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EUROPEAN UNION
Danube Transnational Programme
EcoInn Danube

TRANSNATIONAL ECO STAKEHOLDERS PLATFORMS
LOCAL ROUND TABLES OF STAKEHOLDERS

REPORTS

2017

Project co-funded by European Union funds (ERDF and IPA)
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Introduction of transnational Eco Stakeholders Platforms

Common platforms for ecoinnovators composed of stakeholders' local round tables, transnational round table and stakeholders map presents a room to exchange experience and support cooperation of different parts of quadruple helix. The approach includes the broadest scope of organizations and network that can benefit and have an interest in supporting environmentally conscious innovation.

The Transnational eco-platforms aimed to build a baseline to:

- Learn how to support cooperation in development and implementation of ecotechnologies
- Exchange experience
- Survey needs of stakeholders (please see the details in survey)
- Support matches between production sector and R&D institutions.

Local stakeholders' meetings

Local Stakeholders meeting presented a thematically focused events that strengthen and support the implementation of the project outputs, with direct involvement of stakeholders into elaboration of a common strategy. Project partners collected ideas, problems, needs and solutions proposed by their stakeholders during the meetings. Each meeting gave valuable conclusions and recommendations.

Participant – stakeholders of local stakeholders round tables:

Research and development institutions • research teams, head of centres, institutions • representatives of universities (head management, researchers, professors) • national/regional development institutions	**Private companies** • SME-s • start-ups
Public authorities • local authorities • representatives of public sector • decision makers, policy makers	**General public, NGO-s** • representatives of business support institutions, incubators • experts in the field of renewable energy

Local stakeholder meetings organized across Danube Region:

Country	Austria	Bosnia and Herzegovina	Bulgaria	Croatia	Czech Republic		Germany	Hungary		Serbia	Slovakia		Slovenia	Total
Project Partner	Economica	CCI BL	CCI VRATSA	REDEA	BIC BRNO	BUT BRNO	BWCON	DJ	SMVKA	RDA BANAT	SCSTI	CUSP	KSSENA	
Date	29.06	27.04	16.05	26.06	07.06	02.06	19.05	15.06	23.05	06.06	24.05	01.06	19.05	
(Year 2017)	25.09	06.06	26.06	27.06	21.06	08.06	29.11	22.06	07.06	26.06	31.05	15.06	15.06	
No. of participants	14	28	21	30	37	58	75	18	17	44	23	37	47	**454**

Overview of common recommendations and conclusions to support Eco-innovation in DR:

Cooperation

- sharing good examples, practices, initiatives
- encourage cooperation and networking among the actors
- involvement of public authorities, municipalities

Legislation

- reduction of fiscal obligations, and restructure tax categories
- harmonisation of legal framework, and energy policies
- simplified energy audit, certificates, permits
- priority for the eco-innovative projects

Finance

- elaborate national financing tools, and coordination of funds
- tax discounts
- preferential credits
- funding gap between prototype and marketability, innovators need better access to venture capital

Education, assistance

- business support system for innovators
- improve entrepreneurs' competences
- ecology education in schools, and education of experts and teachers
- Reduction of bureaucratic hurdles, which represents a major obstacle for implementation eco-innovation should be alleviated.

Awareness raising, promotion

- examples of start-ups
- promotion of eco-innovation results, projects
- awareness raising events – innovation days, exhibitions, competitions
- 'demo objects'

Socio-scientific transition

- Need for adequate socio-scientific process. A socially accepted energy transition.
- Breakthrough of energy self-sufficient quarters, the sharing of electricity in peer-to-peer processes and blockchain will firstly be possible and succeed in tenant stream projects. Only with decentralized supply concepts, this change in the energy market will gain momentum.

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AUSTRIA

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29.06.2017

RESULTS OF THE MEETING

Eco-Innovations are best pursued by transdisciplinary approaches. Entrepreneurial knowledge should be integrated in school and higher education. The stronger universities and industry cooperate, the more diverse their competentences are, the better. The Danube region (and the virtual lab) offer a highly suitable ground for finding optimal matches.

Austria has strong, though insufficiently explored potential for eco-innovations. Many publications in scientific literature originate from Austrian research institutions. However, more „success stories". i.e. eco-innovative solutions that have been successfully/ sustainably implemented, are desirable. Many innovative ideas do not make it „into the market". In general, innovative concepts develop successfully, but fail to go beyond the prototype level. One likely reason is Austria´s current funding system: Projects receive financial support primarily at early stages. The further projects proceed, the more they rely on own investment. Many companies lack respective financial resources.

Bureaucratic hurdles represent major obstacles.

Given that photovoltaic devises yield up to 300 times (!) more energy compared to energy plants cultivated on an equivalent area (Uusitalo et al., 2017 Biomass and Bioenergy 99 (2017) 79e89) plant materials (ressources!) should not be wasted for biofuel production. Plants, microorganisms and enzymes offer virtually unlimited opportinities for eco-innovative materials. Austria (e.g. University for Natural Resources) has substantial expertise in biorefineries. Such knowledge forms a fruitful basis for eco-innovative products.

Small enterprises and research institutions need professional economic/entrepreneurial support to close the gap between prototyp and market viability.

Ecoinnovative concepts can be combined for maximal environmental benefit. Concept design should consider all stages of an eco-innovation and - ideally- totally exclude generation of waste *sensu stricto*.

The meeting´s participants will stay in contact and explore the synergies that emerged during the discussion.

RECOMMENDATIONS

Communication, transdisciplinarity, creativity and unconventional thinking should be supported wherever possible.

Entrepreneurial teaching should be integrated in school and higher education, irrespective of the study subject.

Funding systems should prioritize Eco-innovative projects proposals. Ways for implementation include stopping/reducing funding of projects neglecting environmental aspects, and calls exclusively dedicated to eco-innovative proposals.

Bureaucratic hurdles representing major obstacles for eco-innovation implementation should be alleviated.

Tax advantages and other government measures should alleviate the risk of failure to further drive eco-innovations.

A major focus of Eco-innovative concepts should be on circular economy. There is a huge but largely unexplored potential of natural materials and -derived products. Research on biorefineries as innovative materials and replacements of petrol-based materials holds high promises and should be pursued by interdisciplinary approaches.

Awareness of the public (=consumers) for eco-innovations should be increased. Suggestions are e.g. public events, setting up demo-objects (e.g. green „living“ walls for water purification in public buildings).

The need for re-thinking established concepts applies to all; scientists, companies and politics. Innovation means re-orientation.


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25.09.2017

RESULTS OF THE MEETING

Collaboration between universities and industry is a key to eco-innovation. However, when it comes to actually implementing research findings in the production process, large/established companies act slowly/reluctantly or totally refuse change. Smaller, young enterprises exhibit higher flexibility. Optimal, sustainable solutions arise from long-term partnerships (trust/loyality, tailor-made solutions and regular adaptations). Adequate funding support is a main driver for sustainable university&industry partnerships.

Austria´s current funding system requires enterprises to overcome the step from prototype to marketable product largely on their own. Researchers/innovators lack entrepreneurial attitude. They need access to venture capital (e.g. crowd-for-climate).

The current bureaucratic and tideous call application procedures represent major innovation hurdles. Nevertheless, some regulatory means must exist to prevent misuse of funding.

Enterprises offering eco-innovative alternatives to existent products/services inevitably enter into competition with established enterprises. Innovations need a chance to spread.

Despite the fact that photovoltaic devises produce up to 300 times more energy compared to biofuel produced from an equivalent area (see 1st meeting), local biomass can cover local energy needs. The energy self-sufficient municipality of Güssing uses biomass arising from green cuttings, „green waste“ for biogas production. Noteworthy, there is no competition for agricultural land.

Pilot plants, pilot projects, success stories promote eco-innovative development. The municipality of Güssing is a shining example.

Decentralisation is important; local solutions can be identified and implemented more easily.

Austria´s commitment to the Paris Climate Agreement (in force since Nov 2016) is expected to have strong positive impact on green innovation development/implementation/expansion, both in terms of energy saving and waste handling. Austria „is forced to go eco-innovative“.

Farmers would be sufficiently flexible to engage in eco-innovative projects involving (atypical) plant cultivation, as long as the economic benefit is evident.

Environmental problems must be solved resolutely, not outsourced or replaced by less severe alternatives. Eco-innovations must neither produce any non-degradable waste nor endanger biodiversity.

Microorganisms and enzymes offer numerous opportinities for eco-innovative materials and (incl. toxic) waste recycling. ReSyntex (research project on textile recycling, involving Austrian partner ACIB) explores enzymatic conversion of synthetic textile waste.

Plant-derived fibers of several wild flowering plants can be used as insulation material in the textile industry. Cultivation of these plants would be beneficial to flora and insect biodiversity.

EcoInn project activities can help improving the still under-developed innovator networks in Eastern Europe. Here, Austria can contribute its particular strength in environmental technology.

Key challenge for the „Virtual Lab“ lies in attracting attention of relevant target groups.

The meeting´s participants will stay in contact to explore synergies that emerged during the discussion.

RECOMMENDATIONS

To overcome the funding gap between prototype and marketability, innovators need better access to venture capital. This also requires respective awareness raising about respective opportunities.

Researchers/innovators should receive special training to gather entrepreneurial knowledge and attitude.

Bureaucratic hurdles representing major obstacles for eco-innovation implementation should be alleviated.

Though energy-saving objectives can be imposed „from above“, influences „from below“ through market forces, customer demand for eco-friendly alternatives and economic pressure have a stronger impact. Whereever appropriate, inhabitants/consumers should be addressed/involved directly, and actions/decisions be made transparent.

To promote eco-innovative development, expansion and imitation (e.g. self-sufficient municipalities), public awareness about pilot plants, pilot projects, success stories etc. should be raised.

Synergies between EcoInn and BioValnet should be identified and explored.

Enterprises, especially large, established companies, need to become more flexible to adequately respond to eco-innovative trends. Rather than posing barriers to SMEs with eco-innovative alternative products they should cooperate and/or work on their own eco-innovative solutions. The attitude „long-established product = endless marketability“ has to be abandoned.

Bureaucratic hurdles and call application procedurs should be reduced to a moderate level.

Eco-Innovation likes decentralisation: local solutions can be identified and implemented more easily.

Wild plant-based fibershave certain potential as innovative insulation materials for the textile industry. Collaboration between researchers, farmers and industry partners is needed for exploring this potential. To convince collaborators (and appropriate funding agencies), the positive impact of such plant cultivation on biodiversity should be emphasised.


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BOSNIA AND HERCEGOVINA

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27.04.2017

RESULTS OF THE MEETING

Project presentation

During First stakeholder meeting, representative of the EcoInn project, presented to all participants Project in general, objectives, work packages and many other information. Special focus was on stakeholder meetings, gathering information on target groups, activities within the meetings and expected results. All participants expressed their highly positive opinion about the Project and wished a partner, CCI BL, many success in project implementation in Bosnia and Herzegovina.

Energy efficiency

Energy efficiency problem is very popular in last more than 10 years. In last couple of years, a lot of activities had been performed on analyzing energy efficiency in Bosnia and Herzegovina. According to the latest data, as mentioned at the meeting, more than 20% of GDP in Bosnia and Herzegovina is being spent on energy. That number is rapidly lower in United States – 6% and in European Union – around 5%. Also, total consumption of energy per capita is lower than European average. Other problem also is increasing price of the sources of the energy in Bosnia and Herzegovina for the end consumers. Higher prices for the energy sources, which are constantly growing, in combination with low income, low standard of BA citizens and increase of the prices, which is the consequence of higher prices for sources of energy, living in general in Bosnia and Herzegovina is more than difficult.

The biggest consumer of energy is the construction sector (55% in 2009), but also, there are many opportunities in that sector for energy efficiency. If we analyze the problem from technical point of view, in this sector, 50 – 60% of saving of energy can be accomplished, the fact that was stressed by the representative of construction company. If we look at the issue from economical point of view, the situation is different. In order to increase energy efficiency in Bosnia and Herzegovina, and technological – economical compromise must be achieved. The solution that needs to be achieved must comprise between technically possible and economically justified.

Given the fact that Bosnia and Herzegovina is under developed country, for her development, energy needs to be spent. Companies in the country must produce, services need to be available. Main issue is to rationalize the energy consumption and use it on more efficient way. So, for the question how to rationalize the energy consumption, the answer is by increase of energy efficiency.

RECOMMENDATIONS

The role of the State is crucial for the creation of better environment for investing in energy efficiency. Also, the conclusion is that there are no legal barriers for introduction of system for energy efficiency. From the local point of view, adoption of entity laws can only contribute of explanation of rights and commitments which will the local communities have in the system of energy efficiency. Local communities have great interest for creating of their own strategies, programs and plans for the activities in that area.

From the other perspective, through the number of pilot projects implemented in Bosnia and Herzegovina, the fact became obvious, that there are SMEs which are enabled for implementation of energy efficiency measures. Local government and citizens are becoming more and more aware of benefits of implementation of measures for energy efficiency. The problem for implementation of measures of energy efficiency in greater scope is unavailability of financing mechanisms. Nor public nor private sectors have enough resources for investing in the industry of energy efficiency. With that in mind, that industry will continue to be on the same or lower level.

Crucial thing is to develop a model for financing of industry of energy efficiency. That industry could even create a new jobs in Bosnia and Herzegovina.

Stakeholders present at the meeting agreed that a lot of issues need to be corrected and implemented, and they mentioned couple of them: through the projects financed by the EU, for energy efficiency, the implementation of the EE projects must be at the higher level, all projects which are/were implemented, must have increase of jobs as a result, not only EE issues, cheapest measure for increase of EE is education, usage or reusable sources of energy encourage the employment of domestic labor, public – private partnerships must be encouraged in the field of EE, the lack of promotion of EE, etc.


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SWOT
PLENARNA SJEDNICA
GLOBALNA EKONOMSKA KRETANJA I MALE EKO

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06.06.2017

RESULTS OF THE MEETING

At the beginning of the meeting all participants introduced them selves and their organizations and activities and emphasized their organization's relation to the concepts of ecology, innovation, environmental protection and energy efficiency.

Presentation of the project and the previous meeting report

During the meeting, the project partner representative presented the project, goals, tasks and activities, work packages, general information and other relevant details. Attention was made to the work package 3, within which is the organization of this meeting, and on the role of stakeholders. After the presentation of the project, the report from the first meeting held at Jahorina in late April was also presented in detail. were presented with details from the meeting as well as recommendations and conclusions.

Discussion

At the beginning of the meeting, the first topic of discussion was the protection of the environment. A representative of the Center for Environmental Protection presented the problem of building a mini-hydro power plants on smaller rivers. As pointed out, the construction of such facilities would lead to the destruction of certain environmental parameters, and in this way, the energy received would be paid dearly through the destruction of flora and fauna in that region. The result of this type of activity could be the loss of implementation of environmental solutions due to environmental degradation in this area.

The owner and founder of the company Technetis from Banja Luka, introduced the present with its product - a sensor for measuring air pollution. Attention was paid to the problem of sending products purchased online in BiH to end customers, especially if buyers are outside the territory of BiH. The cost of such a delivery is incomparably higher compared to other countries and this fact leads to an unequal position in the products from this area.

In order to present bright examples of innovation and to help young innovators, according to representatives of the Ministry of Science and Technology, the Competition for Best Technological Innovation of Republika Srpska is being organized. During the twelve years of the project, it has been adapted to the changes and needs of the market, and it is possible to initiate a special competition category, for example, eco – innovation. Through a detailed process, the best innovators are selected through a series of educational workshops, giving them the opportunity to develop their innovative ideas and get financial and other forms of help. One example of the award-winning idea is the idea of young entrepreneurs from Teslic, who started the startup of SklopyToys. According to them, they managed to get in touch and find support in various institutions; however, problems of financial nature still exist.

Attention was drawn to the participants', the competition for the best innovation prefers economic profitability in relation to the innovative idea itself and it is proposed to attempt to introduce a category in which the emphasis would be on the positive ecological impact of innovation rather than on the economic aspect.

Representatives of ministries also emphasized the problem of brain drain. BiH is a poor country compared to EU countries, so even if there are certificates of innovation for a particular idea, its bearers will in many cases go to a country that can offer better financial conditions for the realization of the idea.

Representatives of development agencies and business support institutions presented their activities and also stressed that SMEs, especially startups, should contact institutions of this type in order to obtain relevant information on the current resources for developing their innovative ideas in order to be able to participate in various types of business related education, and in order to connect with already existing relevant networks of associates, thus making the realization of their ideas more simple and simpler.

A representative of the Banja Luka Innovation Center pointed out that it necessary to spend more than three years of development and launching on the market in order to make the innovations profitable, which is a problem when seeking financial resources for the realization of the idea. This time is even longer when it comes to eco-innovation.

RECOMMENDATIONS

1. *The infrastructure to support* eco-innovations is partially *developed in Republika Srpska. All available support* for SME development is also a *support for this group, namely:* chamber *system of RS, Agency for SME Development of RS, Investment Development Bank of the RS, Ministry of the* Science *and Technology, the Innovation Center Banja Luka, the Fund for the Protection* of *environment, other ministries, local development agencies and other institutions. There are many contests and competitions where innovators are eligible to participate in* their *attempt* to secure *resources and other forms of assistance. In order to accentuate* eco effect of *innovation, it is recommended to switch focus from exclusively with the economic viability of the ecological aspect in these support programs.*

2. *There are* seldom *programs* of *grant support* for *innovation. One such program is the Challenge to Change, implemented by the SME Agency of RS with the support of Sweden Governmental Funds. This program will have several calls for funding to support to projects that have innovation. It is necessary to promote such programes more and to provide assistance to potential applicants through advising on preparation of proposals by various institutions - chambers of commerce to its* members*, development agencies, ministries, etc.*

3. *The Ministry of Science and Technology carries out a selection of the best technological innovation* competition *every year. Inventors Association organizes INOST of young, international exhibition of ideas, innovation and creativity. It is necessary to better connect and inform all the institutions mentioned, to promote the events and programs with the aim to popularize and provide the additional funding for the development of ecological innovation.*

4. *There are shining examples of startups who managed to start their own business, for example developing software and similar.* R*epresentatives of such companies, one of the largest* issue *when starting a business are finances. It is necessary to initiate reduction of the fiscal obligations so the funds can be reinvested in the business.*

5. *The are several international projects dealing with innovation, environmental protection and similar topics, such as EcoInn, but it is necessary to increase the coordination of partners who implement projects to achieve synergy effect.*

BULGARIA

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16.05.2017

RESULTS OF THE MEETING

Energy efficiency current situation in Bulgaria and the region of Vratsa

The main challenges for eco-innovation in Bulgaria are related to achieving high energy efficiency, increasing energy savings and developing renewable energy sources, each of them having a role in combatting climate change and ensuring energy security. Along with these, the country is also facing socio-onomic and environmental challenges stemming from the financial and economic crisis, poverty and high unemployment, and poor state of the environment, etc.

Identifying of the strengths, problems and opportunities

Despite efforts made in recent years by national authorities to improve the legislative framework in the country – aimed at promoting innovation and eco-innovation – Bulgaria still lags behind and continues to be among the countries referred to as modest innovators. The analysis of Bulgaria's ecoinnovation performance showed a lack of balance in the nation's innovation system with a high number of scientists and engineers and a low level of governmental and investor support. There is a certain demand for "green" oducts and services, which is an incentive for businesses, public bodies and educational facilities to invest in their production and introduction.

Possible solutions – what to improve and how? What solutions are already available?

To meet the demand for "greening" and energy efficiency local stakeholders are taking advantage of funding options by the Energy Efficiency and Renewable Sources Fund, which offers credits with below market interest rates and credit guarantees in the field of energy efficiency. With regard to the drivers, the most significant are: a favourable regulatory and policy framework in recent years, high skilled human resource and knowledge capital, market demand for new green products and technologies. The most important eco-innovation policy measures and funding schemes in the country included the Innovative Strategy for Smart specialization of Republic of Bulgaria 2014 – 2020, National Action Plan for the Promotion of Green Public ocurement, Operational Programme "Innovations and competitiveness 2014 - 2020", Energy Efficiency and Green Economy Programme, etc.

Funding opportunities

Since 2013, Bulgaria has made efforts to improve in its eco-innovation performance through the implementation of several Operational Programmes, including Strategy for smart specialization, initiatives on waste management and recycling, energy efficiency, environment, transport, science and education, and innovation and competitiveness.

RECOMMENDATIONS

- To have a clear definition about eco innovations in the field of the energy efficiency
- To study and implement good EU practises in the field of eco innovations
- To cooperate with other EU funded projects in the field of energy efficiency and eco innovations
- To use all funding opportunities

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26.06.2017

RESULTS OF THE MEETING

Presentation of the project and previous meeting report

At the beginning of the Second National Stakeholders' meeting, the team of the EcoInn project presented themselves as also the new participants in the event. After the presentation of the project, the previous meeting report was presented and the discussion about the eco innovations in Bulgaria and the region of Vratsa had started.

Energy efficiency current situation in Bulgaria and the region of Vratsa

The main challenges for eco-innovation in Bulgaria are related to achieving high energy efficiency, increasing energy savings and developing renewable energy sources, each of them having a role in combatting climate change and ensuring energy security. Even though Vratsa's region is one of poorest in the country, an improvement in the field of energy saving can be seen. Some of the living buildings in the town are having repairs (thermal isolation, PVC windows and etc.) thanks to the municipality and some national Operative programmes, which help to reduce the costs of energy consumption. Participants form the Youth Center Vratsa shared their experience with energy saving, showing their kind of way to solve the problem with high energy consumption– using modern eco innovative technologies, such as solar panels (wich helps a lot during the summer season). On the other side the representative from the Regional History Museum Vratsa complained that there is no support from the government, in the case the museum is a governmental institution, which can help their problem with the heating of the museum halls during the winter. The electrical instalation is too old and it's very expensive to use such an old heating technologies, neverthelles it's not eco friendly at all. The common thought is that people in the region and in the country are thinking about the eco environment and how to preserve it, but there are not enough opportunities to implement the people's thoughts.

Identifying of the strengths, problems and opportunities.

Despite efforts made in recent years by national authorities to improve the legislative framework in the country – aimed at promoting innovation and eco-innovation – Bulgaria still lags behind and continues to be among the countries referred to as modest innovators. It is visible that some regions are more eco developed than others – some of them relly on solar panels for electricity, solar boilers for water heating, huge wind mills for generating electric energy and etc. The analysis of Bulgaria's ecoinnovation performance showed a high number of scientists and engineers and a low level of governmental and investor support. There are various opportunities for developing eco innovations in the country ,thanks to the high capacity of scientists and engineers but they cannot find a proper job relevant to their level of study in the universities and that's why we can mention the existence of „brain-drain".

Possible solutions – what to improve and how? What solutions are already available?

Regional stakeholders are taking advantage of funding options by the Energy Efficiency and Renewable Sources Fund, which can offer credits with below market interest rates and credite guarantees in the field of energy efficiency. The most important eco-innovation policy measures and funding schemes in the country included the Innovative Strategy for Smart specialization of Republic of Bulgaria 2014 – 2020, National

Action Plan for the Promotion of Green Public Procurement, Operational Programme "Innovations and competitiveness 2014 - 2020", Energy Efficiency and Green Economy Programme, etc. One of the ways for improvement, could be a less diffucult access to starting up a bussiness with eco innovations and lowering the prices of legislation documents. The high prices for cetification of, for an example bio diesel, are taking away some the business investors.

RECOMMENDATIONS

- To have a clear definition about eco innovations
- To cooperate with other EU funded projects in the field of energy efficiency and eco innovations
- To study and implement good EU practises in the field of eco innovations

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CROATIA

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RESULTS OF THE MEETING

The aim of the meeting was to gather representatives of defined stakeholders to discuss needs, problems, and solutions in the field of eco-innovations. Conclusions from the discussion will be used to create a common transnational strategy and action plan for implementing eco-innovative result.

A representative of Međimurje County said that they have created an action plan for energy efficiency of the Međimurje County for the period 2017 to 2019. The main purpose of the Action plan is to set guidelines for implementing energy efficiency improvement policies by achieving energy savings and respecting the energy needs of the region and the principles of sustainability and environmental protection. The implementation of the Law of energy efficiency has ensured the achievement of the following goals of sustainable energy development:

- reducing the negative impacts on the environment from the energy sector,
- improving the security of energy supply,
- satisfying the needs of the energy consumers and meeting the international obligations of the Republic of Croatia in the field of reducing greenhouse gas emissions by stimulating energy efficiency measures and using renewable energy sources in all sectors of energy consumption.

A representative of City Čakovec mentioned that currently, they are implementing project „Dynamic light“. The main aim of the project is to make improvement in planning a local lighting infrastructure to modern, energy-efficient planning of demand-driven lighting with better management. By implementing dynamic light the light of the public lighting will adjust to the conditions and number of people sing the road.

Technology Innovation Centre Međimurje have prepared project for energy efficiency, mostly focusing on LED light and renewable energy sources. The public sector should encourage to implementing energy projects of SMEs.

The experience of TechPark Varaždin is that changes occur if a stimulation is given to implement them by public bodies. They conducted a research in the field of energy efficiency. The study included 192 SMEs and concluded that entrepreneurs are inclined to implement energy efficiency projects to achieve as many savings as possible with low investment.

- The representative of the Protective Ecological Organization – NOBILIS (a non-governmental and not-for-profit organization) mentioned that the area of the Medjimurje County is much better off the rest of the country in the implementation of energy efficiency projects. Main activities of NOBILIS are directed to environmental education and awareness raising for various target and age groups, sustainable development and eco-tourism in the region, and publishing. The largest potential in the area of renewable energy is thermal power plants. According to their research, 38% of entrepreneurs decide to introduce renewable energy sources. Regulation is one of the main ways for people to start applying innovations.

Identified problems:

- innovators do not know the economic principles and they are afraid to disclose innovative ideas
- miss of knowledge of other technological solutions in the world
- lack of regulation
- lack of financial resources and expert knowledge

RECOMMENDATIONS

From the conclusions of the round table we highlight the following:

1) The public sector is considered more inclined to use eco-innovation and can be the initiator for eco-innovation.

2) The regulation is the main factor that encourages the application of innovation.

3) It is necessary to develop awareness of responsible behavior towards the environment through the educational system and thus develops a positive attitude of individuals towards the application of eco-innovations.

4) In rare cases, entrepreneurs see eco-innovation in social responsibility. Primarily, they see it through short-term benefits that make savings. Therefore certain measures should be directed towards the promotion of the concept of social responsibility and its long-term impact on the social community, as well as on the development of the corporate image.

5) As far as commercialization of innovation is concerned, it can be noticed that their full potential achieves those arising from a particular entrepreneurial venture compared to the one launched by an individual.

6) It is necessary to further examine the possibilities of changing the attitudes of innovators to present their ideas. Many of them are not inclined to "disclose" their ideas, although this is the first step in the protection of intellectual property. In addition, the barriers to commercialization of innovation represent a lack of knowledge of business processes, insufficient knowledge of already available technological solutions, and lack of funding for advisory services.

7) As a potential for the development of eco-innovation, the environmental issue of soil pollution is separated.

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RESULTS OF THE MEETING

The main aim of the second national meeting within EcoInn Danube project was to gather relevant stakeholders together and represent them the project goals and discuss the current situation in energy efficiency in the Republic of Croatia, identify needs and problems in the field of eco-innovation and discuss possible solutions with the purpose of developing a common transnational eco-innovation strategy.

After the introduction part of the Round table which was a leading project manager, Ana Kralj, discussion began.

Ministry of Economy, Entrepreneurship, and Crafts said that currently there is a competition open titled „Ideas from Europe“. The primary objective is to draw attention of European entrepreneurs - to build a positive image of entrepreneurs, to be a model and contribute to reviving the entrepreneurial environment and spirit of Europeans.

A representative of Green Energy Cooperative and Association „Green Network of Activist Groups“ said that in the Republic of Croatia there are many shifts of ministers responsible for energy efficiency issues and this is one of the problems. Consequently, no support system has been established and people are less deciding on implementing innovations. One of the aims of the Association is to raise awareness of the public, encourage self-initiative and initiate botoom-up changes. Innovations should associate with EU funds or financial incentive because cost effectiveness is low.

A representative of SMEs from Empiria Ltd. claimed that changes are possible with the transfer of EU funds. The national decision makers should encourage changes and introduce tax reforms. There is a lack of good innovative projects in the Republic of Croatia to bring innovation into the market.

Energy Institute Hrvoje Požar – The Department Renewable Energy Sources, Energy Efficiency and Environmental Protection is specialized in renewable energy sources and energy efficiency as well as in the environmental impact of the energy sector. The Department’s scope of activity includes researching the potential for the utilization of renewable energy sources and energy efficiency (building design and construction, non-commercial services, small and medium entrepreneurship and other), quantifying the impact of power plants on the environment, economic and financial analyses, development of a stimulating legislative environment and organization and implementation of programmes and pilot projects. Since the Department’s projects are implemented at local level, special consideration is given to the promotion and education, organization of expert, scientific and promotional conferences, and public opinion research. Experience has shown that when introducing innovations in the field of heat energy, savings of 60 % are achieved, while in the area of electricity savings are about 10 %.

University of Zagreb’s Centre for Research, Development and Technology Transfer said that it is necessary to educate wider public and to raise awareness about energy efficiency. It is also necessary to connect the economic sector with the University. The Centre provides support to research groups at the University in securing funds for research and development as well as in the management of research projects. CRDTT also helps research groups and partners from the business sector to establish cooperation in technology development and commercialization of intellectual property originating from University’s research groups. CRDTT supports researchers and students in starting knowledge and technology based businesses.

Identified problems:

- Lack of academic entrepreneurship. Innovators do not decide on the commercialization of their ideas because they do not have economic knowledge
- Lack of quality innovative projects, financial resources and lack of confidence of innovators
- Lack of sustainability of innovation
- The high cost of purchasing equipment needed for testing innovation, the problem is the commercialization of innovation
- It is necessary to introduce energy efficiency measured, optimize business processes and at the end to introduce the law in the field of energy efficiency. For the implementation of an innovative idea in reality necessary is a push from the big companies that have enough financial resources is needed.

RECOMMENDATIONS

Conclusions from the discussion and the information gathered will be extremely useful for preparing a joint international strategy and an action plan for eco-innovation. From the conclusions of the round table we highlight the following:

1) The economy of the Republic of Croatia is small and is not open to new ideas, which is one of the main barriers to entry to the market with the innovation of just scapegoat, but also the distrust of the state and the legal system.

2) Domestic entrepreneurs are insufficiently co-operating and networking, due to which is insufficient knowledge of the domestic market and the potential of cooperation.

3) Due to limited resources for R & D, there are few small innovation firms (with the exception of certain industries such as ICTs). Large companies need to be the initiator of innovation.

4) To stimulate innovation and their commercialization, it is necessary to strengthen entrepreneurial competencies, primarily by introducing entrepreneurial themes in higher education. In addition, it is necessary to encourage academic entrepreneurship.

5) To generate the demand for eco-innovations, the prerequisite is to show the benefits that they bring to their use through pilot projects and demonstration projects.

6) Međimurje County points to positive examples in the development and application of innovations which should be used as examples of good practice.


REGIONALNA RAZVOJNA AGENCIJA MEDIMURJE
OKRUGLI STOL: POTREBE, PROBLEMI I RJEŠENJA U PODRUČJU EKO-INOVACIJA


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CZECH REPUBLIC

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02.06.2017

RESULTS OF THE MEETING

The main goal of this meeting was to analyse the major incentives and obstacles that stakeholders face within their business. Another objective was to bring cooperation among the participants, and to interlink the projects of municipalities, ministries, universities and private companies. All the participants have shared information about their activities and best practices.

Individual presentations have been followed by a group discussion.

The main barriers mentioned:

SCIENCE AND RESEARCH

- Inefficient cooperation among research institutions and practice.
- Inefficient use of financial resources in the science and research, where quantity of projects is rated over their quality.
- Lack of marketing of the eco-innovation ideas and research results on the market.
- Decreasing number of students in building industry. Universities decrease their standards to cope with the lower number of students and financial resources. The school system and student's evaluation is not motivating enough; it is based on the credit system and graduation.

RECYCLING OF CONSTRUCTION MATERIAL

- Lack of quality control system from the government. Often the technique is limited to simple crushing without any proper separation and use of the recycled material in construction.

COOPERATION

- There is insufficient interlinkage among the stakeholders and small cooperation among the sectors
- Lacking knowhow and technology transfer among companies, same as cooperation between producer and supplier.

LEGISLATION

- There is no integrated waste legislation within Europe. Each country has different norms and standards and this puts obstacles in the business among companies from different countries.
- Municipalities face difficulties with tenders, when not enough companies apply (e.g. SKANSKA only). Difficulties with public procurement documentation
- A controlled demolition is required to secure separation of good quality input material for recycling. There is lack of regulation in the Czech Republic.
- Methodology for "Green Public Tenders" for municipality representatives (and public administration) to be created.
- Price is often the only focus point during the tenders. Condition for using the recycled material is not mentioned. In general, the investors are not confident about the quality of recycled material and do not want to use it.

- "Voluntary Demolition Protocol" issued by the European Union- Ministry of Industry and Trade in cooperation with the Ministry of Environment intend to propose amendments to make use of this protocol. High quality outcome from demolition is the main assumption to have high quality input for recycling.
- "Whole in the ground vs. Sanitary Landfill" - Recycling process remains to be the more expensive solution if it is permitted to deposit waste without any previous treatment. However, recycling is a cheaper solution than waste disposal to sanitary landfills.

FINANCE

- Inefficient use of subsidy funds - they are mostly used by corporate companies.

MARKETING, MARKET USE OF ECO-INNOVATIONS

- The products' portfolio is getting wider and wider. However, there is a lack of communication and use among companies and municipalities.
- Positive competition (while converting waste to resource) as the path towards better awareness about the products.

EDUCATION/ BEST PRACTICES

- Stronger encouragement of designers to use recycled materials.
- Use of material index (of new recycled materials) while designing new projects.
- The need to communicate best practices experience among mayors/chairmen towards the public tenders.

RECOMMENDATIONS

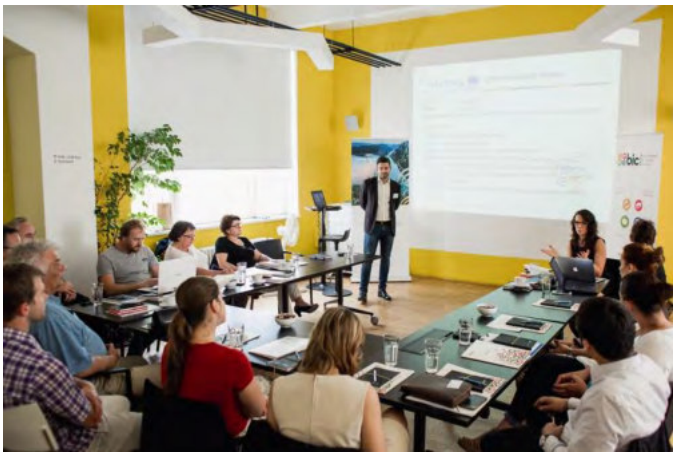
Participating stakeholders will work on a concrete action plan and situation improvement (based on the discussed barriers) during the coming meeting. We recommend to use the participatory methodology to include actively all participants of the meeting. This support the aim that all stakeholders feel involved and contributing toward the changes.

On the second meeting, particular steps and also particular stakeholders putting the ideas in practice, will be identified.

BIC Brno, could keep the role of a mediator; and it could become the communication channel informing and involving other new stakeholders, to put in practice the agreed action plan.

After the two meetings, participants should be aware of the positive opportunities that eco-innovations bring to their business. They will be also offered information sources for topics identified as the barriers. Last but not least, they will be offered support with marketing of eco-innovations.


Představení projektu
„EcoInn Danube“



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07.06.2017

RESULTS OF THE MEETING

Barriers that have been identified during the previous meeting, were divided into 3 specific categories. The participants were divided into 3 groups to discuss the topic of "POSITIVE VISION OF ECO-INNOVATION IN THE BUILDING INDUSTRY BY 2022". Specific steps of an ACTION PLAN to fulfil the vision have been identified as well.

1) The first working group discussed the topic: LEGISLATION AND FINANCE

The vision for the year 2022	Action plan
1) Regulations and statements delivering the standards about construction products and waste management 2) Building designers know well the new norms, and have knowledge about secondary raw materials 3) The environmental aspects (such as the requirements on recycled materials and construction waste handling) are considerate while using EU funds 4) Investors require recycled materials and proper handling (separation and recycling) of the construction waste 5) Good awareness about the possibilities of recycling of construction material 6) Access to information about announced tenders (so that companies that were not approached by the contractor are informed as well) 7) Model for environmental standards and requirements that could be used for public tenders. 8) Recycled products are part of the documentation: PRODCOM, TP170 (technical regulations) 9) Voluntary protocol for building demolition works in practice	1) Common action plan between the Ministry of Environment and Ministry of Industry and Trade. 2) Being well informed about responsible management of resources and secondary raw material is part of the curriculum for designers, catalogue of recycled material products is created by The Ministry of Industry and Trade (MIT) together with Czech Technical University. MIT also prepares an action plan for requalification, which are incorporated to the National Educational Concept by the Ministry of Education. 3) Preparation of assessment standards (to support use of secondary raw material within construction) 4) Increased awareness about the quality of secondary raw materials, demand stimulation, increased knowledge of investors. 5) Sharing awareness also on conferences that are not especially focused on construction industry and waste (Regionservis, Information for mayors about environmental topics from the regional councillors, Connection with activities and trends of Smart Cities, Local Agenda 21, Regional Development Agencies, The National Health City Network, etc.)

2) The second working group discussed the topic: SCIENCE AND RESEARCH, EDUCATION/ SHARING OF BEST PRACTICES

The vision for the year 2022	Action plan
1) There is a platform to connect science, research and the private companies (it is functional and updated). 2) Use of best practices from abroad. Use of well-known technologies. 3) Change of evaluation criteria and involvement of environmental aspects.	1) Ethical code applied within the science, research and private companies – research results are kept by the scientists themselves, but are available for the public as well. 2) Financial motivation for researchers. 3) Working system of tax deduction (even without controlling by the Tax Office).

4) Legislation and methodology support for the use of recycled materials (this information is available for designers) 5) Environmental standards are part of the public tenders' criteria.	4) Quality control over the quantity. 5) Awareness about the possibilities of cooperation (also for the Czech projects) 6) Decrease of the administrative burden (to support the research part not the administrative work). 7) Lifelong educational courses (for example for ČKAIT group). 8) Efficient use of financial resources for marketing and product promotion.

3) The third working group discussed the topic: COOPERATION/ CONSTRUCTION MATERIAL RECYCLING/ MARKETING AND USE OF ECO-INNOVATION ON THE MARKET

The vision for the year 2022	Action plan
1) Involvement of municipalities and public population in the sorting of construction and demolition waste. 2) Support of the regional level. 3) Certification of innovative materials. 4) Unification of prices of the traditional materials and eco-materials. 5) Confidence in use of products from recycled materials.	1) Motivating the municipalities and public population to sort all types of waste. 2) Creating information software, platform (supporting the industry symbioses). 3) Cooperation with the scientific platform from the beginning of innovation. Transformation of waste into resources. 4) Collection, processing and distribution of products on a local level. 5) Sharing of information about quality of recycled materials.

RECOMMENDATIONS

Stated outcomes have been achieved within the two stakeholder's meetings. The participants have identified the main barriers, formed a vision for the year 2022 and prepared a specific step of an action plan leading to the fulfilment of the vision. Participating stakeholders agreed to lead their activities in a way to support the eco-innovation and enhance their promotion on the market. New networks and cooperation among participants were created during the first and also the second meeting.

BIC Brno will continue in the role of a mediator and can become the communicator who will inform and involve other stakeholders, to put agreed action plan into practice. New networks and action plan will be followed and we will keep the mutual cooperation with the participants.

The overall outcome of this meeting is positive.

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08.06.2017

RESULTS OF THE MEETING

The aim of the meeting was to bring together various groups of stakeholders acting in the field of technology transfer and innovations, make them familiar with the EcoInn Danube Project, discuss the topics related to eco innovations and help the participants to find new opportunities for an efficient cooperation. In the common discussion, the following problems were indicated.

MULTIDISCIPLINARY ATTITUDE

- Materials Research Centre was introduced. Its multidisciplinary character was emphasized.
- Research teams presented their fields of expertise.
- Examples of test products made using the innovative materials were introduced.
- New materials are produced using waste materials and prove better characteristics.
- Obstacle for common application of innovative ecological products: Traditional producers are strong market players and hinder usage of new products.
- Materials Research Centre was established as a part of Faculty of Chemistry of Brno University of Technology.
- Researchers take part in education of new scientist.
- Education of successors by research teams members is very important in respect to the multidisciplinary character of research.
- The concept of interconnection between faculty and research centre proves good results.
- Cooperation of research teams from different institution is of high importance. It allows new and multidisciplinary attitudes.

UNTYPICAL COOPERATION

- EcoInn Danube Project was introduced. The virtual lab as a tool for cooperation was outlined and other project features and project outputs were discussed.
- Examples of successful cooperation between researchers and SMEs were presented.
- An untypical application of ecologically innovated material was discussed: aeronautic industry may take advantage of innovated concrete that proves very light material.
- Such untypical applications bring new opportunities for ecological innovations.

WILLINGNESS TO PAY ATTENTION TO THE ENVIRONMENT

- Representative of Czech energy supplier E.ON informed about ecological aspects in energy production.
- The company has its own research center at disposal.
- The research center seeks for ecological solution in waste management, new ecological technologies were invented.
- Flexible and interdisciplinary attitude overcoming barriers between branches is needed.
- More effort would be beneficial, it means paying more attention to ecological needs and more investing but funding possibilities are limited.
- European trend of Circular Economy does not match smoothly with the Czech policy of secondary materials.
- European legislation has to be reflected into the Czech legislation.
  Harmonization of waste management policies across Europe is important.

RECOMMENDATIONS

- Consistent approach on national level
- Clear state policy for waste management
- Coordinated approach on European level
- Sharing experience, strengthening cooperation among eco innovating activities and projects
- Founding coordination activities
- Education of experts

Presentation of EcoInn Danube Project

Project team of BUT

Presentation of Materials Research Centre

Discussion about cooperation and eco-innovation

Informal project discussion between BUT and BIC

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21.06.2017

RESULTS OF THE MEETING

The aim of the meeting was to bring together another group of stakeholders: its participants are acting in the field of research and in the field of technology transfer and innovations and in project management. During the meeting EcoInn Danube Project was introduced and the eco-innovations were discussed in general. Innovations in the region and the Regional Innovation Strategy were mentioned. Grant office of BUT shared information from recent workshops at JIC (South Moravian Innovation Centre) – Current attitudes towards regional innovation systems – and at the University – Legal aspects of project founding. The common discussion should help to understand the needs of participants and to identify the barriers and obstacles they have to face. Except of this, potential solutions of problems were discussed. The following issues were tackled.

LOCAL CONTEXT AND PUBLIC AUTHORITIES

- Public authorities are the less considered subject in the research of regional needs
- Their involvement is highly recommended: they are an important stakeholder – they are competent and authorized, they dispose with the budget for incentives and they come with hints for innovations, they set the rules
- Regional innovation systems: there exist many systems and clusters – the problem is their integration, they do not know about each other, they do not cooperate
- Individual needs of each region – it is not possible to copy the strategies, each region has its own environment, challenges and opportunities
- The quality of regional innovation system of the South Moravian Region is rather high in comparison with other Czech regions

FINANCING AND LEGAL ASPECTS

- European subsidy programmes:
- In the Czech Republic, National Authorities forward the responsibilities and risks by financing from European subsidy programmes to beneficiaries
- In respect to the potential state aid, it is necessary to distinguish between the commercial and non-commercial activities - sometimes it is not clear in the field of university research and technology transfer
- Lack of formal support on the national level: there do not exist model documents for the Czech environment (like the DESCA at the European level – the Model consortium agreement – with regard to the intellectual property rights)

- Czech law about research does not apply the European law but concentrates on the state research policy, the law does not help but complicates the conditions for researchers

TECHNOLOGY TRANSFER

- Possible cooperation in eco-innovation across the university – searching for interconnections between individual research centers
- Introduction of the virtual lab – what it can offer, how it can help by searching for cooperation in research, matching partners for research and projects
- Expectations and risks by offering innovations and new technologies
- Support of Technology Transfer Office of BUT: help for researchers as well as private companies
- Position of scouts in faculties should help with searching for new technologies
- Information about the legal conditions
- Help with legal matters in commercialization process
- Protection of intellectual property – finding the best form
- Finding a commercial application for R&D results of researchers
- Commercial use of results – legal aspects of cooperation, license agreements – researchers are not aware of risks and they are not familiar enough with the legal aspects

RECOMMENDATIONS

- Public authorities must be more considered in the research of regional needs
- Regional innovation systems should cooperate
- Consistent approach on national level, coordination with the European law
- Better quality of national financing tools
- Better support on national level with regard to technology transfer and IPR
- Improvement of legal education in the field of technology transfer

Presentation of EcoInn Danube Project

Presentation of EcoInn Danube Project – the stakeholders

Discussion about the needs of participants in the eco-innovation field

Discussion about the virtual lab and eco-innovations

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GERMANY

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19.05.2017

RESULTS OF THE MEETING

Aim of the event was to introduce the EcoInn project and to discuss with possible stakeholder of the region of Baden-Württemberg the current situation in the Green and Eco-Innovation field. The stakeholder meeting has been strategically converged with some activities running in the framework of the Sustainability Day of the city of Freiburg in order to reach a wider audience and create synergies with actors who are already working in this field. For this reason, focus of the discussion was also the specific case of the city of Freiburg and the sustainability's goals that the city is pursuing in its own agenda. The stakeholder meeting was held within the Hackathon Freiburg focused on the topic of energy. Overall goal of the event was the development of concept and application in the energy, sustainability and eco-innovation field. Three experts were invite to hold presentations on the following topics:

- Energie and IT - Pascal Benot, ENIT System
- Open Data for Energy Application - Ivan Acimovic, Open Governament Data, City Freiburg and Oliver Leis, das Grüne Emissionshaus
- Analysis of energy data with machine learning - Dr. Boris Lau, PSIORI

The keynotes were followed by a focus group discussion on the sustainability goal of the city of Freiburg and the energy efficency initiative already active in Baden-Württemberg. To the focus group took part: energy experts, representative of universities Furtwangen and Offenburg and representatives of the city of Freiburg, such as Mayor for the Environment Gerda Stuchlik. The topic discussed in the group and shortly summarized here after were furthermore discussed together with Baden-Württemberg Minister of the Environment Franz Untersteller, who was visiting the Hackathon during the weekend and participating in an hour-long discussion with the organisers and participants.

The sustainability goals of the city Freiburg give politics and administration a guideline in their decisions and highlight important topics of sustainability from energy, climate protection to social action, education and culture.

With its ambitious environmental policy as a Green City, Freiburg has made a name for itself worldwide. When it comes to sustainable energy management, the Freiburg Green City is a pioneer with its numerous ecological and technical solutions. Around 12,000 people from Freiburg and the region were involved in the environmental and solar economy in 2016. Digitization provides new opportunities to reconcile the generation and consumption of energy. Machine learning provides intelligent methods for analyzing and optimizing energy generation and consumption, as well as complex supply systems.

Since sustainable development as a cross-cutting theme affects all areas of life and thus also all tasks of a municipality, the city of Freiburg has committed itself to the implementation and achievement of 60 local sustainability targets in 12 policy areas. Since 2016, Freiburg's sustainability targets have been consistently developed. In addition, the municipal council has commissioned the administration to reconcile and adapt Freiburg's sustainability objectives with the United Nations Sustainable Development Goals (SDG).

In 2009, the Freiburg municipal council adopted 12 policy areas of sustainable development, which the Sustainability Council had previously elaborated. Five objectives were assigned to each policy area. This means that 60 sustainability targets are decisive for all political decisions. In order to secure the goals in the entire urban context, the Sustainability Management Unit was established in the Department of the Mayor. The task force is responsible for coordinating the transdisciplinary and integrated sustainability management. It ensures that offices and departments co-operate with various actors in

a cross-sectional manner. In this way, synergies are created in order to implement sustainability in administrative transactions.

RECOMMENDATIONS

- In the field of Mobility: Freiburg aims to become a city of short distances which has the goal to reduce motorized individual traffic and to create alternatives. By 2020 the share of cycling traffic should be increased to more than 30%.
- In addition, the already very good public transport network of the city need to be continuously expanded.
- In the field of Clima and energy: Freiburg pursues the vision of a climate-neutral city. By the year 2030 CO2 emissions in Freiburg are to be reduced by at least 50% (having as reference the year 1992). For the year 2050, Freiburg pursues the goal of a climate-neutral city.


HACKATHON
ENERGIE
DIGITALE LÖSUNGEN FÜR ENERGIE DER ZUKUNFT!


HACKATHON
ENERGY

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29.11.2017

RESULTS OF THE MEETING

Bwcon decided to organized its second stakeholder meeting in the framework of the event »Morgenstadt-Werkstatt meets Digitale Zukunftskommune@bw«. This is currently one of the plattform used by the Baden-Württemberg Ministry of the Interior, Digitization and Migration for the development of digitization strategy for cities that involves several areas as: Energy, mobility, health, education, administration and trade.

In order to transform Baden-Württemberg into a digital lead region, the state government in July 2017 adopted the nationwide digitization strategy digital@bw. With the Strategy are set ambitious targets, for which by 2021 around one billion euros will be invested in digitization activities of the state government and in concrete digitization projects.

Within its 2nd stakeholder meeting, bwcon wanted to discuss ecoinnovation solutions for smart cities and to look for possible synergies and cooperation among the involved stakeholders in order to develop project in this field. In particular, a first opportunity for collaboration was identified in the regional call „Digitale Zukunftskommune@bw“ launched by the Ministry of the Interior, Digitization and Migration.

The aim of this competition is to tap the potential of digitization together with municipalities, business, science and citizens in order to increase the quality of life in the cities and communities and thus to create decisive location factors. For this purpose, bwcon invited relevant business stakeholders as speakers for the event, which deal with intelligent digital technologies in the field of smart cities. Aim of the meeting was therefore:

- The discussion of the state of the art of current projects in the energy and digitazion field and the impact they might generate on the city of the future
- The exchange among business stakeholder and city representatives for the identification of eco technologies that can shape the future of smart cities
- The identification of topics and issues in this field that could constitute the basis for a project to be submitted within the regional competition „Digitale Zukunftskommune@bw“

Following stakeholders were invited to present project and technologies in connection to ecoinnovation in Smart Cities:

- Marc König, Head of Business Development bwcon GmbH
- Robert Koning, Smart Makers
- Simon Bernd, SAP
- Alexander Schülein, Star Cooperation
- Matthias Heinzler, Baupilot
- Christine Ulbrich, Deutsche Telekom AG

The final discussion was made around two examples presented in the event:

1. The Project C / sells on the topic of smart grids
2. Electricity produced by tenants as a catalyst for the energy of the future

Regarding the first project, the Federal Ministry for Economics and Energy is supporting five demonstration projects throughout Germany with the program »Schaufenster intelligent Energie - Digital Agenda for the Energiewende« (Sinteg).

Under the project name "C / sells", they will be testing a cellular energy system by the end of 2020 with smart grids. The goal is to prepare the energy system for an immensely higher share of renewable energies in combination with the use of energy storage and digital load control. In the name C / sells C stands for Cells, the cellular approach. "Sells" expresses that a new energy system participatively

enable diverse business models. Aim of this project is to let emerge a regionalized, flexible trade for energy that would enable numerous actors to participate and thus shape the future of energy.
The cells of this project are streets, neighborhoods, communities and areas. For example, Stuttgart Airport is one of the demonstration cells, as well as new emerging quarters such as the Franklin district in Mannheim or existing streets in grown urban structures like Munich. In the main idea of the project, each of these cells should be able to supply its own energy autonomosly. The project tries to answers questions like: which opportunities does a digital energy future offer for us as a whole society? What options does the individual have - be it the private household and homeowner, tenant, landlord or trader and municipal actor?
In South Germany there are already 760,000 prosumers, consumers who not only consume energy, but at the same time produce and partly use it themselves and feed it into the grid. In order to expand this number, an early involvement of the population is required.

The second topic discussed goes in the same direction. Through the electricity produced by tenants more households have now the opportunity to become more independent from the public grid and reduce their electricity costs. In modern homes, the power supply already has a central role today. Through efficient building insulation and ventilation systems, for example, passive houses require up to 90% less heat than a house in construction and 75% less than one typical new construction.
The use of different energy technologies and memory and the smart networking of power consumption and generation support the self-sufficient power supply.
Locally generated electricity promotes the range of electromobility concepts such as e-car sharing, e-scooters and e-bikes. They are integrated services that give tenants great added value offer without increasing the rental costs. After all, electric cars do not just use locally generated electricity, but conversely also support the power supply of the tenants.
For this is located at power demand peaks in the memory of the parked electric car
Tenant electricity supply also makes an important contribution to the energy transition in the heating market. In the case of heat pumps, locally generated electricity is used in heat pumps. Hot water heat pumps in summer can operate almost completely using solar energy. But also other heating systems such as combined heat and power plants become more efficient through tenant flow. The electricity generated here especially in winter is used directly in the local power supply.
The decentralized power supply and the use of different energy producers and consumer presents new challenges to integrated billing, the smart ones network control and variable consumption billing. Smart meters and smart grids are now used to test new processes that later on can be extended on a larger scale.
Tenant electricity projects in multi-family houses and neighborhoods are the first real test markets for blockchain solutions. The microgrids are ideally suited to stimulate the energy management processes. For this purpose, small amounts of electricity are traded in peer-to-peer processes in field tests and settled. This is made possible by the use of smart meters that allow to measure the electricity quantities, bill it and transmitt it in real time and fully automatically. This becomes the basis for new energy industry processes such as for example, the balance-circle-management.
And it makes tenant electricity even with very few parties economically, because the administrative effort is significantly smaller.

RECOMMENDATIONS

- The challenges outlined above require that the path of energy transition is driven not just by technology but also by an adequate socio-scientific process. A socially accepted energy transition can succeed only when the broad masses have a chance to be involved in this process and consequently to take decisions.

- It is likely that the breakthrough of energy self-sufficient quarters, the sharing of electricity in peer-to-peer processes and blockchain will firstly be possible and succeed in tenant stream projects. Only with decentralized supply concepts this change in the energy market will gain momentum.

- Cities have to solve many challenges at the same time. The simultaneity of topics today is indeed a challenge. Nowadays topics like the energy transition or the traffic change are coming up almost at the same time and present a great challenge to be tackeld simultaneously by cities together with the upcoming digitalization. For this purpose, it is required a mindshift in the heads of decision- makers and executives in administration, business and politics. These have to identified the most urgent issues that needs to be tackled and provide sound scientifically strategy in response.


SMART
WORLD
UNSERE
VISION
SMART
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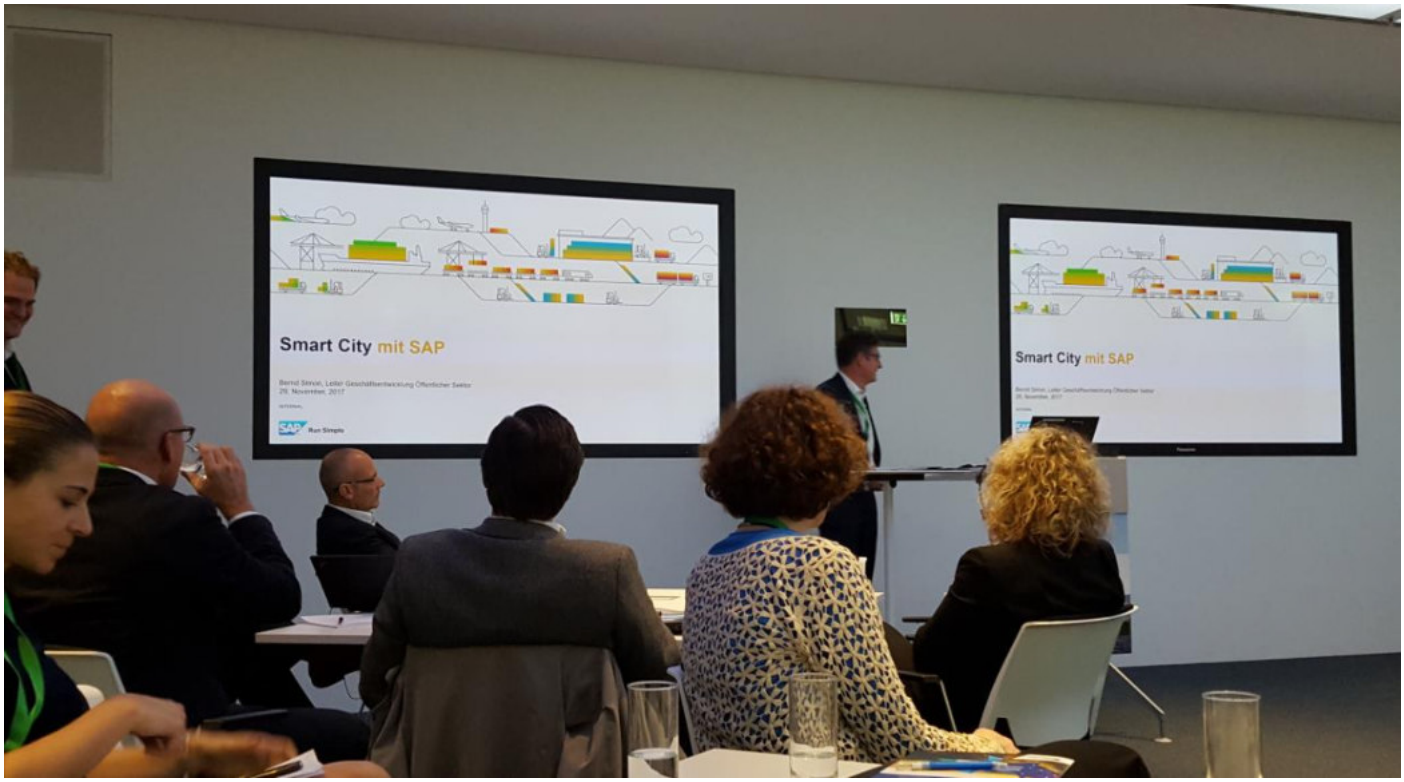
VISION


Smart City mit SAP
Smart City mit SAP


Mein Grundstück.
Wohnen ist Leben.
BAUPILOT

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HUNGARY

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23.05.2017

RESULTS OF THE MEETING

Digital solutions for eco-problems *highlights and conclusion remarks*

PK from Digitális Jólét Nonprofit Kft introduced the EcoInn Danube project, based on which this stakeholder meeting was organized. After introductions, all the participants expressed their standpoint regarding the theme of digital solutions for eco-problems. Participants were asked to talk about their own specialist areas.

GT elaborated on the evaluation and assessment of contaminated sites (industrial areas, military bases, airports, mining, etc.) using linked sensors. After the assessment a team is capable to design, build and operate the most effective soil and groundwater decontamination technologies including real time monitoring. AT added information on sampling and testing of the main elements of the environment (noise, vibration, air, soil and water) as well as wastes and wastewaters.

R Sz-W investigated the idea of automatisation of factories taking into consideration energy use, utilising digital solutions. Energy use can be optimised using technologies which were not available as recently as 5 years ago.

The roundtable discussed that waste and especially plastic packaging waste has a negative image in society. Systems are required that put effort in separate collection, sorting, recycling and recovery of all fractions of packaging waste. Models are needed for the calculation of the benefits of recycling and recovery in order to improve image, communication and education of business clients and public.

ZT and CsM elaborated on the need for new solutions in the plastic packaging sector recycling of multi layered plastic packaging. In fact the whole packaging design, manufacturing and use cycle must be reinterpreted using new digital solutions. This is especially the case for especially for food any hygiene products which require specialised packaging.

AT elaborated on the need for smart monitoring of ground moisture content for agriculture, air quality control measurements, environmental measurements and monitoring of transport facilities.

The group concluded that there are many actors pursuing goals related to solving eco-problems. Digital solutions have begun to address these issues with new tools. We have taken an additional small step towards finding efficient and economic solutions to big problems. There is a long way to go.

RSz-W elaborated on the need for stable, functional, transparent software, with which a company's environmental tasks and processes can be simplified, data recording can be fast and the analyzes can be done within a few clicks. Due to the variety of environmental data types, a solution must be used in almost all branches of environmental protection (waste management, groundwater protection, air protection).

RECOMMENDATIONS

Meeting recommendations

The steakholders recommended the use of hard facts when making decisions about the topics discussed. Review communication strategies, and work on preventing misconception. Communicate more as a provider of green services. There is a need for increased governmental support for the sector.

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07.06.2017

RESULTS OF THE MEETING

- The meeting began with a tour-de-table of participants, each participant commenting on their view of the opportunities to transfer eco-knowledge in the region.
- DM talked in depth about the new initiatives for supporting start-ups in Hungary as part of the Digital Wellbeing programme.
- AV and LR discussed at length the way that larger companies support the development of new solutions. This included the increasing significance of in house incubator and venture capital initiatives in support of relevant start-ups. These are present in some of the larger companies in Hungary including Mol Group. Internal venture funds are rising in popularity and sometimes include free infrastructure at the premises of the large company.
- The group discussed that innovation at big companies is usually incremental. New disruptive solutions are better sourced from outside the company.
- The group discusses tax discounts for investors who invest into start up companies. This is a forthcoming initiative in Hungary and is already available in a number of countries. Other tax related incentives for start ups were also discussed.
- LR discussed the need for a culture of risk to be present for solutions to be created.
- AV discussed the eco problems that MOL Group is presently trying to find solutions for. These include the areas of water removal from oil wells, bacterial solutions for cleanups and detecting metals in water. MOL Group is searching for innovation in a number of oil industry downstream and upstream areas.
- FE discussed a Chinese initiative whereby authorities has collected technology demands and intends to find parties and solutions.

RECOMMENDATIONS

- Regarding a platform for the transfer of eco knowledge the participants entered into a brainstorming session. Suggestions included the filtering of ecoknowledge demands by professionals in the respective fields. A second suggestion was to offer the stakeholders support on how to define the problem they have encountered or are trying to solve. It is often the case that the parties cannot enter into dialogue as they speak different “languages”.
- Regarding the needs and supply of ecoknowledge the consensus in the group was that it is beneficial to focus innovative activity on solving real world solutions. This is preferred to finding partners to some solutions which may not be required by industry.

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15.06.2017

RESULTS OF THE MEETING

Useful awareness raising event

One of the most important result of the meeting was that the potential and relevant stakeholders got information about the EcoInn project, and about its results and values. We could get a more detailed view about the current situation of the Hungarian innovation actors, about their opportunities and problems.

We also got reinforcement and positive feedback that the participants liked the ideas of EcoInn, they will follow the processes and the project activities and help spread the results and developments. Without the active engagement of the stakeholders the project could not fulfill its purposes and could not build and sustain a useful system.

Making better connections among the project partners

It was a good opportunity both the organizers and participants, because all the three involved project partners from Hungary were there. SMVKA and Digitális Jólét as beneficiary and University of Pécs as an associated partner were represented the project and could make better connections with each other and the audience and gave a wider picture about the activities.

Helping understand the wants and needs about the Virtual Lab

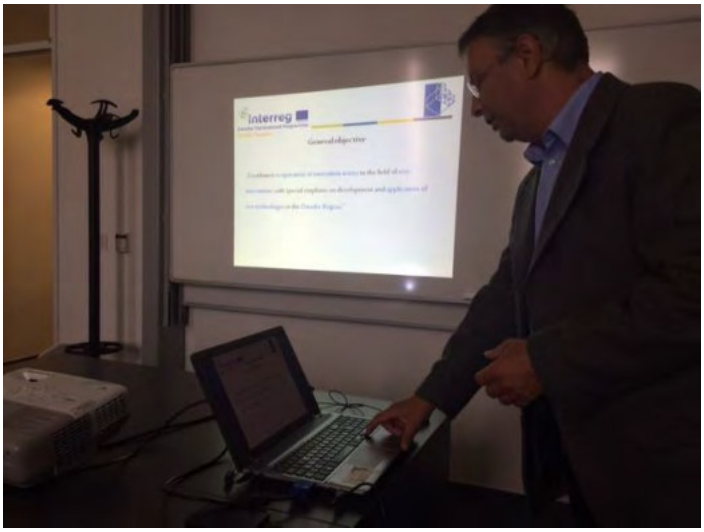
The idea of the Virtual Lab got a highlighted topic during the discussion; as a result there were questions and opinions from the guests. There were lots of question about the operation and the background of the Virtual Lab.

Here are the important ones:

- How to motivate the actors to register on the website?
- What will be the keys of the sustainability of the project?
- Responsibilities and expectations about the actors?
- It is a problem that a certain amount of the external researches are hardly or difficulty to adopt in a real business situation that's why the companies solve it in-house.
- There could be a real needs to follow up the results of the cooperation within the project
- The project webpage should provide an introduction place/menu those companies who could help or support the participants in other/different fields of the cooperation (management, marketing, law etc.)

RECOMMENDATIONS

- The operation of the Virtual Lab got several recommendations. A unified primary thought was that solving the sustainability of the VL would be a complex task. Best practices will be needed from the past and the user experiences and user friendly usability should be in the main focus.
- They recommended that the operator of the website should emphasis that he won't take the responsibility about the information on the site, but he will do everything to keep these data up-to-date and legally correct.
- Another recommendation emphasized that the first impression is the most important in the process of match making, therefore the operator should check that is the introduction of the profile detailed enough.
- It could be useful if the system behind the webpage will be able to send the registered profile an e-mail once or twice a year and ask them to update their information.
- It would be very important that the central regulation become much more predictable and optional to the innovational developments included eco innovation. This could help spread the new technologies and ideas better and faster and help the businesses to plan and invest in a bigger perspective.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General objective

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22.06.2017

RESULTS OF THE MEETING

Building good connections with relevant actors from the region

South Transdanubian Innovation Agency is an efficient and active actor in the field of innovation in both national and international sides. They have good connections with potential stakeholders and have databases about relevant SMEs and NGOs. They are eager to participate in the EcoInn project as a stakeholder and try to help and support the developing processes. They could be useful to the dissemination of the Virtual Lab.

Entrepreneur's Center of Tolna County and the Chamber of Commerce of Tolna County both have good and active connections with the SMEs in the region. Among them there could be potential EcoInn participants; these organizations also will help us to disseminate the results and possibilities of the project.

Analyzing the Hungarian regulatory environment in the case of eco innovation

The participants on the stakeholder meetings are all agreed that the regulatory and legislation environment related to energy and ecological innovations are often unpredictable, fast changing and overregulated in Hungary. It is hard to plan in longer term which is bad for the investments and developments.

Questions about the Virtual Lab

Some questions have arisen about the VL among the participants.

- Is there a strong need for a third part between the supply and demand?
- How do we motivate the actors to sign in the VL?
- Who will be the responsible of the creditability of the uploaded information?

RECOMMENDATIONS

- An up-to-date Virtual Lab could be a big strength of the project, but without proper marketing and awareness raising the actors won't use it.
- A unified legislation within the EU could help spreading the eco innovative developments.
- Nowadays in Hungary there are more and more opportunities for startups to finance their ideas included ecoinnovators but the general legislation is slow and it is difficult to plan for a longer term. The project would emphasis the importance of the eco innovation as strong as it could.

SERBIA

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06.06.2017

RESULTS OF THE MEETING

Energy efficiency and renewable energy – current situation in Serbia

International obligations of Serbia in connection with the promotion of energy efficiency, under the Agreement of establishing the Energy Community of South East Europe are well known. However, conditions for regulated institutional and legal framework for energy efficiency are created in 2013, adopting a long-awaited law on the efficient use of energy and action plans for energy efficiency and renewable energy, with the goal of Serbia's energy sector restructuring and technological market adjusted to be a pillar and driver of the development of Serbian economy and society at large on its path towards the EU. The use of renewable energy sources in Serbia is on a rather low level, which is unacceptable in view of the huge potential for their use, and the distribution of resources of renewable energy sources is as follows: bio renewable sources (biomass) - 63%, energy of small water courses - 14%, wind energy, 4.5%, solar energy 14%, and geothermal energy 4.5%.

Strengths, problems, obstacles and opportunities

Serbia is significantly below of the European average when it comes to innovation, and one of the reason for this could be that we invest just over 0.5 of our GDP in R%D. According to the European Innovation Scoreboard 2016, Serbia belongs to the group of moderate innovators, however, encouraging average annual growth rate of 5.4%. In 2016 and relative performance to the EU has improved significantly from 45% in 2008 to almost 62% in 2015. As one of the greatest forces of Serbia, pointed out the high-quality natural resources. On other hand, one of the biggest obstacles for the implementation of Energy efficiency measures in Serbia is the lack of financial resources, because their implementation requires a large initial investment, usually with long refund period. Serbia consumes several times more energy compared to the EU countries to create the same amount of added value, and have large losses in the process of converting energy from one form to another.

Possible solutions - Examples of good practice in Serbia in energy efficient way of living

To improve the situation in the field of energy efficiency and renewable energy, it is necessary to introduce energy/ environmental management that would allow:

- *Monitoring of energy consumption in the company's various production units and sectors, in order to identified the losses and easier to define possible measures to improve energy efficiency,*
- *Monitoring of energy consumption in real time, which allows an immediate action when in a sector, a disturbance occurs and thereby eliminates the wastage of energy;*
- *Maintaining a balance between economic development and environmental protection, which would lead to a redefinition of existing resource combination and "discovery" of new product and market solution (eco-innovation).*

One of the solutions could also be a promotion and the introduction of the concept of corporate social responsibility, which would contribute to balancing the three pillars of sustainable development (environmental protection, economic development and social development).

As an example of good practice in Serbia, in in the field of energy efficient way of living, at the meeting was presented the resort "Solar Valley", designed to meet the needs of modern life, taking care of the environment. The resort uses renewable energy sources in several segments and achieved a much higher level of energy efficiency of a typical village in Serbia. As such, it is a good example of sustainable housing, which could be applicable across the country.

The possibility of financing innovation / eco-innovations in Serbia

The national authorities are making efforts to facilitate financing for the development of innovative technologies, products and services to the market using, which possess the great potential for commercialization. Serbia Development Agency implements program to support innovative micro, small and medium enterprises and entrepreneurs. Also, the Innovation Fund of the Republic of Serbia has 2 programs for support of technological innovation, aimed at innovators and innovative companies that contribute to:

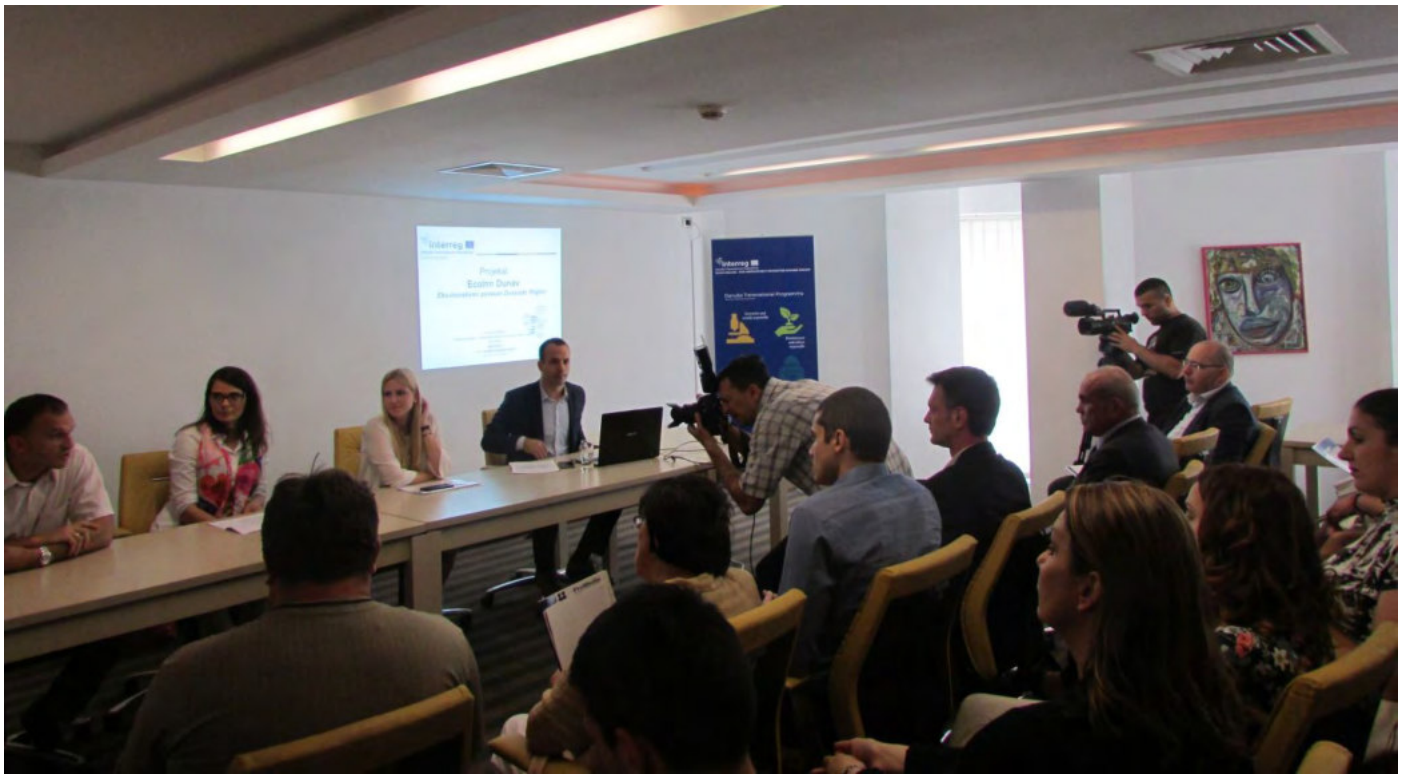
- Encouraging commercialization of research and development and further development of innovative companies based on knowledge;
- Encouraging the establishment of collaboration / partnerships with international companies / organizations;
- Increasing the number of technology companies and their preparation for further investment opportunities.

In addition to existing funding mechanisms, it is necessary to introduce new opportunities that will strengthen cooperation between research and industry and produce market-oriented eco-technology.

RECOMMENDATIONS

- *Increase awareness of environmental challenges and the importance of eco-solutions in the field of renewable energy and energy efficiency;*
- *introduce energy/ environmental management;*
- *Implementation of EU good practices in the field of eco-innovations;*

- *Improve funding opportunities for eco-innovation*

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26.06.2017

RESULTS OF THE MEETING

Project presentation and gathering feedback from stakeholders

During the second Stakeholders meeting, RDA Banat EcoInn Danube project team presented to all participants project, its objectives, work packages and activities within, as well as possibilities of involvement of target groups and results of the project that we expect to achieve. Due to the fact that unlike the first meeting, the second meeting was attended mainly by representatives of the public sector and business support institutions, special focus was on gathering information from these target groups. All present expressed a very positive attitude towards the project and what we want to achieve it, and a willingness to be involved in the implementation of project activities. Most of those present has vast experience in working with the industry and knows the challenges and needs of this sector.

Support innovation - Energy efficiency and renewable energy (current situation in Serbia - strengths, problems, obstacles, opportunities and possible solutions)

Overlong a transition period, as well as the recent economic crisis, has led to the fact that Serbia still faces with significant socio-economic and environmental challenges, weak level of business activity and industrial production, and high unemployment rate. Analysis of the Innovation System in Serbia shows that it has a number of strengths and weaknesses, looking from the standpoint of its elements and extent of coordination and efficiency of connection between its stakeholders. Serbia belongs to the underdeveloped countries, with low-income and low-standard of population, but in the same time with clear need for eco-innovations and so-called green technologies, caused by high energy consumption compared to developed countries and poor competitiveness of the Serbian economy. To change this, we need to create an environment that will foster environmentally oriented research with practical application, and thus cooperation between business and science. This cooperation should lead to eco-technologies that will reduce energy consumption and its use in a more efficient manner, ie improve energy efficiency. Improving energy efficiency, both in the manufacture as well as in the sectors energy consumption, is recognized as one of the key elements of the energy policy of the Republic of Serbia, as defined in its strategic documents, taking into account that the increase of energy efficiency contributes to security of energy supply, increasing the competitiveness of industry and the standard of living, and also contributes to the reduction of import dependence and reducing the negative impacts of the energy sector on the environment. Most of present institutions participated in different initiatives and projects on the theme of encouraging innovation in the field of environmental protection, even in the implementation of support programs that are available at national level and on which was discussed at the previous meeting of stakeholders. There is a consciousness in the country of environmental challenges and the importance of eco-solutions in the field of renewable energy and energy efficiency, there are even companies / SMEs that maybe have the ability to generate new eco-innovative solutions, but require more powerful, system support in terms of creating a framework and favorable environment for the development of innovations in this sphere.
The participants concluded that significant efforts are needed in order to Serbia comply with the Directive of the European Parliament on climate change and energy, which provides the reduction of emissions of greenhouse gases by 20%, improving energy efficiency by 20% and the share of renewable energy from 20% of total consumption in EU by 2020.

RECOMMENDATIONS

- *Use all available mechanisms that would improve the situation in the field* of *energy efficiency and renewable energy;*
- *Education of people about eco-innovation in their importance;*
- *Creation of better links between students, researchers, innovators and practice;*
- *Harmonize regulations with public policies and increase cooperation between all actors involved in eco-innovation with a special emphasis on the development and application of eco-technologies with the practical use;*
- *Provide system support in terms of creating a framework and favorable environment for the development of innovations in this sphere;*
- *Introduction of "Centers for energy efficiency" and the professional consultancy support in this area;*


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SLOVAKIA

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24.05.2017

RESULTS OF THE MEETING

Implementing eco-innovations into practice

Agreement with consumers and energy suppliers to reduce consumption or to inform about energy consumption projects. The Energy Efficiency Action Plan for 2014-2016 contains first information.
ISO 14 001 affects energy consumption on production. At present, there is an **interest in being certified to ISO 50 001** because it is cheaper than an energy audit, which is mandatory every 4 years. ISO is voluntary, it is also a prestige in Slovakia. It is interesting for Slovakia to introduce an **energy certificate.**
Currently, the document focusing on energy efficiency in Slovakia is already available: **An Energy Efficiency Action Plan for 2014-2016 with a view to 2020**

There are several interesting events organized focusing on energy efficiency/climate/ecology:
• Live Energy – Slovak Innovation and Energy Agency (SIEA)
• Green Day – Civil association Green Buildings
• Climate Conference

Carbon intensity is mainly about energy efficiency: In **Slovakia the energy intensity slightly improved** compared to the year 2000, and it was caused mainly by:

- Restructuring in Slovakia and thus closure of energy-intensive companies
- Increased value added (automotive industry)
- Enterprises have invested in less demanding measures to promote energy efficiency

Common identification of problems and opportunities in the region

Financial Resources
• ***Horizon 2020 – is the primary resource for biodiversity research, bio-prosperity.*** There is interdisciplinary interconnection. In the EU green procurement is being implemented.
• Financial resources in the private sector are not a problem. The question is ***how to link the private sector to the public sector.***

Companies in Slovakia are required to perform an energy audit - the obligation to perform the audit was until the year 2013
• ***Audits are being done again*** because some audits did not contain complete details.
• The energy audit also contains recommendations for improvement as well.

For large businesses, the cost of energy does not represent major costs, so reducing consumption of energy is rather an issue of company image.
At the same time, it is also ***difficult to monitor improvements in businesses***, as consumption will decrease but production will increase.
It is also questionable what is considered to be eco-innovation - it would be good to define it.

Presentation of eco-innovations:
• In case of start-ups dealing with eco-innovation, the main focus of publicity is concentrated at social networks. While large businesses are more likely to use annual reports and their own web site.
• ***Few good examples are given***. Likewise, the indicator in the eco innovation scoreboard looks at the media coverage through Meltwater, it is possible that this entity has not have the chance to capture all the information

Circular economics in the Slovak Republic

• At present, there is no indicator in the Slovak Republic monitoring the employment in the ecological industry and income in the ecological industry.
• EU currently issue a circular economy directive
• Eco-design is also important
• Life cycle analysis - is different country by country, therefore it is important to develop own one. The certification system does this, but it is not an obligation.

Suggested solutions, approaches, ideas

• Increasing resources (spending) on science and research
• We are able to capture eco-innovations in large businesses as a part of our statistics because they are motivated to do so; it is much more **difficult to obtain such information for small businesses**.
• **Highlight good examples** such as: Breeam Outstanding rating for Lidl Logistics Center in town Sered in Slovakia.
• There is no action plan for eco-innovation - on the one hand they obviously include a very broad theme
• An eco-innovation plan should be created to define what actually falls within
• The incentive for eco-in-house business would be a tax-deductible.

The Slovak republic does not force companies to implement energy efficient solution but rather tries **to motivate** them, for example by:
• transfer of structural funds to previously identified issues
• provision of energy services by the Slovak Innovation and Energy Agency (SIEA)

RECOMMENDATIONS

Define Eco innovations - it is very important to define ecoinnovation and what falls within ecoinnovation, and it would be beneficial to create a plan of ecoinnovation.

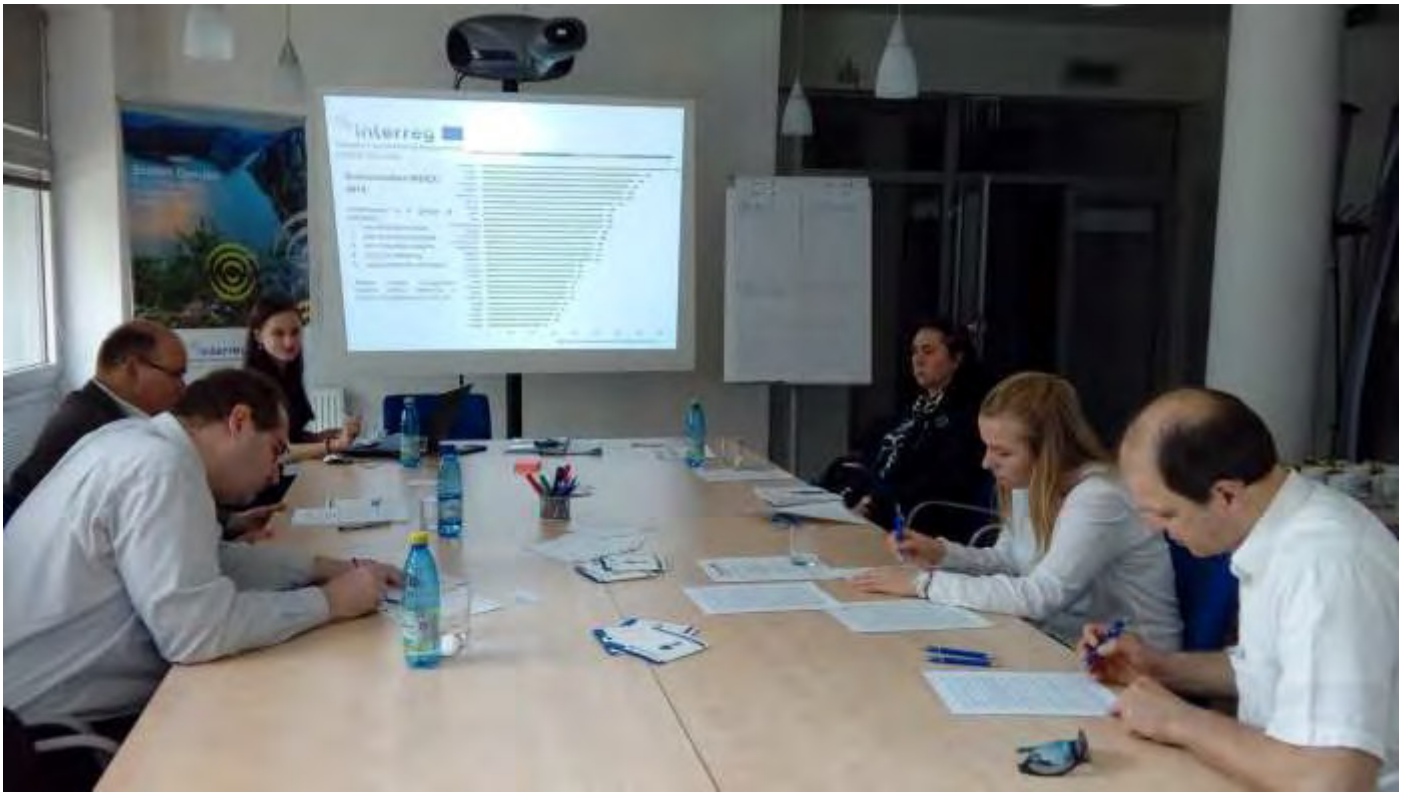
Give proposals for improvement of rations for eco innovation scoreboard

It is important to highlight good examples, and good ideas which were implemented

Get familiar to the Energy Efficiency Action Plan for 2014-2016 with a view to 2020

Get familiar with the results of already implemented international projects as Built upon, Built up which describes barriers in implementation of energy efficiency in buildings.

Focus on funding of the ecoinnovation (possible tax deduction) options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31.05.2017

Implementing eco-innovations into practice

- As an important factor to improve the eco-innovation position of the Slovak Republic, it was noted that shortening of the process of approving projects from operational programs would be helpful. Reducing deadlines would allow a more dynamic take-up of resources.
- Representatives of the academic community at a meeting said that universities are in disadvantage because they are not able to compete with private eco-innovation companies.
- SMEs face also obstacles (compared to the large companies) as they do not have sufficient resources (human or financial) to study new legislation. Changes in legislation makes the process of eco-innovation in SMEs very slow, as it is more difficult for them to allocate resources and time to study changes. Participants agreed that providing training or assisting at least to SMEs would be extremely useful.
- There is no technical argumentation in the field of heat sources, very little information is received. Lectures and excursions would help to improve the situation

Common identification of problems and opportunities in the region

- The discussion started with stress the need to coordinate the efforts of individual actors in the field of eco-innovation. As noted, stakeholder research at EU or national level was carried out by different institutions, and it would be useful to take into account their results and build on them and avoid duplication when creating a strategic document at the level of the Danube region.
- As discussed by several stakeholders, projects such as EcoInn Danube may be the basis for development in this area, but with a short duration of the project - three years does not allow continuous access to the issue. In view of this political will is necessary as well to incorporate the results of similar projects into longer-term development strategies and their real implementation.
- Attention was paid to the gap between the market needs and the knowledge and abilities of university students and graduates. As a solution, we have identified private sector cooperation with institutions of higher education and link them to practice.
- Problem in support scheme based on Megawatts.
- Several participants agreed on the fact that it is not possible to support one source of energy while not disadvantage the others.
- Considering the need to spread awareness among students and to build a young generation of professionals familiar with new trends as well as graduates, civil servants or investors.
- In the discussion, it was proposed to set up training centers in the field of energy-innovation for investors and related support the need for the institution to network to each other.
- Establishing a quality criterion (in public procurement) with regard to ecology is not only a strategic step towards sustainability, but also motivation and enlightenment of the public.
- The discussion brought several ideas to popularize the topic of eco-innovation in society, for example through commercial television focused on economic, environmental, and so on. Activities of televisions abroad as ERDE, DUNA 2, or activities for children and youth, eco-innovative education using fairy tales, games, etc. would be very useful.
- Finally, all participants agreed on the need to coordinate the activities between the different actors and the need to involve the stakeholders.

Suggested solutions, approaches, ideas

- Create a database of contacts of stakeholder contacts where they will be able to discuss (note SCSTI - this should be the WP4 platform)
- To address the Danube Strategy, which is managed by the Ministry of the Environment (Priority 4) and the Ministry of Education, Science and Research (priority 7)
  Information on television focused on energy and environmental programs, educational sessions would be helpful.
- Establishing a public relation database (educational approach), eco – education should starting from kindergartens with eco-school, which is absent in Slovakia
- Prepare an education program
- Small and medium-sized enterprises lack financial support in the form of, for example, an expert who would focus and explain the legislation for these companies. Small businesses do not have the space to study all laws.
  There is a weak link between the student and the practice
- Support participation of startups in events
- Tax allowances for innovation, for example: Introducing the first organic products without VAT
  It is also important to focus on sources of funding for eco-innovation other than public resources

RECOMMENDATIONS

Focus on areas as:

- Education of people active in energy and networking,
- Education in schools, institutions of higher education, better link of students and praxis
- Publication of results.
- Assistance to small and medium-sized businesses with legislative overview.
- It would also help the energy center as a demonstration center.

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01.06.2017
15.06.2017

RESULTS OF THE MEETINGs

CUSP has managed to gather interesting groups of specialists from different areas who besides networking opportunity have contributed with their suggestions and opinions. Participants think that Slovakia has quit easy access to necessary machinery for more effective water and energy management. More and more people are getting involved in non-profitable action groups and initiatives, which are monitoring and actively fixing the environment in their surroundings (such as Green watches collecting garbage and fighting black junkyards for example). Slovakia has enough of specialists in eco-areas, who are able to provide explanations and are searching actively for solutions.

To sum it up, following topics can be deduced from the NSM discussions.

Topic - Eco innovative improvements:

The most frequent ideas and advices regarding the eco-innovative improvements were: continuous monitoring of drinking water sources; replacement of chemical products in agriculture for natural products; avoiding water and soil contamination; effective solution for waste recycling; sustainable development; spreading more information about environmental protection by media; involving students and children in waste sorting; more frequent waste collection from households. Green energy solutions were considered sufficient, but requiring more information and education to understand them better. Different sources of information and fields shall be interconnected, for example geography with e-health system.

Topic - Obstacles in eco innovation process

As for the biggest obstacles in eco-innovative processes, NSM participants have agreed on: complicated legislation in Slovakia; still very little of ecology education in schools; people do not feel that environment protection concerns them; municipalities and city leaders are not enough involved in ecology processes unless there is some EU or state funding available. Existing studies, strategies and policies are ignored on all levels. Controlling systems and procedures are outdated and too bureaucratic.

Being short-sided and focusing only on economic benefits. There is not much cooperation with Slovak scientists and media are not involved in eco-topics enough.

Topic - Motivation in increasing eco-friendly production

Many of the participants see as a motivation tax concessions. They also see as a motivational factor return to natural, bio-friendly solutions. SMEs would prefer easier understandings of ISO 14 000 and other certifications tools and access to them. Effectively adapted charges for garbage collection on the amount base could serve as motivation as well. People and companies could be rewarded for minimum waste production.

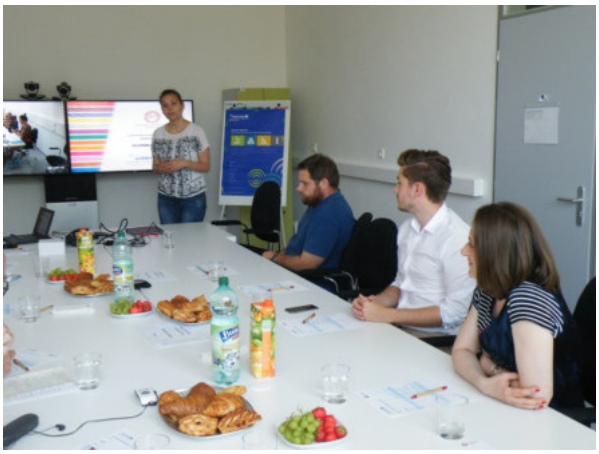
RECOMMENDATIONS

Discussion brought up much more green ideas than expected. Garbage and waste management were considered as the most pressing issue, because of ineffective separation, contamination of water sources and degradation of soil quality.

Participants have opened other topics like energy consumption, low technologies, etc. They were followed by recommendations below:

- Continuous monitoring of drinking water sources
- Using a minimum of material: often you can reduce the amount of material by critically looking at dimensions, required strength and production techniques. It can even be beneficial to use materials that have a high environmental load per kilogram, if you can save weight. This is particularly true in transport, where less weight means less fuel consumption.
- Energy consumption: often underestimated - people normally underestimate the environmental impacts of energy as you cannot hold electricity or gas in your hands.
- Standardization: for example universal cell phone battery charger
- Low tech: the world's cheapest lightbulb is made of just a plastic bottle
- Increasing product life time
- Replacement of chemical products in agriculture for natural products
- Avoiding water and soil contamination
- Effective solution for waste recycling
- Sustainable development and planning
- Designing life cycles, not products: Think about all material inputs and energy use of a product during its whole life cycle
- Use recycled materials: Not only make a product recyclable, but use recycled materials as much as possible. If there is a demand for recycled materials the supply will follow certainly
- Make our products recyclable: Only products that are disassembled easily and have a high enough yield will be chosen for recycling. We can increase the chance that the product is recycled, by optimizing its design.
- Involve students and children in waste sorting
- More frequent waste collection from households
- Spread more information about environmental protection by media


Dnes vyvíjame
vašu budúcnosť



SLOVENIA

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19.05.2017

RESULTS OF THE MEETING

This section provides a summary of main points (suggestions and opinions provided by participants) addressed within the discussion divided between specific points of interest. Key subjects of the discussion were documented regardless of the source in random order and are presented under their relevant category.

Overview of the existing situation

- Slovenia is poor in natural resources and fossil fuels. There is a small amount of natural gas and oil located in the far East of the country, but is not fully exploited due to ecological restraints and economic non-feasibility considering today's prices. There is a relative abundancy of solid fossil fuels (brown coal and lignite), which currently plays an important role in the national energy balance, but is projected to be phased out in its entirety during the next few decades in line with international commitments.
- Hydro energy is also heavily exploited, some potential is left untapped, but decreased water flow in the summer and high demand for electricity (cooling) is already posing a problem.
- Slovenia has one of the largest forest coverages of all EU members' states with about 2/3 of the area. This implies a high potential for use in energetics and wooden final products.
- A large share of existing buildings (public and private) are outdated, unnecessarily large and energy inefficient. An ambitious renovation program is underway but payback periods for a large number of systems (active and passive) remain very high.
- Slovenia has a moderate level of potential for using solar energy and a modest level of wind energy.
- Passenger transport demand has been increasing in Slovenia more or less throughout its 26-year-old history. In this time, car ownership has about doubled and the trend of the public transport modes has been declining respectively. The small number of inhabitants and an inclination to car ownership doesn`t allow for a critical mass of public transport users to make it economical, thus it remains either heavily subsidies (for e.g. students) or costly.
- Generally, Slovenian residents have a high level of understanding and respect towards cleanliness and environmental integrity.

Common identification of challenges and opportunities in the region

Main barriers for marketing eco innovative products and services (general)

- Low purchase power of residents (price is often the determining factor in purchasing decisions).
- Small market (companies need to be oriented on the international markets; economy is heavily dependent on exports).
- Restrictive environment for inexperienced entrepreneurs (rigid rules, high penalties for non-compliance, etc.)

Main restraints to economic growth

- Low-added value translated into low GDP per capita compared to the EU-28.
- Non-flexible administrative and legal framework for employment.
- Negative (and worsening) demographic trends.
- Large share of highly educated employment seekers with no marketable skills.

Potential opportunities and support schemes

- Support portal VEM (Vse na Enem Mestu) – broad service offering for businesses
- Public Agency for Entrepreneurship, Internationalization, Fore-ign Investments and Technology (SPIRIT Slovenia)
- Equity and loan capital from SID bank and SPS (Slovenian entrepreneurial fund)
- Start: up Initiatives (local) organized in larger settlements
- Public tenders for co-financing businesses (ranging from local to transnational initiatives)
- Public co-funding platforms

Legal and administrative

- Renewed energy law (EZ-1)
- Supportive Environment for Entrepreneurship Act (ZPOP-1D)
- Local Energy Concept (LEK)
- Sustainable energy action plan (SEAP) – Covenant of mayors initiative
- National action plans on energy efficiency, renewables, etc. For the period 2014–2020
- Long-term strategy for financing energy renovation DSEPS
- National Energy Concept (EKS) – in development

Ideas, solutions and recommendations

- Allocation of funding from social sciences to applied sciences (mathematics, ICT, engineering, robotics) on the secondary and university (also postgraduate) level.
- Secure funding for tertiary education and prequalification.
- Extend support to extra curriculum activities on the level of primary and secondary education (co-funding for participation on international competitions, promotion and awareness raising about upcoming opportunities).
- Provide additional funds for additional education and training of teachers and professors on the topic of applied sciences.
- Organize annual innovation days on the national level.
- Restructure income tax categories in order to make employment attractive for international talent (high wages).
- Build upon and connect with existing initiatives and international projects
- Award innovation on the level of the organizations (present challenges, award solutions, implement innovation in the work process,).
- Develop and apply an action plan for eco innovation specifically (similar to the national action plan for energy efficiency An URE, national action plant for renewable energy sources An RES, national action plan for nearly-zero energy buildings An sNES, operational plan for GHG emissions, etc.)
- Create a re-purposed cryptocurrency (block chain) to be used as means of exchange within the community of innovators (pre-mine and distribute between residents equally.
- Invite representatives of the scientific community (academia, R&D institutions, etc.) to publicly present their views on legislation relevant to labor, education and enterprise on a regular basis.
- Improve targeted and focused legislation for SMEs (less regulation, looser demands, defining a time period when infractions can be corrected without additional financial penalty, availability of asking for a moratorium or alternative arrangements for debt restructuring, in the case of debt toward the government).
- The development of energy audits and energy certificates could be significantly simplified with focused ICT applications (3D scanning in correlation with thermography, use of drones in fieldwork, new solutions for EMISs – Energy Monitoring Information Systems, etc.)
- Energy monitoring and saving solutions are a huge market, in particular smart buildings solutions (based on IoT)


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Danube Transnational Programme
Ecoinn Danube
Projekt EcoInn Danube
(Eco-innovatively connected Danube Regions)
Lidija Stvarnik
Energetska agencija za
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Koroško
KSSENA
Velenje
19.05.2017

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Danube Transnational Programme
EcoInn Danube

15.06.2017

RESULTS OF THE MEETING

This section provides a summary of main points (suggestions and opinions provided by participants) addressed within the discussion divided between specific points of interest. Key subjects of the discussion were documented regardless of the source in random order and are presented under their relevant category.

Overview of the existing situation

- Velenje is the fifth largest city in Slovenia in terms of population. It is the economic, administrative, political, educational, cultural and commercial center of the Savinjska and Šaleška region.
- Velenje and the surrounding settlements are heavily dependent on a handful of medium to large employers in particular Gorenje (main products are home appliances, heating technology and interior décor), the local lignite mine and indirectly to the lignite fired power plant Termoelektrarna Šoštanj (TEŠ).
- The power plant is the backbone of the Slovenian electric grid, but also provides energy through a large district heating (and cooling) system.
- The plant is presently comprised of six units. Units 1-2 built in the 1950s have closed, unit 3 is also closed 4-5 are currently put into cold reserve and are set to close in the following year. A new sixth unit of 600MW started operations in 2014 and this project was known as TEŠ6.
- TEŠ6 is expected to be in operation for a period of 40 years (until 2064)
- Operating TEŠ6 will result in high CO_2 emissions in spite of improving the efficiency to around 46% as opposed to the 35% efficiency of the current units. The coal used at the TEŠ6 plant will come from the nearby Velenje coal (lignite) mine.
- Municipality of Velenje was the first Slovenian municipality to join the Covenant of Mayors initiative with a Sustainable Energy Action Plan (SEAP) for the local community.
- Municipality of Velenje has established (through the local energy agency) an energy monitoring system for public buildings that include over 75 buildings.
- The municipality is determined to carry out an ambitious program of energy renovation of public buildings, but is somewhat constrained due to the low price of energy from the district heating system.
- There is a variety of successful SMEs and start-ups operating within PC Standard (for e.g. Amibit) and the local environment

Common identification of challenges and opportunities in the region

Main barriers for marketing eco innovative products and services (general)

- The price of heating (locally) is amongst the lowest in the country. Saving energy doesn`t have such a huge impact on the final prices due to overheads.
- Energy prices have decreased (wholesale) or stagnated (retail) and make products and services for reducing energy consumption less attractive economically
- The City Municipality of Velenje along with corresponding settlements have a low number of residents, making efficient public transport systems economically less viable.
- Eco innovative products and services often have a high price tag, which is unaffordable for the working class
- Residents in the local environment our proud of the tradition of lignite mining and running the power plant
- Low purchase power of residents (price is often the determining factor in purchasing decisions).
- Small market (companies need to be oriented on the international markets; economy is heavily dependent on exports).

Main restraints to economic growth

- Clear deficiency of international investment (restrictive administrative environment)
- High penalties for non-compliance (market/health/financial inspection) increase the risks for young companies to do business
- Prohibitive administrative and legal framework for employment.
- Low-added value of traditional industries
- Prohibitive administrative and legal framework for employment.
- Negative (and worsening) demographic trends.
- Large share of highly educated employment seekers with no marketable skills.

Potential opportunities and support schemes

- Start: up Velenje, SAŠA Incubator co-working spaces and mentoring programs
- Co-funding platforms (national and international)
- Start: up Slovenia initiative
- Entrepreneurial and mentorship events (workshops, product development events, coaching, pitching to potential investors)
- Support portal VEM – broad service offering for businesses
- Public Agency for Entrepreneurship, Internationalization, Fore-ign Investments and Technology (SPIRIT Slovenia)
- Public tenders for co-financing businesses (local to transnational initiatives)
- Success stories of national start-up, exchange of experiences and best practices
- Information portals and business gurus

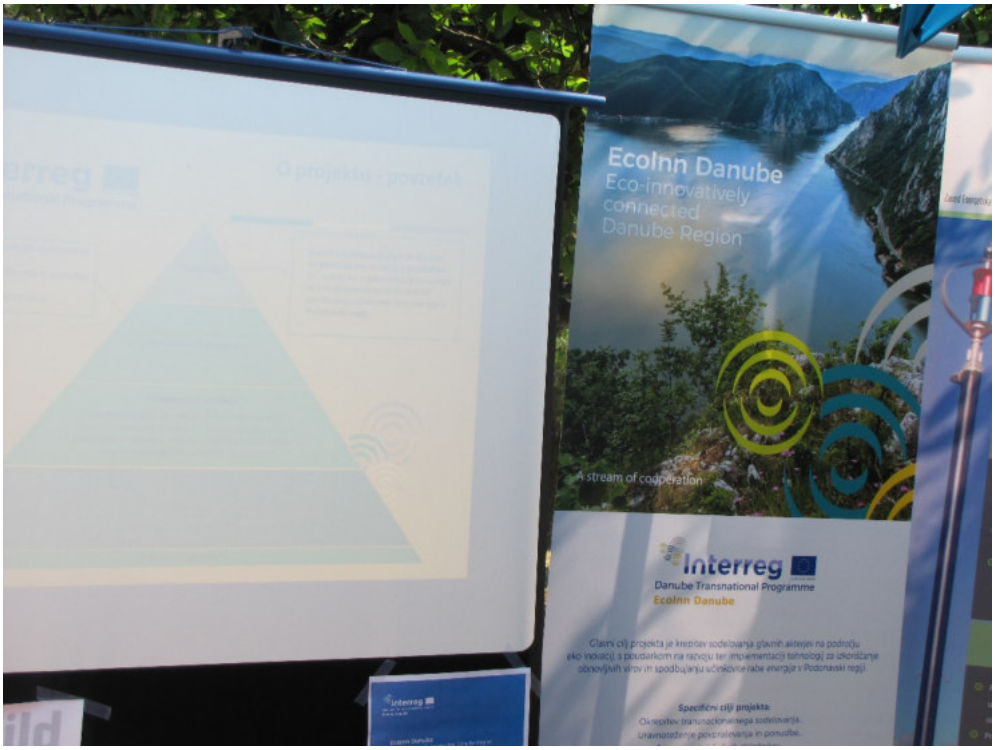
Legal and administrative

- Environmental protection act (ZVO-1)
- National action plan on energy efficiency (An URE), renewables, etc. For the period 2014–2020
- National action plan for renewable energy sources (An RES)
- Operational Programme to Reduce GHG Emissions by 2012 (OP TGP-1, 2009).
- Energy law (EZ-1)
- National Energy Concept (EKS) – in development
- Supportive Environment for Entrepreneurship Act (ZPOP-1D)
- Local Energy Concept (LEK)
- Sustainable energy action plan (SEAP) – Covenant of mayors initiative
- Long-term strategy for financing energy renovation DSEPS

Ideas, solutions and recommendations

- Continue and increase the support of the municipality to local business (comprehensive renovation of co-working spaces, secure funds for personnel of incubators and mentors, co-organize and sponsor topical events, etc.)
- Continue and increase support for formal education carried out on the local level, in particular for research laboratories and working equipment (electronics, robotics, IT, etc.)
- Provide local companies with affordable land for construction of production capacities (PC Stara Vas) or repurpose abandoned buildings
- Simplify the procedure for infrastructure and utility permits
- Continue and intensify the campaign for the construction of the 3rd development axis (highway connecting Savinjska, Šaleška and Koroška) that will improve logistics for local companies, make investment in the region more attractive
- Advance and further develop tourism services, content and promotion, in particular for the Velenje Lake
- Obtain investors for installing a wakeboard cable system on the Lake (perhaps it could be partially powered by PV?) and organize international competitions to promote the region
- Connect with surrounding municipalities (Šoštanj and Topolšica) and discuss the possible development of Šoštanj airport
- Award innovation on the level of the organizations (present challenges, award solutions, implement innovation in the work process,).
- Continue to support local development agencies and the internal project team of the Municipality.
- Organize annual meetings with development agencies and the internal project team
- Expand the BiCy system
- Obtain funding to carry out additional education of adults
- Further develop the EMIS system (from the level of semi-automatic energy accounting towards central monitoring systems)
- Build upon and connect with existing initiatives and international projects
- Develop and apply an action plan for eco innovation specifically (similar to the national action plan for energy efficiency An URE, national action plant for renewable energy sources An RES, national action plan for nearly-zero energy buildings An sNES, operational plan for GHG emissions, etc.)


EmBuild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