HÄRJEDALEN

TOPIC: PROFESSIONALIZATION OF THE CONSTRUCTION SECTOR

Best practice to be adopted

Young Energy People

The project aims to educate students in secondary school in energy management and renewable energy technologies. Jämtland Härjedalen is particularly interested in how this project engages both youth, schools and companies at the same time.

Main needs to respond to

There is a lack of regional initiatives that aim to increase knowledge about energy and climate issues among young people.

Most businesses in Jämtland are small and have few employees. These companies do not have the time or resources to focus on energy issues, although in many cases there are profitable energy efficiency measures.

Main objective to transfer the best practice to your region

The main objective is to increase the likelihood that young people choose to work with energy-related issues in the real estate industry or construction sector.

The objective is also to inspire young people to live a sustainable lifestyle where they strive for a low carbon footprint.

Help schools identify and implement energy efficiency measures.

Help companies with energy management so that they can reduce their costs and strengthen their competitiveness.

Factors that might hamper the transfer

Schools do not have the opportunity to integrate the project into current education plans.

School teachers have hectic schedules and may not prioritize participation in the project.

No project funding.

Policy instrument

As of now there is no policy in place.

Existing financing funds

As of now there are no existing funds for implementation of this project.

Relevant stakeholders

- Public and private schools.
- Municipalities.
- SMEs.
- Labour office.

Main beneficiaries

- Schools and businesses since they receive help with energy management.
- Both companies and public actors benefit from potentially more young people choosing to work with energy issues.

Further information

We want more detailed information on the project, for example how much time is needed for implementation, experiences from recruiting the schools.

A **bi-lateral meeting** was held on the 12th of June, 2017.

BENCHMARKING FICHE REGION: JÄMTLAND HÄRJEDALEN

TOPIC: PROFESSIONALIZATION OF THE CONSTRUCTION SECTOR

Best practice to be adopted

Inducing change in behaviour through energy managers and end-users capacity building - ZagEE project

Main needs to respond to

Building managers and end-users lack knowledge and do not adapt to new conditions after renovations.

Main objective to transfer the best practice to your region

By developing an and applying learning tools for building managers and users, the entire energy efficiency potential can be utilized.

Factors that might hamper the transfer

The guide that has already been developed in Zagreb cannot be directly transferred to our nordic conditions.

If it requires a lot of resources to develop guides and tools that are customized for nordic conditions.

If it's hard to develop a single guide that can be used in different types of buildings.

Policy instrument

As of now there is no policy in place.

Existing financing funds

As of now there are no existing funds for implementation of this practice.

Relevant stakeholders

- Public institutions.
- Public real estate companies.
- Private real estate companies.

Main beneficiaries

Public and private real estate owners.

Further information

We want more detailed information on the project, for example the scope of the guides, implementation plan, resources needed.

BENCHMARKING FICHE REGION: SLOVENIA



TOPIC: PROFESSIONALIZATION OF THE CONSTRUCTION SECTOR

Best practice to be adopted

Young Energy People

Main needs to respond to

Municipalities will have one more tool to achieve goals set in Sustainable Energy and Climate Action Plans in form of reduction of CO₂ emissions and raising public awareness.

Main objective to transfer the best practice to your region

Reduction of CO₂ emissions.

Excellent programme that support implementation of Sustainable Energy and Climate Action Plans.

Students will have better knowledge of Renewable Energy Sources and the Rational Use of Energy.

Factors that might hamper the transfer

Factors that may hamper the transfer are similar to the UK:

- The degree to which the project activities can be incorporated into the existing curriculum.
- The amount of time that teachers are able to dedicate to the project
- The level of support from school senior managers.
- The presence (or otherwise) of a keen member of staff.

Policy instrument

Municipalities that signed Covenant of Mayors initiative have obligation to reduce CO₂ emissions of public building thru Sustainable Energy and Climate Action Plans. Therefore, the support for these kinds of activities is in place since the primary schools are funded by Municipalities.

Existing financing funds

In the form of person / teacher by schools / municipalities.

In the form of professional energy advices and supervision by energy manager of municipality or responsible Local Energy Agency.

Relevant stakeholders

- Municipalities – support for the programme
- Schools – implementation of activities
- Local Energy Agencies – professional support

Main beneficiaries

- Municipalities in form of reduction of CO₂ emissions and savings.
- Students with improved knowledge on field of Renewable Energy Sources and the Rational Use of Energy.

Further information

In implementation phase we could use more information. No bi-lateral meeting is needed, since we will have project presented at Project conference.

BENCHMARKING FICHE REGION: SLOVENIA



TOPIC: PROFESSIONALIZATION OF THE CONSTRUCTION SECTOR

Good practice to be adopted

Quality in multi-apartment building modernization

Main needs to respond to

Restoration of private multi apartment buildings in Municipalities that are in wider public interest.

Financial gap for Slovenian RES and RUE projection for the period 2015-2020 (mil EUR) is:

- Restoration of private buildings 645 – 783.

Main objective to transfer the best practice to your region

In Slovenia these kinds of projects are supported by Eco Fund, Slovenian Environmental Public Fund, but there is space to improve investments into private multi apartment buildings, promotion of good practices and consequently quality of work.

Possibility to gain additional know how that would help Slovenian Eco Fund:

- Construction companies could be required to provide insurance, that they can perform works in accordance to the contract.

- Construction companies could be pre-checked before public procurement process.
- Construction works could be supervised by independent and certified specialists.
- Complaint system (there is no complaint system in place in slovenia).
- State territorial planning and construction inspectorate.
- Good examples of implemented projects could be promoted in the media.

Factors that might hamper the transfer

Eco Fund is overloaded with ongoing work, reviewing applications for subsidies, and therefore is not interested into having additional tasks.

Policy instrument

Policy system is already in place but with possibility to implement even better quality improvement cycle.

BENCHMARKING FICHE REGION: SLOVENIA



TOPIC: PROFESSIONALIZATION OF THE CONSTRUCTION SECTOR

Good practice to be adopted

Podkarpackie Academy Certification

Main needs to respond to

Greater chances of employment for people over 50 years with building qualifications, unemployed people or people of high risk of unemployment with knowledge from construction sector.

Update information for people that does not follow latest trend on energy renovation.

Main objective to transfer the best practice to your region

Raising professional skills of workers over 50 years with building qualifications, unemployed people or people of high risk of unemployment with knowledge from construction sector.

Implementing new technologies and better quality of work on energy renovations..

Factors that might hamper the transfer

Main barrier could be lack of interest from authorities for these kinds of activities and projects.

Policy instrument

Policy instruments for education of unemployed or risk group of people are in place. Not directly for these kind activities but it could be proposed / negotiated.

Existing financing funds

Funds and programmes are already in place, with no similar topic in place. There are two possibilities and for each of them there are different requirements:

- **The public tender** for the acquisition of basic and occupational competences from 2016 to 2019 (we could get in talks with Ministry to prepare right kind of program for next period. Programme is for 50+ years old).
- **National Vocational Qualifications** (if there is a need on a market for these kind of qualification, NVQ could be prepared with help of Public University Kranj).

Relevant stakeholders

- **Ministry of Education, Science and Sport**
- **Public University Kranj**

Main beneficiaries

- People over 50 years with building qualifications, unemployed people or people of high risk of unemployment with knowledge from construction sector.
- Companies with better skilled employees.
- Companies and households that will get better quality of work done on energy renovations.

Further information

Bilateral meeting with Podkarpackie Energy Agency in Rzeszów and Slovenian representatives from Ministry of Education and Public University Kranj would greatly improve chances of success.

6

CONCLUSIONS

The Interregional Thematic Seminar *Professionalization of the Construction Sector* took place in Rzeszow on 21st March 2017. The project's Seminar was a big success with more than 70 attendances, a packed programme of noteworthy panelists from across Europe and effective discussion during networking/dynamic session.

The all-day conference provides very interesting and important conclusions. Currently, whole Europe needs high quality building and construction sector. There are many challenges that can be solved only by highly qualified experts.

It is clear that we need Clean Energy for All Europeans, so we should a focus on:

- Building smartness – European Commission proposed building automation and monitoring replacing inspections.
- New Smartness Indicator: building able to manage itself, interact with building occupants and contribute to grid operation.
- E-mobility: Recharging points in non-residential buildings and pre-cabing of residential buildings.
- Creation of market demand for building energy management through IT products.

Construction sector skills challenges: slight shortage of building workers by 2020 in most European countries; the need for training of the current workforce is much stronger than the estimated need for additional workers; more than 3 million workers would require up-skilling on energy efficiency or renewable energy sources by 2020; importance of transferable and cross-trade knowledge and skills.

Seminar participants had the opportunity to listen the most significant practices concerning improving skills of construction sector in projects partners' countries.

Audience and speakers agreed that if we want to live in "clear world" we need to work together, step by step, and the basis is the awareness of the people. Speakers stressed the importance e-learning and ICT tools. It allows to increase the knowledge of the workers of the building sector in a more effective and a cheaper way.

Conclusions dynamic session are homework for public institution, clusters, companies:

- Inventorying the value chain to foster cauterization.
- Providing technical assistance and organizing workshops.
- Boosting development of rehabilitation sector and create new products and services.
- Between companies - holding together companies and stimulating joint growth.
- Publicity and visibility campaign to spread energy efficiency issues and raising awareness about innovations in renewable energies in order to help SMEs/ clusters to compete with the "old school market".

The main points to consider when addressing this challenge:

- National differences impact on the required skills and therefore necessary training provision.
- Work needs to address all of the technical and social and human aspects.
- How transferrable are qualifications, curriculum, roll out routes etc.
- Which learners do we aim at and how do we accommodate their needs and the needs of employers in order to make training programmes accessible.

The role of the BUILD2LC project in this process is to exchange experience and practical knowledge on improving the qualifications of professionals in the construction industry. The BUILD2LC project will make it much easier for you to experience each other and use good practices from the different project partners.

7

APPEN- DICES

— SEMINAR AGENDA

All the Seminar presentations are available at the BUILD2LC project website:

- [BUILD2LC](#)



Professionalization of the Construction Sector

*INTERREGIONAL SEMINAR AT RZESZÓW, POLAND
20-22 MARCH 2017*

SEMINAR AGENDA

DAY 1 – 21 MARCH 2017

Venue: HOTEL RZESZÓW aleja Józefa Piłsudskiego 44, 35-001 Rzeszów.

8:30 – 9:00 Registration & Welcome Coffee

SESSION 1. WELCOME OPENING

9:00 Opening and Welcome by the Authorities. Project brief presentation.

SESSION 2. PROFESSIONALISATION OF THE EUROPEAN CONSTRUCTION SECTOR

09:30 Professionalisation of the Construction Sector from the European Energy Efficiency Perspective. *Agata Kotkowska, Head of Buildings and Heating/Cooling Sector. H2020 Energy Unit. EASME (European Commission).*

10:00 Cooperation of universities and public and private sector in the frame of construction clusters – challenges, objectives, benefits. *Włodzimierz Grochal, Swietokrzysko-Podkarpacki Energy Cluster.*

10:30 Croskills: Lifelong training plan for building workers. *Diana Horvat, Head of department, Sector for Energy Efficiency in the Buildings Sector. Ministry of Construction and Physical Planning, Croatia.*

11:00 Coffee break.

SESSION 3. PANEL ON GOOD PRACTICES OF PROFESSIONALISATION OF THE CONSTRUCTION SECTOR

11:30 The Podkarpackie Low-Energy Consumption Technologies Transfer Centre's Passive House. *Anna Pasierb, Podkarpacka District Chamber of Civil Engineers.*

11:50 Thermo-modernization of historic buildings within the old town of the city of Przemyśl. *Bogusław Kotek, Association of Owners and Managers Homes in Przemyśl.*

12:10 Cross-sectoral cooperation for raising qualifications of clusters and associations members. *Katarzyna Kowalska, Podkarpacki Renewable Energy Cluster.*

12:30 Examples of successful BUILD UP Skills projects. *Agata Kotkowska, Head of Buildings and Heating/Cooling Sector. H2020 Energy Unit. EASME (European Commission).*

12:50 Professionalisation of skills: Comprehensive improvement of qualifications of civil engineers. *Paweł Chmura, Podkarpacka District Chamber of Civil Engineers.*

13:10 Q&A and discussion.

13:30 – 14:45 Cocktail lunch.

SESSION 4. PITCHING SESSION

14:45 Pitching session for clusters and associations / round table.

This session is intended to initial cooperation and opportunities identification among clusters, associations and other entities.

SESSION 5. DYNAMIC SESSION AND B2B MEETINGS

15:30 – 17:00 Dynamic Session. Technical Committee
This session will foster the interchange of opportunities among the attendants and the contribution to the BUILD2LC project objectives.

17:00 – 18:30 B2B meetings.
Any cluster, association or other entity interested in increasing cooperation activities will have chance to hold bilateral meetings during this session.

18:30 End of first day meeting.

DAY 2 – 22 MARCH 2017

09:15 Travelling by bus to University of Law and Public Administration (Rzeszów).

STUDY VISIT 1

Comprehensive use of renewable energy sources.
More at [website](#) and at the good practice fiche.

10:45 Travelling by bus to Podkarpackie Science and Technology Park (Jasionka).

11:00 Coffee break.

STUDY VISIT 2

11:30 Company ML SYSTEM – R&D Photovoltaic Research and Development Center. ML System manufactures BIPV cells and modules.

More at [website](#).

13:30 Lunch.

Conclusions and end of the interregional seminar.

— PARTICIPANT REGIONAL STAKEHOLDER FICHES

The following profiles for the visiting international stakeholders to the Seminar summarise the organisations attending, alongside the experience, expertise and areas of interest of the representatives.

ML SYSTEM S.A.

Podkarpackie / Rzeszów, Poland



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Sales Director

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Brief description

ML System S.A. is a private owned company, established in 2007. Over the years the company has grown from a three-person start-up to a market leader in its field. We have one of the biggest R&D Photovoltaics Centers in Poland, production facility of over 10.000sq m and more than 100 highly qualified employees.

Purposes and objectives

Our mission is to establish a new trend in the field of photovoltaics. We constantly strive to develop new and innovative products. ML System is the only company in its industry in Poland that has been carrying out advanced research into the properties of prototype PVs and novel PV materials.

We aim to become one of the leading BIPV manufacturers in Europe and in the world.

Knowledge, expertise, products, services

The portfolio of our BIPV products include: ventilated facades, sunshades, skylights, carports, lamps and small architecture forms. We assist our customers from the initial stage of a project through its completion. The range of our services includes initial design, manufacturing, implementation and monitoring of the performance of the system.

Areas of interest in interregional European collaboration

We wish to collaborate with other European stakeholders in the following areas:

- Scientific work in the fields of photovoltaics, nanotechnology and material engineering.
- Promotion of sustainable and energy efficient buildings and renewable solar energy.
- Improving energy efficiency of new and existing buildings.

INSTITUTE OF GOOD ECOSOLUTIONS *ALTERNATIVE LTD.* IDEA

Podkarpackie / Rzeszów, Poland



Piotr Pawelec
President, CEO
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Brief description

IDEA is a consultancy agency specializing in energy, especially in the context of renewables and energy efficiency, climate change, environment. We also support our clients, both public and private in finding external financing for their projects. The company is a member of international CESBA association promoting energy efficiency in buildings.

Purposes and objectives

Our mission is economic growth and benefits for all our partners and customers through support for development of a more sustainable world.

Knowledge, expertise, products, services

We develop energy plans, SEAPs, environmental policies, strategies and other policy documents – both for local and regional authorities.

We advise on energy efficiency issues, assist in public procurements for energy media (e.g. electricity, natural gas), climate change, environmental impacts of an investment or strategy document to environment.

We prepare expertises on energy efficiency, climate change and other issues.

We also provide trainings on energy efficiency, environmental and climate issues and RES.

We prepare energy audits of buildings.

We assist our clients (public and private) in finding external founding for their projects and we apply for them. We provide also assistance in implementation phase of the project and later on appropriate monitoring.

Thanks to our contacts throughout Europe we can find partners for projects that our clients are searching for.

We are flexible and therefore we can adjust to specific needs and expectations of our customers in the field of our expertise.

Areas of interest in interregional European collaboration

We search for partners in projects where we could bring our knowledge of Polish conditions in the field of our expertise.

We also will gladly represent foreign institutions on Polish market where we can also do market research or find partners.

Most of all we are open to new business challenges. Sky is the limit!

ENERGY CLUSTER OF PREŠOV REGION

Central Europe / Prešov. Slovakia



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Brief description

Energy Cluster of Prešov Region is a voluntary interest association of legal entities with the site of action in the Prešov region. It acts as a partner institution in Diversifications energy dependence in the region with the support of technology oriented companies. The aim is to ensure competitiveness of the region making the best use of natural resources. The cluster consists of five founding members and about three dozen partners from the private and public sectors.

Purposes and objectives

EKPK priority focus is the use of renewable energy with the respect to the environmental requirements of the region and energy efficiency. The aim of EKPK is among other things also to propose a way of managing energy that will affect a particular entity in order to achieve the prescribed result in the consumption of energy. The cluster also began to carry out research activities in the field of the use of aerogels in increasing the energy efficiency of buildings.

Knowledge, expertise, products, services

The studies from various fields eg. increasing energy efficiency in public buildings, the analysis of the usage of EPC, PPP and ESCO models within the operation of buildings, and the protection of cultural heritage monuments. Training and consulting in the field of energetics. The cluster provides the building of energy management in the business sector, including the energy process management.

Areas of interest in interregional European collaboration

Environment and energetics, renewable energy sources, energy efficiency in buildings, implementation of innovative technologies.

CLUSTER OF SUSTAINABLE BUILDING OF ANDALUSIA. CLUSTER CSA

Andalusia / Granada, Spain



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Brief description

The cluster, born in 2014, is a public-private association that aims to promote innovation and business collaboration of the construction sector.

We gather more than 70 companies, a cypher that keeps rising every month. Our associates business fields are:

- Real Estate
- Engineering & Architecture
- Landscaping
- Environmental consultancy
- Geology and geotechnics
- Contractor
- Energy management
- Facilities installing: electricity, plumbing, windowing, IT, heating and cooling, energy efficiency, and renewable energies

Purposes and objectives

Mission:

To gather in a collaborative space all the public-private agents of all along the Construction value chain, to increase competitiveness and the reconversion of the sector to sustainable business, through innovation and the application of techniques based on sustainability.

Goals:

- Define and lead the strategic discourse in sustainable construction
- Promoting changes towards sustainable construction in the sector
- Promoting business innovation
- Lobby
- Exchange of experiences
- Boost the public-private collaboration

Knowledge, expertise, products, services

Project consortium, capacity building, R&D facilitation, internationalization and dissemination.

Areas of interest in interregional European collaboration

We are looking for partner and project to develop activities on:

- Civil engineering: railways, water treatment, roads maintenance.
- Building: urbanism, rehab, Passivhaus, new sustainable materials.
- Industrial: ecodesign, installing, landscape integration.
- Energy efficiency: management systems, self-consumption, carbon footprint).

REGION JÄMTLAND HÄRJEDALEN

Region Jämtland Härjedalen / Östersund, Sweden



Elin Nirjens

Competence strategist

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Brief description

Region Jämtland Härjedalen is a public organization and consists of two administrations; health and regional development. The organization as a whole has around 4,000 employees and the administration of regional development where I belong has about 160 employees. Regional development works with a diverse number of topics; education, energy and environment, social welfare, infrastructure and few strategies to name a few.

Purposes and objectives

I am responsible for the regional Competence platform in Jämtland Härjedalen. The Competence platform is a government commission aimed to build an effective and well maintained platform where the labor market and education collaborate to uphold a high, and matching, level of competence in the region.

The regional role is mostly to initiate dialogs and to obtain statistics and a knowledge base that the dialogs can be based on. We act as a process lead so that the dialogs ends up in actions for the stakeholders.

Knowledge, expertise, products, services

Process management and strategic competence development. Collaboration in the multi-level governance.

How to work in a structured way with industry collaboration in a region and municipalities.

Areas of interest in interregional European collaboration

How to support the regional labour market with skills transfer, e.g. in the energy sector.

How to work with the companies in the region so that they will see the need for competence development when it comes to energy saving.

EURO-INVERSIA

Mazowieckie / Warsaw, Poland



Emilio Rull Quesada
Founder

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Brief description

EURO-INVERSIA is a multidisciplinary private consulting company located in Warsaw (Poland) that support the internationalization of SMEs, R&D institutions, clusters and regions.

Purposes and objectives

EURO-INVERSIA is aimed at facilitating international cooperation (especially between Spain and Poland) focusing on export promotion, introducing Spanish entities to Polish market and viceversa, as well as implementing international EU funded projects in field of knowledge transfer, innovations and cross-cluster cooperation.

Knowledge, expertise, products, services

EURO-INVERSIA is based on solid knowledge, practical experience and unique expertise acquired during the last 13 years of operating in the Polish market and fruitfully coordinating Spanish-Polish cooperation. We introduced foreign European partners (specially clusters) to projects all over Poland and implemented various projects together with private sector, public bodies and other stakeholders financed by EU funds.

Areas of interest in interregional European collaboration

EURO-INVERSIA is involved in several cluster and innovation enhancement activities in sectors such as:

- Renewable energies
- Smart cities

- Bio-economy
- Aerospace
- Machinery and metal

Areas of interest in interregional European collaboration:

- Internationalization of SMEs, universities and clusters into polish market
- Grant funding prospects for EU projects 2014-2020 implemented Poland
- Providing reliable partners (SMEs, universities, chamber of commerce, local governments, etc.) and articulating cooperation between Polish and European entities
- Joining consortia for UE international projects (including H2020)
- Cross-clusters cooperation in terms of creation new products and services for its members (including internationalization)

FADECO CONTRACTORS. FADECO CONTRATISTAS

Andalusia / Spain



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Brief description

Fadeco Contratistas is a nonprofit organization and business organization that groups companies from the Construction Industry in Andalusia, provided they have legal personality and full capacity to act in this regional area through their 8 provincial associations and federations.

Purposes and objectives

Representation of their members, promotion of unity and business integration and defense of private enterprise, the market economy and the general and common interests of construction companies in Andalusia.

Fadeco Contratistas follows the principles of transparency, participation, independence and institutional collaboration.

Reports on its developed work to its governing bodies.

Involves its members and the companies themselves in the actions carried out, receiving and endorsing the proposals and suggestions received from them.

Acts with absolute independence from any person or entity, whether public or private. This is not incompatible with the needed and required institutional collaboration with public authorities and other economic and social agents.

Fadeco Contratistas is member to the main territorial and inter-sectorial construction organizations of Andalusia, Spain and Europe.

Knowledge, expertise, products, services

- To warranty the competitiveness of enterprises in equality and free competition
- To ensure legal certainty
- To encourage private initiative

This requires that companies in the sector will get / be provided with:

- full access to permanent and updated information
- expert and skilled advice
- services under preferential conditions, so that they can take decisions and adopt strategies with greater agility at every moment
- ad-hoc services on training plans, occupational H&S, public calls tender coordination
- help to internationalization

Areas of interest in interregional European collaboration

Role of the business organizations in the different models of 'social conciliation': ¿What participation do have the economic and social agents of our European partners in the production and later execution of initiatives within this frame?

Professionalization of the Construction Sector and experiences in education (Dual vocational training, for example) both for workers and for businessmen and women.

Models of financing: major knowledge and access to instruments of financing in the EU. Especially for projects in the Energy Rehabilitation in Buildings and Sustainable Construction, in general, but in the matter of Infrastructures too.

In the bosom of the future cluster, accompanied by the knowledge agents, it is very interesting to debate and know many experiences of current use of new materials and products by the companies, as well as the implantation of new processes from I+D+i and the use of new technologies.

Incorporation of R&D&i in SMEs.

Improving the knowledge of the running of European institutions in everything concerned to Construction Industry.

Other remarkable initiatives:

- Model of dialogue with Trade Unions, as a general rule, but also in a very concrete and particular way over the so-called Labour Foundation of the Construction (FLC), which has allowed a permanent understanding and minimal conflict in such important issues as: occupational

H&S, collective bargaining, regulation of subcontracting, etc.

- The FLC itself is a fully exportable model. It has a philosophy and a structure that is perfectly lined up with all the aims that are chased in the area of the sustainable construction. As an example, FLC has headed the Build up Skills initiative in Spain, which was devised in order to boost continuing or further education and training of craftsmen and other on-site construction workers and systems installers, also addressing skills in relation to Energy Efficiency and Renewable Energy.

Other running initiatives:

- OTC - [Technological Observatory of Construction](#).
- LRb - [Rehabilitation Line](#).
- EPC Tracker software.

THE MINISTRY OF ENVIRONMENT OF THE REPUBLIC OF LITHUANIA

Vilnius, Lithuania



Marius Narmontas

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Brief description

The Ministry of Environment is the main managing authority of the Government of the Republic of Lithuania which forms the country's state policy of environmental protection, forestry, utilization of natural resources, geology and hydrometeorology, territorial planning, construction, provision of residents with utilities, as well as coordinates its implementation.

Purposes and objectives

The goals of the Ministry of Environment and its subordinate institutions are as follows:

- To implement the principle of sustainable development.
- To set preconditions for rational utilization, protection and restoration of natural resources.
- To ensure provision of information about the state of environment and its forecasts to the public.
- To create conditions for the development of construction business.
- To ensure a proper environmental quality, taking into account the norms and standards of the European Union.

Knowledge, expertise, products, services

Buildings are responsible for at least 40% of energy use in most countries. Lithuania has launched a new ambitious Renovation program model for Multi-apartment buildings in 2013 and has achieved the best results. The President of European Investment Bank, Werner Hoyer, identifies the Lithuanian program as a success story. The Program is aimed to increase energy efficiency in multi-apartment buildings and monitoring results show that 50-80 % energy savings are reached.

The main idea of the new and clear model is to strengthen the municipalities' role with the goal – no financial and administrative burden on Households. The Government of the Republic of Lithuania has developed an innovative financing scheme (JESSICA Holding Fund) for this Program.

More than €500 million have been provided from JESSICA for the energy efficiency projects. The overall aim of the scheme is to contribute to increased energy efficiency in housing sector by the means offering the long term loan financing at preferential terms and conditions.

This helps to create new jobs, lower CO2 emissions, meanwhile allowing thousands of people improve living conditions and cut energy bills.

New financial instrument created in 2016

The Lithuanian Leveraged Fund, a guarantee scheme funded with €100 million of EU Structural and Investment Funds and national resources, comes in support of energy efficiency investments to cut energy bills in thousands of Lithuanian homes. The structure will maximise the funds available for the “Multi-apartment Building Modernisation Programme”, a key government priority with national and municipal backing.

Areas of interest in interregional European collaboration

- To develop policies for innovative technologies and financial instruments in Energy efficiency field.
- To encourage the use of ICT to implement innovative solutions for energy efficient buildings.
- To create methodologies of smart and sustainable of energy efficiency in buildings solutions.
- Enable city residents to understand the development of smart sustainable cities
- To create Public - Private Partnership Network.
- Enable smart governance using bottom up and top down initiatives.

GREEN BUILDING COUNCIL SLOVENIA. GBC SLOVENIA

Slovenia / Ljubljana, Slovenia



Irena Hlede

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Brief description

GBC Slovenia is non-profit organization with main objective to transform the way buildings and communities are designed, built and operated, enabling an environmentally and socially responsible, healthy and prosperous environment that improves the quality of life.

GBC Slovenia is member of global organization World Green Building Council with more than 70 member organizations, all with same constitution.

GBC Slovenia is covering Slovenian market of sustainable construction and has recently 41 members.

Purposes and objectives

Green Building Council Slovenia wants its efforts and work to contribute to the development of sustainable construction and sustainable development and management of real estate. It wants to establish a platform for interdisciplinary communication between industry, development, education, designers, developers and managers to improve the quality of residential and business premises and workplaces.

Knowledge, expertise, products, services

To establish a longterm sustainable construction, the principle activities of GBC Slovenia are education, international cooperation with similar institutions, establishing professional criteria, building databases, exchange of good practices, communication with interested stakeholders, advocacy, influence on the government at important professional decisions and exchange of views on government initiatives.

GBC Slovenia is part of World Green Building Council, a global organization with main mission of transforming the places we live, work, play, heal and learn.

GBC Slovenia is gathering its interests inside European Regional Network World GBC - a community of 27 Green Building Councils, 8 Regional Partner companies, and over 5,000 members across Europe. We take action - championing local and European leadership, and empowering our community to drive change. Together, we are greater than the sum of our parts, and commit to green buildings for everyone, everywhere.

Areas of interest in interregional European collaboration

GBC Slovenia closely cooperates with ERN and World GBC with aim to transform together the European market through the following activities:

- *Networking Leaders:* We support active networking of our members and sharing of best practices.
- *Certification:* We lead the market by defining sustainable building practices and driving uptake of these through certification tools.
- *Awareness Raising:* We stimulate demand by communicating the value of sustainable building to hundreds of thousands of people across Europe: industry, politicians and the public.
- *Skills & Capacity Building:* We support supply by educating (over 10,000) people each year, to develop the skills and capacities to deliver and maintain sustainable buildings
- *Financial & Economic Incentives:* We help the market scale-up by supporting the design of financial and economic incentives for sustainable buildings.
- *Policy & Regulation:* We mainstream sustainable building by supporting public authorities with policy design and delivery and advocating ambitious policy goals.

MINISTRY OF CONSTRUCTION AND PHYSICAL PLANNING

Zagreb, Croatia



Diana Horvat
Head of department

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Brief description

The Ministry of Construction and Physical Planning performs administrative and other tasks related to construction, physical planning and housing, and participates in the development and implementation of programmes from European Union funds and other forms of international assistance in these fields.

Purposes and objectives

The Ministry performs administrative and other tasks related to: physical planning in the Republic of Croatia and coordination of regional physical development; planning, use and protection of space; international cooperation in physical planning; physical planning inspectional tasks; spatial information system; monitoring of the status of space and implementation of physical planning documents of the Republic of Croatia; location permits; cooperation in development of physical planning documents of counties, cities and municipalities in order to ensure requirements for management, protection and administration of space, and coordination of activities of state administration bodies participating in the development, adoption and implementation of physical planning docu-

ments; ensuring requirements for development and improvement of operation of legal and natural persons in the field of physical planning; settlement planning and regulation of building land use.

Also, regarding the establishment of requirements for designing and construction of construction works; building and use permits; use, maintenance and removal of construction works; building inspection tasks.

The Ministry performs administrative and other tasks related to the effects of economic policy instruments and measures on the development of design services in construction and on construction services; operation of legal and natural persons in the field of construction, the Croatian Chamber of Architects and Engineers in Construction and other engineers involved in construction;

monitoring and analyzing the quality of construction and design services in construction; housing, housing policy; apartment and settlement construction; implementation of special housing programmes of the Government of the Republic of Croatia; policy, monitoring and improvement of the status in utility management, international cooperation in construction and housing.

Also tasks related to the participation of the Republic of Croatia in the work of bodies of the European Union in the fields of the Ministry's responsibility.

Knowledge, expertise, products, services

Significant financial savings are achieved by energy renovation of buildings, that is, by increase in energy efficiency. Energy audit implementation is the first step in the energy renovation of buildings.

The term "energy renovation" implies, among other things, increasing the heat retention of the external building envelope, replacement of outer window and door frames and replacement or upgrading of the heating system. In the renovation, measures of use of renewable energy sources and adjustment of internal lighting as well as the implementation of a central management system for heating and cooling can also be included.

Energy-efficient houses provide a higher standard of living, while by renovation based on principles of energy efficiency savings on overhead expenses from 30 to 60 percent can be achieved. Eventually, reduction of energy consumption, especially of fossil fuels, leads to a reduction of carbon dioxide emissions, which means less environmental pollution, and thus a better protection of public health.

Areas of interest in interregional European collaboration

Energy certification of buildings

On the date of entry to the European Union the obligation commenced of issuing energy certificates for existing buildings or self-contained building units that are being sold, and as of 01 January 2016 there is the obligation of obtaining energy certificates also for buildings that are rented out or leased and have a total useful floor area of more than 50 m², or are a separate part of a building that has a total useful floor area of more than 50 m², regardless of the floor area of that particular part.

For those properties for which rent or lease contracts were concluded before 01 January 2016, energy certificates are not obligatory until the expire of the respective contractual

obligations. Likewise, renting in this context shall not apply to the tourist activity, therefore providers of accommodation services in holiday flats, apartments and houses are not obliged to obtain energy certificates.

An energy certificate is a document that is valid for 10 years, and establishes the energy class of a building, indicates the energy performance of a building and provides information on the level of energy consumption, as well as on the condition of the building with regard to energy efficiency. The energy certificate provides also a proposal of cost-effective measures to improve the energy performance of the building in order to reduce energy consumption.

Energy certification of buildings shall be performed by persons who have the authorization from the Ministry of Construction and Physical Planning.

The Ministry has prepared a "Draft Ordinance on the system of training and certification of construction workers who built the building sections that affect the energy efficiency of buildings" which is on public consultation until March 22, 2017. The Ordinance defines the system of training and certification of construction workers incorporating parts of the building that affect the energy efficiency of buildings.

CROSKILLS Program is a program of continuous training of construction workers in the area of energy efficiency was created on the basis of "National Guidelines for the ongoing training of construction workers in energy efficiency," European initiative "Build Up Skills' and joint action of the professional public through the" National qualification platform "to strengthen skills construction workers in the area of energy efficiency.

CROSKILLS program consists of theoretical and practical training.

HOUSING ENERGY EFFICIENCY AGENCY. BETA

Vilnius, Lithuania



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Brief description

Public institution Housing energy efficiency agency (BETA) was established by the Ministry of environment in Lithuania to administrate National program for modernization of the multifamily buildings. BETA now has much more functions.

BETA has 10 branch offices in Lithuania, with average 50 people working.

Purposes and objectives

Public institution Housing energy efficiency agency (BETA) was established in Lithuania to administrate National program for modernization of the multifamily buildings. Because of the capacity in the building refurbishment, BETA was obligated to administrate National program for the modernization of the public buildings (belonging to the municipalities).

In 2015 BETA, together with partners from Germany started a new project "Energy efficient renewal of urban areas in Lithuania". In acquaintance with the project "Energy efficient renewal of urban areas in Lithuania" the government of Lithuania prepared and approved legislation for quarter energy efficiency programs in municipalities.

According the legislation BETA is a consultant for preparing and implementing the quarter energy efficiency programs. Now we are also responsible for searching of innovative projects for nature conservation in Lithuania.

BETA is always looking for any new projects which could improve energy efficiency in buildings or quarters. We have contacts with all 60 municipalities in Lithuania. All the municipalities trust BETA as their partner in the concept of energy efficiency, and they are willing to reach higher energy efficiency standards together.

Knowledge, expertise, products, services

BETA has huge capacity working on energy efficiency projects in buildings. This capacity is being used for further projects, to search for innovative solutions on how to save energy not only in buildings but in whole country/area. This capacity we are using in Lithuania and also by helping our partners in other countries.

With every new projects we are getting more and more experience – this is always being shared with our partners, not only by telling them how to do and work, but also by offering to implement real projects. Because of the trust our partners has about BETA, they are usually very interested about the proposals. All the capacity we have built and the knowledge we have collected during the years will be shared with our new or existing partners.

Areas of interest in interregional European collaboration

BETA would like to work on or to get more knowledge about energy efficient renewal projects, these projects could be orientated to old or new buildings, engineering infrastructure and other infrastructure where there are energy losses. Also, we are interested in a new technology which allows to save energy.

ANDALUSIAN CLUSTER OF RENEWABLE ENERGIES AND ENERGY EFFICIENCY. CLANER

Andalusia / Spain



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Brief description

The business cluster CLANER is a non-profit association representing more than 90% of the renewable sector in the region, counting on around 100 members.

Purposes and objectives

CLANER is an alliance of companies, official bodies, research centers, universities and foundations, among others.

It represents and support the Andalusian renewable energies and energy efficiency sector interests through the encouragement and promotion of research, technological development and innovation of products, processes and services linked to, as well as fostering the cooperation among its members in order to increase competitiveness.

Knowledge, expertise, products, services

Our cluster represents 90% of renewable producers in Andalusia, one of the most important regions regarding renewable energy in Spain and Europe. We provide an Excellence network for engineering, planning, assistance, training, maintenance and supply in the field of renewable energy and energy efficiency.

Among our members there are companies, official bodies, research centers, universities and foundations that have huge expertise in: wind, photovoltaics, solar thermoelectric, blue energy, biomass energy and energy efficiency. Having such a broad scope among our members entails us to participate in different projects of different areas.

Our services:

- Protection and representation: support to the sector, public liaison, public administration relations.

- Research, development and innovation management services.
- Consultancy: advice on collaboration and cooperation opportunities, grants, commerce and internationalization.
- Financing: fund raising to set up and improve products and services.
- Business opportunities, training, networking and dissemination.

Areas of interest in interregional European collaboration

The cluster is very active in interregional collaboration. We are open to collaborate in projects in the framework of the EU (H2020, Interreg, etc.), as well as in different projects where we can that can contribute with our expertise to bring added value to our members.

SUBCARPATHIAN RENEWABLE ENERGY CLUSTER. PKEO CLUSTER

Podkarpackie / Rzeszów, Poland



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Brief description

Subcarpathian Renewable Energy Cluster (PKEO) is a network of 83 partners that gathers entrepreneurs (mostly SMEs), Rzeszów universities, business support institutions and local governments representing renewable energies, smart cities, energy efficiency and connected sectors. Created in 2012, the cluster is focused on SMEs development and R&D activities which contribute to the development of innovative products and solutions.

Purposes and objectives

To stimulate cross-sectoral development of new technologies and innovative products related to sustainable use of renewable energies and smart cities solutions based on joint competences of cluster members. PKEO's actions also aim at creating a strong

and uniform representation of the interests of entrepreneurs, investors and research and development units working for the development of environmentally friendly power industry based on renewable energy sources.

Knowledge, expertise, products, services

Knowledge & Expertise

- Expertise in eco-energy, smart cities and sustainable development
- Strong and influential network of Polish and international partners.
- Access to modern R&D infrastructure and technologies.
- Experience in international cooperation (especially with Spain, Slovakia and Ukraine) in field of renewable energies.
- Strong network of business contacts.

Cluster products

- PKEO Intelligent Eco Office 2020.
- E-commerce platform (www.energia24.rzeszow.pl).
- PKEO Intelligent Eco-Housing 2020.

Areas of interest in interregional European collaboration

- Joint international projects (EU) in field of smart energy, smart cities, IoT, new materials, energy efficiency and bioeconomy.
- Living lab international projects in fields mentioned above.
- Experiences and knowledge exchange (including Erasmus+).
- International R&D projects.

UNIMOS FOUNDATION

Podkarpackie / Rzeszów, Poland



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Brief description

UNIMOS is a cross-sectoral organization focused on building trust-based partnerships that foster growth, innovations and international development.

Purposes and objectives

We unite people and organizations from between business, science, administration and clusters on cross-sectoral level, creating a reliable network of trusted partners that grow together at international level.

Knowledge, expertise, products, services

UNIMOS is based on solid knowledge, practical experience and unique expertise from a wide variety of sectors that we have been collecting for the last 15+ years having worked in Latin America, Europe, Caucasus and Asia.

Internationalization: We inspire and help business, science, clusters and regions to become global.

Interclustering: We foster effective cross-cluster cooperation regionally and across borders.

Innovations: We accelerate creation and commercialization of new and added-value services and products.

Our key product is UNIMOS GLOBAL ALLIANCE - cross-sectoral & international alliance aimed at supporting and guiding business, science, public administration and clusters to work, cooperate & grow together at international level, with trusted partners and in inspiring, safe and effective environment.

Areas of interest in interregional European collaboration

- Internationalization of SMEs through cluster/network cooperation and joint programmes and projects.
- Cross-sectoral cooperation (especially renewable energies, smart cities, bioeconomy, health, agrofood and lifescience).
- Transfer and adaptation of good practices from Spain to Poland.
- Innovations, creation of new, joint products based on common competences and aligned to social needs & challenges.

AGENCY OF EUROPEAN INNOVATIONS. AEI

Lviv, Ukraine



Ivan Kulchytskyy
President

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Brief description

Agency of European Innovations (AEI) is a non-profit, research organization aimed to increase cooperation between Ukraine and EU in ICT, Renewable Energy, Agricultural, Food, Health R&D areas within HORIZON2020, ENI and others EU-programmes. AEI acts as Innovation Bridge between science, business and authorities.

Geographic scope: all regions of Ukraine, but the main activities are carried out in the Lviv region. Leading experts from Ukraine that have an experience in 6FP and 7FP projects fulfilment are members of the Agency of European Innovations.

Purposes and objectives

The organization's mission is to support the professional development of domestic intellectual capacity to reform the economy and social life of Ukraine in accordance with the best European and international standards. We also focused on the formation of democratic values and civil society by implementation of scientific, educational, awareness raising and innovation activities.

The main aim of AEI is development in Ukraine the areas of ICT, Renewable Energy, Agricultural, Food, Health R&D.

Knowledge, expertise, products, services

AEI positions itself as an information and consulting centre on the implementation of SME innovative projects.

AEI is a Western Regional Contact Point of Scientific-Technical Cooperation with EU and National Contact Point of ICT&SME of Ukraine.

AEI has developed network of contacts with innovative SMEs and leading R&D&I organizations in Ukraine and Europe.

Experience in organising cooperation building (networking, twinning events and meetings) as well as awareness raising events (info-days, dissemination conferences).

Experience in projects under the FP6 and FP7; the program «Polish Aid» Ministry of Foreign Affairs of Poland; Science and Technology Days of Poland-East; International Forum for Innovative Technology for Medicine IT MED; CBC programme «Poland-Belarus-Ukraine».

AEI also provides research, analytical and advisory services to state and local authorities on the development of tools to support SMEs at national and regional levels. Our organization is actively involved in the discussion of Digital Agenda for Ukraine.

AEI successfully implemented the cross border project **FARADAY**: "Creating permanent mechanisms for transfrontier cooperation in the area of RES".

AEI initiated the creation and chairs the Cluster of energy efficiency and renewable energy of Lviv region. The members of the cluster are companies engaged in renewable energy and energy efficiency.

AEI coordinates the feasibility study for the establishment of Hub-laboratory internet of things within i4MS initiative.

AEI administers "**Innovation Portal**", an effective dissemination tool with mailing database of more than 7000 emails of innovative SMEs and R&D organizations.

Areas of interest in interregional European collaboration

- International cooperation in ICT, new media, content and creative industries.
- Implementation digital agenda in Europe.
- Internet of Things, smart cities.
- Innovation and Entrepreneurship support.
- ICT in Health and ICT in Energy.
- Promotion of renewable energy sources.
- Sustainable energy efficient construction and skills in the building sector.
- Promoting mental health and well-being among youth.
- New knowledge and technologies.
- Science with and for Society.

PREDA LTD

Lower Silesian Voivodeship / Wrocław, Poland



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Brief description

PREDA is a private limited company established in Poland in 2000.

Purposes and objectives

The company's activity focuses on solving energy problems - especially in local communities. Important elements of our core business include energy planning, energetic audits, change of supplier of electricity and gas using an electronic auction realized on our own platform, energy performance contracting, implementation activities in the field of energy efficiency in street lighting and energy management in buildings.

We aim to supply the highest quality products to satisfy the requirements of our customers.

Knowledge, expertise, products, services

We offer a specialized street LED lamp suitable for efficient outdoor lighting. The lamp does not require the exchange of the luminaire, so it can be installed in conventional luminaires. The lamp can significantly reduce the cost of electricity consumption (by 70%), and at the same time improve the quality of light. Unlike other LED lighting sources, the product has an innovative and programmable calendar that allows it to change LED power depending on the time of night, appropriate for the determined class of the road. The lamp is suitable for lighting of roads and streets, parking areas, parks and pedestrian routes, industrial and commercial facilities.

Areas of interest in interregional European collaboration

Modernization of public lighting systems, illumination projects. Implementation of energy management systems in buildings.

We want to expand our international presence and we seek distributors with a good understanding of lighting systems.



More info: www.interregeurope.eu/build2lc

