CESME
Interreg Europe

3rd Newsletter

September 2017

http://www.interregeurope.eu/cesme

Editorial

The Circular Economy for SMEs (CESME) project was launched in April 2016 in the framework of INTERREG Europe. As circular economy is gaining attention in the European Union and worldwide, projects such as CESME are of great significance, in order to support SMEs to enter the green economy and future proof their business in a greener and more sustainable way.

With an overall budget of €1.63 million and supported by €1.39 million of INTERREG Europe funding CESME will share experiences, identify best practices and provide guidance to SMEs to become included in the circular economy. The CESME project is expected to last for four years (until March 2020). Ten partners are taking part in the project from six EU member countries.

Environment & resource efficiency

€ 1.39 M ERDF

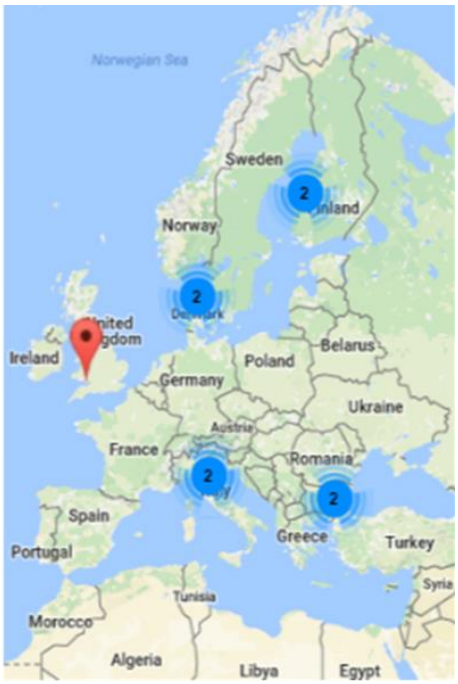
Apr 2016 Mar 2020

European Union
European Regiona
Development Fund

CESME Partnership

The CESME partnership consists of ten public organizations from six European countries (Denmark, Finland, Wales, Italy, Greece and Bulgaria).

VÆKSTHUS	Business Development Centre North Denmark_Leader Partner (DK)
NORTH DENMARK REGION	North Denmark Region (DK)
CITTÀ METROPOLITANA DI BOLOGNA	Metropolitan City of Bologna (IT)
ERVET	ERVET – Local development agency of Emilia-Romagna Regional Authority (IT)
	Regional Council of South Ostrobothnia (FI)
JPYP	JPYP Business Service (FI)
	Bulgarian Association of Municipal Environmental Experts (BG)
Llywodraeth Cymru Welsh Government	Welsh Government (UK)
ANATOLIKI	ANATOLIKI SA, Development Agency of Eastern Thessaloniki's Local Authorities (GR)
	Region of Central Macedonia (GR)



You may Read here

The INTERREG Europe Programme

INTERREG Europe helps regional and local governments across Europe to develop and deliver better policy. By creating an environment and opportunities for sharing solutions, it aims to ensure that government investment, innovation and implementation efforts all lead to integrated and sustainable impact for people and places.

By building on its forerunner, INTERREG IVC (2007-2013), INTERREG Europe aims to get maximum return from the EUR 359 million financed by the European Regional Development Fund (ERDF) for 2014-2020.

INTERREG Europe co-finances interregional cooperation projects with an amount of up to 85% of total project budget. Project activities have to be carried out in a partnership of policy organisations based in different countries in Europe.

The areas of support for 2014-2020 are: 1) research and innovation, 2) SME competitiveness, 3) low-carbon economy, 4) the environment and resource efficiency.

Read: www.interregeurope.eu

CESME activities and next steps…

During the second project semester, the project partners were collecting material in cooperation with stakeholders and experts to develop the White Book with lessons learnt and policy recommendations.

In addition, a Toolkit for green profile assessment including a return on investment calculation model was developed by experts. In parallel, 12 new best practices concerning circular economy were identified.

The 3rd STC and interregional partner meetings were organised in Thessaloniki, Greece. Local Support Group meetings took also place in all participating regions.

Additionally, Business Development Centre North Denmark and the two Italian partners arranged a field trip among local companies to share good practices within circular economy.

3 Italian enterprises went to Denmark in June 2017 to visit Danish good practices

within the dairy industry as well as within construction waste.

In more detail, the Italian Dairy Granarolo who produces milk, soft cheese, yoghurt and baby food went to visit the Danish dairy Thise Mejeri, who has an organic production and who has worked intensively to utilize a number of by-products, recycled water as well as animal welfare and sustainability throughout the production processes.

Furthermore, the employees from Granarolo visited AKV Langholt who has created a sustainable production of potato starch, where everything from water consumption, recycled water, utilization of residues and waste management takes place with the utmost care of the environment. The CESME partners are about to plan a counter visit to Italy, enabling Grenarolo ro showcase their good practices to Thise Mejeri.

In the 4th Semester, the development of the final Toolkit will take place. Furthermore, the White Book will be developed. Finally, 6 Action Plans (1 for each country) will be produced.

Additionally, an interregional partner meeting is scheduled to take place in **Seinajoki, Finland**, aiming to exchange experiences among stakeholders and examine **TOOLS FOR GREEN PROFILE ASSESSMENT** and **RETURN ON INVESTMENT CALCULATIONS** within Circular Economy. Local Support Group meetings will be held in each region and partners will keep on disseminating the project and circular economy model in their countries and regions.

By high quality work from all partners the project aspires to have a positive impact and significant added value in our economies and the environment.

For further information:

CESME website

CESME FB

CESME Twitter

CESME LinkedIn

Circular Economy Best Practices

One of the outputs of the CESME project is to identify Circular Economy Best Practices. Each partner is invited to search and present its Best Practices during the interregional events held. The Best Practices collection within the field tackled could act as a turning point in order to produce concrete, transferable practices not only benefiting the partner regions, but also for inspiration to all European Regions.

KOHIWOOD-Advanced circulation and utilization of side products (FI)

Oy Kohiwood LTD is a wood processing company in Soini, Finland. Main products are high quality wooden glulam panels for furniture industry and building construction materials. The factory has a sawmill and it produces also sawn timber. Main raw material is Finnish pine, but also small amount of Finnish spruce in small size logs are used. All the used wood is PEFC-certified. The certification ensures that the used wood is sustainably produced and legally, qualitatively, economically and ecologically harvested. During the process the glulam is quality sorted by robotized machine camera qualification system that ensures the optimal efficiency in use of timber material. The glue used is non-toxic and non-hazardous to health and the environment. The waste in the process is minimized and crushed to be used as biofuel.

The factory handles abt. 1 300 fixed cubic meters of wood daily. Side products are bark, wood chips and sawdust. Bark is used as biofuel and partly burned in the Kohiwood's own power plant and partly sold to other power plants. Wood chips are sold to pulp mills for pulp and paper production. Sawdust is partly used as

biofuel in own and customers power plants and partly processed to wooden biofuel pellets. Kohiwood needs heating energy around the year due to drying timber in 12 pcs of kilning rooms and also in wintertime for heating the factory facilities. All heating energy is produced by biofuel.

The circulation process needs large partnership network, because the capacity to partners demand varies seasonally, but the factory is operating all year round. Some partners have also different kinds of requirements for processing the side material to be suitable for their technology.

In a wood processing factory like Kohiwood the optimized circulation and utilization of all materials is significant and the sales prices from side products are a very important part of the income of the company. Effective circulation is the only way to be competitive and profitable in tight global business competition.

For future development Kohiwood is going to inspect possibilities to build a new combined biofuel power plant to produce heat and also electricity. The future aim is to produce all the electrical energy for the production process in its own power plant and get more benefit and added value for side products by using the biofuel for electricity production without loading and transportation.

PLASTEC-Manufacturing plastic-wood based fiber composite products (FI)

Plastec is a plastic company located in the municipality of Vimpeli in South Ostrobothnia, Finland. It has produced various injection moulded plastic products for over 30 years. At first, products were manufactured of plastic only, but in recent years the company has begun to manufacture plastic-wood based fiber composite products. The plastic materials are mixed with waste material from the paper industry. The circulated waste material can be up to 40-50 % of the raw material used.

The manufacture of wood and plastic combining composite products is different from the manufacture of plastic products. Composite is a challenging material. It behaves differently in manufacture than plastic. The same methods and moulds do not work, and new innovations and adjustments for the process are needed. The problems were solved by experimenting and testing with a number of different method variations.

The company manufactures furniture frames from composites on an industrial scale for furniture manufacturers. Composite chairs are also made. The testing result has been successful and is now forwarding to increasing industrial scale production.

The paper industry's waste material can replace part of the plastic in plastic products. The use of oil-based materials can be reduced and shifted to using circulated low-carbon materials. However, the production requires method development for the plastic injection moulding process.

After development process the results are good and more sustainable plastic products can be produced on commercial basis.

With good will and know-how more sustainable production can be created by using circulated raw-materials to replace less environmental friendly raw-materials.

For more information:

www.plastec-finland.fi

Lakeuden Ymparistohuolto-Optic sorting from waste material from construction sites, companies and public organizations (FI)

Lakeuden Ympäristöhuolto Oy started to use the first optical waste sorting management in Finland. The company collects waste material from construction sites, companies and also some public organizations. As a result of the new optical waste sorting the company is capable of reusing the materials unlike nobody else in Finland.

Lakeuden Ympäristöhuolto is collecting plastic, metal glass, wood etc. For instance the plastics will be optically analyzed, and the different types of plastics will be sorted to be reused. Optic sorting is capable of doing the sorting efficiently, and in a way that human eye could not do it.

In Finland, municipalities have their own waste management sites for that the private consumers are obliged to use. They have significantly built more capacity to burn the reusable material. According to Lakeuden Ympäristöhuolto significant amounts of reusable materials from individual homes are burned each year rather than reusing the materials. The problem is that according to Finnish law, the municipalities are collecting the waste from the private individuals.

Even though the recycling is getting more and more popular in Finland, the individuals are not capable of sorting the materials as optical system would be. For example different types of plastics cannot be sorted by individuals in a way that they would be right away reusable.

Lakeuden Ympäristöhuolto used to directly reuse 58% of the materials that they receive. 34% was used for energy production and 7% for other reuse such as biogas. As a result of the optical sorting system the company is capable of directly reusing 85% of the material that they receive. The change is very significant.

Recycling done by human eye/ hands is not the best way in the modern world. People are lazy to do recycling and their skills for sorting materials are limited. Today better technology is available and should be widely used.

European Union and the partner states should put pressure on using the state of art technology for more efficient recycling. We can't waste the valuable materials by burning them or not using them.

We need to create systems in which companies efficiently collect and reuse the materials. Lakeuden Ympäristöhuolto mentioned City of New York as an example for Europe on reusing materials and sorting them optically.

For more information:

http://www.lakeudenymparistohuolto.fi

Lapuan Peruna-Production of potato starch for use at paper industry (FI)

Lapuan Peruna is a company that produces potato starch to the use of paper industry. The production plant is located in the same premises with Chemigate Ltd., which is the only buyer for their starch. Chemigate Ltd. again produces modified starches for industrial applications and a range of cationic starch based polymers in liquid form. Lapuan Peruna processes approximately 70 000 tons of potatoes every year, which means 16 000 tons of starch every year. The company gets its potatoes from approximately 150 local contract farmers. The main by-product of the starch making process has been fruit juice that amounts approximately 70 % from the processed potatoes. Earlier this fruit juice has been sold and used as a fertilizer for fields in a liquid form. This has been quite

impractical since liquids are hard to store and transport. By investigating new ways to process the fruit juice and investing to new evaporation equipment they have been able to concentrate the fruit juice in a form that can be sold as a protein feed for pigs and fur animals. This has been successful and meant more business opportunities for the company as well.

Due to the relatively small size of the company, investigating to traditional ways of concentrating the fruit juice would have been unprofitable and impossible. Thus the company has had to be innovative in finding ways to process the fruit juice. This was done by testing the evaporation equipment that was left out of use at the nearby milk processing plant.

Lapuan Peruna is also a good example of small company that has successfully found financing from national and European level funding instruments. They are one of the first companies in Finland to receive funding guarantee from the European Fund for Strategic Investment (EFSI). They have also received funding for their research project from a nutrients recycling program run by the Finnish Ministry of Environment

The by-product flows from the starch making process are used more efficiently. Fruit juice that was earlier used as liquid fertilizer is now concentrated and can be used as an animal feed. This also needs less storage space and also less heavy transportation between the factory and the farmers' fields.

In the process the water vapor is condensate back to water and used to wash the potatoes. The new evaporation equipments were also also put back to the process, where it is used to wash the potatoes. Their new evaporation equipment are also bought from the old milk processing factory and thus recycled. Even a small company can be innovative and receive funding for its innovations. Circular economy and environmental issues in general are growing in importance all the time. It is important that SMEs acknowledge this and take part in this development. There are a lot of opportunities for SMEs in this development and they should be used and taken advantage of.

BIOGAS LAGADA-Power generation from organic raw materials' anaerobic digestion (GR)

Biogas Lagada SA is a power generation plant (power 1 MW) from the biogas combustion, which is produced by the anaerobic digestion of organic raw materials. The majority of the raw materials consist of farm waste such as liquid and solid cattle and poultry manure. As raw materials are also used cheese whey waste and mill wastes. Additionally but in a smaller rate, the AD uses, as a resource, silage from various crops such as corn, wheat, rye, etc.

All the above mentioned raw materials are stored in digestion tanks with the appropriate conditions and the required quantity. This digestion tank, within a suitable temperature conditions and with the absence of air produces the required amount of biogas for the continuous operation of the biogas combustion engine, which operates the power generator. Besides electricity, the whole process produces heat, which is used to cover the heating needs of digestion tanks. The output of anaerobic digestion is stored in tanks and used as fertilizer in agricultural crops of the region.

At a daily basis 240 tons of waste are collected and treated. Otherwise all these produced livestock waste would end up at agricultural crops without following the quality standards, as the output derived from the AD plant. The dairy and mill waste would have been illegally disposed in a natural recipient or in a wastewater treatment plant creating further treatment cost.

Additionally the AD plant constitutes the only RES technologies with negative CO2 balance. The construction and operation of AD plants brings a great environmental benefit and contributes to the implementation of CE goals It is of great importance the licensing process to be simplified in order to give motives for the construction and operation of new AD plants. *For more information:* www.biogaslagada.gr

KAISIDIS ABTE- Use of recovered asphalt mix in new production (GR)

This Good Practice involves the use of recovered asphalt mix in new production. The reclaimed asphalt mixture is the result of the asphalt or scraping asphalt. Demolition is carried out using road machinery such as the excavator while scraping is done using an asphalt cutter. After the material is transferred to the worksite, this material is processed to separate the material containing the highest percentage of asphalt and graded in grain size. This treatment is done by using the Granulator containing special shredders that do not polish the recovered bitumen but repel it.

With this technology, the asphalt contained retains all its properties while the sieves give the material the correct grading required. The recycled asphalt mixture then goes into the production process of the new asphalt mixture. There in special mechanical equipment it is heated and then mixed with the raw materials, asphalt and aggregates.

The most important problem that would prevent this cyclical recovery of the recovered asphalt mix would be the lack of this material. Today this problem does not exist because the percentage of road rebuilding and therefore the acquisition of recovered asphalt mix is much higher than the construction of new roads that do not offer reclaimed asphalt mix. This percentage of new constructions is ensured by the amount of recycled asphalt resulting from the reconstruction since the percentage used is 30%. Determining the optimum percentage of recovered asphalt mix by ensuring the highest quality of the asphalt mix was the most important challenge. The use of sophisticated mechanical equipment for the production of asphalt mixtures and the use of innovative technology called Granulator for the correct recovery and grading of the recovered asphalt mix was the solution to the challenge.

This practice improves the quality characteristics of the final asphalt mixture as well as the environmental benefits from the recovery of a waste. Tests have shown that the use of a 30% recycled asphalt mix increases up to 150% the properties and mechanical strengths of the new asphalt mixture. The primary raw material savings are 30% as well as the recycled bituminous mixture used in the manufacture of new ones. The use of recycled materials ensures the reduction of the use of primary sources of materials as well as the reduction of waste deposits into the environment. The reclaimed asphalt mixture ceases to be a waste, but it is a precious commodity with rich properties and mechanical strengths that offer economy and reduce the pollution of the natural environment In order to properly evaluate the properties of the recovered asphalt mixture, the material to be used in the production should be controlled for both its primary asphalt content and its granulometric grading.

For more information: www.kaisidis.gr

Orangebox Chair for Life and G64 take back and remanufacture scheme (UK)

One of the UK's largest office furniture manufacturers, their in-house design team are committed to ensuring their growth comes from products and services that are as environmentally smart as they are commercially successful. This has

included the design of the first office chair in Europe to be 'Cradle to Cradle' accredited, the set-up of an in-house recycling (take back) service and more recently, an Innovate UK supported project looking at adapting the business toward Circular Economy thinking. Looking forward their aim is to encourage the organisation, customers, distributors & suppliers to adopt a more holistic approach to product life-cycles and reduce environmental impacts.

In 2014, Orangebox undertook an Innovate UK –funded project 'Office Chair for Life'. The intention of the project was to design an office task chair and accompanying sales model optimised for a circular economy. In 2015, the company also began development of a take-back scheme and remanufacture scheme for one of their existing products, the G64 office chair. A significant difficulty for the company was reverse logistics – providing the collection, storage space and facilities for chair return. Orangebox overcame the challenges by identify a number of new partners in their value network who would take responsibility for the storage and refurbishment of chairs, including GreenCap, a local social enterprise.

In the case of the G64, retrofitting the take back scheme was difficult since the company sell through a network of dealers and do not always know the destination of the chairs. Orangebox undertook pilot studies with a key corporate customer to understand the typical wear and tear on the chair and how the chair may be remanufactured. In both cases, the company faces a challenge in developing new markets for refurbished goods. Orangebox is currently developing a separate brand which will sell the refurbished goods.

Both case studies are still at pilot stage. However, the design of the 'Office Chair for Life' product and service has been modelled and shown to have the potential to reduce resource intensity by up to 75% compared to Orangebox's next best available option. It is estimated that, when rolled out, the Chair for Life will divert up to 375 tonnes of material from landfill, generate sales of up to £5 million per annum and generate £2.5 million per annum of added value for Orangebox's supply chain. The pilot study has shown that 98% of the G64 chair is recyclable and remanufactured chairs have 78% recycled content. Carbon footprinting conducted by Best Foot Forward calculates that this represents a 32.44 kg CO_2 reduction compared to a newly manufactured chair. The savings are gathered mainly from the reuse of metal and plastic parts. Remanufactured chairs require no additional aluminium and 75% less steel. Polypropylene requirements fall by 45% and nylon demands by 66%. The refurbishment scheme also provides a new revenue stream for the company and the expanded value network. Taking into account remanufacturing costs, remanufactured chairs are likely to generate between 60 and 90% of the sales value of a new G64.

The Circular Plastics Economy in Wales (UK)

Quality can be enhanced by having access to segregated uncontaminated raw materials. A competitive edge is possible by focusing on quality and doing 'the right thing' in terms of recycling and reusing waste products and this can be attractive to buyers in internationally recognized brands. Quality and Quality Assurance is key. This has allowed Pulse Plastics to have a competitive edge and to develop a range of markets for recycled and reused plastics.

By focusing on a quality product Pulse Plastics now supply International brands such as TATA Steel as well as companies operating in the supply chain for the automotive sector.

Pulse Plastic's operation relies on supply of locally sourced waste plastic (raw material) and an end market for their high quality product. They can demonstrate to stakeholders' circular economy thinking and delivery, which facilitates both supply and demand.

The business specializes in producing extruded and injection moulded edge and bore protection packaging for coils of sheet steel. The protection products are made from 100% recycled HDPE and are currently supplied to Tata Steel for their sites in the UK and Holland.

Pulse Plastics provide a circular and local solution. Taking in waste plastics they grind raw material and then extrude and cut the product. Thus they have control over quality.

For more information:
www.pulseplastics.co.uk

Ice Arena Wales (UK)

Enabling Zero Waste (EZW) is a Constructing Excellence in Wales (CEW) initiative providing practical, positive and active intervention to establish if, and how, the construction industry can achieve the overarching Wales waste strategy target of zero waste to landfill for waste in Wales, together with identifying associated barriers by working with live construction sites.

One of the EZW projects is the construction of the Ice Arena Wales. The Ice Arena Wales is a £17.5million development of a two pad ice rink situated in Cardiff Bay on a remediated former municipal landfill site, built by Kier Construction Ltd (Kier) with the design from Scott Brownrigg.

The Ice Arena is home to the Cardiff Devils Ice Hockey team with facilities capable of holding European and Olympic standard events. The development is a focus for ice sports in the UK and offers seating for approximately 3000 spectators along with a café and private event facilities.

The building is a commercial template composite metal and backlit polycarbonite cladding on a trapezoidal steel frame.

Public Health Wales (PHW) (UK)

During 2016 PHW relocated from several smaller satellite offices across Wales to one new large open plan office in Cardiff Bay (51,000sft over 4 floors) incorporating the transfer of around 500 staff. PHW wanted to create a unique workplace environment designed to encourage a collaborative, social and learning focused workspace which embedded sustainability as a core principle. The brief produced for furnishing the building emphasized the need for environmental, economic and social sustainability to be demonstrated throughout the refit.

In order to achieve this PHW took a new and innovative approach to procuring office equipment, furnishings and flooring using as much re-used and remanufactured equipment and products as possible. PHW wanted the successful bidder to use as much of the existing office furniture as was reasonable: repairing and refurbishing where necessary and adding new elements as required. The exercise was based on a collaborative approach to securing a required outcome, rather than a detailed specification of numbers and needs, with suppliers invited to provide tenders which, in a variety of means, would meet the client's design and supply needs.

PHW, as an organization dedicated to improving public health and well-being, felt that this objective should extend across all their activities, including procurement of goods and services, and the refit was identified as an opportunity to demonstrate this approach. They already had a large number of quality furniture and fittings in their existing offices across Wales and it was felt that these items, with some cleaning, refurbishment and redesign, could be repurposed for use at the new office space in Carfiff Bay instead of being sent to landfill.

Once refurbished these could be combined with other new or re-used items in a cohesive and functional style appropriate for the new office space. The

tender brief stipulated the need to combine existing, re-used and remanufactured items as a core requirement, along with a design concept fitting with PHW's aspirations for a work space incorporating goals for collaboration, socialization, learning and focus, whilst meeting the functionality of the space required. Plans also needed to take into account the sustainability requirements of the Well-being of Future Generations (Wales) Act 2015.

Utilisation of Transport Marine Containers in the Building Industry (BG)

The project demonstrates the possibility to use marine transport containers for building a hostel for students. This is the first of this kind building in Bulgaria and it is tailor-made for the needs of a specialized sport school in Sofia to provide optimal living conditions to some of the youngsters studying there. Twelve colored marine transport containers were used for the building which after processing and transformation resulted into 8 fully equipped apartments. The project has taken into consideration the needs of handicapped as well, while one of the apartments is designed completely to serve students with disabilities.The idea was born as a result of the negative trade balance between Asia and Europe, which results in piles of unused containers, stored and not used anymore once they reach Europe.

It is important to be careful in picking up the containers from the harbors, so that it is provided that only undamaged containers, because the system to construct such a building is using the "click" modules and everything should fit precisely.

The buildings built out of colored containers are covering the requirements and providing the comfort of a standard apartment. They are extremely energy efficient, can be built much faster than the traditional ones, are not affected by the weather conditions and the investment costs are lower. They are also mobile and much solid in case of an earthquake.

The constructing modules allow a very quick assembling in case of necessity – force major, red cross actions as the containers are prepared and equipped into a specifically designed for the purpose plant – they come from the plant with a 90% readiness to be installed on the spot. The concrete fundament to be used as a foundation of the building is minimal as the construction system is light and solid at the same time. This approach/ technology could be used to build kinder gardens, homes for old people, low budget hotels, bungalows, bazars, office buildings, etc.

Save potable water in WC (BG)

The project is about saving potable water in households and public facilities by installing: water saving showers and wash basins with aerators and sprinklers, which use smaller amount of water and locks like massive water stream - WC with 2 flushing water volumes; the classic water flushing wc has a volume 8-12 liters, but to flush after a slash is not needed so big volume. It can be used 3-4,5 liters /flush. By installing wc cistern with 2 flushing volumes –small volume 3-4,5 liters and big volume 6-9 liters can be saved a big amount of potable water. For example in a home a person visited the WC 1 time daily for pooping and 3 times for slash – total 4times/day. If use classic WC cistern with 12l volume – will used 4*12=48 liters/day/person.

If use a WC with 2 flushing water volumes 4 liters and 8 liters, the used water amount will be 1*8+3*4=20l/d/person, which is with 28 liters less and will save 58% potable water.

By using such WC cisterns in public facilities the saved potable water will be multiplied, as well as can be saved 50-60% from water, used for WC flushing 28

liters/person/day, which is 21% from water consumption per person (consumption 128 liters/person/day). For 7,5 million people in Bulgaria 28 liters/day = 210 000 m3/day saved potable water-timer self-closing valves in public facilities-showers, sinks, urinal etc.
BAMEE propose education and information campaigns in municipalities in order to explain benefits.

Utilization of Sewage Sludge (BG)

The example describes Combined Heat and Power (CHP) production as well as compost production facility using the sewage sludge of the WWTP in charge for the exploitation, maintenance and management of the water supply, sewerage systems and purification of waste water of Sofia Municipality. The plant disposes with technology line for mechanical and biological purification of the waste water and a technology line for sludge treatment – dewatering and energy production. The CHP installation has 3 co-generators producing: 1063 kWt electricity per co-generator and 1088 KWT heating power per co-generator. The daily capacity is 35 000 – 39 000m3 biogas. The sludge of the plant is used as fertilizer in agriculture.

It occurs that sometimes there are contaminations (substances) in the waste water (as its quality varies) that make the purification process more difficult and challenge the production of fertilizer with high quality and high level of safety. A very close monitoring and control is exerted on the input and on the sludge treatment process as a whole to prevent dangerous substances being present in the produced fertilizer. A special legislation regulates all processes of using sludge as fertilizers.
The WWTP is fully satisfying its own needs and provides energy independency of the plant. The graph below shows the tendency in energy consumption and energy independence. The produced fertilizer is used for re-cultivation of areas around Sofia and the neighborhood.

News and Events

… on Circular Economy

Circular economy is a hot issue in the EU and its member countries. Due to this fact there has been a lot of activity in policy setting during the past year. Some of the highlights during the past year have been the following:

EU level

• In **June 2017**, the World Circular Economy Forum took place in Helsinki, Finland gathering together recognised experts and decision makers in the field to present circular economy solutions with 1,200 key people.

https://www.sitra.fi/en/projects/world-circular-economy-forum-2017/#wcef2017

• In **May 2017**, the Green Conference Circular Economy: Creating Value took place in Thessaloniki, Greece examining how businesses are transforming product lifecycles and organizational infrastructure to become more sustainable, with a dual focus on environmental responsibility and commercial value.

http://www.circulareconomy.gr/

… on CESME project

During the third Semester of CESME, project partners have been very active in organizing events to establish the project in the regional milieu and to promote the concept of circular economy to relevant stakeholders:

• The 4th Local Support Group Meeting of the Finish partners took place on 05.06.2017 in Alajärvi, Finland.

• In September 2017, the 3rd Local Support Group Meeting of Greek partners took place in Thessaloniki, Greece.

• In August 2017, the 3rd Local Support Group Meeting of the Finish partners took place in Seinäjoki, Finland.

… also

• The project webpage is active at http://www.interregeurope.eu/cesme/. The webpage will be regularly updated with project news and events. You may also search for CESME project on Facebook, Twitter and LinkedIn. Send to us news and good practices on circular economy to disseminate it to the public!

• The CESME White Book platform will be available soon at www.cesme-book.eu. The White Book will be collaborative developed and will contain the lessons learnt and the recommendations targeting both policy makers at strategic level, as well as SMEs at practical level.

Upcoming project events

• In September the 4th Interregional partner event of the CESME project will take place in Seinajoki, Finland, aiming to to exchange experience among stakeholders and evaluate **the Toolkit GREEN PROFILE ASSESSMENT** and **RETURN ON INVESTMENT CALCULATIONS** within Circular Economy. Information about the event will be available at the news section of the CESME project website and in the social media pages of the project.

… also

Several events relevant to circular economy are scheduled for next semester outside the framework of CESME project. Those events will be announced in the social media pages of the project on time. Two of the events that have already been scheduled are:

• The next **Circular Economy European Summit** that will be held in Barcelona on 14-16 November.

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