



Event Report

EPPA Sub-regional Workshop on Circular Economy

26-27 May 2021

Live video conference



This Project is funded by the European Union

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1 The event

The EPPA Sub-regional Workshop on Circular Economy took place on May 26-27, 2021, via live video conference. The workshop was organized in cooperation with TAIEX, and under the EPPA project work programme, namely activity 2.3 “Organisation of regional and national conferences on resource efficiency and circular economy”. It targeted the following EPPA beneficiaries: Bosnia and Herzegovina, Montenegro, and Serbia.

The participants came from the relevant authorities of the EPPA beneficiaries involved in the implementation of circular economy policies. They represented the Ministries with the environment portfolio, in addition to national environmental management and conservation agencies, municipalities, private operators, trade or industrial associations, universities and research institutes. Details are available in the list of participants. Civil society was represented by NGOs from the beneficiaries, namely: Centar za ekologiju i energiju (Bosnia and Herzegovina). The EU Delegations Bosnia and Herzegovina and Montenegro were also present.

The speakers represented EU Member States’ and EU institutions’ experience. There were experts from the relevant national authorities of Sweden, Austria and Hungary; and from DG Environment and DG SANTE, European Commission. Additionally, the workshop mobilized contributions from the European Environment Agency, the World Business Council for Sustainable Development, Circular Together Poland, Circular Point Hungary, Copper8, Extended Producer Responsibility Alliance, Circular Future Netherlands, and Elixir Zorka Mineral Fertilizers. Details are available in the agenda and the presentations can be downloaded from both the TAIEX website and in the EPPA project website.

The aim of the Workshop was to share the EU’s policy initiatives and practical measures for the development of a sustainable, low carbon, resource efficient, and competitive economy in the frame of the Green Deal. Advice and guidance as well as practical examples were provided on Circular Economy (CE) in order to support the development of CE in the beneficiary countries. The specific objectives of the workshop were:

- to explain the CE concept and to present the latest EU initiatives in this area.
- to present the latest initiatives in the beneficiary countries in the area of CE.
- to provide examples of CE business models in practice.
- to present and share experiences and best practices from EU Member States and from businesses in the sectors where the potential for circularity is high: plastic, packaging and food.
- to discuss the opportunities and challenges for CE in the beneficiary countries.

2 Proceedings and conclusions

The workshop was opened with the remarks by Ms. Astrid Schomaker, Director at the European Commission DG Environment and Mr. Lawrence Meredith, Director at the European Commission DG NEAR as well as high level speakers of the Beneficiaries: Ms. Sandra Dokić, Assistant Minister of Serbia, Mr. Danilo Mrdak, State Secretary of Montenegro, and Mr. Mirza Hujčić, Assistant Minister of Bosnia and Herzegovina.

The policy context was set with an EC presentation on the EU policies and measures to advance the CE: the European Green Deal, and the new Circular Economy Action Plan for a cleaner and more competitive Europe. The need for action stems from the verifiable over consumption of resources worldwide. There is only one planet earth, yet by 2050 the world will be consuming as if there were three. There are other worrying indicators: more than 90% of biodiversity loss and stress come from resource extraction and processing and the annual waste generation will increase by 70% by 2050. In the EU, only 12% of the materials used by industry come from recycling. The new Circular Economy Action Plan falls under the European Green Deal priority of mobilizing industry for a clean and circular economy.

The first Circular Economy Action Plan had success in looking at the life cycle of products (Eco-Design Working Plan, revised waste legislation, interfacing regulations), creating a material specific approach (Single Use Plastic Items Directive), and having a strong stakeholder engagement (EU Circular



Economy Stakeholder Platform, EU Platform on Food Losses and Waste, Circular Economy Finance Support Plan).

However, further steps are needed to change the way Europe consumes and produces. For this purpose, the new action plan aims to create a sustainable product policy framework in key value chains in order to create less waste and more value. This entails making sustainable products the norm in the EU, empowering consumers and public buyers and foster sustainable production processes to reduce waste generation, waste exports, while boosting the market for high quality and safe secondary raw materials. The targeted sectors are electronics and ICT, batteries and vehicles, packaging, plastics, textiles, construction and buildings, food, water, and nutrients.

A sustainable product policy framework is needed because many products break down too quickly, cannot be easily reused, repaired, or recycled, and many are made for single use only; consumers do not repair products, find too many labels and some green claims are misleading; and production processes in Europe are not resource efficient and can pollute our air, water, and soil. The response present in the new action plan is therefore to influence product design, empower consumers and thus reinforce circularity in product design, based on a new overarching framework addressing all products placed on the EU market, supporting more sustainable patterns of consumption, and cutting waste.

The Sustainable Products Initiative is then a legislative initiative to ensure products placed on the EU market become increasingly more sustainable, that will widen the Ecodesign Directive beyond energy-related products and establish a set of sustainability principles (via Ecodesign Directive or another instrument). The adoption of the proposal is planned for Q4 2021. Concretely, the Initiative's objectives are to improve durability, reusability, upgradability and reparability; address the presence of hazardous chemicals and increasing recycled content; restrict single-use and counter premature obsolescence; incentivise product-as-a-service and digitalisation, including digital product passport.

In terms of consumer empowerment, there will be a revision of consumer law: consumers to receive trustworthy and relevant information on products at the point of sale; establishing a new "Right to repair"; a legislative proposal to ensure companies substantiate their green claims using Product and Organisation Environmental Footprint methods (expected Q2 2021); include more systematically durability, recyclability and recycled content in EU Ecolabel criteria; a proposal for mandatory Green Public Procurement (GPP) criteria and targets in sectoral legislation.

Regarding waste, the action plan foresees specific waste reduction targets for more complex streams, enhance the implementation of the requirements for EPR schemes, continue modernising EU waste laws (packaging, end-of-life vehicles, hazardous substances in electronic equipment; batteries adopted Q4 2020), propose to harmonise separate waste collection systems; develop chemicals that are sustainable and safe by design; reduce the presence of hazardous substances detrimental to health and the environment; assess the scope to develop further EU-wide end-of-waste criteria for certain waste streams; establish 'recycled in the EU' as a benchmark for quality secondary materials; thoroughly review EU rules on waste shipments, increasing the processing of materials; adopt multilateral, regional and bilateral measures to combat environmental crime.

The new Plan is also concerned in making circularity work for people, regions and cities with the revision of the Skills Agenda [adopted 2020], a new Pact for Skills [launched October 2020], cohesion policy funds (to help regions implement CE strategies & reinforce their industrial fabric), a just Transition Mechanism, and urban initiatives.

The transition to a circular economy and the plan implementation are to be enabled by connecting it to climate neutrality (measuring circularity contribution to climate mitigation, strengthening the role of circularity in future revisions of the National Energy and Climate Plans, certification of carbon removals), using economic tools (integrating CE in EU Taxonomy Regulation (Q4 2021), EU Ecolabel criteria for financial products (Q4 2021), CE solutions in State Aid, business strategies, financial instruments and reporting (2021)), and research and innovation support through multiple funding programmes (Regional Development Fund, LIFE, HorizonEurope). The implementation progress will be measured at EU and national levels based on indicators of resource usage and timed along the European Semesters.



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Circular Economy was also connected with specific sectoral policies of the EU, which will be the building blocks to achieve circularity. As such, the participants received a brief on the new industrial strategy of the EU, EU policies and measures to prevent plastic waste and to improve its management, and EU policies and measures to prevent food waste.

A clear introduction to the concept of Circular Economy was also provided, focusing on the knowledge, skills and governance approaches needed for a systemic transition. Circular Economy stands for a renewable industrial economy that offers a changed concept of production and consumption in terms of design, use of resources and approach to waste generation. It entails gradually decoupling economic activity from the consumption of finite resources, and designing waste out of the system. The circular model builds economic, natural, and social capital. It is based on three principles:

- Design out waste and pollution
- Keep products and materials in use
- Regenerate natural systems

In addition, circular economy prioritizes renewable energy sources, efficiently uses energy, and encourages innovative technologies, green public procurement and replacement of hazardous chemicals with the less dangerous ones. Circular economy is not waste management hierarchy that was created in linear economy to reduce waste and retrieve materials back to production. Circular economy is above the waste management process because its starting point is a brand-new manner of thinking about the use of resources. It is based on 3 key principles: Preserve and enhance natural capital by controlling finite stocks and balancing renewable resource flows; Optimize resource yields by circulating products, components and materials in use at the highest utility at all times in both technical and biological cycles; Foster system effectiveness by revealing and designing out negative externalities. The Circular economy model is SMART:

- **SUSTAINABLE** - Circular economy is crucial for sustainable manufacturing, because it prevents environmental degradation, reduces pollution, and secures production processes with the use of clean technologies.
- **MINIMIZING** - The circular economy model is designed in such a way that the use of natural resources and energy is minimized, while also minimizing waste generation, pollution and other negative impacts on the environment.
- **APPROPRIATE** - The circular economy aims to renew the natural resources, to keep the raw materials in use, and to expand the product lifespan by applying the appropriate design that turns expired products into raw materials instead of waste, so that they do not contribute to pollution.
- **REGENERATIVE** - Circular economy is a regenerative economic model that has a positive impact on all types of capital: financial, human, social and natural.
- **TRENDY** - The circular economy business models allow the industry to improve and harmonize its production processes with the market needs and new global economic trends.

Circular business models will also reduce the linear inefficiencies and create bottom line impact for companies. Each circular business model has its own characteristics. Depending on the productivity needs, the models can be used individually or in combination. They include sharing platforms, resource recovery, product life extension, product as a service, circular supply chain.

A adoption of road map to achieve circular economy in the Western Balkans will offer the countries a number of advantages in the economy (competitiveness, market development, new business models), politics (national political consensus, EU accession, implementation of international obligations, regional positioning), environmental protection (waste reduction, reduction of GHG emissions, improving energy independence), and society (social well-being, better consumer rights, green jobs). Such a roadmap would aim to provide information about the importance of transition to circular economy, i.e. about the new business models and competitiveness criteria. It elaborates on the opportunities for a faster development of country's economy, offering solutions to problems such as management of secondary raw materials (including waste), need for resource and energy independence, and environmental security; identify the sectors in which the circular economy tools can be introduced more easily, but without underestimating the less developed sectors and traditional industries that will require more



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investments to transition to the new production models; recognize the key actors of change whose synchronized, joint activities can contribute to a faster transition to circular economy; present different approaches to reasons for transition to circular economy, as well as economic models and possible ways to increase the national productivity through new global trends of economic growth, which will lead towards a lower use of natural resources and a lower negative environmental impact.

After the initial setting the scene with EU policy and the implementation of a circular economy in the EPPA beneficiaries, the workshop proceeded along a set of main themes contributing to a circular economy: procurement, industrial pollution, plastic waste, circular business models and the role of SMEs in bringing and adopting innovation, the built environment, packaging, and food. For each theme, in addition to the policy briefs of the EU, the participants learned from case studies from EU Member States, highlighting cutting-edge best practices and inspirational achievements.

Hungary presented its circular economy approach, which seeks to create a clean environment, reduce the amount of waste, use the potential of the waste management sector and encourage innovation. These goals are set in the February 2020 Climate and Nature Protection Action Plan. Some of the measures aimed to help to achieve the circular economic objectives are:

- Elimination and prevention of illegal dumping: introduction of stricter administrative and criminal sanctions from 1 March 2021, complemented by supports for the disposal and prevention aiming to keep waste in the legal treatment system
- Introduction of a deposit-refund system: ensuring the replacement of glass and plastic bottles and metal cans from 1 July 2023
- Prohibition of single-use plastics: the placing on the market of certain disposable plastic products and products made of oxo-degradable plastics will be prohibited in Hungary from 3 July 2021
- Transforming the waste management sector
 - Making the public authority system more efficient: the establishment of a new waste management authority with control, supervision and quality assurance entitlements for efficient and coordinated performance of tasks (implementation time: 2021)
 - Introduction of a concession system from 1 July 2023: transformation of the waste management market by modifying the regulatory environment in order to increase the efficiency of the performance of public service tasks, on the basis of which the state performs a part of the waste management activity with the involvement of private parties through a concession contract.
- Community-based awareness-raising programmes, and development and investment in circular opportunities
- Environmentally friendly production processes and resource efficiency in the SME sector
 - Creating jobs
 - Catching-up of regions in difficulty
 - Strengthening social cohesion
 - Widening corporate social responsibility and responsible business
 - conduct

The participants then learnt about the Netherlands' experience with Circular Procurement. Public procurement is an essential part of circularity in Europe as its aggregate value in Europe is larger than Canada's GDP. The Netherlands has been working on launching a full circular public procurement in the past 10 years, with an expected deployment date of 2023. The road was marked by the achievement of several milestones, such as the creation of a circular procurement academy, creating learning networks and buyer groups, updating sustainable procurement criteria, e-learning tools, pilot projects, etc. One of the lessons learnt so far is that circular procurement is possible in all sectors (construction, waste, electronics, furniture, textiles, etc.), but some are more attractive than others in terms of the relationship between complexity of implementation and impact. Among the most attractive sectors in the Netherlands one can list catering, roadworks, and construction. Another valuable lesson is the integration of innovation requirements in public procurement contracts, either through framework agreements or paid pilot projects. Innovations that meet success criteria are then redeployed in current



and future contracts, as well as future pilot projects. A full account of the Netherlands experience is available in the book “Circular Procurement in Eight Steps”, by Copper8¹.

The EC presented the new Industrial Strategy for Europe. Its objectives are to foster the green transition, global competitiveness by setting standards and having a thriving entrepreneurial milieu, and the digital transition. The strategy will support industry towards climate neutrality by focusing on the supply of clean, secure and affordable energy, transforming manufacturing processes, and paying attention to construction and sustainable mobility. The transformation of manufacturing is supported by the verification that EU SMEs can reduce material waste up to 50% and increase their profit margins by 10% within 6 months after the intervention. Gains can be had in the manufacturing process itself, but also in logistics and product design. This wide industrial transformation will be operated through multiple factors, some of which are skilling and reskilling, deeper and more digital single market, fostering a spirit of industrial innovation, financing the transition, building industrial ecosystems that unite all actors (large companies, SMEs, service providers, authorities and the research community).

Another EC presentation focused on the plastics strategy of the EU that seeks to improve the economics and quality of plastics recycling, drive innovation towards circular solutions, curb plastic waste and littering and harness global action. Action already taken includes the directive on single use plastics and fishing gear, which represent 50% of marine litter. The amended Waste Framework Directive (2018) included measures on marine litter and plastic packaging recycling targets were set. The implementation of the EU Strategy for Plastics in a Circular Economy contains mandatory requirements for recycled content and waste reduction measures, addresses the presence of microplastics in the environment, it sets a policy framework on bio-based and biodegradable plastics, and it is at the source of the new Directive on Single Use Plastic Products.

Regarding plastics, the participants also had the opportunity to learn from the European Environment Agency about plastic usage and its environmental impact. Although plastics production is stable in Europe (slightly decreasing), it continues to grow worldwide. Trade in plastic waste has seen a significant reduction after 2017 when the Chinese plastic ban was introduced. Currently, the biggest 2 importers of plastic waste are Malaysia and Turkey. The environmental impacts of plastic are related with fossil fuel use, GHG and pollutants emitted on production, exposure to toxic substances by consumers, litter on land and water, and further GHG from incineration and landfilling. Plastic accounts for a significant portion of the chemical industry GHG emissions.

With this in mind, Austria presented its policies to prevent plastic waste. Plastics in waste represent a significant amount of recyclable material, whereby the potential for the recovery / use of these recyclables has not yet been fully exploited. Ambitious targets for the management of plastic waste at European level have been defined, AT will also need to cope with these. Both the Circular Economy Package and the Single- Use Plastics Directive are set to be transposed into Austrian law by mid-2020. The Planned measures are an outright ban on, and measures to reduce, consumption of selected products; requirements on packaging and labelling; rules and incentives for the use of recyclable packaging materials; higher recycling and reuse targets for packaging and municipal waste; new collection targets for plastic bottles; awareness building and litter prevention measures; extension of the Extended Producer Responsibility principle. From 3 July 2021, marking requirements are introduced for certain single-use plastic products to inform consumers about appropriate waste management options. From 3 July 2024, beverage plastic bottles with a capacity of up to three litres may be placed on the market only if their caps and lids remain attached to the containers during the products' intended use. PET beverage bottles with a capacity of up to 3 litres, including caps and lids, must contain at least 25 % recycled plastic from 2025 and 30 % from 2030. By 2025, Austria plans to reduce consumption of plastic packaging by 20-25% and all plastic packaging is to be recycled by 2030. From 2023, EPR provisions will be extended to apply to certain single-use plastic products. The requirements will include substantially higher recycling and separate collection targets. The producers will have to pay for awareness raising measures and clean-up of littering.

¹ <https://www.copper8.com/wp-content/uploads/2018/10/Circular-Procurement-in-8-steps-Ebook.pdf>



Currently, 78% of all plastic waste in Austria is composed of plastic foils, other plastics, polyolefene and packaging. Austria recycles only 25 % of the around 300,000 tonnes of plastic packaging produced every year. To achieve the EU's 50 % recycling target by 2025, AT to double the amount of plastic packaging recycled over the next five years (from 75,000 tonnes to 150,000 tonnes). Approximately half of the light fraction from the packaging collection produced in Austria is processed in four plants (~95,000 tonnes). The input is mainly packaging waste from the post-consumer sector or from households, and selected batches from the post-industrial sector. Deliveries are made in bags, as pressed bales as well as loosely in containers/trucks with underslip floors. In total, Austria has 12 Plants whose main purpose is the sorting and treatment of plastic waste or plastic-rich waste. There are 25 plants for material recycling of plastic waste or plastic-rich waste; 20 plants for the treatment/recovery of Styrofoam, and 1 pilot plant for chemical recycling.

Another of the topics under discussion was the construction sector. The presented its European Framework for Sustainable Buildings (Levels(s)). Levels(s) is an EU assessment and reporting sustainability framework for buildings. Buildings are responsible for half all materials extracted from the planet and half of all energy used, as well for 33% of all water consumption and waste generation. Level(s) takes into account the whole building lifecycle. It uses core indicators tested by the building sector, it can be applied to residential and offices, new construction/ renovation. In essence, it is an entry-level tool for the mainstream market as it makes building lifecycle performance understandable to professionals in planning and policy making, design and execution and financing. Its benefits are:

- Common language using best practice industry standards
- Tracks performance throughout the life cycle
- Underpins future EU and national policies
- Future-proofing buildings for carbon neutrality
- Enhances dialogue between stakeholders
- Supports sustainability skills and understanding
- Targets mainstream sector
- Brings accountability and investor confidence
- Certification schemes looking to align Planning and Policy making, Design and Execution, Financing

Level(s) will be complemented in the future by a Sustainable Finance Delegated Act in 2021, Directives on energy performance – revisions in 2021, Roadmap for Whole Life Carbon reduction in the building sector in 2023, Green Public Procurement Criteria in 2023.

Complementarily, the WBCSD presented a circular vision for the built environment, a potential 4.5 trillion-USD market by 2030. The WBCSD identified the drivers of this transformation as technology (material quality, recycling, and reuse technologies, reducing distance between demolition-reuse locations), regulation (certification schemes, new standards and norms, recasting waste legislation), markets (create enough supply at a price that makes business sense for the demand side), education, culture and beliefs. For details consult the publication: "Scaling the Circular Built Environment: pathways for business and government"².

Circular Point Hungary presented the role of consumers in establishing and maintaining circular business models and markets. Consumers' role is often overlooked or underestimated in the CE. Measures on consumer protection are mostly related to guarantees and safety, but understanding and consumer needs, perspectives and behaviours are crucial. Circular business models (CBMs) must be examined for consumer mass markets. In this regard, a new consumer type is rising: young, urban and educated, high consciousness (regarding environmental and social impacts), accessing and using instead of owning, zero waste lifestyle, tech savvy, activism. This trend will require a new relationship between consumers and producers in the framework of a circular economy, characterized by:

- More interaction between producer and consumer
- Repairing – DIY (do it yourself) thanks to modular design
- Servitisation – more connections and data exchange between producers and consumers

² <https://www.wbcd.org/Programs/Circular-Economy/Factor-10/Resources/pathways-for-business-and-government>



- Shared product responsibilities
- Taking good care of products for use and performance
- Rewarding careful consumers (like with health or car insurance policies)
- New roles for circular customer (recirculating waste back as resources)
- Shared value co-creation or retention
- Building brand loyalty
- Diffusion of awareness, knowledge and skills to relating to circularity and circular products/services
- Product labelling at the point of sale (product lifetime, reparability, modularity, etc.)
- DIY awareness-raising campaign in DIY or assisted repair (e.g. repair cafés)
- Incentives and information for closing the loop (i.e. use, takeback, separation, collection, deposit etc.)
- Direct involvement in circular initiatives
- Extensive communication through all channels (i.e. in-store advertising, website, sales personnel)
- Public debate concerning the benefits of a longer lifetime for products

Some of the challenges in addressing consumers under a circular economy can be overcome by emerging circular business models. The organization Circular Future presented the best practice examples of circular business models in the EU. Circular business models can be divided in 4 major categories: circular design models, that design products and materials with the long-term aim of retaining value; optimal use models, that support better usage and offer supporting services; value recovery models, that capture value after user life; and circular support models, focused on management and support. These models are applied to a production and consumption pyramid, with extraction at the bottom, followed by manufacturing, assembly, retail and, finally, repair and maintenance. The application of the models allows for products and materials not only linearly go up the pyramid, but also down (through reuse, refurbishment, remanufacture and recycling) – thus ensuring circularity. A concrete example of the pyramid was given for the textile economy, whereby it is possible to maintain production and consumption without growing extraction of new resources.

The transition to circular models will require time to grow, based on better usage of natural resources and new economic models (innovation). However, successful application will eventually lead to sectoral and social transitions, with those who not adapt being left behind and eventually be pushed out from the market. The experience of 3000 member companies of Ecopreneur.eu, the green front runners, has shown that success is possible in both services and products, with the following, verifiable advantages: creation of more value, innovation and competitiveness, better asset management, customer loyalty and feedback, partnerships, risk reduction and motivated staff – attracting and keeping the best talent.

Regarding the 4 business model categories identified previously, the circular design and production models consists particularly of design and production of products and assets that enable circular economy strategies, through e.g. (i) increased resource efficiency, durability, functionality, modularity, upgradability, easy disassembly and repair; (ii) use of materials that are recyclable or compostable; development and deployment of process technologies that enable circular economy strategies; development and sustainable production of new materials (including bio-based materials) that are reusable, recyclable or compostable; substitution or substantial reduction of substances of concern in materials, products and assets to enable circular economy strategies; and substitution of virgin materials with secondary raw materials and by-products.

The circular use models are based on the reuse, repair, refurbishing, repurposing and remanufacturing of end-of-life or redundant products, movable assets and their components that would otherwise be discarded; refurbishment and repurposing of end-of-design life or redundant immovable assets (buildings/infrastructure/facilities); product-as-a-service, reuse and sharing models based on, inter alia, leasing, pay- per-use, subscription or deposit return schemes, that enable circular economy



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strategies; rehabilitation of degraded land to return to useful state and remediation of abandoned or underutilised brownfield sites in preparation for redevelopment. The third group, circular value recovery models, offer the potential to separate collection and reverse logistics of wastes as well as redundant products, parts and materials enabling circular value retention and recovery strategies; the recovery of materials from waste in preparation for circular value retention and recovery strategies (excluding feedstock covered under the next bullet); the recovery and valorisation of biomass waste and residues as food, feed, nutrients, fertilisers, bio-based materials or chemical feedstock; and the reuse/recycling of waste water. Finally, the circular support models are based on the development/deployment of tools, applications, and services enabling circular economy strategies.

Another important aspect of a circular economy is packaging, which requires an upstream innovation mindset. Currently only 2% of plastic is recycled worldwide into the same or similar quality applications, with the majority being lost due to leakage, landfilled or incinerated. Without bold action, the plastic pollution problem will get much worse as consumption surges. Upstream innovation seeks to shift the attention from the end-of-process approach (collection, sorting and recycling) to the beginning, where materials are selected, designed, and where manufacturing takes place under specific business models. There are advantages to this approach: there is a potential 10 billion USD market in the making, plastic pollution can be reduced, new solutions will satisfy customers expectations, carbon emissions can be reduced. However, upstream innovation requires a shift in mindset. It involves rethinking not just the packaging itself, but also the product and the broader business model, with the aim being to identify new ways of delivering value to users, whilst designing out waste. To unlock the full opportunity, it is necessary to move beyond focusing on incremental packaging improvements, towards fundamentally rethinking how to best deliver products and services to a user.

Applying the upstream innovation mindset can help to achieve three key circular economy innovation strategies: elimination, reuse, and material circulation. Elimination is more than bans on straws and plastic bags — it is an opportunity to deliver value without the need for packaging. To achieve a circular economy we need to cut down the growth in the amount of plastic introduced to the market. It can have 2 approaches: direct elimination of packaging that does not serve an essential function and innovative elimination, for packaging that serves an essential function. Reuse models are gaining significant momentum in the world of packaging. Reuse not only offers a new range of solutions to plastic pollution, but also the potential to unlock significant business benefits. There are four consumer facing reuse models: refill (at home or on the go) and return (from home or on the go). In terms of material circulation significant innovation upstream is needed in order to achieve a step change in the effectiveness and viability of downstream processes like sorting and recycling. There are three routes for plastic material circulation: plastics recycling (requiring product design and specific logistics for sorting), plastics composting and substitution.

The European Environment Agency complemented these ideas with a presentation on the prevention of plastic waste in Europe. In 2018, 32.5 % of plastic waste was recovered in Europe —81 % of the recovery took place in Europe — in 2016, about 6 % of the current European demand for plastics was covered by domestic recycled or secondary plastics. Most plastics are designed to be used once only (limited recyclability) and the share of recycled plastics in new products is very low. One of the key goals would be to decouple plastic waste from other streams and making it a priority. In a report from 2019, “Plastic Waste Prevention in Europe”, the EEA mapped the measures aimed at prevention of plastics waste in the EU seeking to find existing best practices. 18 European countries have introduced taxes/levies/charges for single-use plastic bags and there is an increasing interest in bans on microplastics and certain single use plastics. 9 countries have explicit prevention targets - concrete targets are key for both implementation and monitoring. In general, the EEA found that priority should be given to impactful plastic types; qualitative waste prevention and eco-design are need with links to other policy areas; invest in diversification of measures; and set more concrete targets.

EXPRA, the Extended Producer Responsibility Alliance, presented EPR measures to improve the management of packaging waste: experiences and lessons learnt from EU Member States. EPR schemes are usually centred around a Producer Responsibility Organization, whose role is to:



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- Ensuring that a convenient and efficient collection, sorting and recycling infrastructure is existing and running so that as much packaging as possible is staying in the economic circle
- Running a respective transparent data management system to be able to reflect and document the operational activities
- Work with the various stakeholders to understand their part of the packaging circle and to improve each's performance and contribution including “design for recycling / sustainability” with obliged companies and packaging producers and “communication, awareness raising and education” with consumers and inhabitants.

Nevertheless, implementation of the EU packaging directive has different forms across Europe. 30 states have producer responsibility schemes, 3 are without any compliance scheme, 1 has a fund scheme run by industry, and 1 has trading certificates. Likewise, EPR schemes have several ways of implementation. Diversity has not been an obstacle to growing success. Data from 1977 to 2018 shows that recycling of several waste streams, including plastic, are growing in the EU. But obstacles remain. Some of the common barriers across countries are: unclear and overlapping roles and responsibilities of different actors; ambiguous relationship between municipalities and EPR; inadequate infrastructure for collection from households in several countries (competition at the EPR level many times results in cherry picking). Therefore, for EPR to be a solution it needs to follow some key principles:

- A clear separation of roles and responsibilities of all relevant actors involved;
- Ownership of the EPR limited to the obliged Producers;
- Not-for-profit set-up;
- Measurable waste management targets;
- Reporting transparency;
- Equal treatment of producers of products regardless of their origin or size;
- Information to consumers;
- EPR transparency;
- Cost coverage, to reflect the end-of-life costs of its products;
- Cost efficiency, means that an EPR scheme has a clearly defined geographical, product and material coverage;
- Fee modulation, taking into consideration the packaging' recyclability;
- Monitoring and enforcement.

The workshop also reflected on another important of circularity, namely food waste. The EC presented the EU policies and measures to prevent it. Action on food waste started to be taken in 2015 with the first circular economy action plan and has since then becoming an active focus of policy. The EU established a Platform on Food Losses and Food Waste, it issued guidelines on food donation, use of food no longer suitable for human consumption as animal feed, measures on food waste were included in the revised waste legislation. In 2022, the first EU-wide reporting of food waste in Member States will start. Some of the measures on food waste prevention envisaged in Circular Economy Action Plan were (as mentioned above): the EU Platform on Food Losses and Food Waste Prevention (set up in 2016), measure and monitor food waste (decisions adopted in 2019), EU guidelines to facilitate food donation (guidance adopted in 2017), optimise safe use of food in feed (guidance adopted in 2018), promote better understanding and use of date marking (ongoing).

The EU Platform on Food Losses and Food Waste is an Informal Commission's Expert Group aiming to support actors in monitoring progress towards SDG 12.3, defining measures needed to prevent food waste, fostering inter-sectorial cooperation and sharing best practice. It is composed of Member States (mainly food authorities)/EFTA countries, EU bodies and international organisations and actors in the food value chain (37 private sector organisations selected following public call for applications). The platform is subdivided in subgroups: Food Donation, Food Waste Measurement, Action and Implementation, Date Marking.

The EU former food to feed guidelines facilitate the safe feed use of former food, in line with "food use" hierarchy, and prevent food waste; clarify application of relevant EU rules: food, feed and waste; present best practice examples which comply with regulatory framework and prevent unnecessary



administrative burden. Another issue being tackled is food marking, namely the difference between “use by” (food safety dimension) and “best before” (food quality dimension). Data shows that consumer awareness of these 2 concepts needs to be improved, especially regarding the “best before” dimension.

In the revised waste legislation, the Waste Framework Directive 2008/98/EC (as amended by 2018/851/EC), several provisions were included, namely: definition of food waste, Member States obligations on food waste prevention, option for future food waste reduction targets, reporting obligation and measurement of food waste. Member States shall take measures to prevent waste generation. These measures shall, at least reduce the generation of food waste in primary production, in processing and manufacturing, in retail and other distribution of food, in restaurants and food services as well as in households and encourage food donation and other redistribution for human consumption, prioritising human use over animal feed and the reprocessing into non-food products. It also calls for specific food waste prevention programmes within Member States waste prevention programmes.

The 2020 Farm to Fork Strategy is stepping up action against food loss and waste, by setting EU-level targets for food waste reduction (proposal by 2023), revising EU rules for date marking (proposal by 2022), and investigating food losses at production stage and explore ways of preventing them. Additionally, it seeks to scale up action and mobilize players across the EU by promoting uptake of EU Platform’s recommendations for action and implementation of food waste prevention hierarchy (including facilitating food donation), further integrating food loss and waste prevention as part of all relevant EU policies, strengthening evidence-base for food waste prevention and share best practice through the EU Platform on FLW, supporting actors in taking action to fight food waste (e.g. Horizon Europe, grants through Single Market Programme).

In this context, Sweden presented some measures for food prevention divided in 4 categories: policy instruments, changing social norms, nudging and changing practices and intelligent technology, new products and business models. Policy instruments can include national waste acts with reporting, goals and action plans, and voluntary agreements, public procurement and VAT return on food donations. Sweden is implementing a voluntary agreement scheme that measures and reports losses and food waste. Data is collected for follow-up of the agreement's goals and to be able to find "hotspots" to work with across the value chain. It also acts on the results from data collection with objectives for reducing food waste, food losses and food waste. It fosters a cooperation forum and joint communication through working groups to spread good examples and implement joint projects.

In terms of changing social norms, media coverage, information campaigns in schools, and Guidelines and Handbooks, best before dates and dedicated shelving for close to expiry products are important tools. For instance, Sweden has a handbook for public kitchens (for instance in schools) that details training needs, offers checklists for kitchen operation and defines responsibilities. Nudging and changing practices can include smart packaging, end of bulk discounts, adjusted pricing (auctioning), and changes in physical environment. Examples of intelligent technology, new products and business models are scanning of wasted products in retail, smart scales, rescued food from restaurants, use of 2nd grade and rejected food products in new ways. The business case for food waste reduction is illustrated by the UK food waste reduction initiative that saved households 6.5 billion pounds and local governments 86 million pounds over a period of 5 years, whereas the cost of the programme was 26 million in the same period. It offered a benefit-cost ration of more than 250:1.

The workshop also presented an example of best practice of a private operator in Serbia, ElixirZorka. In the Republic of Serbia, there are limited capacities for physico-chemical treatment, disposal or storage of hazardous waste. Due to the lack of an alternative, producers are in a situation to temporarily store hazardous waste at their locations, in some cases for 20 or more years. In most cases, the temporary storage of hazardous waste does not meet the prescribed requirements, and the collection of hazardous waste generated in industrial processes or at the site is based primarily on the economic value of the waste. There is a lack of information on the collection of certain hazardous waste streams that do not have a positive economic value (acids, chemical waste, oil contaminated waste, sludge, etc.).

Based on the fact that the Republic of Serbia does not have a facility for physico-chemical treatment of hazardous waste or facilities for storage of liquid and slurry special streams of industrial



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waste, such as solvents, waste oils, waste acids and bases, and taking into account the experience applied in more industrially advanced countries, Elixir Zorka decided to innovate the technological process of NPK fertilizer production, applying the possibility of using solutions of waste acids and bases. The new technological process is in line with the principles of circular economy. By applying these innovations, Elixir Zorka is additionally approaching European standards and values, and at the same time contributing to the improvement of waste management in the Republic of Serbia.

Elixir Zorka currently uses acids (HCl, H₂SO₄, H₃PO₄) and bases (NH₄OH) of technical quality as raw materials for the production of NPK fertilizers, in the amount of about 12,000 tons per year. An integrated permit has been obtained for the plant for the production of mineral fertilizers, in accordance with the Law on Integrated Pollution Prevention and Control, this factory does not generate either solid or liquid waste, and the emission of harmful substances is below the limit values. The system for purification of waste gases before release into the atmosphere consists of 7 devices - scrubbers. In these devices, waste gases from the production process are flushed with technical water before discharge in order to reduce emissions into the air. The liquid that is created by rinsing the waste gases (scrubber liquid) is returned to the process by recirculation, so there is no discharge of wastewater from the process of NPK fertilizer production.

The new technological process includes the use of a waste solution of sulfuric acid, which can partially replace technical sulfuric acid. The quantity of this new raw material for the production of NPK fertilizers will be in a quantity that will not affect the quality of the fertilizer. Elixir Zorka has also introduced a novelty in the air purification system: instead of technical water, solutions of waste acids and bases for rinsing waste gases will circulate in the scrubbers, thus replacing a part of the scrubber liquid. The introduction of this procedure is feasible having in mind that the waste solutions of acids and bases are chemically similar to scrubber. In addition, waste solutions of acids and bases contain active substances (nitrogen, phosphorus, potassium, sulphur and other nutrients for plant nutrition) that are needed for fertilizer as a product. The solution that circulates after rinsing the waste gases is further sent to a "granulator" where the active substances can be "extracted" and thus will be reused for the production of fertilizers.

The use of raw materials for the circular economy will reduce the supply and consumption of acids and bases of technical quality. At the same time, the consumption of technical water used for flushing waste gases will be reduced. The application of this idea will contribute to the reduction of greenhouse gas emissions. The introduction of waste acids and bases will achieve annual savings of at least 991 t CO₂eq. The monitoring performed on the final emitter of the factory shows that there was no deterioration of the results with the use of waste acids and bases. The next step is the introduction of the use of ash obtained by burning sludge, resulting from the treatment of communal waters, as a substitute for the raw material, raw phosphate in the percentage of up to 30%.

During the workshop discussions, the participants of the workshop came to the following conclusions and recommendations:

- Rethink plastics design to allow reusability, which requires a transition towards a circular economy approach to avoid pollution and waste
- Waste packaging should be reduced, and recycling made easier
- The construction sector in the EU is responsible for over 34% of the total waste generation and for about 10% of total greenhouse gas emissions, making it essential to reuse construction materials
- Over 20% of food is lost in the EU; it is therefore crucial to address food losses along the supply chain
- Finally, the cost saving potentials and positive environmental impacts of a circular economy are not widely recognized. In this respect, the workshop gave participants examples of the environmental, health, economic and employment benefits of transitioning towards a circular economy model.

Workshop outputs

The workshop's main outputs were:



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- Strengthened capacity to address the implementation challenges of circular economy policies
- Raised awareness on the latest initiatives on circular economy in EU Member States
- Exchanged experiences in the implementation of circular economy policies between EU Member States and the EPPA beneficiaries
- Increased regional dialogue on the implementation of circular economy policies

3 Evaluation

The participants were asked to evaluate the workshop by TAIEX using an online survey after the event. The evaluation results are presented below in a summary table.

			No. Responses	Expert Score	Yes / Excellent	No / Good	Partially / Satisfactory	
80802	Workshop - participant - A. Questions	1	39	-	39 (100%)	-	-	
		2	39	-	39 (100%)	-	-	
		3	39	-	39 (100%)	-	-	
		4	39	-	34 (87%)	-	5 (13%)	
		5	39	-	36 (92%)	1 (3%)	2 (5%)	
		7	39	-	29 (74%)	10 (26%)	-	
		8	39	-	37 (95%)	2 (5%)	-	
		Workshop - participant - B. Expert ratings	Ms. Ivanica, Madalina - Speaker EU	39	93.58%	30 (77%)	8 (21%)	1 (3%)
	Mr. Bakas, Ioannis - Speaker EU		39	92.94%	29 (74%)	9 (23%)	1 (3%)	
	Ms. Monteleone, Francesca - Speaker MS		39	92.94%	29 (74%)	9 (23%)	1 (3%)	
	80802	Workshop - participant - B. Expert ratings	Mr. Schonsker, Alois - Speaker EU	39	94.23%	31 (79%)	7 (18%)	1 (3%)
Mr. Bormans, Werner - Speaker EU			39	94.87%	31 (79%)	8 (21%)	-	
Mr. Heinemier, Thomas - Speaker EU			39	93.58%	30 (77%)	8 (21%)	1 (3%)	
Ms. Lindblom, Josefin - Speaker EU			39	92.94%	29 (74%)	9 (23%)	1 (3%)	
Mr. Zambrycki, Bartosz - Speaker EU			39	92.3%	28 (72%)	10 (26%)	1 (3%)	
Mr. Hujic, Mirza - Speaker CC			39	92.3%	28 (72%)	10 (26%)	1 (3%)	
Mr. Kriza, Mate - Speaker PP			39	93.58%	30 (77%)	8 (21%)	1 (3%)	
Mr. Meredith, Lawrence - Speaker EU			39	93.58%	29 (74%)	10 (26%)	-	
Mr. Nortmann, Lars Fogh - Speaker EU			39	92.3%	27 (69%)	12 (31%)	-	
Mr. Mirdak, Danilo - Speaker CC			39	92.3%	28 (72%)	10 (26%)	1 (3%)	
80802			Workshop - participant - C. Logistic Ratings	Mr. Quoden, Joachim - Speaker PP	39	93.58%	29 (74%)	10 (26%)
	Mr. Steiner, Attila - Speaker MS	39		91.82%	28 (72%)	9 (23%)	1 (3%)	
	Mr. ten Wolde, Arthur - Speaker PP	39		92.94%	30 (77%)	7 (18%)	2 (5%)	
	Ms. Bhasin, Aditi - Speaker MS	39		91.66%	27 (69%)	11 (28%)	1 (3%)	
	Ms. Claradi-Advet, Cristina - Other speakers	39		91.66%	27 (69%)	11 (28%)	1 (3%)	
	Ms. Desgus, Anna - Speaker PP	39		94.23%	30 (77%)	9 (23%)	-	
	Ms. Tansakovic, Jelena - Speaker CC	39		92.94%	28 (72%)	11 (28%)	-	
	1	19		-	15 (79%)	1 (5%)	3 (16%)	
	2	24		-	21 (88%)	-	3 (13%)	
	3	10		-	4 (40%)	6 (60%)	-	
	4	10		-	4 (40%)	6 (60%)	-	
5	10	-	4 (40%)	6 (60%)	-			
6	29	-	26 (90%)	1 (3%)	2 (7%)			
7	23	-	19 (83%)	3 (13%)	1 (4%)			
8	31	-	30 (97%)	1 (3%)	-			
9	29	-	28 (97%)	1 (3%)	-			
10	29	-	29 (100%)	-	-			
11	29	-	28 (97%)	1 (3%)	-			
80802	Workshop - speaker - A. Questions	I have never received the email with the Zoom link and information about pre-event. Previously I did receive Confirmation letter and Agenda. Luckily my colleague shared this link with me. This explains why I'm partially satisfied with some aspects. It should be useful to mention relevant standards for circular economy, due to TSO/TC 323 recently formed and going ahead with all issues related to circular economy		-	-	-	-	-
		1	7	-	7 (100%)	-	-	
		2	7	-	7 (100%)	-	-	
		3	7	-	5 (71%)	-	2 (29%)	
		4	7	-	6 (86%)	-	1 (14%)	
		5	7	-	6 (86%)	-	1 (14%)	
		6	7	-	1 (14%)	1 (14%)	5 (71%)	
		7	7	-	2 (29%)	-	5 (71%)	
		8	7	-	7 (100%)	-	-	
		9	7	-	7 (100%)	-	-	
		Workshop - speaker - C. Logistic Ratings	1	1	-	1 (100%)	-	-
2	1		-	1 (100%)	-	-		
3	1		-	1 (100%)	-	-		
4	1		-	1 (100%)	-	-		
5	1		-	1 (100%)	-	-		
6	1		-	1 (100%)	-	-		
7	3		-	3 (100%)	-	-		
8	3		-	3 (100%)	-	-		
9	4		-	4 (100%)	-	-		
10	4		-	3 (75%)	-	1 (25%)		
11	4		-	3 (75%)	-	1 (25%)		
Workshop - speaker - D. Comments	Very good agenda, good length of presentations, really enjoyed being part of it.		-	-	-	-		



Endnotes

* This designation is without prejudice to positions on status, and is in line with UNSC 1244 and the ICJ Opinion on the Kosovo Declaration of Independence.

Annexes

Annex 1: Agenda (provided as a separate document)

Annex 2: List of Participants (provided as a separate document)

Annex 3: Presentations (provided as a separate document)



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