

NATIONAL REPORT ON EXISTING STRUCTURES FOR SUPPORT OF ECO- INNOVATION – SLOVENIA



WP3	Strategy for eco-knowledge
ACTIVITY 3.2	Analysing the environment for ecoinnovation in partner countries
DELIVERABLE 3.2.3	National report on existing structures for support of Ecoinnovation

Project number	DTP1-191-1.1
Title of the project	Eco-innovately connected Danube Region (Ecolnn Danube)
Version	Final
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Country	Slovenia
Date	2018

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1. Abstract

Slovenia has been regarded as one of the most advanced countries in transition ever since it gained its independence in 1991. The country is located at the crossroads of Central and Southeast Europe, placed between the Alps and the Mediterranean. Slovenia joined the EU in 2004, adopted the Euro in the beginning of 2007 and became a Schengen area member in the end of December 2007. The country is a member of the OECD (Organisation for Economic Co-operation and Development) since July 2010. After the adhesion to the European integration processes along with the global economic expansion in the period leading to 2008, the economic downturn that followed exposed several systemic problems and left the country with extensive debt. In the aftermath of the financial crisis, Slovenia documented one of the sharpest declines of GDP (- 7,8%) of all member states in 2009, which was followed by slow growth (or further declines) until late 2013. The sudden lack of liquidity forced several companies into bankruptcy, investment projects were halted, and once favourable credit ratings plummeted towards “junk-bond” territory almost over-night. To bail-out the troubled banking sector, Slovenia increased public debt relative to GDP from 21.8 % to 82.6% in 2015, currently maintained at around 33 billion EUR (or about 16,000 EUR per citizen). However, in this new normal of public debt, Slovenia has managed to establish a stable environment for doing business and has notably improved in several areas.

The strategically relevant location of Slovenia provides vast business opportunities for the European market but may also serve as a hub for the Western Balkans (long business tradition and personal networks) and beyond. Slovenia offers solid transport and communication networks. Some of the most important infrastructure that service the economy is the excellent network of motorways for inland transport, effective port infrastructure (Luka Koper) as well as reliable transmitting lines and supply chains for electricity and gas. The country has a dependable and robust telecommunications network.

The business environment of Slovenia has been considerably improved, particularly within the last decade since the financial crisis of 2008. According to the World Bank (“Doing business indicators”), it improved its global ranking from the 55th place in 2008 to 37th currently in 2018. The strongest features of the national business environment are a well-diversified and robust export sector, highly educated and skilled workforce and as well as a high quality of life. It also holds a competitive advantage in trading across borders, transparent resolution of insolvency cases, ease of paying taxes and presently a stable banking sector (overcapitalized by the Slovenian government).

The administrative environment for doing business has generally been improved and is sufficiently effective to service the economy. The major issue for businesses is the Slovenian ineffective and slow judicial system, which has a substantial backlog of unresolved court proceedings, even though according to the OECD, Slovenia allocated 0,5 % of its national GDP to the judicial systems (second only to Israel).

Starting a company is relatively easy and affordable, both for nationals and citizens of EU member states. Interested parties can receive in depth guidance on national “one-stop-shop” portal such as EUGO and e-VEM. For a business to operate in Slovenia permanently, the owner is required to register the company as a business entity. Economic activity may be performed by an individual or business in a variety of legal and organisational forms. A citizen of the EU, EEA or the Swiss Confederation, has the same rights and obligations in the country as a Slovenian business entity. However, as a non-resident of the Republic of Slovenia, prior to commencing operations, an EU citizen must obtain a Slovenian tax number, and in specific cases, a personal identification number. The financial cost of opening a business depend on the type of legal form of a company (sole trader or a limited liability company) but is in general very low. Moreover, several activities such as the registration of a simple one-person LLC, general proposal for the registration of founding the LLC or a change of activity in the Slovenian Business Register can be done free of charge at Republic of Slovenia at VEM offices in multiple locations. There are several companies that handle the procedure on behalf of the company to be, whereby total cost of starting up a company amount to a few hundred EUR.

The banking sector, although overcapitalized to mitigate the negative spill over effects of the global financial crisis does not easily provide financing to the economy, in particular to micro, small and medium sized enterprises. For companies with the sole trader legal form, it’s particularly difficult. Start-up companies are not eligible for loans from conventional sources, as the high risk of failure can’t meet the requirements of the lending institutions. Funding sources are however widely available through an extensive network of business support organizations or directly through companies.

Green jobs, material productivity and energy efficiency in relation to the pragmatic use of natural resources and optimized water management are regarded as one of the key opportunities defined within Slovenia’s Smart Specialization Strategy.

2.2. Support structures for facilitating eco-innovation

2.1 Government support

Active labour policies played a key role in supporting the business environment in Slovenia, particularly after the onset of the financial crisis, although issues of relatively high unemployment and poor enforcement of labour laws was characteristic of the national situation even within the period of economic expansion before 2008. Non-flexible formation and inability to adapt to rapidly changing macroeconomic state of affairs were recognized as essential negative impacts on the overall low competitiveness of the national economy. The main goal of the several reforms carried out since 2009 were to increase flexibility and security of the national labour market by insuring better workers' rights protection, lowering labour costs, simplification of layoff procedures for employers, stricter and more efficient supervision as well as enhanced judicial protection. Domestic support funds, albeit frequently managed under jurisdiction or cooperation from national ministries are presented in a separate chapter.

2.1.1 Employment incentives

Labour market developments in Slovenia following the global recession have exhibited increasing segmentation, especially along the lines of contract types (between permanent and temporary workers) and age (young and older workers seem to be particularly affected by precarious employment and unemployment). Presently, there are several incentives in place, that promote employment/self-employment of job seekers, also from marginalized groups as well as less developed regions. There were several programs for subsidizing self-employment of citizens operated by the Slovenian government implemented since 2009. The initial program provided a once-off financial assistance of 4,500 EUR that supported the setting up of enterprises (most commonly in the legal form of sole traders). Support measures are for e.g. provided by the employment office of the Republic of Slovenia in the various form of incentives for young entrepreneurs, incentives for women entrepreneurship and partial exemption for taxes/social contributions. There are currently several incentives that promote business development in Slovenia provided by public institutions, such as the Slovenian Fund for Entrepreneurship. The fund offers multiple grants and soft-loans to companies in various stages of development and socio-economic backgrounds, such as for e.g. the incentive for innovative enterprises (seed capital up to 54,000 EUR), incentives for setting up enterprise in areas with high unemployment (from 20,000 to 40,000 EUR) and incentives for companies working in the field of timber/biomass. Various additional instruments such as guarantees for interest rate subsidies, microcredits and venture/mezzanine capital. In addition, there are numerous non-financial support activities carried out by technological parks, business incubators, university incubators and so forth.

There exists very strong support for providing employment opportunities amongst the young. One such form of support is the incentive for young entrepreneurs managed by the Employment Office of the Republic of Slovenia that targets unemployed persons up to the age of 29 that already have an existing business idea and are willing to get involved in the mandatory entrepreneurship training, which provides them, upon successful completion, with a One-time financial grant (5,000 EUR lump sum) for starting a company and preliminary development of their business. The incentive is widely accessible for the target group and requires no previous experience. Every step of the process is clearly defined and supported by free of charge counselling. The support structure is guaranteed for the period from 2018 until 2019, for which a minimum of 2,5 million EUR is secured. The funds are provided through the European social fund (80%) and the Republic of Slovenia (20%). It's very likely that the incentive will be made available also after 2019, as they have been more or less for the past decade. The support structure is very effective and popular, especially amongst first time job seekers who are unable to obtain relevant experience elsewhere. The support mechanism can be easily adapted to various target groups and is highly replicable. Another support mechanism managed by the national Employment Office is the incentive for female entrepreneurship, that also provides applicants with a financial grant (5,000 EUR lump sum) for starting a company and developing their business. The incentive is easily accessible for all unemployed women with at least post-secondary level education and requires no previous experience. Every step of the process is clearly defined and supported by free of charge counselling. The support structure is guaranteed for the period 2018 and is unclear whether or not the incentive will be available also in 2019 and beyond. The support structure is very effective and popular, as thus far nearly 800 women have started their entrepreneurship since the inception of the programme. The support mechanism can be easily adapted to various target groups and is highly replicable.

The provided incentives are sufficiently accessible with respect to the main target groups. The process for acquiring the subsidy for e.g. self-employment is accompanied by excellent support from the emissary institutions, so no specific knowledge is required, expect of course for the trade/profession one wishes to pursue with their business ventures. Classes about basic business development and managerial assignments are also mandatory in several cases, so the self-employed person is equipped with essential knowledge.

The incentives for employment have been available on a periodical basis in the past decade, however where re-opened (published) very commonly, so the effect was an almost continuous availability of the funds. Some measures, such as tax incentives have been in place continually within the observed period. Previous experience show that some of these support measures will only remain in the extent that they are actually required as it is very unlikely that they will endure in the environment of strong economic growth and high employment levels (2018). These incentives have achieved their purpose in entirety, although there have been some concerns over precarisation and marginalization of the work force (much lower benefits compared to regular full-time employment, no social safety). The measures described are by large very easily and quickly adapted, replicated and scaled.

2.1.2 Tax incentives

In the period from 2007 onwards a clear trend towards non-discretionary instruments, such as tax incentives for research and development have been observed. Fiscal policy is considered an essential component of creating a more stimulating investment environment in Slovenia, which is focused on job creation, technology and knowledge transfer and facilitating new opportunities for local/national companies. In addition to some examples of grant aid described in the previous section, Slovenia presently provides a tax relief by a 100 % tax allowance on the volume of qualifying expenditure for research and development (operational and capital expenditures – equipment acquisition costs). The tax allowances were introduced in 2005 and raised from 20% to 40% in 2010 and onward from 40% to 100% in 2012, which led to a notable increase in the implied tax subsidy for R&D, both for profitable and loss-making entrepreneurs. What's more, unused credits are eligible to be carried forward for a duration of 5 years and there is practically no ceiling on the amount of qualifying expenditures or value of the tax relief. While direct funding of BERD has been volatile in the past two decades, growing steadily only within the 2009 to 2012 period, when the national GDP declined substantially, the tax relief as a share of GDP (which in 2015 amounted 5 times more than direct BERD funding) have been in place to bridge this gap and has gained importance in absolute and relative terms since 2005.

2.1.3 Trainings and seminars for skill development

There are various trainings available that address several different areas of expertise. They're carried out through various types of institutions, from public educational institutions, public expert institutes, chambers of commerce and industry, employers' associations to private organizations and public employment agencies. Many of said training and skill development activities are provided free of charge, frequently through capacity and development project co-financed by European funds. However, a large share of available trainings are focused on the development of soft-skills like public speaking and presentations, time management, leadership and project management, business etiquette, communication skills and so forth.

Trainings for development of highly sought skills such as for e.g. graphic design, software development, computer aided design/manufacturing and search engine optimization are also periodically available, but mostly involve training fees or payable issuance of certifications.

Generally, the share of adults participating in at least some form of learning programs is at a very high level, at 11,6% in 2015 (above the average of the EU, which stood at 10.8%). Furthermore, the same year an incredible 89% of employed persons took part in professional trainings to broaden skill sets relevant to their areas of expertise, while 84,1 % of all companies offered such opportunities to their employed personnel in some form

Thematic trainings inclusive of free of charge on line tools and educational materials on the topic of energy efficiency (topics like energy refurbishment, standards on nearly-zero energy buildings, HVAC systems, innovative financing models such as EPC/ESC, etc.), and renewable energy (RES power system modelling, economic and environmental calculations, available subsidies, maintenance, etc.) are provided through a network of local energy agencies from different Slovenian regions as well as a wide variety of private providers. Education and training of personnel is defined as a right and obligation of the employee and the employer, to the extent that it's essential for the work process the employee is directly involved with. Several companies that generate high value added with their marketable products and services also tend to invest more in their human resource capacity in order to optimize work processes, familiarize with new technologies (particularly in STEM fields), and basically secure a competitive advantage over their direct competitors by drawing the most talented experts into their teams.

Some companies also include training within their business models, in terms of providing for e.g. publicly available tools that are useful for a variety of applications but also promotes the company's products (such as the building construction modelling programme provided by insulation producer URSA). Despite the availability of entrepreneurship training for the unemployed, especially for highly educated youth, there are some gaps and areas for improvement in the entrepreneurship support system. First, there is a gap in entrepreneurship training offerings for the less educated unemployed, early school leavers and core-age unemployed people (i.e. 25 to 49 years old), who make up the bulk of the unemployed population. The most significant gap is the absence of financial supports that support the unemployed in business creation. Another area for improvement is that information on start-up financing and potential sources of investment could be strengthened and simplified so that the unemployed can easily access and understand it.

2.2 Domestic support funds

Domestic (national) support programmes for development of human resources are commonly available and are to a large extent based on European structural and investment funds. Substantial support is provided through various public funds operating on the national or regional level. The key national institution for providing study and research scholarships as well as other incentives for human resource development, including financial incentives for companies/employers is the Public Scholarship, Development, Disability and Maintenance Fund of the Republic of Slovenia. The fund manages several programmes and also provides timely information on support mechanisms to the public and increases international mobility of students as well as researchers through various initiatives and networks.

One such programme is the Competence centre for personnel training (KOC), whose main activity is the implementation of trainings for personnel employed in companies operating in a particular industry or in the field of operation of the Smart Specialization Strategy in line with the requirements and long-term strategy of the companies involved. Under the coordination of independent experts, a model of primary competencies is prepared (identifying greatest deficits and greatest growth potentials) which is the basis for the training plan for the employees. Primarily training is provided to strengthen professional-specific competences, which represent a comparative advantage for the business, the economy and the wider society. This includes training of transversal, multi-disciplinary content, such as managerial, sales and soft skills, as they have a significant impact on the commitment of employees, the performance of the organization and the achievement of results. The training is also focused on delivering new knowledge in the field of marketing, design, introduction of changes, ecology and digitization. There are/were several other programmes structured as activities carried out within competence and development centres. One such programme was the Competence Centre for the Woodworking Industry – KOCles, which introduces concepts of management, branding and development of competences that enhance the success of Slovenian operations and thus contribute to the competitiveness and preservation of jobs in this key Slovenian industry. The programmes main intent was to achieve higher value added from an industry with low investment in research and development, namely by focusing on design and development of innovative products and services as a key opportunity to adapt to the modern business world with new knowledge and improved practices. The project activities introduced hundreds of training session (focused on design management and branding, management and business improvements as well as marketing, sales and communications) and business process improvement within the companies from the Slovenian wood industry. It was concluded at the end of 2017. Another relevant programme, titled Following the creative path to knowledge 2016-2020 (Open, responsive and quality system of higher education - Project work with the economy and non-economy in the local and regional environment) enables the integration of higher education institutions with the labour market and thus gives students the opportunity to gain practical experience. In the framework of co-funded projects, students explore creative and innovative solutions to the challenges of the economic and social environment. The program also introduces the promotion of mutual exchange of knowledge, experience and good practices of higher

education teachers and experts from the economy. The main purpose of this activity is the transfer of professional and academic knowledge, which will consequently encourage higher education institutions to modernize study programs and introduce an innovative teaching approach. The program enables co-financing of projects that are carried out in groups of 6 to 8 students under the mentorship of the pedagogical and working mentor. In addition, an organization from an economic or social field can join the project. Projects are eligible to last from 3 to 5 months.

Another key organization for supporting business and innovation development in Slovenia is the Slovene Enterprise Fund, which was established to improve the access to financial resources for business development, particularly investments into micro, small and medium-sized enterprises (SMEs) as well as microfinancing of start-ups in the Republic of Slovenia. The fund supports business projects within the broader Slovenian entrepreneurial sector, mostly with the use of refundable financial instruments (loans, guarantees for loans, subsidised interest rates, venture capital). The fund manages the two most essential programmes for supporting business development, which are the Young enterprises and SME5+ programmes. The fund provides through the Young enterprises programme financial support (start-up incentives, seed capital, venture capital, microcredits and guarantees) for newly established innovative companies that demonstrate high growth potential. There are 3 main products for young innovative enterprises offered from the category of start-up incentives, namely incentives for innovative start-ups with high-growth potential (financial incentives plus support from the best local and foreign start-up mentors), incentives for start-ups in problem regions (not technologically innovative companies per se, however demonstrate positive economic and social potential, especially in terms of reducing the unemployment in problem regions) and incentives for start-up enterprises in the field of wood utilization (for supporting the introduction of products and services in the area of wood utilization that demonstrate higher value added than conventional enterprises within the field) focused on the integration and exchange of knowledge in the forest-wood chain. Besides financial support, the first development phase covers the entire assortment of services associated with setting up an enterprise, inclusive of the support for the creation of a minimum viable product (MVP) based on own development, the creation of an entrepreneurial team in addition to a direct transfer of knowledge and knowledge institutions into the business environment. Within the SME5+, as the name applies, the fund provides microcredits and guarantees for already established (5+) micro, small and medium-sized enterprises in promote growth (expansion of operation) or optimizing existing or developing other complementary products or services. The credit is secured by the funds guarantee and as such offers better terms for enterprises because of lower collateral requirements, competitive interest rates, maturity of the credit and the possibility of a grace period for repayment of the credit. Furthermore, enterprises that obtain a credit within this product at one of the participating banks, have the possibility of obtaining a guarantee in the framework of the three credit-guarantee lines, which also include the opportunity to secure conventional projects, to secure technologically innovative projects and to enforce and secure trade activities.

One of the essential national organizations for implementing regional development policies is the Slovenian Regional Development fund. Its main goals are to achieve regional and rural development targets in the areas attributed to smart and sustainable growth and is focused to provide incentives to entrepreneurs and companies, agricultural holdings, co-operatives and the food processing industry, projects in the areas of the autochthonous national communities and local communities (municipalities). On the primary level the fund provides financial in the form of loans with very low interests and long maturity (up to 20 years). In some exceptional cases the fund also provides incentives in the form of grants. The main fields of investment for which tenders are periodically available include co-financing of initial entrepreneurial investments, co-financing of local and regional infrastructure as well as social and economic infrastructure owned by municipalities, co-financing of projects in the field of rural development and support for projects in primary agricultural production as well as projects of processing, marketing and complementary activities, co-financing of investment projects to increase the economic basis of the autochthonous national communities and co-financing of projects based on the implementation of emergency measures in regional development. Presently, the Slovenian Regional Development fund has no existing open calls relevant to eco-innovation. There are also several additional organizations relevant to the uptake of entrepreneurship and innovation, such as the Slovene Equity Growth Investment Programme (SEGIP), which is a 100 million EUR worth equity investment programme launched in November 2017. The fund is managed and deployed through the European Investment fund EIF and the national bank for export and development SID and supports Slovenian micro, small and medium enterprises with access to equity capital for growth. The fund is targeted to capitalize on additional investment from the private sector by attracting international equity investment and establish local capacity by supporting fund managers that focus investment into the Slovenian economy.

2.2.1 Scholarships

There is a wide variety of scholarships available for students included in formal education activities on the secondary and tertiary levels. The scholarships are managed through the Public Scholarship, Development, Disability and Maintenance Fund of the Republic of Slovenia and can be awarded with considerations of social status, future employment opportunities (deficit area vocations) or even for e.g. high-level achievements of students. The Zois scholarships are awarded as an incentive for achieving exceptional achievements and thereby creating added value in the fields of knowledge, research, development, and art. They are aimed at promoting education and attaining a higher level of education, raising the responsibility of scholarship holders for their education, as well as for choosing an education program, shortening education and improving employability. National scholarships on the other hand are awarded to students below a certain income threshold as a social corrective in order to make public education accessible to people from the socio-economic margin. Scholarships for deficitary professions are awarded to mitigate the lack of interest for certain (mostly technical) professions and there are even specific scholarships for Slovenians living abroad. There is also the possibility to apply for the Ad futura scholarships, that are intended for applicants who wish to obtain a scholarship for an educational program at a foreign academic institutions as well as for foreign citizen that apply for tertiary education in Slovenia.

2.3 Transnational support funds

Slovenia was very successful in absorbing European Structural and Investment (ESI) funds (constituted by the European Regional Development Fund-ERDF, the European Social Fund-ESF, the Cohesion Fund-CF, the European Maritime and Fisheries Fund-EMFF and the European agricultural Fund for Rural development-EAFRD) ever since it joined the EU in 2004. In the previous programming period (2007-2013), Slovenia was eligible for 4,1 billion (more than 5000 projects of different kinds), which it was able to allocate almost in its entirety. Slovenia continued to make substantial advancements compared to other EU countries with respect to the rate of absorption in the programming period 2014-2020, in which the country is eligible to obtain 3.87 billion EUR from ESI funds. Along with the national contribution of just over one billion EUR, Slovenia if successful will invest 4,9 billion EUR in various areas relevant to eco-innovation, such as low-carbon economy, transport, environment, education, employment as well as innovation and competitiveness of enterprises/SMEs.

The largest contributions will be allocated from the ERDF, CF, EAFRD and ESF. Some of the most notable goals for which the funds are planned are to improve R&D capacity and infrastructure (allocate a larger share of GDP), to provide support to SMEs in increasing productivity and securing higher value added, improve the business environment and facilitate access to finance, increase the share of energy production from renewable sources, improve energy efficiency of buildings, power systems and equipment, reduce GHG emissions and other air pollutants. Investments in environmental protection, sustainable and efficient use of resource as well as to improve infrastructure of the fresh water supply systems as well as substantial investment in improving educational services and access are also considered a priority in in the programming period. The most relevant funding programmes include Horizon 2020 Research and Innovation programme, the EU programme for the Competitiveness of Enterprises and Small and Medium-sized Enterprises, LIFE programme, Erasmus+ programme, transnational framework programmes such as Interreg Alpine Space/Central Europe/Mediterranean/Danube/Adriatic-Ionian as well as several other relevant cross-border and interregional cooperation programmes.

2.4 Business incubators

Technological parks, business and university incubators are the main source of direct support to young enterprises and are the most important factor in facilitating increased competitiveness, higher value added and a more equal regional development of entrepreneurship. There are over 20 institutions (out of which 3 technology parks, 13 local/regional incubators and 3 University incubators) of this kind currently in operation, not considering several public-private organizations of smaller scale.

The ecosystem for supporting new innovative companies in Slovenia has made great progress in the past decade, particularly from 2011 onwards. Start-up companies were able to raise almost 0,5 billion EUR in just 5 short years. 2017 set a new all-time record for raising capital, achieving 139,405 million EUR with just 113 investments. Up to this point, the trend is growing strong for 2018, with over 40 million EUR already raised. The start-up financing stabilized within the period from mid-2014 onwards and can now be benchmarked at over 100 million of raised capital per year. Positive trends are observed in the field of identification and implementation of appropriate legislative measures, which is being carried out on the highest decision-making level. The innovative company sector has had a major impact on the national economy by connecting hundreds of entrepreneurs and creating thousands of well-paid jobs. The ecosystem for supporting growth of innovative companies is now scaled, very efficient and has a monumental impact on how business is carried out and how business culture is viewed by the public. The major point of interest in 2017 were development of blockchain based companies and financing through initial coin offerings (which represented 57,5% of the total), making Slovenia the country with the highest concentration of experience with blockchain globally. Another very positive development is that 34,5 % (about 48 million EUR) of raised capital was done so by means of venture capital and only 0,9% by means of crowdfunding.

Slovenian start-ups in 2017 remained a high rate of diversity. However, from the total, companies operating in the primary industries that can be attributed to the broad term of eco-innovations, such as environmental technologies and services (441,000 EUR), mobility (1,847,873 EUR) and for e.g. food (3,190,246 EUR) represented only a very small share of the acquired funds. The support offered to companies and entrepreneurs by means of supporting organizations has been on a very high level for several years. This includes technological parks and business incubators, technology transfer offices in addition to organizations co-operating within the so called national innovation system.

2.5 Support by companies (internal and external)

The economic recovery of the European and global economy have put a strain on employers to obtain qualified and motivated personnel. Because of this, many companies now actively seek future personnel and attempt to spark their interest by offering various systems of reward and support. For e.g. in 2017 Slovenia re-introduced apprenticeship programmes within secondary vocational educational programmes, which was aimed to provide students with basic skills and knowledge about their specific profession, reducing the gap between classroom and employment position, allowing companies to receive support for on the spot trainings. Students have the ability to carry out employment tasks under the supervision and guidance of personal mentors, while receiving mandatory monthly remunerations in the process. These apprenticeship programmes are an excellent way to provide education and skill development from the ground-up in the sense that participants within these programmes will obtain a much better understanding of the entire work process, as opposed to engineers that finished grammar school on the secondary level and focused their studies on theory for the entire duration of time spent in academia. Next year (academic year 2018/2019) students will be able to receive practical education in 8 deficitary professions within more than 200 Slovenian companies. Many national companies also provide private scholarships to promising students. The purpose of human resources scholarships is to integrate/connect future employment seekers and the employment sphere, because companies can, through long-term human resources planning, ensure the on-time development of appropriate personnel, thus stimulating the development of enterprises. Personnel scholarships are on average the highest among all types of scholarships, but many of them remain unused each year. The advantage of staff scholarships is to provide immediate first employment after finishing school. High-profile employers (international corporations or large national/former national companies) have also been introducing alternative actions in order to on the one hand, get in contact with promising persons as potential future employees and secondly, to develop products and services that them, as the company, would require to support or expand their business operations, but don't want to carry out the work on their own and don't want to outsource the work to an external entity. In this regards, hackathons, training "bootcamps" and various other forms of co-creation and educational events have become commonplace within Slovenian companies. Eco-innovation in general, is becoming an indispensable part of Slovenian companies' strategies to survive and/or to achieve a competitive advantage.

2.6 Crowdfunding

Slovenian entrepreneurs have achieved very good success in terms of acquiring equity through crowdfunding campaigns in the past decade. In a way, crowdfunding campaigns were initiated and implemented from necessity, as the unemployment, especially within marginal groups such as young people reached very high levels after the credit crisis, in which Slovenia fared especially poorly. Particularly the youth decided to take the bold step into entrepreneurship and started developing a culture of innovation, business and international cooperation, a culture that has become commonplace and integrated into the mindset of citizens across the country. The majority of these however were hosted by international platforms, such as Kickstarter, Indiegogo and Gofund me. In 2017, Slovenian campaign acquired co-funding support of 743.485 € from 14.571 supporters. Out of 60 launched campaigns, 21 or 35% achieved their targeted contributions. The first national crowdfunding platform named Adrifund was established in Slovenia at the end of 2015 or beginning 2016. Surprisingly, the ratios of successful funded campaign in relation to those that failed was the highest on Adrifund (reward based crowdfunding platform), with 63% successful campaign compared to only 25% of those that were published on Kickstarter. In addition, the second national crowdfunding platform Conda (equity and lending based crowdfunding platform) was launched in 2017. Support for carrying out crowdfunding platforms can also be obtained on various levels, in addition to very good access to experts included in the network of business/start-up incubators. For e.g., this includes organizations such as the Poligon Institute for the development of creative industries, which started operations in 2012, at the height of the financial crisis as a response to the clear deficit of existing support structures (governmental or otherwise) for creative industries and business development nationwide. The institute has provided support to coworking and crowdfunding initiatives through expert support, promotion, spaces for development, thematical events, trainings and much more. The Poligon Creative Centre which was established in 2014 as the first of its kind in Slovenia, is located at the former Tobacco factory Tobačna Ljubljana and provides 7 offices, 1 conference room, a crowdfunding lab, more than 60 working desks, a gallery space and an event space. The organization operates as a private NGO and does not receive public funding.

Despite the fact that 2017 was without a doubt the year of ICOs (Initial Coin Offerings) and that conventional crowdfunding campaigns were not as popular as in previous years (as these campaigns usually required a much more detailed product description, business case, reward system, etc. as opposed to general “whitepapers” and promotional videos) crowdfunding will remain an important source of financing for future entrepreneurs and innovators for years to come. The most important feature that crowdfunding project sourced from Slovenia as a very small country, not widely known, frequently associated to socialist/communist regimes and corruption by foreigners, should focus on is the transparency of procedures, products and people involved within a campaign. Particularly the latter, whereby innovators and entrepreneurs with global recognition and personality capital are considered an important factor of trustworthiness when it comes to crowdfunding campaigns.

2.7 Events and networking

There are multiple platforms for events and networking focused on innovation, product/business development, match-making and entrepreneurship, organized by public and private organizations. Access to promotional, marketing and general networking mediums in Slovenia is very good as there is a variety of events, media and organizations (both public and private), that provide strong support to innovators and start-ups. The strong community of business support organizations allow innovators and business to be visible across several platforms for addressing supporters, investors, clients, co-workers, partners and other partnering organizations. Information campaigns and other promotional activities have engrained the very essence of innovation and entrepreneurship into the public domain where it now receives high admiration and strong positive consensus.

In this respect, the initiative Start: up Slovenia is one of the key facilitators and promoters of innovation, development and entrepreneurship, connecting public and private stakeholders within the national start-up ecosystem. The initiators of the Start: up Slovenia initiative are the Technology Park Ljubljana and Tovarna podjetnov, with the Primorska and Pomurska Technology Parks, Regional Incubator of the Savinjska and Šaleška regions and the Development center for Information and Communication Technologies. The most influential international event for networking and promoting innovation and entrepreneurship is the PODIM (<https://www.podim.org/>) annual conference. It's the largest and most visible start-up conference in the Alps-Adriatic region with more than 6800 participants (start-ups, investors, corporations and other stakeholders with global presence) is a dynamic two-day entrepreneurial event hosting internationally renowned speakers, start-up celebrities and prominent investors organized annually. It represents one of the most relevant networking platforms for connecting and opening the regional start-up ecosystems from the European Adriatic and Western Balkans area to the global scene. A very high-profile event organized within the country is the Industrial forum of Innovation, Development and Technology-IRT (<https://www.forum-irt.si/en/>). The forum focuses on achievements and novelties within industry, innovation and innovative technological solutions, successful application projects of research organizations, institutes and universities carried out in an industrial environment as well as best practice examples of transferring useful knowledge from the scientific and research environment to industry. The national innovation ecosystem is very strong on the local/regional level, therefore topical events focusing on local environments inclusive of training seminars, co-creation and co-working events, such as the Start:up Müsli meetings for the City of Maribor are very commonplace across the country. Wholesale promotion of science and innovativeness in society and promotion of research achievements and inventions in addition to the comprehensive promotion of creativity, innovativeness and entrepreneurship for the young is also outlined as a priority within the Research and Innovation Strategy of Slovenia 2011-2020 (RISS). Technical studies and science are already strongly through information campaigns, communication/info days from the side of the Slovenian Research Agency. A best practice example of promotion and awareness raising in science (research, development and innovation) is the "Excellent in Science project", which represent the selection of the most important achievements of the past year, carried out by members and members of the scientific research councils of individual disciplines. The selected achievements are presented in publicly accessible events every

autumn in the form of short popular lectures. In 2017, the achievements of researchers and researchers were presented at six thematical events organized by the Agency in cooperation with the Pan-European Nights of Researchers, collaborators and collaborators of the Science on the Road project, the Slovenian Ethnographic Museum, the Slovenian Academy of Sciences and Arts and the Novo mesto Grammar school. Another very successful activity is the organization of the “Days of Communication of Science” which is organized in the form of a three-day set of events dedicated to raising awareness and acquiring skills in the field of communication about science. Other topical events and promotion

Other topical events such as Meet and Match (a closed event that targets match-making between corporations and start-ups. Selected start-ups and corporations are invited to a series of pre-arranged meetings aiming to establish business collaborations), Healthday (pitching competition and matchmaking event for health start-ups) and PowerUp! (pitching competition for energy start-ups and matchmaking event for the energy industry) are widespread.

2.8 Promotion and marketing

Active participation on national and international fairs is supported from the side of various public and private organizations in Slovenia, most notably this activity is facilitated by the Chamber of Commerce and Industry-GZS (and its sub and partner organizations) as well as the Public Agency for Entrepreneurship, Internationalization, Foreign Investments and Technology-SPIRIT. For example, THE public Agency SPIRIT Slovenia issues and manages open public tenders for the joint participation of national organizations in international trade fairs abroad in 2019, which are published each year. There is substantial interest from the side of the of Slovenian companies, industry associations, sections and clusters or other interest-based economic associations to promote their services and products and to establish new business contacts with foreign business partners, which leads to the conclusion of new businesses and, consequently, to the growth of participating and partner companies. In the framework of group presentations at the fairs abroad, SPIRIT Slovenia covers the costs of renting an unspoiled exhibition space, technical connections for the needs of the group exhibition and the entry of exhibitors in the fair catalogues.

There are several channels for promotion and marketing on the national level, for e.g. the start-up Slovenia initiative which provides up to date information about the start-up scene, investors, founders, entrepreneurs. It represents the key start-up association of Slovenia and is focused on representing the start-up ecosystem to other stakeholders, including policy-makers. Daily newspapers/information portals such as Finance.si and Svet Kapital (issued by Delo) cover the activity of Slovenian start-ups, companies and innovators very extensively. Finance.si also manage the Startaj.si news portal which is specifically designed to present news on start-up/entrepreneurial topics. Furthermore, the national public media house Radio-Television Slovenia also hosts a talk show in primetime on successful SMEs and start-ups, titled Prava Ideja that is very successful in presenting the success stories of Slovenian entrepreneurs amongst the general public. Similar shows have been or are still aired on other, competing (commercial)

TV stations, such as for e.g. Dober posel at Planet TV. In terms of promotional activities carried out through commercial channels, a very successful and widely known promotion campaign for young entrepreneurs “to be” is the Štartaj Slovenija campaign, which is carried out by Spar Slovenia, which is unique in the sense that successful ideas are marketed within the extensive network of stores nationwide and promoted through a TV show that has significant outreach to the potential clients.

Award ceremonies are also a very popular and effective way of promoting both specific innovations and products, but also the very concept of entrepreneurship and innovation between the general public. One such event is the Slovenian “Start-up of the year” award which rewards most promising Slovenian start-up entrepreneurs, with the intent of highlight their activities and not only promote their own companies, products and/or services, but to promote entrepreneurship and innovation with the recipients of the award in the role of business/innovator ambassadors. There are several other publicly visible award ceremonies, such as the entrepreneur of the year, the Gazela award for best, most rapidly growing companies as well as international awards such as the European awards for entrepreneurship. There are numerous other promotions, events, awards and other relevant activities that inform and promote ecologically oriented innovation within the country.

3. Support structures for energy efficiency, renewable energy and environment conservation

Support schemes for energy efficiency, renewable energy and environmental protection investments have been available for 25 years. The most imperative organization providing support for each before mention area is the Slovenian Environmental Public Fund. The fund was established under the 1993 Environmental Protection Act. The fund was assigned with new tasks in the field of supporting investment in energy efficiency of the final consumers of energy with the renewed Energy Act (EZ-1), transposing the EED and EPBD Directives and the National Energy Efficiency Action Plan Action. As such, it is (currently) oriented to fulfill targets of the National Energy Efficiency Action Plan Action for the period 2017-2020 (AN-URE 2020) as well as the Long-Term Strategy for Mobilizing Investments in the energy renovation of buildings (DSEPS 2015) and is in-line with the National Renewable Energy Action Plan 2010-2020 (AN-OVE 2020) and the Operational Programme for the reduction of GHG emission (OP-TGP). The main purpose of the public fund providing energy incentives is to facilitate investment in energy efficiency, renewable energy sources and other areas of sustainable development by providing grants (non-repayable subsidies) and low-cost loans to both individuals and legal entities including municipalities, providers of public utility services and enterprises.

The fund offers incentives in the fields of energy efficiency, renewable energy, sustainable mobility as well as some additional incentives in the field of fresh water conservation and even waste management, either through non-refundable incentives (grants) or affordable loans. The most important are financial incentives for new investments in increased energy efficiency, the use of renewable energy sources and sustainable mobility, which include for e.g. the installation of solar heating systems in a residential buildings, installation of wood biomass heating plants for central heating of residential buildings, installation of heat pumps for central heating of residential buildings, installation of solar heating systems (collectors – solar thermal), installation of micro solar power plants, installation of micro/small solar, wind and water power plants, installation of micro CHP units (micro cogeneration of heat and electricity), connecting older one or two floor building to district heating systems, installation of energy efficient wooden windows, thermal insulation of façades (thermal envelopes), thermal insulation of the roof and/or ceilings, installation of ventilation by returning the heat of waste air (recuperation) in residential buildings, installation of gas condensing boilers for central heating of older residential buildings, construction or purchase of nearly zero energy new one or two floor buildings, complete renovation of older buildings, purchasing a dwelling in a new or renovated almost zero energy three and multi dwelling buildings, optimization of heating systems, deep energy renovation and even financial incentives to legal persons for purchasing electric vehicles (battery EV)/plug-in hybrids. In addition, some incentives are specifically focused on supporting environmental/health protection, which include investment for the connection of residential buildings to the public water supply network, securing drinking water supply where public supply is not foreseen, installation of rainwater collectors, installation of drinking water

treatment plants, removing insulating and fireproof linings containing asbestos fibres, replacement of plumbing or sewage pipes from materials containing asbestos or heavy metals (lead, zinc, etc.) and replacement of roof covering containing asbestos fibres, etc. In addition, for legal persons (for e.g. enterprises) the fund also provides incentives (soft-measures) for co-financing of awareness-raising, education and promotion projects of non-governmental organizations (NGOs) as well as events and other communication/educational activities.

In the area of supporting energy renovation of public buildings, the most relevant development was the enactment of the Long-Term Strategy for Mobilising Investments in the energy renovation of buildings in October 2015. The strategy is also implemented under the Energy act (EZ-1) transposing the Energy Efficiency Directive (2012/27/EU) of the European parliament and of the council into national legislation. Moreover, Slovenia affirmed the objective to include 1.8 million m² of public buildings in the energy renovation within the duration of the programming period until 2023 in the Operational Programme for the Implementation of the EU Cohesion Policy in the period 2014 – 2020. Other operational targets of the strategy include the energy renovation of 3 % of public buildings owned or occupied by central government each year (between 15 000 and 25 000 m²) and the improvement in the ratio between public funds invested and investment incentives in the public sector to 1: 3 (OP TGP 2020)

This was the basis for the launch of the national tender for co-financing energy renovation of existing building stock in ownership and/or management of municipalities. The first tender was launched in September 2016 and remained opened until mid-January 2017. It's expected that an estimated 414,8 million EUR will be invested into energy renovation up to 2023, with equity from ESCOs and financial instruments together providing over 60 % of the total required investment. The other main source of funding will be through European Structural and Investment Funds (ESIF), with a minor contribution from the government/state budgets. With respect to the first concluded tender, results about eligible applications, participating municipalities and included buildings are still unknown at this time, but the estimated funds available in the year 2017 and 2018 exceeded 10.5 million EUR. Through feedback provided by the national stakeholder network, as well as from the organizations personal experience in finalizing the scope of the investment and preparing pre-investment documentation, allowing partner municipalities to apply to the tender, many difficulties were identified. Several stakeholders from local authorities reported that they weren't successful in obtaining a single bid from an ESCO, despite the co-financing rate of 40 % of eligible costs for renovation projects. This implies that the foreseen funding level is not sufficient to foster investments in deep renovation and remain within the acceptable payback period of maximum 15 years.

Renewable energy as such has been vigorously supported in the past by providing non-refundable funding (grants), soft loans with and energy purchase agreements through a feed-in tariff system. The state aid scheme to promote the production of electricity from renewable sources and the high-efficiency cogeneration of electricity and heat, (the RES and CHP support scheme), has in recent years been one of the key measures of climate and energy policy in Slovenia and across the EU. In its original form it was primarily designed as an incentive for investments in environmentally friendly technologies for the production of electricity/energy. The initial scheme for supporting such investment, known as the system of qualified producers, was introduced in Slovenia in 2002, which did not achieve the projected targets and at the same time was not completely in-line with the guidelines of the European Commission with respect to granting state aid in the field of sustainable energy and environmental protection. National legislation was firstly adapted with, most notably, the amendment of the national Energy Act in 2009, however the scheme and respective liabilities already in place were found to be to a very large extent economically unsustainable and too focused on solar power plants (photovoltaic) on buildings. In 2009, the level of feed-in tariffs and premiums in Slovenia for the installation of on-grid rooftop solar ranged from 28.07 (10MW – 125MW installations) to 41.55 ($\leq 50\text{Kw}$) euro cent per kWh.

The disproportionate increase in the costs of the support scheme (which will peak only in 2023 considering existing contracts/liabilities), and at 130-140 million large left about a 20 million financing gap annually) has led to a significant burden on final customers with the obligation to pay a contribution to RES and CHP, which covers the majority of the costs of the support scheme. The final revision of the support scheme was introduced with the latest amendment of the Energy Act (EZ-1) in 2014. The final change was introduced with the aim of controlling the costs of the support scheme and defining the value of state aid, which provide adequate stimulus to attract investment in RES and CHP production facilities but are limited in the context that they will not exceed the maximum permissible values set by the guidelines prescribed by the European Commission. In order to coordinate the terms and conditions of the support scheme with the European Commission, the new support scheme was not operational until the end of 2016, after the successful notification of the notification to the European Commission in October 2016 and the scheme declared compatible with the internal market. The former feed-in tariff scheme is now closed. Presently support is provided through a two-stage tender process for installations of electricity production capacity from RES and CHP connected to the grid after 22nd September 2014, which are published on the basis of Article 373. of the Energy Law - EZ-1 (Official Gazette of the Republic of Slovenia No 17/14 and 81/15) annually by the Slovenian Energy Agency. The operation, the organizational structure and the responsibilities and tasks of the institutions responsible for the operation of the scheme, such as the Slovenian Energy Agency and Slovenian Power Market Operator Borzen, which operates the Center for Support in RES/CHP, are regulated since November 2016 by the Decree on Support for Electricity produced from renewable sources energy and high-efficiency cogeneration of heat and electricity. Within the framework of the support scheme, state aid is granted to producers of electricity produced from RES and CHP - support to compensate for the difference between production costs and revenues if the cost of production of this electricity, including the normal market return on invested funds, exceeds the price this electricity can be achieved on the market. The scheme supports the production of electricity, in theory non-discriminatory to all types of renewable

energy technology, inclusive of hydro, wind, solar, geothermal, biomass, biogas/landfill gas and gas treatment plants and energy from biodegradable waste. Since the entry into force of the EZ-1, support can be obtained for electricity produced in production facilities on renewable energy sources not exceeding 10 MW of nominal electrical power, except for production facilities for wind energy consumption, where this limit is 50 MW, and in production installations with high efficiency cogeneration not exceeding 20 MW of rated electrical power. For CHP, the support is intended exclusively for high-efficiency cogeneration, which provides savings of primary energy savings. Financial support for electricity from installations on RES and CHP is carried out as a guaranteed purchase (type of a guaranteed energy purchase agreement) of electricity at a predetermined fixed price or as operating support for operations where the producers themselves sell electricity on the market directly. The state aid is applied to cover the difference between the defined cost of production, which also includes a normal yield, and the reference market price of electricity. The future trend of developing support schemes for electricity produced from RES and CHP is the slow abandonment of guaranteed pricing systems altogether as the long-term priority remains the full integration of this type of electricity into the market. Thus, with the change in the support scheme, the guaranteed purchase price of electricity is limited only to production facilities with a nominal power of up to 0.5 MW. Support can be provided for up to 15 years for RES installations and for 10 years for cogeneration units.

4. Summary

This report - the national report on existing structures for support of eco-innovation (D 3.2.3) – is one of the core components constituting the common transnational strategy and effectively, the national action plans for implementing eco-innovation. Its main purpose is to determine key support structures for eco-innovation in place on the national level, both from the governmental (public expenditure on innovation, existing policy) and private (support structures put in place by companies such as scholarships, coworking projects with universities, mentorship/apprentice programs, etc.) perspectives. Structures and mechanism through which support to key areas relevant to eco-innovation is carried out are at a very high level in Slovenia and have been for quite some time. The support structures have been developed in a notable extent out of pure necessity, for empowering the growing number of unemployed, underemployed or part-time workers to create their own success story and line of credit. The support structures are currently very highly developed, decentralized and applicable for supporting further uptake of eco-innovation in terms that they are easily accessible, available continuously, available in a non-discriminatory way to all individuals regardless of age, sex and other socio-economic characteristic, available at the local and regional levels and so forth. Governmental support for supporting skill development, job growth and innovation has been successful in the areas of improving the conditions on the national labour market through various employment incentives, tax incentives and exempts as well as providing essential trainings for skill development to future/potential entrepreneurs and innovators. The public education system of which the availability to citizens regardless of their income levels is one of the highest in the world, however is too much focused on social studies and lacks incentives for sciences and engineering degrees on the national level. Research and development carried out within academia has not been adequately supported in the year following the financial crisis and the national decision makers have been unable to create competitive conditions for researchers to carry out their work in Slovenia. Conversely, the grass roots movements associated to supporting business development and the entrepreneurial spirit as such have had a very substantial impact on not just on how Slovenia is perceived on the international level, but also how ordinary citizens view entrepreneurship as something exiting and noble. Potential innovations are able to acquire support through the widespread network of business incubators and technology parks. Starting a company is now relatively easy, requiring very little initial capital, with several public organizations providing counselling and support every step of the way. Renewable energy and environmental protection technologies and other products are substantially supported through publicly operated financing systems in order to reduce the high price of eco-innovations and bring them closer to comparable market levels. Support for energy efficiency and renewable energy sources is comprehensive and has been revised in order to reflect the developments of price reductions in some technologies and provide long-term financial stability of the scheme. In the area of micro hydropower plants and wind turbines (only 2 single wind turbines in the entire country), it's clear by the lack of supported investment that the scheme could be further optimized.

5.Sources

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