



Služba vlade za razvoj in evropsko kohezijsko politiko (SVRK)

(Government office for development and European cohesion policy)

Study visit and conference Ljubljana, Slovenia

Project Activity: A3.4

Document version: 1

Date: 27/11/2017

Project acronym: SYMBI

Project name: Industrial Symbiosis for Regional Sustainable Growth and a Resource Efficient Circular Economy

Project code: PGI00291

Document Information

Document Identification Name: SYMBI_A3.4_Study_visit_minutes

Document title: Minutes of SYMBI Study visit and conference in Ljubljana

Type: Minutes

Date of Delivery: 27/11/2017

Activity Leader: SVRK

Dissemination level: Restricted

Document History

Versions	Date	Changes	Type of change	Delivered by
Version 1.0	27/11/2017	Initial Document		SVRK

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Content

1. Introduction

The Government office for development and European cohesion policy of the Republic of Slovenia (SYMBI project partner) hosted a two-day study visit on 21 and 22 November 2017 within the activity 3.4. Activity as foreseen in the application form states:

“SVRK will host a 2 day study visit to share national practices on waste recovery, separation & processing systems. The study will be organized on the basis of input documentation to be shared beforehand, describing the practices to be exchanged. All partners will participate, with members of their stakeholder groups. SVRK will draft a workshop summary report; partners will organize internal reporting meetings.”

The input study documentation was prepared and shared before the event. The full paper can be found in Annex I.

The aim of the study visit was to discuss the waste recovery, separation and processing systems with the context of boosting the circular economy and promoting the industrial symbiosis. Important part of the event was the field visits in [Aquapark Atlantis](#) and paper company [VIPAP Videm Krško](#). The first was the case of the shared heating, while the second about the innovation processes (e. g. deinking) that can lead towards forging new industrial synergies. The event was thus composed of three panel discussions and two study visits. Panel discussions served as a theoretical introduction and overview of the topic before going on field and see how these concepts work in practice. In total we hosted 14 guest speakers and welcomed 42 participants.

2. List of attendance

21 November 2017 (House of the European Union)

SYMBI STUDY VISIT, CONFERENCE AND INFO DAY, 21 NOVEMBER 2017, LJUBLJANA, SLOVENIA

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22 November 2017 (National Museum Slovenia)

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3. Agenda

“CIRCULAR ECONOMY AND INDUSTRIAL SYMBIOSIS: DRIVERS, ENABLERS AND CHALLENGES”

Tuesday, 21 November 2017

Venue: House of the European Union

8h50 – 9h00	Registration
9h00 – 9h10	Welcome remarks
	<ul style="list-style-type: none">• Alenka Smerkolj, Minister without portfolio responsible for Development, Strategic Projects and Cohesion• Peter Laybourn, Executiv Chief of International Synergies Limited, United Kingdom
9h10 – 10h40	Separation and waste recovery – closing the gap between primary and secondary raw materials
	<ul style="list-style-type: none">• Jana Miklavčič, Waste Division, Ministry of Environment and Spatial Planning, Slovenia• Rachel Lombardi, Director of Business Development, International Synergies Limited, United Kingdom• Arno Behrens, Senior Research Fellow and Head of Sustainable Resources, Centre for European Policy Studies, Belgium• Susanne Fischer, Research Unit Circular Economy, Wuppertal Institute, Germany
10h40 – 11h00	Coffee break
11h00 – 12h45	Good practices from Europe and Slovenia
	<ul style="list-style-type: none">• Ernesto Hartikainen, SITRA, Finland• Primož Oprčkal, Slovenian national building and civil engineering, Slovenia• Mateja Mešl, Project “Cel.Cycle”, Slovenia• Alenka Burja, Environmental Consulting, Slovenia
12h45 – 13h45	Lunch break
13h45 – 19h30	Study visit / Field visit to: <ul style="list-style-type: none">• <i>VIPAP Krško (paper industry)</i>
20h00	Networking evening

Venue address: Dunajska cesta 20, SI-1000 Ljubljana ([see the map](#)).

Wednesday, 22 November 2017

Venue: National Museum of Slovenia

9h00 – 10h30	Financial instruments for encouraging industrial symbiosis
	<ul style="list-style-type: none">• Tea Pirih, Ministry of Economic Development and Technology, Slovenia• Gregor Umek, Ministry of Economic Development and Technology, Slovenia• Mojca Vendramin, EKO Fund, Slovenia• Mateja Lavrič, Kolektor Venture
11h00	Departure to Aquapark Atlantis
11h30	Study visit / Field visit to: <ul style="list-style-type: none">• Aquapark Atlantis (<i>shared heating system</i>)
16h00	Wrap up and conclusions

Venue address: Maistrova 1, SI-1000 Ljubljana ([see the map](#))

4. Issues discussed

Welcome remarks in the beginning of the conference were delivered by **Alenka Smerkolj**, Minister without portfolio responsible for Development, Strategic Projects and Cohesion and **Peter Laybourn**, Executive Chief of International Synergies Limited (United Kingdom).

Alenka Smerkolj

- Slovenia has become very active and engaged when it comes to boosting the transition towards circular economy, since we are aware of the fact that linear economy no longer is an option if we want to secure decent living conditions to the future generations on our planet.
- Knowing that circular economy cannot just happen, but we need to strive to make it functional, we need to work on structural, horizontal and holistic approach.
- The knowledge, ideas and experience gained with the help of projects, such as SYMBI, has already helped us in preparing in drafting the strategic documents and this will be the case also in the future.
- SYMBI is thus seen as a great contribution for understanding the industrial symbiosis, role of green, circular and innovation public procurement in the process of accelerating the transition towards circular economy and particularly to make an overview and assess the role of financial instruments and mechanisms.

Peter Laybourn

- He emphasized the Oxford conference on strategic materials for low carbon economy, where they found that extraction of raw materials will grow 4-times by 2050.
- He made a short sum up of EUROCITIES conference (taking place in Ljubljana, Slovenia), where they found that all indicators about planetary boundaries are going wrong direction – instead of talking about the growth, the discourse should be about decouple growth from resources that are already circulated. In addition to that, there should be clear measures how to be cost effective, when coming to circular economy.
- They found that the benefit cost ration is 32:1, when it comes to investment into circular processes (if you invest 1 EUR in circular economy processes, you get on a long run 32 EUR via taxes and other indirect revenues).
- There are strong synergies between SYMBI and TRIS projects, since both projects are pursuing similar objectives.
- The third event was going to take place in Turkey on regional development and how Turkey could initiate a transition towards the circular economy.
- DG growth are going to examine the market potential for industrial symbiosis this November – public investments needed to help unlock the potential that the IS represents.

Photo material:



4.1 Separation and waste recovery – closing the gap between primary and secondary raw materials

The first panel session (21 November 2017, from 9h10 to 10h40) with the title *Separation and waste recovery – closing the gap between primary and secondary raw materials* highlighted different aspects of the topic. Panelists were **Jana Miklavčič**, Waste Division, Ministry of Environment and Spatial Planning (Slovenia), **Rachel Lombardi**, Director of Business Development, International Synergies Limited (United Kingdom), **Arno Behrens**, Senior Research Fellow and Head of Sustainable Resources, Centre for European Policy Studies (Belgium) and **Susanne Fischer**, Research Unit Circular Economy, Wuppertal Institute (Germany).

Jana Miklavčič

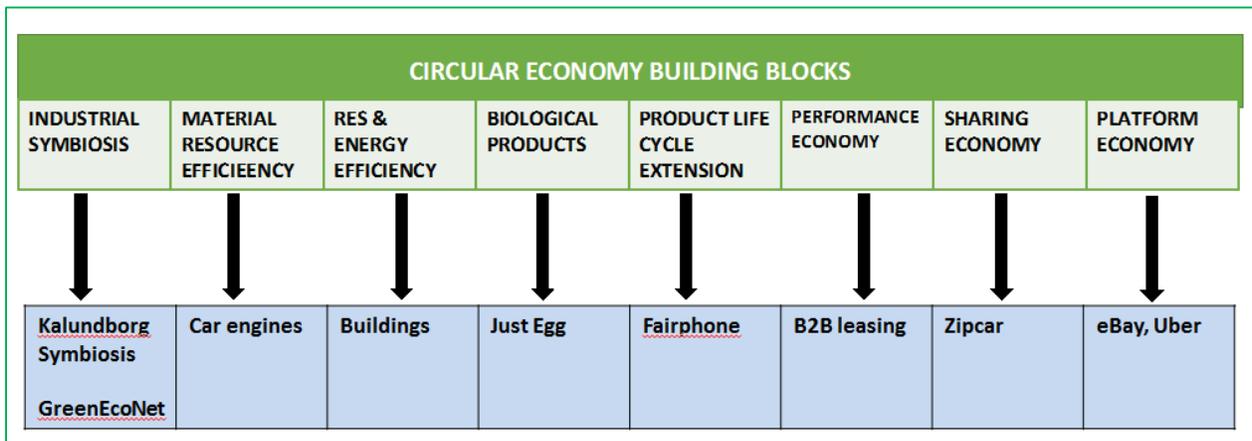
- She presented the EU and particular Slovenian legislation in the field of waste management.
- The Ministry of environment and spatial planning is responsible for preparing of national policies and for compliance of EU legislation in the field of waste management.
- According to statistical numbers, Slovenia ranks among highest in the EU in terms of separating the waste.
- The highest number of waste represent construction sector, followed by municipal waste and waste from wood and metal processes.
- In Slovenia, 80 % of waste is processed, while 7 % end at landfill.
- Ministry is following certain principles as shown in the picture below:



- Many activities are directed in waste prevention, which is the first and foremost step in waste processing system.
- Ministry puts a lot of emphasis on eco-design, since this area became the crucial element when speaking about the transition towards circular economy.

Arno Behrens

- His main message was that policies need to go in the direction of simplifying the complexity of circular economy so that particularly companies would know exactly where they belong and what they should need to do.
- One of the key messages was also that circular economy is above waste management, which usually is seen and described as main issue.
- According to him, the circular economy consists of three main pillars: environmental benefits, cost saving and new market.
- The model of circular blocks helps companies to find themselves in the particular box (see the picture below).
- One of the enablers for industrial symbiosis is platforms that help companies matchmaking – one of such is: www.greeneconet.eu



Susanne Fischer

- She highlighted the importance of waste prevention, which plays the first step when speaking about circular economy.

- She briefly pointed out the three main messages of European Week of Waste prevention, i. e. increase of material intensity; intensification of use; prolonging use after end-of-life
- We have to be careful when speaking about waste prevention, since not all “waste prevention cases” go into direction of reducing the waste; to this end, she presented cases of repairing vs buying new one | packing vs reusable | etc.
- To this end, she presented some steps about how to tackle the waste prevention.

Rachel Lombardi

- She presented enabler for industrial symbiosis, based on British case of NISP (National Industrial Symbiosis Programme).
- Many countries around the world are more and more interested in industrial symbiosis, since it is: economically justified, environmentally responsible and social beneficial.
- Therefore there are many business models and particularly initiatives, all of them leading towards circular economy. She presented the development of global initiatives and how we came to the circular economy.
- EU legislation is following the latest development and initiatives, but it is difficult to find consensus among member states.

Photo material:

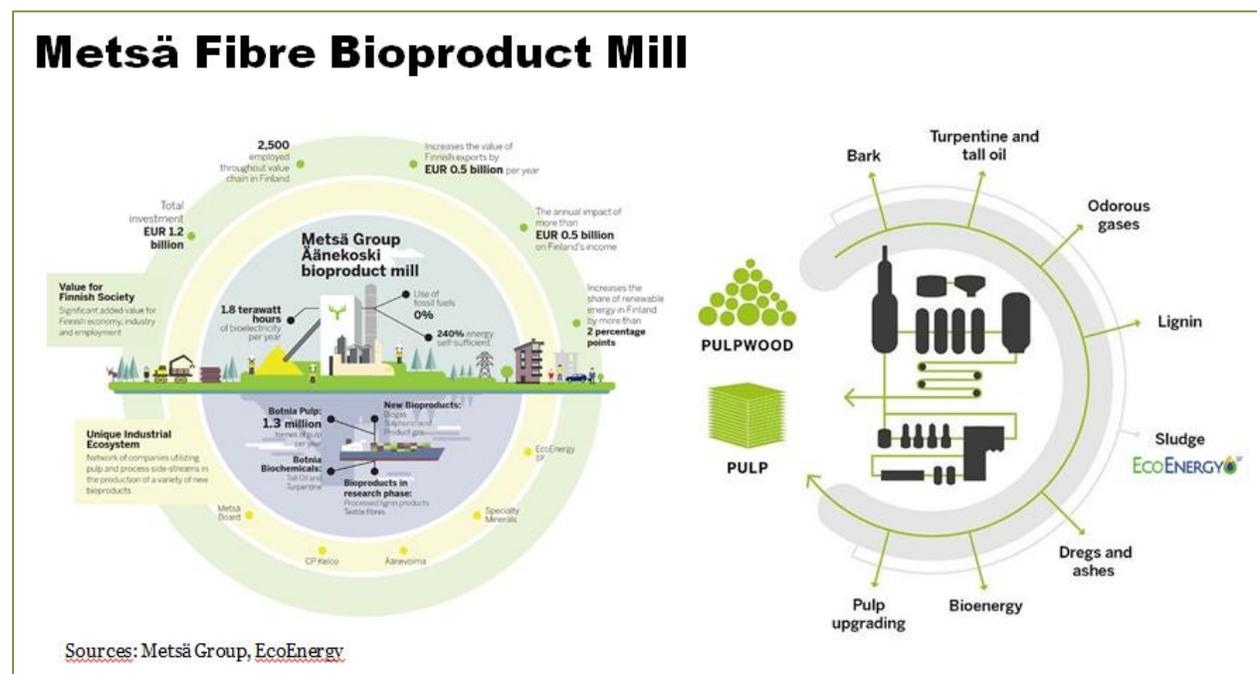


4.2 Good practices from Europe and Slovenia

The second panel session (21 November 2017, from 11h00 to 12h45) with the title *Good practices from Europe and Slovenia* was dedicated to share and discuss national and European case studies. To this end, we had four presenters, namely **Ernesto Hartikainen**, SITRA (Finland), **Primož Oprčkal**, Slovenian national building and civil engineering (Slovenia), **Mateja Mešl**, Project “Cel.Cycle” (Slovenia) and **Alenka Burja**, Environmental Consulting (Slovenia).

Ernesto Hartikainen

- He briefly presented the concept of Circular Economy and what the concept consists of – this is important to know when it comes to use of this concept in practice.
- Coming from SITRA, he presented how SITRA and Finnish government jointly drafted the Finnish roadmap to circular economy. They developed a methodology with which they identified those sectors that had the biggest potential to become circular.
- Along with these criteria, they identified companies and described their cases.
- He described the case study of Metsä Fibre Bioproduct Mill.
- The document Finnish road map to a circular economy 2016-2025 can be found [here](#).
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Primož Oprčkal

- Slovenian National Building and Civil Engineering Institute (ZAG) is a member of EIT RawMaterials.
- He presented project RusaLCA, aiming at upscaling innovative water remediation and circular economy.
- Nanoremediation of water from small waste water treatment plants and reuse of water and solid remains for local needs (case of municipality Šentrupert in Slovenia, where they launched the pilot project). This water is later used in construction company and for garden usage.

Mateja Mešl

- She presented the Cel.Cycle project, which aims at discovering potential of biomass for development of advanced materials and bio-based products.
- Within the project, they are looking for solutions on how to put the bio materials back in the use. One of the case studies is the process of deinking in paper industry (which we later went to see in practice).
- Within the project, they are looking for solutions on how to valorize the biomass potential and thus develop the bio-based products.
- Link to the project is [here](#).

Alenka Burja

- She presented the state of the GPP in the European Union and particularly in Slovenia. Slovenia has adopted the new Decree on GPP in September 2017, containing 20 services, goods and works, where GPP principles need to be taken into account.
- GPP significantly contributed in CO₂ emission reduction.
- In 2016, 30,37 % of all contracts issued by Slovenian public sector contained at least one aspect of GPP.
- She presented GPP 2020 project, supported by H2020 programme, where main aim was to make a research on how much GPP criteria help reducing the CO₂ emissions.
- Another project was GreenS (Green public procurement supporters for innovative and sustainable institutional change), where main aim was to research how much the GPP contributes to boosting innovation and make institutional changes (sustainable practices).

Photo material:



4.3 Study visit to VIPAP Videm Krško

After both sessions, we had a study visit to paper company **VIPAP Videm Krško**, which main activity is the production of paper from recycled paper. To this end, they are using some innovative solutions, e. g. deinking, which is a very promising solution and leverage for creating new synergies among different companies and sectors. Participants were welcomed by **Danijel Oštir**, member of the Management Board, who briefly introduced the company, main activities, challenges and future plans. He pointed out that majority of the paper is made of recycled paper, coming from different countries, mainly located in the Central Europe. As one of the biggest challenges, he pointed out the price volatility of separately collected paper – the price can vary for several tens of Euros. In the last year, there has been a huge demand for separately collected paper from China, resulting in raising prices on EU market. **Breda Ogorevc** later presented facts about the company, how company as a complex is composed and what are their novelties (innovations) that are promising to change the paper market (e. g. deinking, based on bio based materials). We made a tour around the company, where we could see all phases of paper production.

Photo material:



4.4 Financial instruments for encouraging industrial symbiosis

The third panel session (22 November 2017, from 9h00 to 10h30) with the title *Financial instruments for encouraging industrial symbiosis* was dedicated to make an overview of financial instruments to support the transition towards circular economy and industrial symbiosis. Panellists were coming from Slovenia, since all of them presented which instruments are currently available or are being in the process of implementation; **Tea Pirih**, Ministry of Economic Development and Technology, **Gregor Umek**, Ministry of Economic Development and Technology, **Mojca Vendramin**, EKO Fund and **Mateja Lavrič**, Kolektor Venture.

Tea Pirih

- Ministry is taking the circular economy seriously into account when planning policies and instruments.
- They are supporting the R&D activities that are accelerating the transition towards the circular economy.
- Through their financial mechanisms, they are financial supporting those projects that pursue principles of circular economy. To this end, she presented two cases: furniture, made of recycled materials; development of polymers for coating industry.

Gregor Umek

- He presented a new financial instruments for SMEs, i. e. *“Development and Implementation of New Business Models to Enhance Integration of SMEs in Global Value Chains”*, which aims at boosting and unlocking the investment potential.
- The aim is to support companies that want to integrate sustainable aspects of business into business strategies and business models, thus increasing the added value and competitive advantage in the market, both in positioning the final products on the market, as well as in integrating into global value chains. To support companies operating in one of the 9 priority areas of the Slovenian Smart Specialization Strategy.
- In order to get as many useful information about the companies and to train them, the Ministry established the *Academy for Establishing Sustainable Business Models*, where good practices are carefully examined and studied.

Mojca Vendramin

- She presented the EKO Fund that is a public fund (owned by the Government) specialized in providing financial incentives for different environmental investments.
- EKO Fund offers different type of financial support (loans and grants) for households, municipalities and companies.
- EKO Fund is thus the only institution that offers direct financial support for greening the households of citizens.
- Investments are focused on 6 key areas: air pollution reduction; efficient use of energy; use of renewable energy sources; waste management; waste water treatment and water supply

Mateja Lavrič

- Kolektor is one of the biggest Slovenian companies, supplying mainly the automotive industry. Dues to changes on the market and future predictions, where trends go, they started focusing on digitalization.
- They started looking for smart solutions. To this end, they set up a financial support mechanism to start-ups that they provide a solution for certain process or product.
- It is called *Corporate Venture Capital Fund*, based on open innovation principles.
- The company is thus answering to 4 main challenges: CORPORATE VENTURE CAPITAL FUND → INTERNAL R&D OF FoF (Factories of Future) → INTELLECTUAL CAPITAL → DIGITAL TRANSFORMATION

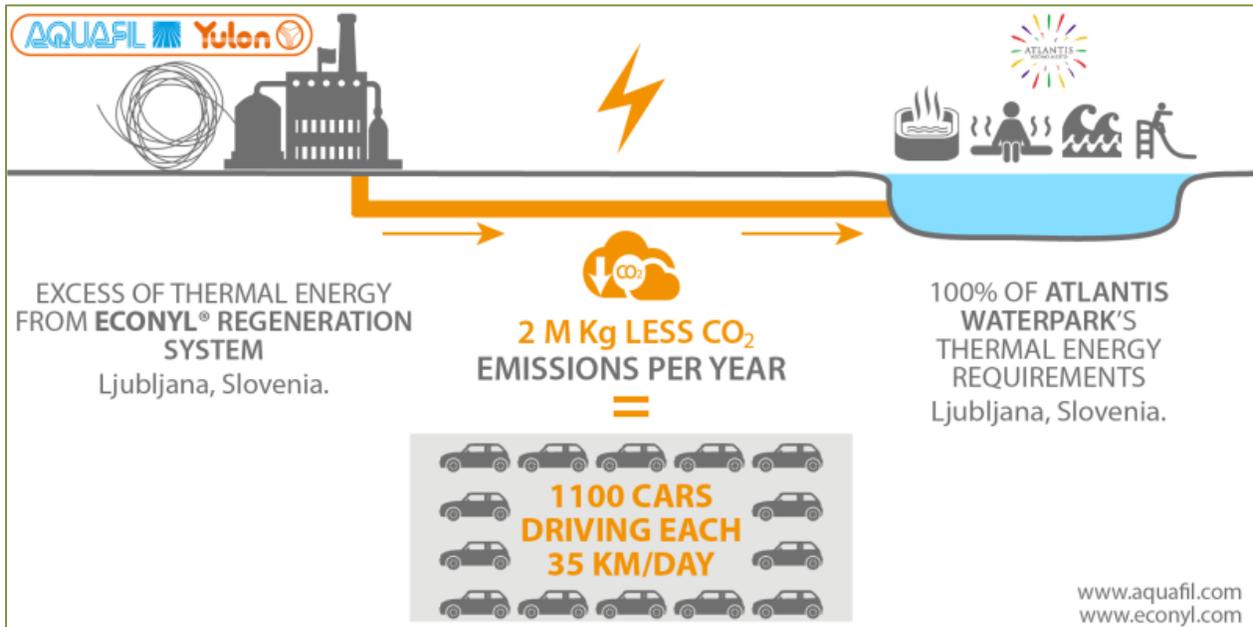
Photo material:



4.5 Study visit to Aqua Park Atlantis

After the session, we had a study visit to aqua park Atlantis, which has the most remarkable industrial symbiosis with Aquafil Company (shared heating system). Aqua Park Atlantis needs a heat to warm the pools and the entire complex, while Aquafil needs to cool the water, before releasing it in the municipal sewage system.

The industrial symbiosis can be best illustrated with this picture:



Source: [Aquafil](http://www.aquafil.com)

Photo material:



