Interreg
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Danube Transnational Programme
EcoInn Danube

ACTION PLAN OF IMPLEMENTING ECOINNOVATIVE RESULT

Project co-funded by European Union funds (ERDF and IPA)
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WP3	Strategy for eco-knowledge
ACTIVITY 3.3	Elaboration of Strategy and Action Plan
Output 3.2	Action plan of implementing ecoinnovative result

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LIST OF ABBREVIATIONS:

- BIC Brno: Business and Innovation Centre Brno (EcoInn Danube project partner #1 from Czech Republic)
- BUT: Brno University of Technology (EcoInn Danube project partner #2 from Czech Republic)
- BWCON: Bwcon GmbH (EcoInn Danube project partner from Germany)
- CCI BL: Chamber of Commerce and Industry of Banja Luka Region (EcoInn Danube project partner from Bosnia&Herzegovina)
- CCI Vratsa: Chamber of Commerce and Industry Vratsa (EcoInn Danube project partner from Bulgaria)
- CUSP: Comenius University in Bratislava, Science Park (EcoInn Danube project partner #2 from Slovakia)
- Digitális Jólét: Digitalis Jolet Nonprofit Kft (EcoInn Danube project partner #1 from Hungary)
- Eco-IS: The Eco-Innovation Scoreboard (Eco-IS)
- EcoInn Danube project: Eco-innovatively connected Danube Region project
- Economica: Economica Institute for Economic Research (EcoInn Danube project partner from Austria)
- Final JS: Final joint strategy on eco-innovation in the Danube region
- GHG: Green House Gas
- JAP: Action plan of implementing eco-innovative result (The joint action plan and national inputs)
- JAP methodology: Methodology on the joint action plan and national inputs
- KSENNA: Energy Agency of Savinjska, Šaleška and Koroška Region (EcoInn Danube project partner from Slovenia)
- R&D: Research and Development
- RDA Banat: Regional Agency for Socio - Economic Development Banat Ltd (EcoInn Danube project partner from Serbia)
- REDEA: Regional Development Agency Međimurje REDEA Ltd. (EcoInn Danube project partner from Croatia)
- SCSTI: Slovak Centre of Scientific and Technical Information (EcoInn Danube project partner #1 from Slovakia – Lead partner)
- SME Small and Medium Size Enterprises
- SMVKA: Entrepreneurs' Centre of Somogy County Foundation (EcoInn Danube project partner #2 from Hungary)
- WP: Work Package

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1. INTRODUCTION

The JAP has been developed according to the Methodology on the joint action plan and national inputs (hereinafter: JAP methodology). Moreover, the Joint action plan (hereinafter: JAP) has been developed and structured to combine scientific and non-scientific issues having in mind primarily regional (Danube region) but also a European-wide dimension to reach and achieve the most important results and meet the challenges in creation of advanced eco-innovation environment. Its purpose is to schedule activities in the course of the implementation of the Joint strategy of Danube region countries to drive and boost regional (and thus European) economic development and efficiency in the field of eco-innovation. The JAP meets several important criteria: a) Involvement of relevant stakeholders; b) Clear definition of tasks and roles; c) Actuality of the JAP and d) Anticipations and assumptions.[1]

As its integral part, the JAP is strictly in line with the Final joint strategy on eco-innovation in the Danube region (hereinafter: Final JS). Essentially, all of the proposed actions are divided into two main categories: Immediate (foreseen to be finished till the end of the project) and Long term ones (foreseen to be finished within 5 years after the end of the project). The next adjustment with the Final JS is in prioritised areas and objectives set within them. Relating to this the actions/changes are presented by both, the countries and objectives.

The basic component of the JAP is the actions/changes proposed by the EcoInn Danube project partners. The main criteria that each of them has to fulfil is to be in the area of supporting the development of eco-innovation and has to match at least one of the objectives set in the Final JS. Beside these criteria's JAP's actions are defined by: a) A subject to carry out these actions/changes (partners and stakeholders); b) implementing period (from-to); c) Main indicators in order to measure level of implementation; d) Source of funds and estimated costs and e) Country which proposed the action/changes.

Following both, the JAP methodology and the Final JS, the JAP has been structured as follows:

- Methodology;
- Components and Elements;
- National inputs;
- Implementation&evaluation, and
- Annexes.

Finally, JAP is structured taking into consideration the Action Plan of European Union Strategy for the Danube Region, particularly when objectives have been described as well as the actions, and when one of the proposed actions is stated as an example.

[1] Methodology on the Joint Action Plan and National Inputs (2018). EcoInn Danube project. Chamber of Commerce and Industry of Banja Luka Region.

The JAP developed this way should be used in two ways:

1. Firstly, as a "journal" of immediate actions, which have already been or are being undertaken within the duration of the project. It has a purpose for convincing the authorities and/or other relevant stakeholders that eco-innovative actions are important and realistic for implementation. Beside this, these actions demonstrate partnership on the different levels of financial potential, knowledge & skills etc.
2. Secondly, as a "guide" in part of long term actions which are proposed to be undertaken in the following years. The term "guide" could mean at least:
    a. "Guide" for the proposed actions as it is written in the JAP or "ready to use/implement",
    b. "Guide" for the public authorities and/or other relevant institutions for preparing wider and deeper relevant document with numbers of activities/projects that should be implemented in order to improve situation regarding to relevant indicators in eco area, and
    c. "Guide" for the third parties/potential stakeholders interested to "copy" some relevant activities after respective adaptation to their specific interests and needs.

Last but not least, the JAP will justify itself at the level of implemented actions and achieved targets. However, over the years, the priorities and objectives may evolve and hence, the actions and projects may be updated, transformed or replaced by those who will take the responsibility for their implementation. So, the JAP is therefore "rolling", and could be a good base for the future projects.

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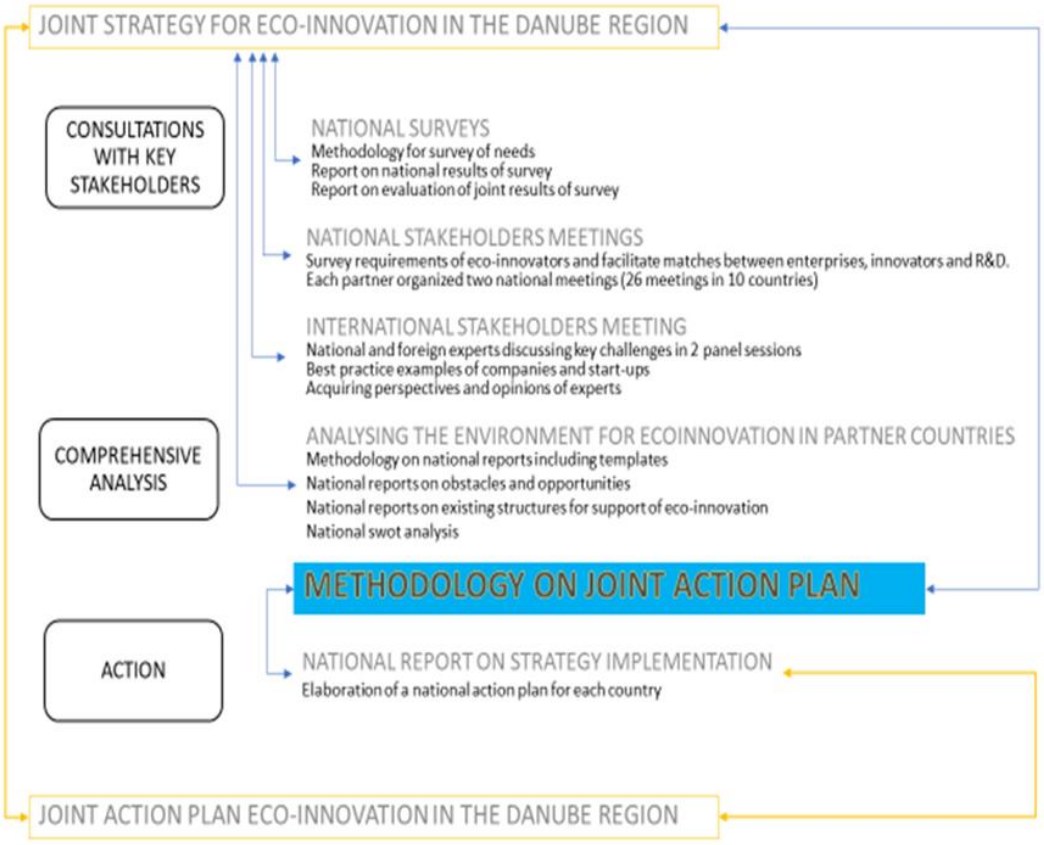
2. METHODOLOGY

The process of the JAP development is basically a process which integrates all the efforts made by activities carried out in WP 3 (Strategy for eco-knowledge) of the EcoInn Danube project. The JAP is an operational document which should help to turn recommendations, conclusions and intentions into the reality, and it is primarily based on national inputs collected from 13 project partners from 10 countries of Danube region (Austria, Bosnia&Herzegovina, Bulgaria, Croatia, Czech Republic, Germany, Hungary, Serbia Slovakia and Slovenia).

The development of the JAP follows the development process as presented in the figure below.



Picture 1. Wider positioning of the Methodology on Joint Action Plan[2]

The JAP integrates inputs from 3 levels:

#1 Consultations with key stakeholders in project partners countries;

#2 Comprehensive analysis reported in separate national documents, and

#3 Action level.

[2] Methodology on the Joint Action Plan and National Inputs, *Op. Cit.*

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In the action planning process the Methodology on the joint action plan and National inputs has been implemented as a basic guideline in the framework of the EcoInn Danube project (Deliverable D 3.3.2).

As the concept, the main idea behind this JAP should be scalability and universality! Considering different level of performance of Danube region countries regarding to European Innovation Scoreboard, the JAP is set as scalable and can be easily updated with as many actions as it is necessary for the country. Nevertheless, the JAP is time limited, as it is foreseen by national inputs. Basically there is no strict limitation to undertake certain activity in each country because it depends on national agendas and (changeable) policy frameworks. Also, of the proposed action by one country is interesting for the other one from Danube region it could be undertaken in period and in scale which is not limited at all. This flexibility is very important as the Joint Action Plan can (in the end) be easily aggregated and elaborated by responsible partner.

Considering target groups, the eco-innovative nature of the action itself proposed a wide range of those who should be introduced in the JAP. They are: Different levels of Public Authority, Higher Education and Research Institutions, SME (and also other business subjects), Interest Groups including NGOs, Business support organizations (such as Chambers of Commerce and Industry, EEN etc.) as well as Regional development agencies. The list is not limited because the important issue is to include influential people from all the parts of the community affected with the actions/changes to be produced.

Finally, considering the objectives the JAP strived to cover all the objectives set in the Final JS (Deliverable D 3.3.5). Since the proposed actions are limited by the number and impact of the objectives, the JAP itself is confined. Its primary purpose is not to achieve strict measurable improvement in certain macro indicator but rather to serve as guidance for the necessary actions in particular country which proposed the action as well as the book of eco-innovative ideas for the other ones.

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3. COMPONENTS AND ELEMENTS

Activities proposed in the JAP are designed as close as possible in order to convolute along SMART principle elements and the most prominent objectives underlying EU policies in regard to eco – innovation.

Following the paradigm of systemic approach in eco-innovation research, first pronounced within EU Framework Programme for Research (FP7) and more and more in the current Horizon 2020 with its initiatives (Industry 2020 in the circular economy) and priorities (Societal challenges), proposed activities of the current JAP will tackle issues of: emerging innovative technologies, viability of various waste management techniques, new business models, novel production modes and circular economy oriented consumption behaviour and adjoining dependables.

3.1. Priority areas of the JAP

Based on the partner research done for each country and respective data collected this Joint Action Plan has identified the following priority areas to be addressed by the actions:

1. Ecology:

With the following topics: Environmental awareness and environmentally-friendly behaviour; Continuous protection of unique natural resources; Awareness about the problem of throw-away-mentality; Reliable statistics in eco-innovation related filed; Continuous reduction of environmental pollutants and monitoring; Introduction of low energy houses and passive houses; Increase emphasis on eco-issues and Awareness about energy scarcity, energy efficiency and renewables.

2. Education:

Tackling issues on how to: Increase the share of the population with secondary and higher education; Increase the share of students' population in Secondary schools with an engineering focus in the STEM fields (science, technology, engineering, mathematics); Provision of first-class education (especially in the STEM field); To decrease the drop-out rate among university students; To decrease the gap between market and education system; To increase co-operation of R&D institutions and universities on one side and private sector (companies) on the other side; To improve dysfunctional ecosystem for innovations (science-education- innovations); To improve the outdated and insufficient research and development infrastructure; To attract qualified students and professor; To increase the R&D intensity.

3. Policy and Society:

On how to: Get more financial support by the government for R&D and innovation activity; Introduce research tax premium on R&D; To decrease unemployment rate of young engineers; To

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create stable macroeconomic environment and low direct taxes; To create sound and predictable fiscal policy; To accelerate the pace of development of e-governance; To decrease high tax burden on labour in the form of taxes and social security contributions; To increase political commitment to implement structural reforms; To facilitate creation of stable investment climate; To introduce national policy for adaptation to climate change; To compensate unfavourable demographic trends; To decrease risk of poverty and significant social problems; To decrease unemployed youths and discouraged people; To resolve the problem of slow and clumsy administrative procedures; To find financial resources to support eco-innovations; Systemic governmental approach to accreditation and standardization policy needed; Assurance of necessary risk capital; Improvement of eco-innovation policy; To use ESIF as a lever of economic growth; To harmonise the cooperation between institutions related to eco-innovations; To improve the legislation frameworks in the field of eco-innovations; To launch motivation mechanisms in the field of eco-innovations (tax incentives, privileges, etc.); Attracting foreign direct investment into science-intensive sectors of the economy; To increase the importance of public-private partnerships and concessions; To provide systematic support for eco-innovative start-ups and companies; To support the implementation of eco-innovation in large companies; To support eco-innovation from the structural funds and national sources and to decrease effects of „Brain drain" and depopulation emigration of citizens in region.

4. Business:

Topics on improving business performance with proposals on how to: increase patent output; increase venture capital funding; improve energy infrastructure and prevent losses in transmission and distribution; produce the energy from renewables; use favourable geographical location for business opportunities; increase private spending on R&D; increase usage of public e-services by businesses; increase labour productivity and resource efficiency of the economy.

3.2. Objectives of the JAP

In the course of the project implementation, project partners agreed over specific objectives which will envelope the activities within the Joint Action Plan. These objectives are communicated in the Joint strategy on eco-innovation in the Danube region at the following order:

1. Research and Development

There is general impression that activities of the R&D are not sufficiently financially supported in the countries of the Danube region, resulting in modest quality and potential for enabling eco innovation environment. More structured and adequate approach is needed for funding of baseline scientific research and its integration and uptake by industry. To improve this picture, Joint Strategy identifies two specific objectives:

- Prioritize funding of R&D activities - Increase R&D expenditure in the public sector to 0,9 % of GDP by 2020 (50 % increase compared to the reference year 2015), and

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- Attract private capital into R&D activities - Increase R&D expenditure in the business sector to 2 % of GDP (100 % increase compared to the reference year 2015).

2. Ecology (environmental protection)

Environmental policies and legislation have direct effect on behavioural patterns of industry and people, but it doesn't significantly affect the international trade patterns. Successful implementation of these policies shifts the comparative advantage from pollution intensive industries towards more sustainable. To limit, control and act upon market uptake of environmentally sound products and services, environmental impacts the products and services life cycle must be quantified and appropriately priced all along the value chain. Implementation of international, regional and national environmental policies should be implemented through a mix of efficient policy instruments (Strict control of polluters, efficient eco-taxation and subsidization and voluntary self-regulation of public sector and industry), and to reach these aims, the Joint Strategy proposes the following specific objectives within the ecology topic:

- Efficient implementation of environmental policy instruments: improved capacity of environmental inspectorates and simplified legal procedures resulting in an increased rate of +5% final executable convictions for crimes against the environment and workers;
- Increase market share of environmentally friendly products and services, and
- Green Public Procurement stimulation: Establishment of Green Public Procurement as a mandatory (currently voluntary) common practice on EU markets by 2020.

3. Energy

Energy demand increases each year, stretching potential of conventional resources and increasing environmental risks associated with the traditional exploitation techniques. In order to enable more sustainable and environmentally friendly energy resources, EU member states agreed on increased production and consumption from RES, aiming at 20% and 27% of total consumption in the years 2020 and 2030 respectively.

Reaching these targets imply changes in the policies, technologies, business management, jobs and direction of investments. Changes create number of opportunities for new businesses, jobs and profitable investments.

While production costs of traditional resources exploitation decreases, prices for end users didn't follow the trend, creating room for alternative mechanisms to financially stimulate eco innovation and support exploitation of the RES. In doing so, the following specific objectives are set:

- Increase the wholesale energy prices by 20% and stimulate the RES and RUE Innovations;
- Establish the national policy framework for alternative fuels/sustainable mobility, and
- Make ETS more efficient in stimulation of decarbonisation of energy sector and other industries in the ETS to reach Paris Agreement climate goals.

4. Resource efficiency and waste recuperation

Prevailing model of economy largely depend on heavy usage of natural resources, materials and energy. This fact fuels increased global competition for natural resources, often with fierce

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consequences for national economies, political independence and public welfare. This provoked for the search of alternatives in resources supply, giving birth to (amongst others) the concept of the circular economy which tackled the issues of resource use, production, consumption and waste. Circular economy aims to circulate certain material/resource in "production-usage-recycling-production" loop for as long as possible by maintaining the value of products, materials and resources in the economy. This reduces waste generation, use of virgin materials and associated environmental risks. Prevention of waste and waste management is now a key aspect of the circular economy, and waste is rather perceived as a valuable resource for the European economy.

Following trends in economic growth, financial crisis and structural changes in the economy, resource use in Europe has declined over the last decade. Resource efficiency of European countries varies greatly, and great efforts are placed in securing the supply of critical raw materials. These efforts include innovations in both technologies and all aspect of societal endeavours.

As EU waste legislation is a key driver of better waste management, and Action Plan for the Circular Economy sets goals which may only be met by transiting from traditional model to circular economy through R&D, new business models and adoption of contemporary national and regional policies and instruments on regulating most aspects of economy and social behaviour.

In the scope of the present JAP, set of goals (establishment of a fair price on waste; creation of opportunities in waste management; establishment of rewarding system for companies with excellent eco-behaviour and promotion of awareness campaigns for general public) are to be tackled with one, yet systemic and ambitioned objective:

- Improving recycling rates for packaging waste to 80 % and municipal waste to 70 % by 2020.

5. Business environment

Improving business environment is perceived as one of the key issues for resolving the alarming problem of depopulation of certain areas of Danube region and Europe at grand. During the last two decades, following the successful accession of the countries of the Eastern Europe into the EU, the pace of economic emigration has sped up, devastating the structure of the work force in departing-from countries and posing increased immigration pressure in more economic advanced countries.

It is the intention of the Joint Action Plan to tackle this issue by setting the goal of establishing new innovation friendly environment and propose new legal form that supports eco-innovations. In reaching this goal, two objectives are set:

- Introduction of a uniform flat-tax income of no more than 25 % for all workers, and
- Cut and reverse the brain drain effect (increase migration back to the countries of origins by 10%).

6. Funding programmes

There are several opportunities of securing funding for eco-innovative activities through different

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programmes and instruments of the EU, complemented with available national financing. However, too often there is limited capacity for adoption, thus resulting in mostly unused potential of funds. Some of the available funds are: EIC Pilot instruments; SME instrument; Fast track to Innovation, Future and Emerging Technologies, EIC Horizon Prizes, H2020, and other, where applicable.

In the effort to increase the level of utilisation of these funds, the following specific objectives are identified:

- Increase the survivability of eco-innovative products and services that reaches the market, and
- Increase of absorption rate of Structural and investment funds to 85% of allocated funds on average per Danube region country in current financial perspective.

7. Education

There are huge differences between areas of the Danube region in terms of e.g. curricula, methodology, quality of education and resources local governments dedicate to it. The following generations would need comprehensive and comparable educative content in order to be able to address common issues of the region and respond to challenges ahead. To achieve these, revision of current curricula might be necessary, as well as policies regulating education, R&D and scientific work. In improving education outputs of the region, the following specific objectives are proposed:

- Achieve a reduced number of applicants for tertiary level of education by 10 % by 2025
- Decreased number of applicants for human/social studies by 5 % until 2025
- Increased number of applicants in natural sciences and engineering by 5 % until 2025
- Introduction of clear evaluation mechanism for professors and other educational workers (from the perspective of students and the perspective of the future employer(s) – how well was the student for e.g. mechanical engineer prepared to work in the company by 2020
- (Re)-Introduction of entrance exams for universities by 2020

Network approach in pursuing the objectives defined by this JAP is of crucial interest as regional and international collaboration can provide more comprehensive picture of the market and its potential across the project. It will also be an efficient paradigm which will enable avoidance of redundancies, double work and over-funding. Collaboration on activities tackling various objectives should not be subjected to exclusivity, but rather inclusive where all stakeholders and interested parties are welcomed, as long as reaching objectives present benefits for the community. It means that the networking approach will not only provide information to the partners, but also to act as the intermediating principle between different kinds of stakeholders be it from the civil sector, NGO, non-scientific, scientific, public or political field.

This approach will enable stakeholders already engaged in a network to improve the intra-national, regional and international transfer of know-how and enable stakeholders and partners from different countries to benchmark and define future milestones past the project lifetime. Also, it poses a great potential to promote the topics of cooperation, and raise awareness for the importance of eco-innovations and its potential for joint actions, offer the opportunity of international collaboration to less-experienced start-ups and spin-offs or SMEs, and thus improve

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involvement of business community.

Intensified networking activities between scientific and non-scientific stakeholders can increase dissemination of innovative research results and their entrepreneurial and speed up their economic exploitation. Universities and research organizations can benefit from the special know-how of the non-scientific parties, as these partners are in closer contact to real life challenges and often closer to regional authorities and governmental institutions.

3.3. Dissemination of information

Informing, advertising, advocating and educating the general public is an absolute "to do" list in order to raise awareness and uptake of the term, idea and paradigm of eco-innovation by the people. These activities and raised general public consciousness of eco-innovations will underline and stress its importance and consecutively communicate it to the level of decision makers.

Involvement of public authorities can be strengthened by providing them feedback on necessary adjustments of current policies and what are (positive and negative) implications of fulfilment of actions defined in the Joint Action Plan or inactivity related to it.

Information providers and funding institutions may and should provide regular feedback to public authorities on their relationship with their clients (universities, research institutions, companies, SMEs, start-ups and spin-offs) to enable authorities to update policies accordingly.

Positive advertising of good practice examples can be very motivating and demonstrative way to raise attention and create appetite for involvement where it's missing.

3.4. Funding of the JAP activities

In general, there are four forms of funding which could be utilised as a source for the implementation of the Joint Action Plan:

- National public funds,
- EU structural and investment (ESIF) and community funds (programmes),
- Private funds from industrial sector, and
- International investment funds for joint ventures.

Financing of research and development, improvement of research infrastructures and initial support to eco-innovative start-ups is in the outreach of dedicated national funds and European resource divided in programmes. Those funds could be equipped to finance the transfer of the results of R&D, international know-how into commercial projects and foster spin-offs and provide risk parachute for start-ups. This gap between R&D and industry can also be partially serviced through angel capital and joint ventures. However, these instruments are not widely accepted nor homogeneously present throughout the countries of the project area.

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Good management of financing resources is necessary in order to avoid useless, non-optimal and double - funded applications for financing from the programs and funds dedicated to reaching the objectives and fulfilling the tasks of the creation of rank and vibrant eco-innovation environment. A good practice example is to use revolving principle in funding: funds made available to activities capable of generating profit for new investments, which are fed back in funding scheme.

Sometimes public funding may prove to be insufficient and therefore it is of great importance to initiate as much as possible of private funding investments in the actions foreseen with the JAP. Also, it seems reasonable enough to search for alternative forms and models of financing of different activities and emerging needs of the actors working on the implementation of changes

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The JAP is structured to accommodate both long and short term activities, in dependence of whether the execution of activities fall in the course of the project implementation, or later when the appropriate circumstances are met (interested parties, stakeholders, availability of the funding and similar).

It is also flexible since it allows for adoption of new activities and revision of the initial ones, should the need for liability with post JAP policies arise.

This flexibility is one of its key characteristics, as it helps activities of the JAP to become core theme or part of various other Projects and initiatives, complementing and creating synergic effect all along the chain.

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4. NATIONAL INPUTS

The EcoInn Danube project team is a highly heterogeneous partnership in terms of:

1. Position in the institutional environment,
2. Thematic orientation and Scope of work,
3. Source of funding, and
4. Human resources qualifications and capacities.

This diversity is reflected in the national inputs received. Therein partners proposed actions from their own perspectives. The JAP outlined below builds upon national inputs and recapitulates the proposed actions in two systems of ordering:

1. By the countries, and
2. By the objectives.

4.1. Overview on the actions by the countries

On order to obtain the very first information about the activities that should be undertaken in field of eco-innovations in this paragraph will be presented an overview by countries. Each partner institution proposed several actions/projects, according to its perspective derived from previous analyses as well as institutional priorities and capacities.

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Austria

The Eco-Innovation Scoreboard (Eco-IS) and the Eco-Innovation Index put Austria at the top of Average Eco-Innovative performers' countries lagging one step behind the Eco-Innovative leaders. Austria scores particularly well in the categories "eco-innovation activities" and "eco-innovation outputs", but is below average with respect to "eco-innovation inputs", "resource efficiency outcomes" and "socioeconomic outcomes".[3] All forms of eco-innovation activity are well represented, particularly from the side of companies that are introducing environmentally relevant innovations within their internal business processes. Austria needs to make sure that its substantial innovation input should show up more strongly in innovation output (patents) as well as innovation impacts in the form of sales and employment. There is an urgent need to cut down on material consumption and to improve resource productivity.[4]

Taking into consideration above mentioned facts, EcoInn Danube project partner from Austria, which is Economica Institute of Economic Research (hereinafter: Economica), proposed two groups of eco-innovative actions as it stated below:

- Immediate actions:
  1. Stimulate within own organization regular, science-based discussions on how private households can reduce their ecological footprint;
  2. Use of eco-friendly devices/replace existing devices with eco-friendly alternatives;
  3. Raise interest among authorities on innovation-related issues and the associated potential of political framework adaptation. Prepare proposal for a respective study/ policy advisory. Elaborate policy advisory and deliver to political stakeholders.
  4. Engage in discussions on eco-innovation; communicate lessons learned from EcoInn project activities at topically related events, and
  5. Prepare to engage in projects for Greening up of Cities.

- Long term actions
  1. Plea for elevating funding for bio-economy-driving plant science; reaching wide and relevant readership;
  2. Project pitches at relevant companies to attract investment (Microbe-enhanced oil recovery; Eco-innovative food products and sustainable agriculture, and supporting biodiversity in cities);
  3. Elaborate policy advisory emphasizing need and economic potential for innovation, resource efficiency, environmental protection, and

[3] National report on obstacles & opportunities – Austria (2017). EcoInn Danube project. Economica Institute of Economic Research.

[4] Final joint strategy on eco-innovation in the Danube region (2018). EcoInn Danube project. Energy Agency of Savinjska, Šaleška and Koroška region.

4. Intensive/diverse communication to shift customer preferences towards eco-friendly products and services, and
5. Support IÖB (innovative public procurement) by promoting via Virtual Lab. Submit proposal for IÖB call “eco-solutions for incontinence products”.

Relating to the immediate objectives Economica, from its own perspective, defined them as: a) previous reports and human capacity building at the Institute shall be utilized for elaboration of policy advisories, and b) to promote ecological / environmental awareness, knowledge exchange between people and institutions that are potential drivers of eco-innovations. Economists have a different point of view than ecologists, and only if a common language is found can eco-inventions turn into profitable eco-innovations. Researchers with experience in technology, industry, economy, ecology and biosciences need to engage in discussions. Economica aims to provide a suitable and prospering environment for this.[5]

Relating to the long-term objective Economica, from its own perspective, defined them as: a) to promote ecological / environmental awareness, knowledge exchange between scientists working in diverse eco-related fields, and b) to demonstrate the virtue of bio-based materials as resources for eco-innovative products and/or alternatives to petrol-based products.[6]

Relating finances for long-term activities Economica foresees 3 actions/projects with zero costs, one action with estimated costs of EUR 10,000, and one frequent action which costs depends on number of projects, and it is more than EUR 100,000 per project (See Annex 1).

[5] National Input for Short Term Action – Austria (2018). EcoInn Danube project. Economica Institute for Economic Research.
[6] National Input for Long Term Action – Austria (2018). EcoInn Danube project. Economica Institute for Economic Research.

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Bosnia&Herzegovina

"Bosnia and Hercegovina has been characterized by a complex and inefficient political composition with very poor coordination and communication between key institutions on basically all areas of decision making since its inception. This is perhaps even more evident in the fields of ecology and innovation, especially in terms of a clear deficit and mechanism for facilitating cooperation with the economy."[7] "Eco innovative solutions are mostly based on renewable energy sources, either using them for powering new technology or inventing new ways of their protection … Bearing in mind the significant energy potential, it is necessary to encourage special research in the areas of maximum energy consumption, with a strong emphasis on renewable energy sources and their protection." [8]

Taking into the consideration all of previously mentioned facts, EcoInn Danube project partner from Bosnia&Herzegovina, which is Chamber of Commerce and Industry of Banja Luka Region (hereinafter: CCI BL), proposed two groups of eco-innovative actions as it stated below:

- Immediate actions:
  1. Presentation of DMS and other services and technologies for digitalization and automatization of business processes;
  2. Education on green office;
  3. Workshop – how to write EU funded projects in the area of innovation, and
  4. Presentation of Virtual Lab and related topics at the meeting of Association of Innovators.

- Long term actions
  1. Presentation of eco innovative activities to the mayors and presidents of municipalities – three-month meetings;
  2. Establishing the competence organization in energy efficiency area for Banja Luka Region;
  3. Preparation and implementation of Project on EE Audit,
  4. Continuous education on Green office – CCI RS and CCI BL employees and employees of all municipalities and cities offices in CCI BL region, and
  5. Monthly meetings with ministers in the government through CCI RS.

Relating to the immediate objectives CCI BL, from its own perspective, defined them as: a) to promote eco-innovation within own organization, b) to engage the enterprises and the general public and endorse eco-innovation on the local and national level and to raise the level of

[7] Final joint strategy on eco-innovation in the Danube region (2018), *Op. cit.*
[8] National report on obstacles & opportunities – Bosnia&Herzegovina (2017). EcoInn Danube project. Chamber of Commerce and Industry of Banja Luka Region.

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understanding of eco innovation, ecology and energy efficiency in total.[9]

Relating to the long-term objectives CCI BL, from its own perspective, defined them as: a) to influence on efficient implementation of environmental policy instruments, b) increase market share of environmentally friendly products and services, c) stimulate green public procurement, and d) establishment of the national policy framework for alternative fuels/sustainable mobility through different kind of activities in the period from 2019 till 2021.[10]

Relating finances for long-term activities CCI BL foresees 5 actions/projects with total estimated costs of EUR 325,000.

[9] National Input for Short Term Action – Bosnia&Herzegovina (2018). EcoInn Danube project. Chamber of Commerce and Industry of Banja Luka Region.
[10] National Input for Long Term Action – Bosnia&Herzegovina (2018). EcoInn Danube project. Chamber of Commerce and Industry of Banja Luka Region.

Bulgaria

The Eco-Innovation Scoreboard (Eco-IS) and the Eco-Innovation Index put Bulgaria at the very bottom among the all of EU-28 countries. "The main challenges for eco-innovation in Bulgaria include shifting towards a low carbon economy and promoting resource efficiency."[11] "The main opportunity for eco-innovation in Bulgaria lies in the clean energy transition, shifting towards a low carbon economy and promoting resource efficiency (promoting efficient use of resources by achieving high energy efficiency (especially in homes and building infrastructure), further developing renewable energy sources, and improving sustainability practices within the transport sector)."[12]

Taking into the consideration all of previously mentioned facts, EcoInn Danube project partner from Bulgaria, which is Chamber of Commerce and Industry Vratsa (hereinafter: CCI Vratsa), proposed two groups of eco-innovative actions as it stated below:

- Immediate action:
  1. First steps on becoming "green office".

- Long term actions
  1. Establish contact with The Directorate of Vratsa Balkan Nature park;
  2. Establish contact with the Entertainment park "Ledenika",
  3. Promotion of eco-innovation in tourism in the region of Vratsa, and
  4. Raise cooperation with the Regional Historical Museum in Vratsa in activities related to ecological awareness and promotion of eco-innovations.

Relating to the immediate objectives CCI Vratsa, from its own perspective, defined them as: a) to promote eco-innovations and ecological awareness amongst the business on national level through our EEN network, b) dissemination of ecological knowledge for the society and private sector, and c) promote the usage of eco-innovations in the public sector (green office).[13]

Relating to the long-term objective CCI Vratsa, from its own perspective, defined it as to promote eco-innovations and ecological awareness in the tourism sector in the region of Vratsa, Bulgaria, through partnership with relevant regional institutions.[14]

Relating finances for long-term activities CCI Vratsa foresees 4 actions/projects with total estimated costs of EUR 10,400.

[11] National report on obstacles & opportunities – Bulgaria (2017). EcoInn Danube project. Chamber of Commerce and Industry Vratsa.
[12] Final joint strategy on eco-innovation in the Danube region (2018), *Op. cit.*
[13] National Input for Short Term Action – Bulgaria (2018). EcoInn Danube project. Chamber of Commerce and Industry Vratsa.
[14] National Input for Long Term Action – Bulgaria (2018). EcoInn Danube project. Chamber of Commerce and Industry Vratsa

Croatia

According to the available data from the Eco-Innovation Scoreboard (Eco-IS) Croatia belongs to the group of countries who Catching up with the Eco-innovation with exception in year 2014 when it moved forward into the Average Eco-innovation performers' countries. According to available data from year 2016 on the Eco-Innovation Index, Croatia scores particularly well in the categories "socioeconomic outcomes", "resource efficiency outcomes" and "eco-innovation outputs", but is below Danube region average with respect to "eco-innovation activities" and at the bottom among EU-28 countries together with Bulgaria with respect to "eco-innovation inputs". "In 2014, Croatia adopted the Strategy for innovation encouragement for period 2014. - 2020. Its main objective is to increase the level of competitiveness of the Croatian economy and increase social well-being. The document entails a list of around 40 guidelines structured around four thematic pillars: Development of the innovation system and setting up a legal and fiscal framework to encourage innovation; Strengthening the innovation potential of the economy; Encouraging cooperation and knowledge flows between business and academia; and Strengthening of the human resources in innovation and creation of an attractive environment for world-class researchers … Observing Croatian economy, noticeable is high demand of environmental services, such as water supply and the disposal of wastewater, the management of solid waste, maintaining a clean air environment, clean sea and preserving the natural habitat."[15]

Taking into the consideration all of previously mentioned facts, EcoInn Danube project partner from Croatia, which is Regional Development Agency Međimurje Ltd. (hereinafter: REDEA), proposed two groups of eco-innovative actions as it stated below:

- Immediate actions:
  1. Going green in the office;
  2. Energy savings by installing relevant equipment;
  3. Apply green public procurement through ongoing institution activities, and
  4. Promotion of VLab through the newsletter and official REDEA's Facebook page.

- Long term actions
  1. Supporting SMEs on a local and regional level;
  2. Development of Centre of excellence in informatics;
  3. Organization of education/workshops for start-ups and other interested SMEs, and
  4. Organization of education/workshops for start-ups and other interested SMEs.

Relating to the immediate objectives REDEA, from its own perspective, defined them as: a) to

[15] National report on obstacles & opportunities – Croatia (2017). EcoInn Danube project. Regional Development Agency Međimurje Ltd.

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promote eco-innovations within own organizations (become green ambassadors), b) establish cooperation of SMEs and innovative companies with R&D institutions, and c) improve business environment through organizing educations for SMEs.[16]

Relating to the long-term objectives REDEA, from its own perspective, defined them as: a) to establish cooperation of SMEs, innovative companies and researchers with R&D and other public institutions, and b) to provide a support for eco-innovators to place their product/service on the market – encourage local and regional decision makers to support eco-innovators by helping to implement their innovations.[17]

Relating finances for long-term activities REDEA foresees 4 actions/projects with total estimated costs of EUR 60,462.

[16] National Input for Short Term Action – Croatia (2018). EcoInn Danube project. Regional Development Agency Međimurje REDEA Ltd.
[17] National Input for Long Term Action – Croatia (2018). EcoInn Danube project. Regional Development Agency Međimurje REDEA Ltd.

Czech Republic

According to the available data from the Eco-Innovation Scoreboard (Eco-IS) Czech Republic belongs to the group of countries who Catching up with the Eco-innovation with exception in year 2015 when it moved forward into the Average Eco-innovation performers' countries. According to available data from year 2016 on the Eco-Innovation Index, Czech Republic scores very well in the categories "socioeconomic outcomes", "eco-innovation activities" and "resource efficiency outcomes", but it is below Danube region average with respect to "eco-innovation inputs" and particularly with respect to "eco-innovation outputs". "Higher percentage of population that would be employed in innovation seeking is the main goal for Czech Republic in the future, if the country wishes to improve on its innovation rating and continue in the growth into the knowledge-based economy."[18]

Taking into the consideration all of previously mentioned facts, EcoInn Danube project partners from Czech Republic, which are Business and Innovation Centre Brno (hereinafter: BIC Brno) and Brno University of Technology (hereinafter: BUT), proposed two groups of eco-innovative actions as it stated below:

- Immediate actions:
  1. Circular Hub Prague focused on circular economy, and
  2. Round table "Eco-innovation at Brno University of Technology".

- Long term actions
  1. "Czech Science to the world";
  2. „Energy Active Consumers - Opportunity To Use Local Energy Sources", and
  3. Establishing spin-off "ConWe".

Relating to the immediate objectives BIC Brno and BUT, from their own perspective, defined them as: a) to support the expansion of the principles of the circular economy in Czech Republic, b) to develop cooperation between companies and research organizations and to organize events where information about eco-innovation and energy-saving technologies will be disseminated to professionals and general public, c) to raise awareness, discuss the eco-innovations and eco-inventions at the Brno University of Technology, d) to promote knowledge exchange between scientists, e) provide support for eco-innovative R&D and f) to help the scientists to obtain funding for their eco-oriented R&D.[19,20]

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[18] National report on obstacles & opportunities – Czech Republic (2017). EcoInn Danube project. Business and Innovation Centre Brno.
[19] National Input for Short Term Action – Czech Republic (2018). EcoInn Danube project. BIC Brno spol. s r.o., Business and Innovation Centre.
[20] National Input for Short Term Action – Czech Republic (2018). EcoInn Danube project. Brno University of Technology.

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Relating to the long term objectives BIC Brno and BUT, from their own perspective, defined them as: a) to support the expansion of the principles of the circular economy in Czech Republic, b) to develop cooperation between companies and research organizations and to organize events where information about eco-innovation and energy-saving technologies will be disseminated to professionals and general public, c) to raise awareness, discuss the eco-innovations and eco-inventions at the Brno University of Technology, d) to promote knowledge exchange between scientists, e) provide support to the researchers with their eco-innovative R&D results and f) to help the scientists to obtain funding for their eco-oriented R&D.[21,22]

BIC Brno and BUT foresee 3 actions/projects. Relating financing of these long-term activities, it is not possible to determine a specific amount, if any, of costs at this stage of the process. The funding will most likely be from internal sources.

[21] National Input for Long Term Action – Czech Republic (2018). EcoInn Danube project. BIC Brno spol. s r.o., Business and Innovation Centre.
[22] National Input for Long Term Action – Czech Republic (2018). EcoInn Danube project. Brno University of Technology.

Germany

"Germany is the world leader in terms of cleantech development and deployment, climate protection and more specifically, expanding the use of renewable energy … The data available shows that the energy transition will only succeed in Germany if the industry and other big players will significantly expand their investments in energy efficiency and renewable energy in the future, along with private households."[23] "In 2015, Germany scored above the EU-28 average in regards to the four of the five components of the Eco-innovation composite index (eco-innovation activities, eco-innovation inputs, eco-innovation outputs and resource efficiency outcomes). It is particularly remarkable for the indicator on government investments in environmental and energy R&D, total R&D personnel and green early stage investments. Germany belongs to the top performer for indicators on company participation in eco-innovation for both material and energy efficiency activities."[24]

Taking into the consideration all of previously mentioned facts, EcoInn Danube project partner from Germany, which is Bwcon GmbH. (hereinafter: Bwcon), proposed two groups of eco-innovative actions as it stated below:

- Immediate actions:
  1. Implementation of green public procurement within Bwcon;
- Long term actions

1. Establish the Green Innovation and Investment Forum (EcoInn Danube pilot action) as a sustainable platform for matching ecoinnovative startups ideas with venture capital;
   2. Replicate the model of the Green Summer School to train young talents and very early stage entrepreneurs in eco-innovation and raise awareness on environmental issues;

Relating to the immediate objectives Bwcon, from its own perspective, aims to introduce Green public procurement in its own organisation to tackle two main objectives: a) Increase environmental awareness and environmentally-friendly behaviour among its employees, and b) Increase the general awareness about the problem of throw-away-mentality with concrete daily actions.[25]

Relating to the long-term objectives Bwcon, from its own perspective, defined them as: a) To provide systematic support for eco-innovative start-ups and companies, b) To support the implementation of eco-innovation in large companies, and c) To increase venture capital funding for eco-innovative companies.[26]

Relating finances for long-term activities Bwcon foresees 2 actions/projects with total estimated costs of EUR 100,500.

[23] Final joint strategy on eco-innovation in the Danube region (2018), *Op. cit.*
[24] National report on obstacles & opportunities – Germany (2017). EcoInn Danube project. Bwcon GmbH.
[25] National Input for Short Term Action – Germany (2018). EcoInn Danube project. Bwcon GmbH.
[26] National Input for Long Term Action – Germany (2018). EcoInn Danube project. Bwcon GmbH.

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Hungary

"Hungary is lagging behind in most of the eco-innovation-related indicators, some are looking however worse than others. The eco-innovation outputs: related patents, academic publications and media coverage put Hungary on the end of the list, which hopefully marks and end to the continuous decline in these departments. Hungary still performed remarkably well in eco-industries mainly due to the strong presence of remediation, environmental monitoring and instrumentation and nature protection … There is no significant support for eco-innovation and this sector remains mainly unknown to this day, this is however a deeper rooted issue since environmental concerns has just really started to become a relevant concern in decision-making and in the public discourse."[27]

Taking into the consideration all of previously mentioned facts, EcoInn Danube project partners from Hungary, which are Entrepreneurs' Centre of Somogy County Foundation (hereinafter: SMVKA) and Digitális Jólet Nonprofit Kft (hereinafter: Digitális Jólet), proposed two groups of eco-innovative actions as it stated below:

- Immediate actions:
  1. Resources usage and dealing with waste issues collected in offices;
  2. Presentation the aims and achievements of the EcoInn project on an energy efficiency workshop;
  3. Presentation the EcoInn project and dissemination of its eco-innovation achievements (Virtual lab) on a sustainable tourism workshop.
- Long term actions
  1. Plastic Free Business/Enterprise pilot scheme for a certification system
  2. Planning for 2019 energy efficiency project proposal within the framework of Hungary-Croatia Co-operation Programme 2014-2020;
  3. Education of green office – training for the SMVKA employees;
  4. Awareness raising campaign – cooperation, joint events with universities for promotion of knowledge transfer between innovators and business sector;
  5. Virtual Lab promotion with business support organisations.

Relating to the immediate objectives SMVKA and Digitális Jólet, from their own perspective, defined them as:

a) To raise awareness, inform and facilitate public dialogue on eco-innovation on the level of national & local actors,
b) Support institutional adhesion into transnational activities,

[27] National report on obstacles & opportunities – Hungary (2017). EcoInn Danube project. Entrepreneurs' Centre of Somogy County Foundation.

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c) Environmental awareness and environmentally-friendly behaviour,
d) Continuous protection of unique natural resources,
e) Awareness about the problem of throw-away-mentality,
f) Reliable statistics in eco-innovation related filed,
g) Continuous reduction of environmental pollutants and monitoring,
h) Introduction of low energy houses and passive houses,
i) Increase emphasis on eco-issues, and
j) Awareness about energy scarcity, energy efficiency and renewables.[28,29]

Relating to the long term objectives SMVKA and Digitális Jólet, from their own perspective, defined them as:

a) Institutional promotion and implementation of measures in the area of energy efficiency and reduction of CO_2 emission,
b) Support ecological behaviour in everyday performance of public institutions, households and finally individuals,
c) Environmental awareness and environmentally-friendly behaviour,
d) Continuous protection of unique natural resources,
e) Awareness about the problem of throw-away-mentality,
f) Reliable statistics in eco-innovation related field,
g) Continuous reduction of environmental pollutants and monitoring,
h) Increase emphasis on eco-issues,
i) Awareness about energy scarcity, energy efficiency and renewables,
j) To improve dysfunctional ecosystem for innovations (science-education- innovations),
k) To increase political commitment to implement structural reforms,
l) Improvement of eco-innovation policy,
m) To launch motivation mechanisms in the field of eco-innovations (tax incentives, privileges, etc.),
n) To provide systematic support for eco-innovative start-ups and companies,
o) To support the implementation of eco-innovation in large companies,
p) To use favourable geographical location for business opportunities, and
q) To increase private spending on R&D.[30,31]

Relating finances for long-term activities SMVKA and Digitális Jólet foresee 4 actions/projects with total estimated costs of EUR 189,000 while remains 1 project which costs are not available.

[28] National Input for Short Term Action – Hungary (2018). EcoInn Danube project. Entrepreneurs' Centre of Somogy County Foundation.
[29] National Input for Short Term Action – Hungary (2018). EcoInn Danube project. Digitalis Jolet Nonprofit Kft.
[30] National Input for Long Term Action – Hungary (2018). EcoInn Danube project. Entrepreneurs' Centre of Somogy County Foundation.
[31] National Input for Long Term Action – Hungary (2018). EcoInn Danube project. Digitalis Jolet Nonprofit Kft.

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Serbia

"There are many critical areas in Serbia that should be improved in order to achieve progress in eco-innovations … As a major problem in uptake and then support eco-innovation is lack of awareness what eco-innovation really is, in various social sectors such as: governmental, business and households as well."[32] According to this, every action could be found as appropriate and relevant.

Taking into the consideration all of previously mentioned facts, EcoInn Danube project partner from Serbia, which is Regional Agency for Socio - Economic Development Banat Ltd. (hereinafter: RDA Banat), proposed two groups of eco-innovative actions as it stated below:

- Immediate actions:
  1. Registering RDA Banat as a supporter in EU Covenant of Mayors for Climate & Energy;
  2. Initiating the idea for registering the City of Zrenjanin and other Local Governments from Banat region in the Covenant of Mayors for Climate & Energy initiative, as signatories, and
  3. Organizing the meeting with the representatives of Government of the Republic of Serbia, Serbian Development Agency and Regional Development Agencies in Serbia on issues outlined in the national analysis.

- Long term actions
  1 Establishing the competence organization in energy efficiency domain for Banat region;
  2 Introduction of eco-management (Eco-Management and Audit Scheme (EMAS)) monitoring of key indicators in public companies and organization;
  3 Reduction of CO_2 emissions in major urban areas through electrification of public transportation, and
  4 Increase the resource efficiency and waste recuperation.

Relating to the immediate objectives RDA Banat, from its own perspective, defined them as: a) to raise awareness, inform and facilitate public dialogue on eco-innovation on the level of national & local decision makers, and b) to support institutional adhesion into transnational activities.[33]

Relating to the long-term objective RDA Banat, from its own perspective, defined them as: a) tangible results in reduction of pollution, b) better utilization of the material goods, and c) filling

[32] National report on obstacles & opportunities – Serbia (2017). EcoInn Danube project. Regional Agency for Socio - Economic Development Banat Ltd.
[33] National Input for Short Term Action – Serbia (2018). EcoInn Danube project. Regional Agency for Socio - Economic Development Banat Ltd.

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the gaps for evident missing links in eco management practice in Serbia: measuring and managing.[34]

Relating finances for long-term activities estimated total costs are MEUR 21.06, out of what the estimated costs for one projects are MEUR 20, which means that other 3 actions could be undertaken for MEUR 1.06.

[34] National Input for Long Term Action – Serbia (2018). EcoInn Danube project. Regional Agency for Socio - Economic Development Banat Ltd.

Slovakia

"Slovakia belongs to the group of economies whose eco-innovation index does not reach high level and it is far behind strong innovators such as Germany and Austria or the average of the EU. The only exception is the resource efficiency outcome index, where Slovakia scores high above the average of the EU and the Danube region countries. This represents a clear opportunity for Slovakia to ensure long-term benefits for all - the government, businesses and people."[35]

Taking into the consideration all of previously mentioned facts, EcoInn Danube project partners from Slovakia, which are Slovak Centre of Scientific and Technical Information (hereinafter: SCSTI) and Comenius University in Bratislava, Science Park (hereinafter: CUSP), proposed two groups of eco-innovative actions as it stated below:

- Immediate actions:
  1. Organize a competition for public promoting green and eco-innovative approach to Christmas with an event for students focused on forest preservation and ecological impact of Christmas, and
  2. Organizing the meeting between the representatives of eco-friendly companies and students.

- Long term actions
  1. Establish a Green Code of Conduct on organizational level and become a greener consumer of goods and services, and
  2. Increasing the share of eco-oriented graduation thesis that directly address specific industry challenges in life sciences, diagnostics and biotechnology.

Relating to the immediate objectives SCSTI and CUSP, from their own perspective, defined them as: a) to raise awareness and create a public dialogue on eco-innovation and engage general public with emphasis on students in a greener approach to their everyday life, b) raise awareness about career opportunities in eco-friendly companies and discuss the future of eco-innovations at the Corvinus University in Bratislava, and c) promote knowledge exchange between scientists, students and small eco-innovative companies.[36,37]

Relating to the long term objectives SCSTI and CUSP, from their own perspective, defined them as: a) to raise awareness within own organisation and become a green ambassador – engage employees to a more proactive approach to environmentally responsible conduct of activities, and

[35] National report on obstacles & opportunities – Slovakia (2017). EcoInn Danube project. Slovak Centre of Scientific and Technical Information.
[36] National Input for Short Term Action – Slovakia (2018). EcoInn Danube project. Slovak Centre of Scientific and Technical Information.
[37] National Input for Short Term Action – Slovakia (2018). EcoInn Danube project. Comenius University in Bratislava, Science Park.

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b) increase the share of diploma thesis that directly address specific industry challenges.[38,39]

Relating finances for long-term activities SCSTI and CUSP foresee 2 actions/projects out of which one has estimated costs of EUR 8,000 (EUR 2,000 for each diploma thesis) while costs for another one are not available.

[38] National Input for Long Term Action – Slovakia (2018). EcoInn Danube project. Slovak Centre of Scientific and Technical Information.
[39] National Input for Long Term Action – Slovakia (2018). EcoInn Danube project. Comenius University in Bratislava, Science Park.

Slovenia

"Being considered as a strong innovator, it is generally more suited to compare Slovenia with developed western countries rather than countries with transition economies. It`s main strengths of its innovation system remain in the area of human resources, firm investments and a relatively innovation-friendly environment. In previous years, Slovenia has made significant improvements, which have also upgraded the countries status in terms of eco-innovation performance, however, the aggregation of funds for research and development as well as product development and market penetration for "green" products/services is still very difficult."[40]

Taking into the consideration all of previously mentioned facts, EcoInn Danube project partner from Slovenia, which is Energy Agency of Savinjska, Šaleška and Koroška Region (hereinafter: KSSENA), proposed two groups of eco-innovative actions as it stated below:

- Immediate actions:
  1. Facilitate virtuous behaviour (energy efficiency and environmental conciseness) amongst own personnel and lead by example;
  2. Endorse and advance green mobility (modal shift and zero-emission public transport);
  3. Establish contacts with relevant (new) partner/stakeholder organizations from the Danube region and the EU with a common vision for future energy supply and use by actively participating in topical events, and
  4. Promote energy efficient and healthy living environments amongst local stakeholders and beneficiaries.
- Long term actions
  1. Identify and facilitate advanced educational approaches on the local/national level, specifically in the areas of energy and environmental protection;
  2. Facilitate virtuous behaviour (energy efficiency and environmental conciseness) amongst own personnel and lead by example;
  3. Endorse and advance green mobility (modal shift and zero-emission public transport);
  4. Advance capacity to expand/improve energy efficient and healthy living environments amongst local stakeholders and beneficiaries;
  5. Pursue opportunities for applying green public procurement within internal organizational processes as well as on the level of capacity development within the local and national environment;
  6. Provide incentives for supporting innovative thought of personnel in the manner of informal rewards and recognition of efforts by the collective, and
  7. Form consortia with relevant partner/stakeholder organizations from the Danube region and the EU with shared objectives for future sustainable development.

[40] National report on obstacles & opportunities – Slovenia (2017). EcoInn Danube project. Energy Agency of Savinjska, Šaleška and Koroška Region.

Relating to the immediate objectives KSSENA, from its own perspective, defined them as: a) promoting the uptake of ecologically oriented innovative products and services internally by informing and educating its own personnel, through the provision of guidelines, tools and their active engagement in topical events of the organisation, b) supporting the local entrepreneurial community (focusing on SMEs/start-ups) in identifying relevant challenges, gaining access to potential partners, co-workers and investors, providing expert technical knowledge as well as experience in applying for funds from national and international funding programmes, and c) identifying and advancing ecological aspects of energy and mobility related development projects with respect to national and international targets and conventions.[41]

Relating to the long-term objective KSSENA, from its own perspective, defined them as: a) continuing to promote virtuous behaviours and actions as well as the provision of eco-innovative products and services internally (on the level of the organization) by informing and educating its own personnel as well as through the establishment and development of guidelines, tools and their active engagement in relevant events of the organization, b) continuing to raise awareness and effect positive behaviour change amongst the general public in areas associated to the use of energy on the local, national and transnational level, c) supporting the local entrepreneurial community (focusing on SMEs/start-ups) in identifying relevant challenges, gaining access to potential partners, co-workers and investors, providing expert technical knowledge as well as experience in applying for funds from national and international funding programmes, d) further advancing the cooperation with local companies and business support organizations (with a special focus on start-ups/SMEs) to develop new solutions (products, services, business model) addressing topical challenges (energy dependency, air quality, waste build-up/pollution, etc.) in the interrelated areas of environmental protection and energy supply/distribution/use, e) facilitating market development for the uptake of eco-innovative products and services through the involvement of partner local authorities in applying measures in the area of green-public procurement, f) identifying and advancing ecological aspects of energy and mobility related development projects with respect to national and international targets and conventions, and g) advancing sustainable mobility on the local level and establishing a replicable, integrated and scalable model of a hydrogen fuel cell deployment project for zero-emission mobility, applicable for the Danube region and particularly countries from the South-eastern Europe/Western Balkans area.[42]

Total costs for implementing outlined long-term activities are estimated at MEUR 6.532, whereby activities related to the investment project for hydrogen technology deployment account for the majority of these costs (MEUR 6,489). In total, all 6 other actions defined in the joint action plan in the category of long-term objectives could be undertaken for as much as EUR 43,250.

[41] National Input for Short Term Action – Slovenia (2018). EcoInn Danube project. Energy Agency of Savinjska, Šaleška and Koroška Region.
[42] National Input for Long Term Action – Slovenia (2018). EcoInn Danube project. Energy Agency of Savinjska, Šaleška and Koroška Region

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4.2. Overview on the actions by the objectives

The Final JS made clear distinction between two approaches for actions that should be proposed for implementation, relating to their time perspective. They are:

- Immediate actions, and
- Long term actions.

Immediate actions are those which can be implemented by EcoInn Danube project partner organizations and by organizations within their respective networks. As such, they are intended to be implemented in the course of the EcoInn Danube project duration.

By contrast, the reach and scope of the long term actions spans from regional, national and sometimes international impact. Their implementation period outgo EcoInn Danube project, as they are far more demanding in terms of the funding, number of partners necessary to implement them, scope and financial demand. To implement and achieve ambitious activities and goals described by the JAP, organizations will have to include various national and international stake holders and partners and utilise their own, national and/or international sources of funding available from available programmes, funds and national budgets.

4.2.1. Immediate objectives

Each of immediate objectives is subject to unique understanding of the national situations and the actual ability to foster change amongst relevant stakeholders, and therefore are tackled with proposed actions, as set forth. Below there are presentations and short description of immediate objectives classified by the recommendations set in the Final JS. Where applicable, for each specific objective one proposed action has been indicated and briefly described.

Specific objective #1:
Promote eco-innovation within own organizations (become green ambassadors)

Comprehensive motivation of the public and systemic efforts within own organizations to introduce eco-innovation in public appearances and events through application of the ICT tools, best practices in Green procurement and its proliferation toward national procurement practices using experience from internal processes and roundtables, rewarding improving ideas. The objective is to be achieved by internal re-organization and leveraged to national policy adaptations, where applicable.

⇒ Example of the proposed action: "*Use of eco-friendly devices/replace existing devices with eco-friendly alternatives*"[43]

[43] Action/project A 1.3. from the Annex 2.

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In order to become real ambassadors of the informed purchases of ecologically friendly products and services, personnel and organisations themselves should act in line with "practice what you preach" paradigm in their day-to-day activities with clients. By replacing parts of the hardware they are using with eco-friendly alternatives (printers, LED lighting, recyclables, etc.), organizations would display their commitment to green procurement to end users of their services.

Specific objective #2:
Support the adhesion of municipalities, towns and regions into transnational initiatives

Creation of the linkages in between the people and micro-regions through different forms of transnational cooperation and transfer of best practice (through conferences, workshops, webinars and similar) is identified as adhesion vehicle which may propel innovation and resourcing and create opportunity for eco-innovations for local businesses, institutions and even financial operators. The objective may be achieved by actions of the local organizations in synergy with local and regional political support. There are several international initiatives identified within the scope of the JAP, namely: Covenant of Mayors; Energy Cities; ICLEI – Local Governments for sustainability; NALAS – Network of Associations of Local Authorities of South-East Europe; FEDARENE – European Federation of Agencies and Regions for Energy and the Environment; Regions and Cities initiative FCH JU – Hydrogen and fuel cell deployment initiative and EIP-SCC – The European Innovation Partnership on Smart Cities and Communities.

⇒ Example of the proposed action: "*Initiating the idea for registering the City of Zrenjanin and other Local Governments from Banat region in the Covenant of Mayors for Climate & Energy initiative, as signatories*"[44]

This activity is aimed directly into inclusion of the City of Zrenjanin and other local governments from Banat region in transnational initiatives on energy, environment and innovation, specifically to the world's largest movement for local climate and energy actions, now gathering 7 000+ local and regional authorities across 57 countries. Covenant signatories are sharing their key actions as a source of inspiration for others.

Specific objective #3:
Inform and promote participation of towns, cities, municipalities and regions as well as enterprises and individuals in European award competitions

There is evident need in certain towns, cities, municipalities and regions to bring closer decision makers to the idea of competing for EU awards in order to enable them to further improve culture and identity image of their respective settlements as ones which constantly strive to achieve ambitious goals. The objective is meant to establish long-lasting co-operations between cities and regions. This may prove to be more relevant for smaller settlements as they are in need for networking if they wish to achieve more ambitious projects and international recognition. The

[44] Action/project A 2.2. from the Annex 2.

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proposed activity should also foster dialogue about common issues and enable local decision makers to pursue eco-innovations in their communities.

⇒ Example of the proposed action: *"Establish contacts with relevant (new) partner/stakeholder organizations from the Danube region and the EU with a common vision for future energy supply and use by actively participating in topical events"*[45]

Proposed activity (ongoing) is congregating the stakeholders in co-designing project concepts and application for funds. It strives to provide support to initiatives addressing better business environment, competitiveness, and innovation amongst SMEs, while trying to communicate project goals and its content to relevant national authority. It already applied to the transnational programme in the end of June 2018.

Specific objective #4:
Raise awareness, inform and facilitate public dialogue on eco-innovation on the level of national decision makers

The pace of changes in favour of raised awareness of the eco related issues in societies is accelerating at high rate, posing challenges before national policies thus requiring their update in more than one sector. This process is time consuming, needs strong public support; involves number of stakeholders and requires consideration of numerous factors and events. For these reasons, there is strong need for facilitation of a continuous dialogue with national policy makers to incorporate eco-innovation into new strategies, laws and policies. It also requires communications with relevant stakeholders with pronounced national appearance such as are national chambers of commerce and other sectorial and professional associations, R&D and scientific institutions. One of the channels of communication with national decision makers may be media appearances, social medias, online platforms and other contemporary ICT tools.

⇒ Example of the proposed action: **"***Presentation the EcoInn Danube project and dissemination of its eco-innovation achievements (Virtual lab) on a sustainable tourism workshop"*[46]

The action herein proposed is aimed at wide dissemination of the virtual lab achievements of the EcoInn Danube project on a sustainable tourism workshop. The success of the action is indicated by the number of professionals involved, quality and scope of the presentations and number of the people attending these events.

Specific objective #5:
Engage the enterprises and the general public and endorse eco-innovation on the local and national level

[45] Action/project A 3.1. from the Annex 2
[46] Action/project A 4.4. from the Annex 2.

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Sectors which are relevant to the eco-innovation are to be subjected to awareness campaign, especially on the issues related to energy (conservation, consumption and savings) and the implications of the activities of the businesses to the environment. This campaign can utilise already established networks, media channels and sharing platforms to bring together national chambers of commerce, decision makers with political support, R&D institutions and general public.

⇒ Example of the proposed action: **"***Organizing the meeting between the representatives of eco-friendly companies and students"*[47]

The objective of the action is to raise awareness about career opportunities in eco-friendly companies through meetings/excursions (4) which would discuss 10 initiatives/ideas at the Comenius University in Bratislava. It also aims at promotion of knowledge exchange between scientists, students and small eco-innovative companies. This activity is jointly prepared with the companies involved in the CUSP business incubator.

4.2.2. Long term objectives

Long term actions are those which can be implemented in following years when EcoInn Danube project ended. They could be initiated and with participation of the EcoInn Danube project partner but not as obligatory condition. In line with the long term activities, there are set the long term objectives which are drawn from the Final JS. In that document the long term outlook has been classified into the 7 priority areas. They are:

1. Research and Development,
2. Ecology (Environmental Protection),
3. Energy,
4. Resource Efficiency and Waste Recuperation,
5. Business Environment,
6. Funding Programmes, and
7. Education.

These priority areas could be seen as pillars for the entire strategy. For each of the priority area's the objectives are set which are in the JAP became specific objectives.

Below are presented long term (specific) objectives classified by the priority area's set in the Final JS. For each specific objective one proposed action has been indicated and briefly described.

Priority area/Pillar P #1:

[47] Action/project A 5.7. from the Annex 2.

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RESEARCH AND DEVELOPMENT

Specific objective SO #1.1.: Prioritize funding of R&D activities

Since the level of financing for R&D is not sufficient to satisfy the needs of researchers, there is likely the situation that they will not be drawn to R&D jobs where conditions aren't appropriate for their level of knowledge and education. To tackle this gap between the R&D and funding, certain increase of public budget appropriations for R&D on the national level (which would provide job opportunities with appealing benefits for researchers in public institutions) would be needed. This objective can be reached through adaptation of national policies.

⇒ Example of the proposed action: "*Czech Science to the world*"[48]

This action is aimed in providing support to the participation of national research teams in international R&D projects. The innovative infrastructure of the project is the utilization of the communication strategies using modern communication channels. Activities of national research teams and companies will be supported through technical assistance, consultancy and promotion on social networks

Specific objective SO #1.2.: Attract private capital into R&D activities

Companies, particularly SMEs which should carry out the biggest uptake of eco-innovations are not motivated to participate in R&D activities due to two main reasons: they are not benefiting directly from tertiary education structure and they don`t feel they influence public R&D activities and easily access the results of it. To mitigate these problems, there are options in: providing the tax incentives for enterprises which cooperate (and co-finance) in public R&D activities; national recognition of graduation on real life and specific industry challenges and better informing of the companies on public R&D and benefits which they may acquire from them. This would require modifications of educational programmes/curricula at the universities; adoption of initiative coming from various stake holders (SMEs, universities, R&D institutions, local authorities, chambers of commerce/engineering/construction, etc.); organization of the events and trainings with interested professional bodies (Chambers of commerce/engineering/construction, etc., start-up incubators, development agencies).

⇒ Example of the proposed action: "*Establish the Green Innovation and Investment Forum (EcoInn pilot action) as a sustainable platform for matching Eco innovative start-ups ideas with venture capital*"[49]

The action builds on agreement between regional agencies to take action in gathering the budget through sponsorship from variety of parties. Upon the fundraising activities, an open call for applications will be launched and through which the certain number of startups will be selected to participate. Successful companies will be invited to commit to help for the replication of the event in the coming years.

Priority area/Pillar P #2:

[48] Action/project A 1.1.2. from the Annex 1.
[49] Action/project A 1.2.2. from the Annex 1.

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ECOLOGY (ENVIRONMENTAL PROTECTION)

Specific objective SO #2.1.: Efficient implementation of environmental policy instruments

Since the monitoring and enforcement of environmental legislations is not gaining satisfactory results, current national policies should be subject to upgrade to be able to meet ambitious EU goals in regard to ecology. This upgrade would address the increase of capacity of environmental inspectorates and initiate simplification of legal procedures in order to increase final executable convictions for crimes against the environment and workers by 5%, and abolish limitation periods for all types of corporate and environmental crimes.

⇒ Example of the proposed action: "*Establishing the competence organization in energy efficiency domain for Banat region*"[50]

The action will establish and equip registered competence organization, with at least two employees with proper training, who will be able to transfer good practice from the study tour and communicate it via functional web-site. Besides this basic set up, premises of the centre themselves will be display of the smart building principle, first of the kind in the region. It will in-point the need of the application of the smart technical solutions to contemporary building practice and their impact on energy efficiency over the lifetime of a building. Amongst other services, interested parties will be able to obtain advisory on variety of energy –efficiency related issues in regard to business or general housing.

Specific objective SO #2.2.: Increase market share of environmentally friendly products and services

Even though environmental awareness has improved in last decades, there's still substantial part of the population who will opt for the lower price over the importance and the level of environmental impact of the products and/or services purchased. It means that all profiles of the general public associations are an important stakeholder for provision of the portrait of the demand side to the eco-innovations industry, education institutions and government. It also means that general public should be more informed on the outlooks and benefits of the usage of eco-solutions and stimulated to use it and co-create it through continuous public information campaigns fostering an image of informed and virtuous consumer. This can be achieved by opening the variety of communication channels using ICT tools for the exchange of environmental issues and eco-solutions between the general public on one side, authorities, industry and educational system on the other. It may also require adaptation of certain national policies with appropriate mediums for dissemination (National consumers associations, National media, NGO's, etc.).

⇒ Example of the proposed action: "*Reduction of CO_2 emissions in major urban areas through electrification of public transportation*"[51]

Activity herein proposed has the intention to reduce emissions in urban areas where there is possible to convert public transportation to EV. This activity accounts for the build-up of power

[50] Action/project A 2.1.1. from the Annex 1.
[51] Action/project A 2.2.1. from the Annex 1.

plants powered by alternative power sources (solar), accompanied with re-charging stations with sufficient points where intake units are available to public EVs and purchase of sufficient number of EVs, subject to local area public transport capacities/needs.

Specific objective SO #2.3.: Green Public Procurement stimulation

Public sector present is powerful consumer which can be educated in purchasing eco-friendly goods and services. Besides it would help the growth of eco-innovation, it would also be example the good practice of sustainable behaviour and cause positive spill-over effect across sectors and markets. Introduction of Green Public Procurement as a mandatory (currently voluntary) practice on EU markets by 2020 is an ongoing activity, requiring adaptation the procurement legislation and national policies to favour the purchase of sustainable goods and services and to shift tender focuses from lowest prices to lowest environmental impacts.

⇒ Example of the proposed action: "*Plastic Free Business/Enterprise pilot scheme for a certification system*"[52]

The activity includes identification of public cooperation partners who will define the framework and attract businesses into signing up to the framework and certification scheme. In the course of the action, certain number of the grants will be allocated to the representative entities of the business sector which practice best example of the agreed framework.

Priority area/Pillar P #3:
ENERGY

Specific objective SO #3.1.: Increase the wholesale energy prices by 20% and stimulate the RES and RUE Innovations

Prices of energy at the world market are too often subject to political fluctuations influencing wholesale prices at national and regional level. To avoid this kind of sensitivity and in order to be able to stabilize supply and rely more on sustainable and renewable energy sources, certain part of the energy price toward the end user should be diverted into eco-innovation. This surplus then can be used as investment in stimulation of the RES and RUE Innovations. To allow for the increase, some national policies should be adapted.

⇒ Example of the proposed action: *N/A*

JAP is not proposing specific activity in the frame of this specific objective. However, some of the partnering countries have already finished proposed adaptation of national policies and the surcharge is implemented with the billing of national electricity provider. For the comparing purposes, in Germany, this surcharge raised from 4.5% in the year 2006 to 23% in 2017 the composition of average power price for a household.

Specific objective SO #3.2.: Establish the national policy framework for alternative

[52] Action/project A 2.3.3. from the Annex 1.

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fuels/sustainable mobility

In general terms, the Emission Trading (ETS) system which was introduced in 2005 failed to meet its goals. In an attempt to reinforce its mission and reach the goals of Paris Agreement, it launched Innovation Fund and Modernization Fund to support the de-carbonization of the EU industry. In the course of the reformation of the ETS, main efforts will be placed in re-evaluation of the prices of GHG emissions through adaptation of national and EU policies.

⇒ Example of the proposed action: "*Monthly meetings with ministers in the government through CCI RS*"[53]

This action is based on intensification of the communication at the national decision makers' level to increase Green Public procurement on entity level through number of meetings organized.

Specific objective SO #3.3.: Make ETS more efficient in stimulation of decarbonisation of energy sector and other industries in the ETS to reach Paris Agreement climate goals

This specific objective is aimed at reinforcing the EU Directive for deployment of alternative fuels infrastructure in order to mitigate heavy usage of imported fossil fuels in transportation. It would require development and adoption of national policies.

⇒ Example of the proposed action: "*Planning for 2019 energy efficiency project proposal within the framework of Hungary-Croatia Co-operation Programme 2014-2020*"[54]

Utilisation of EU programmes to reach the goals of the Paris Agreement is main idea behind this action. It intends to mobilize number of stake holders from Hungary and Croatia in order to finalize project concept and apply for it for a grant.

Priority area/Pillar P #4:
RESOURCE EFFICIENCY AND WASTE RECUPERATION

Specific objective SO #4.1.: Improve recycling rates for packaging waste to 80 % and municipal waste to 70 % by 2020

There is ambitious EU goal set towards shifting to circular economy – it drives eco innovations in almost every segment of industry today. All economic operators have to take into account scarcity of resources, efficiency and mitigation of the waste. This change in paradigm creates new opportunities for eco innovative enterprises and individuals as well as challenge for decision makers who need to improve waste management and waste prevention policies. Policies would

[53] Action/project A 3.2.1. from the Annex 1.
[54] Action/project A 3.3.1. from the Annex 1.

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need to re-evaluate the taxes on non-renewable and environmentally problematic packaging, foster proper waste management practices, increase the waste separation and recycling and support awareness raising initiatives by general population and industry.

⇒ Example of the proposed action: "*Energy Active Consumers - Opportunity to use local energy sources*"[55]

The action proposes development of detailed outlook of the suitability of the projects meant for energy-active communities. It would investigate pros and cons of the solution for so-called "energy poverty" by allocating energy-active consumers into a social housing. It relies on data synthesis of the technical economic potential and the socio-demographic characteristics of various groups of energy consumers..

Priority area/Pillar P #5: BUSINESS ENVIRONMENT

Specific objective SO #5.1.: Introduce a uniform flat-tax income of no more than 25 % for all workers

There is evident massive dislocation of the skilled workforce across the EU. It is the consequence of the better living conditions and professional opportunities in developed economies of the EU and their availability, made possible through the process of accession of new EU member states, mostly from the eastern and central European countries. This phenomenon is widely addressed as a "brain drain", and present very serious problem for the countries suffering from the massive exodus of the part of the population which should be the very generator of the positive changes and economy growth. In order to prevent or at least mitigate the rate of the drain, several actions may be introduced by the affected countries, such as are: application of a low, uniform (flat) income tax category for all workers; offer incentives and benefits (tax benefits, accommodation, free day-care, etc.) for international experts willing to work in the region and expatriate experts to bring them back to their home countries. At the EU level, changes in policies or their adaptations would allow for the reduction of the wage inequalities between the South-East and North-West parts of the EU.

⇒ Example of the proposed action: *N/A*

This objective did not generate specific activity for the JAP. However, it is to the respective countries to change their policies to allow for the uniform application of the reduced taxes.

Specific objective SO #5.2.: Cut and reverse the brain drain effect (increase migration back to the countries of origins by 10%)

Similar to the previously acclaimed reasons of the brain drain, it is important to stress the need of the productive and inviting business development environment for professionals to thrive. For the

[55] Action/project A 4.1.2. from the Annex 1.

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research to be initiated and to be inviting for the professionals there must be measures which would mitigate the risk, provide support and promote entrepreneurial and innovative culture and processes. These measures would also include: creation of the centres of excellence; innovation hubs; novel legal forms of associations of eco-innovative SMEs and entrepreneurs; tax and incentives; prevention of risks (safe nets), and similar.

⇒ Example of the proposed action: "*Development of R&D centre for IoT and prototyping (Metal Centre Čakovec)*"[56]

This action should provide boost of innovation and collaboration of the private sector and academia – acting as an innovation hub within the scope of the Project "Development and Training Centre for the Metal Industry in Čakovec" financed from the EU funds

Priority area/Pillar P #6: FUNDING PROGRAMMES

Specific objective SO #6.1.: Increase the survivability of eco-innovative products and services that reaches the market.

Structural and investment funds are very important funding sources for development of eco-innovation, especially at the national economies of South-Eastern parts of Danube Region. However, they remain widely underused due to lack of capacity and other factors (i.e. complicated administrative procedures within public calls and tenders). To tackle these issues, some simplification of administrative procedures on the national level, optimization of the organization and funding of national controllers and establishment of the national and regional / local task-forces that will facilitate the absorption of EU funding should take place.

⇒ Example of the proposed action: *N/A*

JAP is not proposing specific action for this objective. It is, however, clear that National governments must plan efforts in activities which will include policy adaptations (modifications of the tax policies), as well as establishment of the EU funding task forces at national/ regional/local levels, delegation to EU bodies and invitation to private sector to include their activities in this field.

Specific objective SO #6.2.: Increase of absorption rate of Structural and investment funds to 85% of allocated funds on average per Danube region country in current financial perspective.

There are three main problems which cause failure of reaching the market of mature eco-innovative projects: scarcity of public development funds, demanding administrative procedures and lack of knowledge (of entrepreneurs, researchers and innovators). It seems that early stage

[56] Action/project A 5.2.1. from the Annex 1.

innovative concepts manage to get enough sources for successful early development stages, but further the development has run off the less support it gets. These problems may be addressed through establishment of systematic (national or regional) public funds for eco-innovative projects which would follow up all development stages of a product / service till the market maturity development stage. This support should be exclusively intended to support innovative projects with demonstrated sustainability aspect.

⇒ Example of the proposed action: *N/A*

This action plan has not come with the specific action plan for this objective. Rather, it appeals to the national, regional and local governments to approach to the modification of relevant policies and introduce EU funding task forces in respective levels of authorities into resolving this issue.

Priority area/Pillar P #7: EDUCATION

Specific objective SO #7.1.: Achieve a reduced number of applicants for tertiary level of education by 10 % by 2025.

There is evidence which suggest that insufficient communication between the industry and educational system is causing reduced numbers of tertiary level students. By bringing together interested parties (for example to round tables and networking events between industry representatives, innitiatives, events, trainings, etc.) should contribute in reaching solution to this issue. Relevant stake holders on this issues include: national decision makers in the area of education and education providers SMEs, universities, R&D institutions, local authorities, chambers of commerce/engineering/construction).

⇒ Example of the proposed action: *N/A*

There are no specific actions developed for none of the specific objectives for this priority area. These issues therefore remain in domain of national education policies.

Specific objective SO #7.2.: Decreased number of applicants for human/social studies by 5 % until 2025.

At present, there is widening gap due to the misalignments of educational programs with specific industrial challenges. Tackling the gap would require study grants for specific skill-sets provided by industry and re-introduction and extension of practical work in studies. Also, organization of a part of formal education as practical challenges in which students attempt to solve existing problems with human environmental impact would be needed.

⇒ Example of the proposed action: *N/A*

There are no specific actions developed for none of the specific objectives for this priority area. However, there are some efforts already in play in some countries, trying to match the needs of

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the industries by changing their syllabuses and (re)introducing dual education.

Specific objective SO #7.3.: Increased number of applicants in natural sciences and engineering by 5 % until 2025

Further development of the economy in the countries of the region cannot be possible without sustainable inflow of new scientist, engineers and researches. To ensure sufficient number of expertise profiles in demand of the ever advancing industry, educational system has to place some effort in securing sufficient number of students for natural sciences and engineering fields.

⇒ Example of the proposed action: *N/A*

Present volume of JAP is not proposing specific action on this issue. These issues are part of national agendas and strategies concerning educational system.

Specific objective SO #7.4.: Introduction of clear evaluation mechanism for professors and other educational workers

As well as revision of educational curricula is needed in order to better address particular industry requirements, so is the case with the benchmarking of the quality of the education providers – teachers, professors and other workers who are components of the educational system.

⇒ Example of the proposed action: *N/A*

There are no proposals for the specific action on this issue in the course of this JAP. Reaching standardised practice on this matter should be the subject of greater regional if not international agreements.

Specific objective SO #7.5.: (Re)-Introduction of entrance exams for universities by 2020

Some of the most famous world universities are reconsidering the introduction of the entry level exams to enable the process of accepting the most promising students get their place in the studies. It will also assure that entering students poses sufficient level of knowledge required for the studies in case and eliminate biasing on the assessment based solely on the evaluation of the grade levels.

⇒ Example of the proposed action: *N/A*

There is no particular activity in the JAP reflecting the issue. However, resolution of the problem lies in well-known activity that is the re-introduction of once regular entry exams practice.

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5. IMPLEMENTATION AND EVALUATION

The main purpose of the JAP is to undertake the actions in the way they are foreseen and described. The long term actions are characterized by complexity and multidimensionality, which, among other conditions respecting the principle of division of responsibilities between the competent responsible institutions/project partners. On the other side, the immediate actions are characterized by both the area of operation of the project partner as well as with its position in the national institutional environment.

Timeframe for the actions realisation is foreseen as follows:

1. Immediate actions: Should be finished along with the Project or at least during the 2019.
2. Long term actions: Should be finished by year 2022.

Relating to the stakeholders of proposed actions/projects in the annexes, they are identified according to quadruple helix stakeholder engagement. This approach brings together stakeholders from public institutions (at the level of cities, regions and national), private organizations (start-ups, SMEs, corporations), as well as academia (researchers, universities, research organizations) and citizens. The SMEs capability to adapt eco-innovation will be supported by strengthening the transfer of information and encouraging the quadruple helix approach in the domain of eco-innovation.

The actions/changes proposed in the JAP bear their own risks of being not possible to implement in practice. There are a lot of risks which could interfere level of the JAP implementation. Generally speaking, all of the risks should be classified into the 3 main categories:

- Governance related,
- Financing related, and
- Market related.

Detailed risk description is provided in the Final JS.

Each strategic document should include adequate monitoring and evaluation of its implementation. The leading partner of each proposed action/change should compare achieved results with the foreseen ones.

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The actions proposed in the JAP can be helpful in planning and creation of different budgets and funds. The most significant financial resources for the implementation of the strategy are: EU, national and local budgets. Beside these the actions are foreseen to be funded by bilateral donors and international financial institutions, as well as by the partners/stakeholders.

It is suggested for the each country to propose the Final JS and the JAP to be considered by the different levels of the public authorities and ask them to accept the role of the Strategy coordinator or at least join the findings from these documents to the existed national strategies related to the eco innovation area.

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ANNEXES

- Annex 1: Table form of the JAP for Long term activities
- Annex 2: Table form of the JAP for Immediate actions

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Interreg
Danube Transnational Programme
EcoInn Danube

Annex 1: Table form of the JAP for Long term activities

Pillar/priority area:
P #1:
R E S E A R C H A N D D E V E L O P M E N T

Dimension/specific objective:						
SO #1.1:						
Prioritize funding of R&D activities						
Code:	**Activity**	**Partners/ Stakeholders**	**Term**	**Main indicator(s)**	**Source of funds and estimated costs**	**Country**
A 1.1.1.	*Plea for elevating funding for bioeconomy - driving plant science; reaching wide and relevant readership*	• Economica • Labor journal	2018	• The article published	**Total: EUR 0**	Austria
A 1.1.2.	*Czech Science to the world*	• BIC Brno • Czech Academy of Science	2018 - 2020	• Support for research organizations and companies in their participation in international research and development projects. • BIC Brno Scientific Council for interconnection research organizations with private companies.	**Total: EUR 192,000** • ERDF fund	Czech Republic 1
A 1.1.3.	*Establishing spin-off "ConWe"*	• BUT	Since 2018	• Spin-off company ConWe (Constructed Wetland) founded by academics and students from BUT. • Product of this spin-off company is eco-innovative technology for wastewater	**Total: EUR 0**	Czech Republic 2

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				treatment based on nature-friendly processes with minimal environmental impact.		
A 1.1.4.	*Supporting SMEs on a local and regional level*	• PI REDEA, • Medjimurje County, • Municipalities of Medjimurje County, • TICM, • MEV, • Metal Centre Čakovec • SMEs and start-ups	April 2019 – April 2021	• Round tables with relevant stakeholders to help SMEs to minimize negative environmental impact when placing their product on the market	**Total: EUR 9,200** • Medjimurje County's budget • EU funds	Croatia
A 1.1.5.	*Development of Centre of excellence in informatics*	• Centre of Excellence in informatics, • Medjimurje County • PI REDEA, • TICM, • 3rd Elementary School Čakovec, • High school Josip Slavenski Čakovec, • Association of young Informatics Strahoninec (MIS), • Primary and secondary students	February 2019 and ongoing	• Workshops for primary and secondary students ("My first Program"; "Algorithm 1, 2 and 3"; "Robotics"; "IoT and software development"; "Web design") to improve their competences, knowledge and innovative way of thinking through STEM educational programme • Procurement of IT equipment, didactic and teaching materials	**Total: EUR 24,390** • National funds	Croatia
A 1.1.6.	*Organization of education/workshops for start-ups and other interested SMEs*	• PI REDEA • Start-ups, • SMEs	April 2019 – October 2020	• 4 workshops in a period of 18 months to improve the business environment	**Total: EUR 22,700** • Medjimurje County's	Croatia

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					budget • EU funds	
A 1.1.7.	*Identify and facilitate advanced educational approaches on the local/national level, specifically in the areas of energy and environmental protection.*	• Implementers: ○ Energy agency of Savinjska, Šaleška and Koroška region (KSSENA) ○ University for lifelong learning Velenje (LU Velenje) ○ Faculty of energy technology (FE) ○ Environmental protection college (VŠVO) ○ Business incubator of the Savinjska and Šaleška region (SAŠA inkubator) • Beneficiaries: ○ Local community ○ Local enterprises ○ Republic of Slovenia ○ International partner organizations ○ Ministry of Education, Science and Sport	2019-2020	• 1 introductory meeting organized with expert administrators of the innovative educational concept; • 1 project proposal for applying the concept on the transnational level; • Design and create content for at least 2 new training models (1st topic – hydrogen economy, 2nd topic TBD), relevant to future development guidelines of the local community and country as a whole; • 1 consultation meeting organized with the responsible ministry (MIZŠ)	**Total: EUR 10,532.00** • Organizations own funds • Co-funding from transnational co-operation programmes • National public funding sources • National private funding sources (local/national companies interested in innovative approaches for on the job trainings, companies involved as sponsors, etc.)	Slovenia

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Dimension/specific objective: SO #1.2: Attract private capital into R&D activities						
Code:	**Activity**	**Partners/ Stakeholders**	**Term**	**Main indicator(s)**	**Source of funds and estimated costs**	**Country**
A 1.2.1.	*Project pitches at relevant companies to attract investment:* • *Microbe-enhanced oil recovery* • *Eco-innovative food products and sustainable agriculture* • *Supporting biodiversity in cities* *Efforts will continue.*	• Economica • Companies (anonymous) farmers	2018+	• Companies contacted • Pitches performed • Decision received • Lessons learned	**> EUR 100,000 per project** • Private sector • EU funds (e.g. H2020)	Austria
A 1.2.2.	*Establish the Green Innovation and Investment Forum (EcoInn pilot action) as a sustainable platform for matching ecoinnovative startups ideas with venture capital*	• Bwcon • Regional agencies of the state of Baden-Württemberg • Venture Capital	2020	• Signed contract among regional agencies • 30.000 Euro budget raised through sponsorship • A minimum of 100 applications for the open call • 20 startups selected to participate • Minimum 150 attendants • Commitment for the replication of the event in the coming years	**Total: EUR 60,000** • EU funds • Sponsoring	Germany

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Pillar/priority area:
P #2:
E C O L O G Y (E N V I R O N M E N T A L P R O T E C T I O N)

Dimension/specific objective:						
SO #2.1:						
Efficient implementation of environmental policy instruments						
Code:	**Activity**	**Partners/ Stakeholders**	**Term**	**Main indicator(s)**	**Source of funds and estimated costs**	**Country**
A 2.1.1.	*Establishing the competence organization in energy efficiency domain for Banat region*	• 5 LSGs (Zrenjanin, Žitište, Sečanj, Nova Crnja and Novi Bečej), • EU agency/ center with good practice; • RCR Banat; • Ministry in charge and • NGOs	2019-2021	• An registered competence organisation • Trained staff (at least 2) • 1 Study tour • 1 Web site functional • Equipped premises	**Total: EUR 450,000** • LSGs' budgets: up to EUR 50,000 • EU funds: up to EUR 400,000 • Provincial funds: up to EUR 20,000 • RDA BANAT: up to EUR 5,000	Serbia
A 2.1.2.	*Introduction of eco-management (Eco-Management and Audit Scheme (EMAS)) monitoring of key indicators in public companies and organization*	• RDA Banat, • 3LSGs (Zrenjanin, Kikinda and Novi Becej), • PUCs in 3 selected LSGs, • EU partner city with good practice, • Private companies	2019-2020	• 1 Study tour • 1 rulebook for introduction of EMAS in PUCs • Trained staff in PUCs on EMAS implementation	**Total: EUR 210,000** • LSGs' budgets: up to EUR 180,000 • National/provincal funds: up to EUR 50,000 • PUCs budgets: up to EUR 20,000 • Private investors: up to EUR 20,000	Serbia
A 2.1.3.	*Elaborate policy advisory*	• Economica	2019	• Proposal submitted		Austria

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	emphasizing need and economic potential for innovation, resource efficiency, environmental protection	• Contracting authority		• Contract awarded 12/2018 • Final document submission spring 2019 • Monitor outcome/ implementation of advisory contents	**Total: EUR 10,000** • Contracting authority	
A 2.1.4.	*Establish contact with The Directorate of Vratsa Balkan Nature park*	• Chamber of Commerce and Industry Vratsa • The Directorate of Vratsa Balkan Nature park	2019-2021	• 1 Training • 2 seminars • Educational program	**Total: EUR 2,000** • CCI-Vratsa • Municipality of Vratsa	Bulgaria
A 2.1.5.	*Establish contact with the Entertainment park "Ledenika"*	• Chamber of Commerce and Industry Vratsa • Entertainment park "Ledenika"	2019-2022	• Participation in the show "Sound and Light" • Joint activities in: The fabulous alley, Ledeniche	**Total: EUR 4,000** • CCI-Vratsa • Municipality of Vratsa	Bulgaria
A 2.1.6.	*Presentation of eco innovative activities to the mayors and presidents of municipalities – three-month meetings*	• 18 municipalities and two cities covered by CCI BL	2018-2021	• 4 meetings per year • 5% decrease of paper usage in municipalities and city offices	**Total: EUR 5,000** • CCI BL • Partners	Bosnia and Herzegovina
A 2.1.7.	*Establishing the competence organization in energy efficiency area for Banja Luka Region*	• 18 municipalities and two cities covered by CCI BL	2019-2021	• Registered competence organisation • Trained staff (at least 2) • 1 Study tour	**Total: EUR 250,000** • EU funds: up to EUR 230,000	Bosnia and Herzegovina

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					• CCI BL: up to EUR 20,000	
A 2.1.8.	*Facilitate virtuous behavior (energy efficiency and environmental conciseness) amongst own personnel and lead by example*	• Implementers: ○ KSSENA • Beneficiaries: Founding partners ○ City municipality of Velenje (MOV) ○ City municipality of Celje (MOC) ○ City municipality of Slovenj Gradec (MOSG) ○ Public utility company Velenje (KPV)	2019-2020	• 4 dedicated staff meetings per annum; • 1 depository of gathered ideas with regular updates; • 1 comprehensive code of conduct for KSSENA employees; • Periodic biannual consultation meetings with local enterprises and business support organizations	**Total:** **EUR 7,714.00** • Organizations own sources	Slovenia

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Dimension/specific objective: SO #2.2: Increase market share of environmentally friendly products and services						
Code:	**Activity**	**Partners/ Stakeholders**	**Term**	**Main indicator(s)**	**Source of funds and estimated costs**	**Country**
A 2.2.1.	*Reduction of CO_2 emissions in major urban areas through electrification of public transportation*	• 3 LSGs (Nis, Belgrade and Novi Sad), • PTCs, • Private investors, • EU city with good practice, • Ministry in charge • National PUC „Putevi Srbije“	2019-2022	• 3 Power plants are built • 3 re-charging stations • 30 intake units • 30 EVs	**Total: MEUR 20** • LSGs' budgets: up to MEUR 5 • National funds: up to MEUR 3 • PTCs budgets: up to MEUR • Bank loans: up to MEUR 2 • Private investors: up to MEUR 8 • EU cities: up to MEUR 2 • Ministry in charge: up to MEUR 1	Serbia
A 2.2.2.	*Intensive/diverse communication to alter customer preferences towards ecofriendly products and services*	• Economica (sustainability-oriented) • Career Center Salzburg University	2018-2020	• Attendance and active input at relevant events • >20 persons, plus colleagues “educated”	**Total: EUR 0** • Regular staff activities	Austria
A 2.2.3	*Promotion of eco-innovation in tourism in the region of Vratsa*	• Chamber of Commerce and Industry Vratsa • Nature Conservation	2019-2021	• Co-organized event (1 event per year) • Eco-innovations – part of	**Total: EUR 2,900**	Bulgaria

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		Center “Natura”- Vratsa		year plan for implementation of activities	• CCI-Vratsa • Nature Conservation Center “Natura”- Vratsa	
2.2.4	*Raise cooperation with the Regional Historical Museum in Vratsa in activities related to ecological awareness and promotion of eco-innovations.*	• Chamber of Commerce and Industry Vratsa • Regional Historical Museum in Vratsa	2019-2020	• 2 shared events per year • 1 co-organized event focused on eco-innovations	**Total: EUR 1,500** • CCI-Vratsa • Regional Historical Museum in Vratsa • Municipality of Vratsa	Bulgaria
A 2.2.5.	*Replicate the model of the Green Summer School to train young talents and very early stage entrepreneurs in ecoinnovation and raise awareness on environmental issues*	• Bwcon • Universities of the region of Baden-Württemberg	2020	• Informal partnership with local university • 9.000 euro for material costs raised through projects and sponsorship • A minimum of 40 application for the school • A minimum of 20 people selected for the school • Commitment for the replication of the school in the next years	**Total: EUR 40,500** • Sponsoring of companies • Participation fee • Funding through European projects	Germany
A 2.2.6.	*Preparation and implementation of Project on EE Audit*	• Regulatory Agency for Energy • Chambers of Commerce in B&H	2019-2022	• Project developed • Project implemented • 5 persons educated on EE audit	**Total: EUR 50,000** • CCI BL • EU funds	Bosnia and Herzegovina

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A 2.2.7.	Continuous education on Green office – CCI RS and CCIBL employees and employees of all municipalities and cities offices in CCIBL region	• CCIBL, CCI RS 18 municipalities and two cities covered by CCI BL	2019 - 2022	• 6 workshops delivered • More than 100 persons educated	**Total: EUR 15,000** • CCI BL • EU funds • Stakeholders	Bosnia and Herzegovina

A 2.2.8.	*Endorse and advance green mobility (modal shift and zero-emission public transport)*	• Implementers:
		  ○ KSSENA
		  ○ City municipality of Velenje (MOV)
		• Beneficiaries:
		  ○ Residents of the City municipality of Velenje and surrounding settlements
		  ○ Republic of Slovenia
		• Partners:
		  ○ SRIP ACS
		  ○ Ministry of Infrastructure of Republic of Slovenia (MzI)
		  ○ Ecubes Arcola
		  ○ Faculty of Mechanical engineering, University of Ljubljana
		  ○ Petrol
		  ○ NOMAGO
		• International supporting
			2019-2020	• 1 complete project feasibility study;
				• Complete technical documentation (DIP, IP, IZ, ŠI),
				• 1 Application to relevant public tender);
				• Procurement of 6 FCEV buses;
				• Procurement of 1 FCE personal vehicle;
				• Establishment (expansion) of hydrogen production facilities on-site the TEŠ power plant;
				• Installation of a hydrogen refuelling station (for 350 and 700 bar applications);
				• 3 consultation meetings with relevant experts;
				• Organization of periodical study visits by national and international organizations
					Total: MEUR 6.489
					• KSSENA EUR 25,316.67
					• Organizations own funds
					• City municipality of Velenje
					• National public funding sources (Programme for climate change mitigation, Eco fund tenders);
					• National private funding sources (companies involved in the project including hydrogen producer, distributor and PTOs).
					• Connecting Europe Fascility program
						Slovenia

Project co-funded by European Union funds (ERDF and IPA)

		organizations: ○ Fuel cell and hydrogen Joint Undertaking (FCH JU) ○ Roland Berger • Suppliers: ○ Safra ○ ITM power ○ Hydrogenics ○ Pure energy center		(at least one per annum).	• PDA funding (ELENA, FCH JU) • Horizon 2020, Horizon Europe	
A 2.2.9.	*Advance capacity to expand/improve energy efficient and healthy living environments amongst local stakeholders and beneficiaries*	• Implementers: ○ KSSENA ○ Business incubator of the Savinjska and Šaleška region (SAŠA inkubator) • Beneficiaries: ○ Local community ○ Local enterprises ○ Republic of Slovenia	2019 - 2020	• Roundtables/consultation events organized with key stakeholder and beneficiaries (at least one per year); • 2 improved portable sensor boxes ENIOTOR; • Roadshows organized with potential investors and beneficiaries.	**Total: EUR 7,160.00** • Organizations own funds • Co-funding from transnational co-operation programmes • National public funding sources • National private funding sources	Slovenia

Project co-funded by European Union funds (ERDF and IPA)

Dimension/specific objective: SO #2.3: Green Public Procurement stimulation						
Code:	**Activity**	**Partners/ Stakeholders**	**Term**	**Main indicator(s)**	**Source of funds and estimated costs**	**Country**
A 2.3.1.	*Support IÖB (innovative public procurement) by promoting via Virtual Lab* *Submit proposal for IÖB call "eco-solutions for incontinence products"*	• Economica • IÖB	2016-2019	• 2 IÖB-derived eco-innovation demands published on Virtual Lab platform • Own proposal submitted to IÖB challenge (biodegradable nappies)	**Total: EUR 0** • EcoInn regular activities	Austria
A 2.3.2.	*Establish a Green Code of Conduct on organizational level and become a greener consumer of goods and services*	• SCSTI	Starting Dec 2018	• Amount of printed documents decreased by 25% • Saving of the spent electrical energy by 10%	N/A	Slovakia1
A 2.3.3.	*Plastic Free Business/Enterprise pilot scheme for a certification system*	• Digitális Jolét Nonprofit Kft. • Public cooperation partners	End of 2020 - Q4 2022	• The framework • Number of businesses signing up to the framework and certification scheme	**Total: N/A** • EU funds • Business sector	Hungary 1
A 2.3.4.	*Education of green office – training for the SMVKA employees*	• SMVKA • Ex Ante Consulting Group	Sep 2019 – Jan 2020	• 10 participants • Cost of overhead decreased by 10%	**Total: EUR 2,000** • SMVKA EUR 2,000	Hungary 2

Project co-funded by European Union funds (ERDF and IPA)

A 2.3.5.	*Pursue opportunities for applying green public procurement within internal organizational processes as well as on the level of capacity development within the local and national environment*	• Implementers: ○ KSSENA ○ City municipality of Velenje (MOV) ○ City municipality of Celje (MOC) ○ City municipality of Slovenj Gradec (MOSG) ○ Municipality of Žalec ○ Municipality of Nazarje ○ Municipality of Mozirje • Beneficiaries: ○ Association of Municipalities and Towns of Slovenia (SOS) ○ Ministry of Infrastructure of Republic of Slovenia (MzI)	2019-2020	• At least 1 consultation meeting with local and national authorities about the challenges and barriers of the currently established system for GPP (if required); • Establish contact and participate in 2 transnational consortia, • 2 project applications jointly developed by relevant stakeholder groups from the Danube region applied to a topical call on a transnational donor funding programme	**Total: EUR 6,163.30** ▪ Organizations own sources • EU programmes sources (Interreg, Horizon 2020, cross-border programmes, etc.) • National sources	Slovenia

Project co-funded by European Union funds (ERDF and IPA)

Pillar/priority area:
P #3:
E N E R G Y

Dimension/specific objective:						
SO #3.1:						
Increase the wholesale energy prices by 20% and stimulate the RES and RUE Innovations						
Code:	**Activity**	**Partners/ Stakeholders**	**Term**	**Main indicator(s)**	**Source of funds and estimated costs**	**Country**
A 3.1.1.				•		

Dimension/specific objective:						
SO #3.2:						
Establish the national policy framework for alternative fuels/sustainable mobility						
Code:	**Activity**	**Partners/ Stakeholders**	**Term**	**Main indicator(s)**	**Source of funds and estimated costs**	**Country**
A 3.2.1.	*Monthly meetings with ministers in the government through CCIRS*	• All ministries in the government • CCI RS – Chamber of Commerce and Industry of Republika Srpska	2019 - 2021	• More than 20 meetings organised • Increase of Green Public Procurement on Entity level	**Total: EUR 5,000** • CCI BL • CCI RS	Bosnia and Herzegovina

Project co-funded by European Union funds (ERDF and IPA)

Dimension/specific objective: SO #3.3: Make ETS more efficient in stimulation of decarbonization of energy sector and other industries in the ETS to reach Paris Agreement climate goals						
Code:	**Activity**	**Partners/ Stakeholders**	**Term**	**Main indicator(s)**	**Source of funds and estimated costs**	**Country**
A 3.3.1.	*Planning for 2019 energy efficiency project proposal within the framework of Hungary-Croatia Co-operation Programme 2014-2020*	• SMVKA • Private and public buildings owners • Engineer Chamber • Commercial and Industrial Chambers from HU and CRO • Enterprises development agencies from HU and CRO • Regional development agencies from HU and CRO • Energy efficient agencies from HU and CRO	Feb 2019 – Jul 2021	• Final project concept document • Signed partnership • Final application form • Grant contract on Project	**Total: EUR 125,000** • ERDF (HUHR CBC) EUR 106,250 • National funds EUR 12,500 • SMVKA EUR 6,250	Hungary 2

Project co-funded by European Union funds (ERDF and IPA)

Pillar/priority area:
P #4:
R E S O U R C E E F F I C I E N C Y A N D W A S T E R E C U P E R A T I O N

Dimension/specific objective:						
SO #4.1: **Improve recycling rates for packaging waste to 80 % and municipal waste to 70 % by 2020.**						
Code:	**Activity**	**Partners/ Stakeholders**	**Term**	**Main indicator(s)**	**Source of funds and estimated costs**	**Country**
A 4.1.1.	*Increase the resource efficiency and waste recuperation*	• RDA Banat, • Ministry of Economy, • Ministry of Environment Protection, • 10 major LSGs (Belgrade, Novi Sad, Nis, Kragujevac, Subotica, Zrenjanin, Pancevo, Novi Pazar, Krusevac, Kraljevo), • CCIS, • Private and corporative investors	2019-2022	• 1 Analysis on greater recycling rates • 10 Action plans by LSGs drafted • Relevant laws amendments adopted • 10 trainings on recycling and circular economy delivered	**Total: EUR 400,000** • LSGs' budgets: up to EUR 60,000 • National/provincial funds: up to EUR 80,000 • EU funds: up to EUR 300,000	Serbia
A 4.1.2.	*Energy Active Consumers - Opportunity To Use Local Energy Sources*	• BIC Brno • ALIES • Technology agency of Czech Republic	2019 - 2021	• Data synthesis of the technicaleconomic potential and the sociodemographic characteristics of various group of energy consumer. • Research of the suitability of projects of energy-active communities for solution of so-called energy poverty (implementation of energy-active consumers into a social housing).	**Total: EUR 262,000** • National funding from Technology Agency Czech Republic	Czech Republic1

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Pillar/priority area:
P #5:
B U S I N E S S E N V I R O N M E N T

Dimension/specific objective:						
SO #5.1:						
Introduce a uniform flat-tax income of no more than 25 % for all workers						
Code:	**Activity**	**Partners/ Stakeholders**	**Term**	**Main indicator(s)**	**Source of funds and estimated costs**	**Country**
A 5.1.1.				•		

Dimension/specific objective:						
SO #5.2:						
Cut and reverse the brain drain effect (increase migration back to the countries of origins by 10%)						
Code:	**Activity**	**Partners/ Stakeholders**	**Term**	**Main indicator(s)**	**Source of funds and estimated costs**	**Country**
A 5.2.1.	*Development of R&D centre for IoT and prototyping (Metal Centre Čakovec)*	• PI REDEA, • Medjimurje County, • TICM, • Metal Centre Čakovec – R&D centre for IoT and prototyping • Faculty of Engineering Rijeka, • Polytehnic of Međimurje in Čakovec (MEV), • Faculty of Organization and Informatics (FOI), • Start-ups and SMEs	May 2019 and ongoing	• Research institution infrastructure (1.776,87 m^2) with two laboratories equipped (Lab for prototyping and IoT lab) • 3 researchers employed by the year 2020 • 10 scientific publications indexed published at the "Web of Science" by 2024	**Total: MEUR 4.172** • EU funds • Medjimurje County	Croatia

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A 5.2.2.	*Increasing the share of eco-oriented graduation thesis that directly address specific industry challenges in life sciences, diagnostics and biotechnology*	• CUSP • Department of Molecular biology, Faculty of Natural Sciences • Geneton • Slovgen	2018 - 2021	• One practical diploma thesis in area of animal diseases diagnostics • Three practical diploma thesis in area human diagnostics and biotechnology • 4 students residing in Slovakia	**Total: EUR 8,000** • Comenius university (EUR 2,000 by each diploma thesis)	Slovakia2
A 5.2.3.	*Awareness raising campaign – cooperation, joint events with universities for promotion of knowledge transfer between innovators and business sector*	• SMVKA • University of Pécs • University of Kaposvár	Apr 2019 – June 2020	• Number of events • Number of participants • Number of filled questionnaires	**Total: EUR 30,000** • Own contribution of co-organisers EUR 3,000 • National funds EUR 27,000	Hungary 2
A 5.2.4.	*Virtual Lab promotion with business support organisations*	• SMVKA • Commercial and Industrial Chambers • Enterprise development agencies • Regional development agencies • Universities in the South Transdanubian region	May 2019 – Dec 2020	• Concept and Methodology of the events • Promotion and Communication plan • Number of meetings and consultations	**Total: EUR 32,000** • Own contribution of co-organisers EUR 10,000 • National funds EUR 22,000	Hungary 2
A 5.2.5.	*Provide incentives for supporting innovative thought of personnel in the manner of*	• Implementers: o KSSENA • Beneficiaries:	2019-2020	• 1 newly established informal reward structure, documented in the form of	**Total: EUR 3,206.00**	Slovenia

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	informal rewards and recognition of efforts by the collective	○ City municipality of Velenje (MOV) ○ City municipality of Celje (MOC) ○ City municipality of Slovenj Gradec (MOSG) ○ Municipality of Žalec ○ Municipality of Nazarje ○ Municipality of Mozirje ○ Public utility company Velenje (KPV) • Other stakeholder/ target groups: ○ Local authorities involved in the Association of Municipalities and Towns of Slovenia (SOS) ○ Ministry of Public Administration (MJU) ○ Ministry of Finance (MF)		an informal whitepaper; • 2 rewards given out to most innovative employees annually; • 1 report documenting the developed actions derived from innovative ideas; • 1 presentation to local stakeholders	• Organizations own sources	
A 5.2.6.	*Form consortia with relevant partner/stakeholder organizations from the Danube region and the EU with shared objectives for future sustainable development*	• Implementers: ○ KSSENA ○ City municipality of Velenje (MOV) ○ City municipality of Celje (MOC) ○ City municipality of	2019-2020	• Participation in 2 thematically relevant events per year; • 1 new partner consortium relevant to the vision of KSSENA per year; • Joint development of 2	**Total: EUR 8,478,00** • Organizations own sources • National sources	Slovenia

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		Slovenj Gradec (MOSG) • Beneficiaries: o Municipality of Žalec o Municipality of Nazarje o Municipality of Mozirje o Republic of Slovenia o Association of Municipalities and Towns of Slovenia (SOS) o Ministry of Infrastructure of Republic of Slovenia (MzI) o Ministry of Finance (MF)		project applications for funds on international donor funding programmes per year)		

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Pillar/priority area:
P #6:
F U N D I N G P R O G R A M M E S

Dimension/specific objective:						
SO #6.1:						
Increase the survivability of eco-innovative products and services that reaches the market.						
Code:	**Activity**	**Partners/ Stakeholders**	**Term**	**Main indicator(s)**	**Source of funds and estimated costs**	**Country**
A 6.1.1.				•		

Dimension/specific objective:						
SO #6.2:						
Increase of absorption rate of Structural and investment funds to 85% of allocated funds on average per Danube region country in current financial perspective						
Code:	**Activity**	**Partners/ Stakeholders**	**Term**	**Main indicator(s)**	**Source of funds and estimated costs**	**Country**
A 6.2.1.				•		

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Pillar/priority area:
P #7:
E D U C A T I O N

Dimension/specific objective:						
SO #7.1:						
Achieve a reduced number of applicants for tertiary level of education by 10 % by 2025						
Code:	**Activity**	**Partners/ Stakeholders**	**Term**	**Main indicator(s)**	**Source of funds and estimated costs**	**Country**
A 7.1.1.				•		

Dimension/specific objective:						
SO #7.2:						
Decreased number of applicants for human/social studies by 5 % until 2025						
Code:	**Activity**	**Partners/ Stakeholders**	**Term**	**Main indicator(s)**	**Source of funds and estimated costs**	**Country**
A 7.2.1.				•		

Dimension/specific objective:						
SO #7.3:						
Increased number of applicants in natural sciences and engineering by 5 % until 2025						
Code:	**Activity**	**Partners/ Stakeholders**	**Term**	**Main indicator(s)**	**Source of funds and estimated costs**	**Country**
A 7.3.1.				•		

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Dimension/specific objective: SO #7.4: Introduction of clear evaluation mechanism for professors and other educational workers						
Code:	**Activity**	**Partners/ Stakeholders**	**Term**	**Main indicator(s)**	**Source of funds and estimated costs**	**Country**
A 7.4.1.				•		

Dimension/specific objective: SO #7.5: (Re)-Introduction of entrance exams for universities by 2020						
Code:	**Activity**	**Partners/ Stakeholders**	**Term**	**Main indicator(s)**	**Source of funds and estimated costs**	**Country**
A 7.5.1.				•		

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Annex 2: Table form of the JAP for Immediate actions

Specific objective: SO #1: Promote eco-innovation within own organizations (become green ambassadors)						
Code:	**Activity**	**Partners/ Stakeholders**	**Term**	**Main indicator(s)**	**Source of funds and estimated costs**	**Country**
A 1.1.	*First steps on becoming "green office"*	• CCI-Vratsa	Nov 2018 - Dec 2018	• 1 research on "how to become green office" done • Incorporated good practices in the office	**Total: EUR 0**	Bulgaria
A 1.2	*Stimulate within own organization regular, science-based discussions on how private households can reduce their ecological footprint*	• Economica	2018, open end	• >10 topics discussed • Consumer behavior positively influenced	**Total: EUR 0**	Austria
A 1.3	*Use of eco-friendly devices/replace existing devices with eco-friendly alternatives*	• Economica	2018, open end	Replaced: • Printers • Towels • LED lighting • Recyclable office materials	**Total: EUR 3,000** • Own organization	Austria
A 1.4.	*Presentation of DMS and other services and technologies for digitalization and automatization of business processes*	• New Concept, ltd	11 Nov 2018 -	36 people educated	**Total: EUR 100** • CCI BL	Bosnia and Herzegovina

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A 1.5.	*Education on green office*	• Prime Communications	March 2019	• People educated • 5% less paper usage per month	**Total: EUR 500** • CCI BL	Bosnia and Herzegovina
A 1.6.	*Circular Hub Prague focused on circular economy*	• BIC Brno	From April 2018	**Circular scan** • indicator: creation unique circular scan **Culture-innovative center** • indicator: creation culture innovative center • indicator: testing of circular economy method	**Total: EUR 0**	Czech Republic1
A 1.7.	*Round table "Eco-innovation at Brno University of Technology"*	• BUT	12.11.2018	• A round table with the focus on Eco-innovations at BUT organized • Consultations and support of researchers on registering their R&D eco-oriented results	**Total: EUR 0**	Czech Republic2
A 1.8.	*Going green in the office*	• PI REDEA	Dec 2018 - Dec 2018 and ongoing	• Organization of a roundtable with personnel • Rewarding good green ideas with "eco diplomas"	**Total: EUR 0**	Croatia
A 1.9.	*Energy savings by installing relevant equipment*	• PI REDEA	Dec 2018 – April 2019	• Installed solar panels on the roof of our building through project RURES • Changed the lighting in the offices through project RURES	**Total: EUR 20,266.67** • EU funds • Medjimurje County	Croatia

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A 1.10.	*Apply green public procurement through ongoing institution activities*	• PI REDEA	Dec 2018 and ongoing	• Going on additional education for green public procurement – webinars, seminars • Taking action in the procurement of GPP criteria products	**Total: EUR 0**	Croatia
A 1.11.	*Promotion of VLab through the newsletter and official REDEA's Facebook page*	• PI REDEA; • Entrepreneurs, Students, • A public which sympathizes REDEA's and MENEA's, • TICM's, M • EV's work	Dec 2018 and ongoing	• Sending information about VLab to the local organizations/institutions so they can share it on their social media pages (MENEA, TICM, MEV) • Sending a newsletter to SME's, NGO's monthly about VLab and how to go greener in office	**Total: EUR 0**	Croatia
A 1.12.	*Resources usage and dealing with waste issues collected in Digitális Jolét offices*	• Digitális Jolét Nonprofit Kft	Nov 2018 – Nov 2019	• Number of boxes/bags placed in premises • Eco-audit document • Informal policy document • E-mail campaign/survay • Number of posters	**Total: EUR N/A** • Digitális Jolét	Hungary 1

A 1.13.	*Facilitate virtuous behavior (energy efficiency and environmental conciseness) amongst own personnel and lead by example*	• Implementers:
		  ○ KSSENA
		• Beneficiaries:
		  ○ City municipality of Velenje (MOV)
		  ○ City municipality of Celje (MOC)
		  ○ City municipality of Slovenj Gradec (MOSG)
			2018	• Initial consultation meeting carried out on August 20th 2018.
				• Second periodic consultation meeting organized on September 17th 2018.
				• Third periodic consultation meeting
					Total: EUR 759.50
					• Organizations own funds
						Slovenia

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		○ Public utility company Velenje (KPV)		carried out on November 8th 2018		

Specific objective: **SO #2:** **Support the adhesion of municipalities, towns and regions into transnational initiatives**						
Code:	**Activity**	**Partners/ Stakeholders**	**Term**	**Main indicator(s)**	**Source of funds and estimated costs**	**Country**
A 2.1.	*Registering RDA Banat as a supporter in EU Covenant of Mayors for Climate & Energy*	• RDA Banat	Oct 2018-April 2019	• 1 submitted registration form • Filled, signed and submitted Commitment Statement • Created Online profile	**Total: EUR 0**	Serbia
A 2.2.	*Initiating the idea for registering the City of Zrenjanin and other Local Governments from Banat region in the Covenant of Mayors for Climate & Energy initiative, as signatories*	• RDA Banat • City of Zrenjanin	Oct 2018-April 2019	• 1 meeting organised • At least 1 submitted registration form • Filled, signed and submitted Commitment Statement(s) • Created Online profile(s)	**Total: EUR 0**	Serbia
A 2.3.	*Endorse and advance green mobility (modal shift and zero-emission public transport)*	• Implementers: ○ KSSENA ○ City municipality of Velenje (MOV) • Beneficiaries: ○ Residents of the City municipality of Velenje and surrounding settlements ○ Republic of Slovenia	2018-2019.	• 6 Consultation meetings • 1 developed project	**Total: EUR 4,125,00** • Organizations own funds • Additional co-financing from the City municipality of Velenje	Slovenia

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		• Partners:
		  ○ SRIP ACS
		  ○ Ministry of Infrastructure of Republic of Slovenia (MzI)
		  ○ Ecubes Arcola
		  ○ Faculty of Mechanical engineering, University of Ljubljana
		  ○ Petrol
		  ○ NOMAGO
		• International supporting organizations:
		  ○ Fuel cell and hydrogen Joint Undertaking (FCH JU)
		  ○ Roland Berger
		• Suppliers:
		  ○ Safra
		  ○ ITM power
		  ○ Hydrogenics				

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Specific objective: SO #3: Inform and promote participation of towns, cities, municipalities and regions as well as enterprises and individuals in European award competitions						
Code:	**Activity**	**Partners/ Stakeholders**	**Term**	**Main indicator(s)**	**Source of funds and estimated costs**	**Country**
A 3.1.	*Establish contacts with relevant (new) partner/stakeholder organizations from the Danube region and the EU with a common vision for future energy supply and use by actively participating in topical events*	• Implementers: ○ KSSENA ○ City municipality of Velenje (MOV) ○ City municipality of Celje (MOC) • Beneficiaries: ○ Republic of Slovenia ○ Association of Municipalities and Towns of Slovenia (SOS) ○ Ministry of Infrastructure of Republic of Slovenia (MzI)	2018.	• 1 project submitted to the transnational programme in the end of June 2018. • Established contacts with relevant partner organizations and involvement in a thematically relevant (to the regional/ local circumstances) partner consortium (within the scope of the event)	**Total: EUR 3,719.00** • Organizations own funds	Slovenia

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Specific objective: SO #4: Raise awareness, inform and facilitate public dialogue on eco-innovation on the level of national decision makers						
Code:	**Activity**	**Partners/ Stakeholders**	**Term**	**Main indicator(s)**	**Source of funds and estimated costs**	**Country**
A 4.1.	*Organizing the meeting with the representatives of Government of the Republic of Serbia, Serbian Development Agency and Regional Development Agencies in Serbia on issues outlined in the national analysis*	• Government of the Republic of Serbia, • Serbian Development Agency and • Regional development agencies	Oct 2018-Nov 2018	• 1 meeting organised • 3 initiatives/ideas discussed	**Total: EUR 500** • Meeting organiser	Serbia
A 4.2.	Raise interest among authorities on innovation-related *issues and the associated potential of political framework adaptation.* *Write proposal for a respective study/ policy advisory.* *Elaborate policy* advisory and deliver to political stakeholders.	• Economica	Nov 2018-spring 2019	• Finalized proposal for policy advisory; and – upon proposal acceptance – • Delivery of policy advisory paper	**Total: EUR 10,000** • Contracting authority	Austria
A 4.3.	*Presentation the aims and achievements of the EcoInn project on an energy efficiency workshop*	• SMVKA • Chamber of Construction Engineers	Oct 2018-Nov 2019	• 1 workshop is organised • 25 participants • 25 submitted registration forms	**Total: EUR 300** • HUHR CBC Programme, EN-EFF project	Hungary 2

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A 4.4.	*Presentation the EcoInn project and dissemination of its eco-innovation achievements (Virtual lab) on a sustainable tourism workshop*	• SMVKA • Tourism Board of Somogy County	Jan 2019-Feb 2019	• 1 workshop is organised • 15 participants • 15 submitted registration forms	**Total: EUR 300** • Danube Transnational Programme, AoE Bike Trail project	Hungary 2

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Specific objective: SO #5: Engage the enterprises and the general public and endorse eco-innovation on the local and national level						
Code:	**Activity**	**Partners/ Stakeholders**	**Term**	**Main indicator(s)**	**Source of funds and estimated costs**	**Country**
A 5.1.	*Engage in discussions on ecoinnovation; communicate lessons learned from EcoInn project activities at topically related events*	• Economica	ongoing	• Discussions at workshops (Innovation for Future; Anthropogenic climate change and energy supply" in event "HUMANS" (Salzburg, 19 Jan 2018) • Regular interaction with sustainability-oriented University career center (Salzburg)	**Total: EUR 0**	Austria
A 5.2.	*Project anticipated for Greening up of Cities*	• Economica • Grün statt Grau	2019-2021	• Motivating major corporation (identity confidential) for in-kind-contributions • Network meeting 24. Jan 2019 • Exploring Greening-up-potential with head of Viennese district 28. Jan 2019 • Negotiation with architect Feb 2019 on (green) redesigning theater front	**Total: EUR >100,000** • Private funds • Eco-related national and EU funds	Austria

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				yard • Proposing experimental greening-up pilot study to house owner 18. March 2019		
A 5.3.	*Implementation of green public procurement within bwcon*	• Bwcon	2019	• By January 2020, 30% of all products purchased by bwcon should come from local producers • By June 2019, the material printed by bwcon should be reduced by 20% • By June 2019, bwcon will add CO_2 compensation to at least 30% of products and services purchased by the company • By January 2019, bwcon will draft a plan to improve its IT system and digitalize some of its process in order to save time, money, energy and resources	**Total: EUR 5,000** • Internal companies funding	Germany
A 5.4.	*Workshop – how to write EU funded projects in the area of innovation*	• EUPC	November 2018	• 1 workshop organized • 30 people participated	**Total: EUR 300** • CCI BL	Bosnia and Herzegovina
A 5.5.	*Presentation of Virtual Lab and*	• Association of innovators	April 2019	• 1 meeting organised		Bosnia and

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	related topics at the meeting of Association of Innovators	of Republika Srpska		• 3 ideas for cooperation generated	**Total: EUR 500** • CCI BL	Herzegovina
A 5.6.	*Organize a competition for public promoting green and eco-innovative approach to Christmas with an event for students focused on forest preservation and ecological impact of Christmas.*	• SCSTI	December 2018	• 3 winners of the Facebook competition • Min. 50 students attending the popularization event	**Total: EUR 0**	Slovakia1
A 5.7.	*Organizing the meeting between the representatives of eco-friendly companies and students.*	• CUSP • Slovgen • GoSpace Tech • GHC Genetics • Fablab	Oct 2018-Nov 2018	• 4 meetings/ excursions organized • 10 initiatives/ideas discussed	**Total: EUR 0**	Slovakia2
A 5.8.	*Promote energy efficient and healthy living environments amongst local stakeholders and beneficiaries*	• Implementers: ○ KSSENA ○ Business incubator of the Savinjska and Šaleška region (SAŠA inkubator) • Beneficiaries: ○ Local community ○ Local enterprises ○ Republic of Slovenia	2018.	• 1 Consultation meeting • 1 Workshop organised	**Total: EUR 0**	Slovenia

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