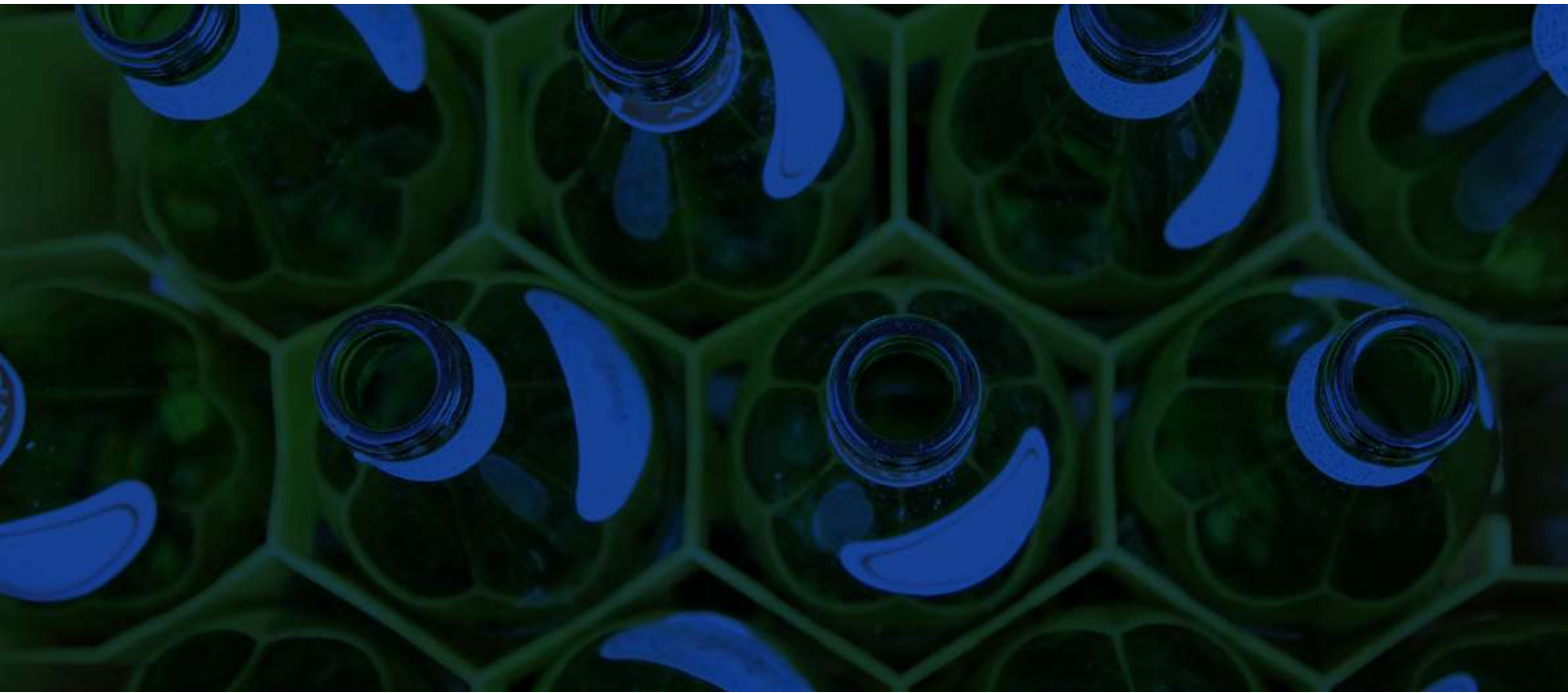


Starting the Journey to
Circular Economy
Module 1 - Training material

LEAD PARTNER



PARTNERS



INTRODUCTION TO THE CIRCULAR ECONOMY

Basic concepts and definitions

Circular economy (CE) is one of the fundamental part of policy of European Union. CE strategy indicates that all products, materials and raw materials should remain in the economy, as long as possible, and the generation of waste should be as much as possible minimized (COM no. 398, 2014, (COM no. 614, 2015)

The Commission has published three COM about CE:

- Towards a circular economy: A zero waste programme for Europe 2014 (COM no 398, 2014)
- Closing the loop - An EU action plan for the Circular Economy 2015 (COM no 614, 2015)
- Monitoring framework for the circular economy 2018 (COM no 29, 2018)

Circular economy definitions - European Commission:

- 2014: 'CE systems keep the added value in products for as long as possible and eliminates waste' Source: Towards a circular economy: A zero waste programme for Europe (COM no 398, 2014);
- 2015: CE is economy 'where the value of products, materials and resources is maintained in the economy for as long as possible, and the generation of waste is minimised' Source: Closing the loop - An EU action plan for the Circular Economy (COM no 614, 2015)

CE is the strategy that:

- boost economic growth without increasing consumption of resources,
- deeply transforms production chains and consumption habits,
- re-designs industrial systems at the system level.

In an economy based on recycling, materials are reused. For example, waste glass is used to make new glass and waste paper is used to make new paper. To ensure that in the future there are enough raw materials for food, shelter, heating and other necessities, our economy must become circular. That means preventing waste by making products and materials more efficiently and reusing them. If new raw materials are needed, they must be obtained sustainably so that the natural and human environment is not damaged .



OBJECTIVES

Module I Introduction of CE

Objectives: assumptions of the idea of CE, concept of CE, basic legal acts in CE, presenting good practices in the field of implementing CE solutions, presentation of models: ReSolve and the European CE Stakeholders Platform.

Module II Circular economy in tourism – model and good practices

Objectives: presentation of sustainable business approaches in tourism in economic, environmental and social aspects in order to effectively implement the CE assumptions in enterprises, mainly SMEs, examples of good practices in companies operating in the tourism industry.

Module III Tools and instruments supporting implementation of CE

Objectives: presentation of support tools and practices for assessment of CE, examples of classification and certification of CE in tourism, presentation of the EREK tool (European Resource Efficiency Knowledge Center) aimed at efficient use of raw materials in the area of water, waste, energy and materials management.

Goal: The aim of the workshop is to raise knowledge, shape attitudes and mobilizing SMEs from the tourism industry to implement the idea of CE





THEME

COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT ABOUT CE



Towards a circular economy: A zero waste programme for Europe 2014 (COM no 398, 2014)

In the first CE Communication of 2014, "Towards a circular economy: A zero waste programme for Europe "(COM No. 398, 2014) The European Commission (EC) emphasized that it was more effective the use of waste can bring significant economic benefits to countries EU member states, including Poland. Circular economy systems allow Maintain the added value of products for as long as possible and minimize waste.

CE systems keep the added value in products for as long as possible and eliminates waste. They keep resources within the economy when a product has reached the end of its life, so that they can be productively used again and again and hence create further value.

Transition to a more CE requires changes throughout value chains, from product design to new business and market models, from new ways of turning waste into a resource to new modes of consumer behavior. This implies full systemic change, and innovation not only in technologies, but also in organization, society, finance methods and policies. Even in a highly circular economy there will remain some element of linearity as virgin resources are required and residual waste is disposed of (COM no. 398, 2014):

CE approaches 'design out' waste and typically involve innovation throughout the value chain, rather than relying solely on solutions at the end of life of a product. For example, they may include (COM no. 398, 2014):

- reducing the quantity of materials required to deliver a particular service (lightweighting);
- lengthening products' useful life (durability);
- reducing the use of energy and materials in production and use phases (efficiency);
- reducing the use of materials that are hazardous or difficult to recycle in products and production processes (substitution);
- creating markets for secondary raw materials (recyclates) materials (based on standards, public procurement, etc.);
- designing products that are easier to maintain, repair, upgrade, remanufacture or recycle (ecodesign);
- developing the necessary services for consumers in this regard (maintenance/repair services, etc.);
- incentivising and supporting waste reduction and high-quality separation by consumers;
- incentivising separation, collection systems that minimise the costs of recycling and reuse;
- facilitating the clustering of activities to prevent by-products from becoming wastes (industrial symbiosis); and
- encouraging wider and better consumer choice through renting, lending or sharing services as an alternative to owning products, while safeguarding consumer interests (in terms of costs, protection, information, contract terms, insurance aspects etc.).

CLOSING THE LOOP - AN EU ACTION PLAN FOR THE CIRCULAR ECONOMY 2015 (COM NO 614, 2015)



In 2015, the European Commission adopted an ambitious package on the economy of closed circulation to stimulate the transition of Europe to the CE and thus increase global competitiveness, promote sustainable economic growth and create new jobs (COM no. 614, 2015).

The CE will boost the EU's competitiveness by protecting businesses against scarcity of resources and volatile prices, helping to create new business opportunities and innovative, more efficient ways of producing and consuming. It will create local jobs at all skills levels and opportunities for social integration and cohesion. At the same time, it will save energy and help avoid the irreversible damages caused by using up resources at a rate that exceeds the Earth's capacity to renew them in terms of climate

and biodiversity, air, soil and water pollution. A recent report also points at the wider benefits of the circular economy, including in lowering current carbon dioxide emissions levels. Action on the CE therefore ties in closely with key EU priorities, including jobs and growth, the investment agenda, climate and energy, the social agenda and industrial innovation, and with global efforts on sustainable development (COM no. 614, 2015).

Production

A CE starts at the very beginning of a product's life. Both the design phase and production processes have an impact on sourcing, resource use and waste generation throughout a product's life.

Product design

Better design can make products more durable or easier to repair, upgrade or remanufacture. It can help recyclers to disassemble products in order to recover valuable materials and components. Overall, it can help to save precious resources. However, current market signals appear insufficient to make this happen, in particular because the interests of producers, users and recyclers are not aligned. It is therefore essential to provide incentives for improved product design, while preserving the single market and competition, and enabling innovation.

- The Commission will promote the reparability, upgradability, durability, and recyclability of products by developing product requirements relevant to the circular economy in its future work under the Ecodesign Directive, as appropriate and taking into account the specificities of different product groups. The Ecodesign working plan for 2015-2017 will elaborate on how this will be implemented. The Commission will shortly also propose Ecodesign requirements for electronic displays.
- The revised legislative proposals on waste creates economic incentives for better product design through provisions on extended producer responsibility.
- The Commission will examine options and actions for a more coherent policy framework of the different strands of work of its product policy in their contribution to the CE.

PRODUCTION PROCESSES



Even for products or materials designed in a smart way, inefficient use of resources in production processes can lead to lost business opportunities and significant waste generation.

- The Commission will include guidance on best waste management and resource efficiency practices in industrial sectors in Best Available Techniques reference documents (BREFs) and will issue guidance and promote best practices on mining waste.
- The Commission is proposing (in the revised legislative proposals on waste) to clarify rules on by-products to facilitate industrial symbiosis and help create a level-playing field across the EU.

Consumption

The choices made by millions of consumers can support or hamper the circular economy. These choices are shaped by the information to which consumers have access, the range and prices of existing products, and the regulatory framework. This phase is also crucial for preventing and reducing the generation of household waste.

The Commission will specifically consider proportionate requirements on durability and the availability of repair information and spare parts in its work on Ecodesign, as well as durability information in future Energy Labelling measures.

- In the revised waste proposals, the Commission proposes new rules which will encourage reuse activities.
- The Commission will work towards better enforcement of the guarantees on tangible products, examine possible options for improvement, and tackle false green claims
- The Commission will prepare an independent testing programme under Horizon 2020 to help the identification of issues related to possible planned obsolescence. This work would involve relevant stakeholders as appropriate.
- The Commission will take action on Green Public Procurement (GPP), by emphasising circular economy aspects in new or revised criteria, supporting higher uptake of GPP, and leading by example in its own procurement and in EU funding.

WASTE MANAGEMENT



Waste management plays a central role in the CE: it determines how the EU waste hierarchy is put into practice. The waste hierarchy establishes a priority order from prevention, preparation for reuse, recycling and energy recovery through to disposal, such as landfilling.

This principle aims to encourage the options that deliver the best overall environmental outcome. The way we collect and manage our waste can lead either to high rates of recycling and to valuable materials finding their way back into the economy, or to an inefficient system where most recyclable waste ends in landfills or is incinerated, with potentially harmful environmental impacts and significant economic losses. To achieve high levels of material recovery, it is essential to send long-term signals to public authorities, businesses and investors, and to establish the right enabling conditions at EU level, including consistent enforcement of existing obligations.

The Commission is adopting, together with this action plan, revised legislative proposals on waste comprising in particular:

- long-term recycling targets for municipal waste and packaging waste, and to reduce landfill
- provisions to promote greater use of economic instruments
- general requirements for extended producer responsibility schemes
- simplification and harmonisation of definitions and calculation methods and will step up its work with Member States to improve waste management on the ground, including to avoid overcapacities in residual waste treatment.

The Commission will assist Member States and regions to ensure that Cohesion Policy investments in the waste sector contribute to supporting the objectives of the EU waste legislation and are guided by the EU waste hierarchy.

MONITORING FRAMEWORK FOR THE CIRCULAR ECONOMY 2018 (COM NO 29, 2018)



The transition to a CE is a tremendous opportunity to transform our economy and make it more sustainable, contribute to climate goals and the preservation of the world's resources, create local jobs and generate competitive advantages for Europe in a world that is undergoing profound change.

The monitoring framework is intended to measure the progress of economic activities with a closed loop in such a way as to take account of its various dimensions at all stages the life cycle of resources, products and services. There is no indicator that can be a single measurement for the CE. A number of existing indicators can

help to measure performance in several areas that directly or indirectly contribute to the CE development. They can be grouped into 4 presented groups:

1. production and consumption;
2. waste management;
3. secondary raw materials;
4. competitiveness and innovation.

THE EXAMPLES OF INTRODUCTION OF CE

The idea of CE is not the new concept. A lot of countries have already introduced the CE concept as for example national strategy, the main concept protection of the environment.



The ideas of a circular economy were officially adopted by China in 2002. China adopted the circular economy due to the environmental damage and resource depletion that was occurring from going through its industrialization process.



On the 21st of June 2017, the Norwegian government presented a White Paper on waste policies in a circular economy with an emphasis on increasing reuse and recycling to the Norwegian Parliament.



"Leading the cycle – Finnish road map to a circular economy 2016-2025" (2017)

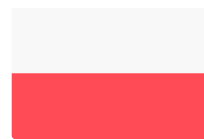


National Programme Circular Economy
Objectives:

- Circular economy in NL by 2050
- 50% reduction in use of raw materials by 2030
- Reduction
- Recycled
- Based
- Sustainable sourced



Circular Economy roadmap of France: 50 measures for a 100% circular economy (2018)



10.09.2019 – acceptance of the roadmap of transformation towards a circular economy)



IMPLEMENTATION OF CE – ReSOLVE MODEL

Developed by Ellen MacArthur Foundation, the framework takes the core principles of circularity and applies them to six actions:

- Regenerate
- Share
- Optimise
- Loop
- Virtualise
- Exchange

The ReSOLVE framework offers companies a tool for generating circular strategies and growth initiatives. Many global leaders have built their success on innovation in just one of these areas. Most industries already have profitable opportunities in each area .

REGENERATE	<ul style="list-style-type: none"> Shift to renewable energy and materials Rebuild, restore, and restore health of ecosystems Restore recovered biological resources to the biosphere
SHARE	<ul style="list-style-type: none"> Share assets (eg cars, tools, appliances) Remanufacture Prolong life through maintenance, design for durability, reparability etc.
OPTIMISE	<ul style="list-style-type: none"> Increase performance/efficiency of product Reduce waste in production and supply chain Leverage big data, automation, remote sensing and sharing
LOOP	<ul style="list-style-type: none"> Remanufacture products or components Recycle materials Extend availability Extend lifespan from organic waste
VIRTUALISE	<ul style="list-style-type: none"> Digitalise assets (eg books, CDs, DVDs, travel) Digitalise industry (eg online shopping)
EXCHANGE	<ul style="list-style-type: none"> Reduce risk with advanced non-renewable materials Apply new technologies (eg 3D printing) Choose new production/service (eg multimodal transport)

Source: Report Towards the circular economy, Ellen MacArthur Foundation; The ReSOLVE framework for a Circular Economy, <https://makeweathistory.org/2016/09/12/the-resolve-framework-for-a-circular-economy>

The ReSolve model includes 6 phases such as:

- **Regenerate:** a broad set of actions that maintain and enhance the earth's biocapacity. That includes the transition from finite fossil fuels to renewable energy. It includes reclaiming land and restoring or protecting ecosystems. Returning biological resources to nature also falls into this category, through composting for example.
- **Share:** the 'sharing economy' is a concept that overlaps with the circular economy. Sharing gets the full use out of goods and eliminates waste and duplication. The average European car is only driving for 5% of the time, for example, spending the vast majority of the time parked up and out of use. Car-sharing schemes, tool hire, or libraries all help get more value out of products by sharing them. The second-hand market and repair are also filed under 'share', as they similarly reduce the 'loop speed' of goods passing through the economy, ensuring that they're only sent back for recycling or reprocessing when they really need it.
- **Optimise:** this is about removing waste energy and materials in the manufacture of goods, and in the use of them as well. It also entails using technology to maximise resource use. For example, fertiliser use is destabilising the nitrogen cycle, but 70% of the fertiliser that is spread on crops is washed away or goes into the soil, and never ends up being used by the plant. Precision farming techniques can deliver exact quantities of fertiliser directly to the roots at just the point that plants look for it, ensuring that as little as possible is wasted.
- **Loop:** where organic materials are composted in a circular economy, inorganic (or 'technical') materials are reused. They may be recycled, or even better, goods or parts can be remanufactured. Either way, resources are processed, looped around and put back into the economy, rather than lost to it through landfill.
- **Virtualise:** if you have an e-reader or a Netflix subscription, you're taking part in the virtualisation of the economy. Think how many different gadgets have been displaced by the apps on your phone – alarm clocks, maps, a daily newspaper. McKinsey also include driverless cars here and I'm not sure why, as the car itself is hardly dematerialised, even if the driver is.
- **Exchange:** the final category describes the processes of swapping in new technologies, upgrading or replacing older ways of doing things. Electric motors will replace internal combustion engines, for example. We may exchange ways of doing things too – perhaps swapping out private motoring, electric or otherwise, in favour of public transport and autonomous car-sharing.

EUROPEAN CIRCULAR ECONOMY STAKEHOLDER PLATFORM



The European Circular Economy Stakeholder Platform - <https://circulareconomy.europa.eu/platform/en> is a "network of networks" going beyond sectorial activities and highlighting cross-sector opportunities and challenges. The Platform is a hub gathering knowledge on circular economy and a place for dialogue among stakeholders

It is structured as follows:

Pillar I: Policy dialogue gathering stakeholders' input and views.

Pillar II: A Coordination Group that brings together circular economy-related multistakeholders networks/platforms; groupings/organisations of businesses, of trade unions and from the civil society; networks of national, regional and local public authorities/bodies and organisations from the knowledge and research communities, think-tanks, universities.

Pillar III: Website as a virtual venue for dissemination of circular economy-related content such as national strategies and good practices. The website is also feature a dynamic database with contacts, published studies and events relevant to CE.

The Commission and the EESC are calling for applications for the selection of existing networks (or similar grouping organisations) as members of the Coordination Group of the European Circular Economy Stakeholder Platform. Now on the Platform there is only 1 case about tourism in Thailand.



INDUSTRIAL SYMBIOSIS

Industrial symbiosis means cooperation in order to make better use of raw materials and rationally manage waste to bring direct economic benefits, as well as promote environmental protection. It should be emphasized that this is a voluntary cooperation of various organizations (enterprises) focused on a certain area, whose main purpose is better use of raw materials and better management of waste.

Based on Closing the loop - An EU action plan for the Circular Economy 2015 (COM no 614, 2015) industrial symbiosis means that waste or by-products from one industry sector become a raw material for another.



CIRCULAR ECONOMY IN TOURISM - MODEL AND CASE STUDIES

Circular Economy Tools and Practices

(http://ec.europa.eu/environment/green-growth/tools-instruments/index_en.htm)

Level(s) - Building sustainable performance

Level(s) is a voluntary reporting framework to improve the sustainability of buildings. Using existing standards, Level(s) provides an EU-wide approach to assessing environmental performance in the built environment. It encourages life cycle thinking for the whole building by offering a step by step approach to life cycle assessment.

ETV - EU Environmental Technology Verification

ETV is a new tool that helps innovative environmental technologies reach the market. This circular economy tool provides third-party verification of the performance of technologies, building trust

among potential customers whilst reducing technological risk.

PEF-OEF - Product Environmental Footprint and Organisation Environmental Footprint

Product Environmental Footprint (PEF) and Organisation Environmental Footprint (OEF) are comprehensive tools that measure and inform customers about the environmental impact of products and organisations. Their approach of assessing life-cycles reflects the essence of the circular economy.

EU Ecolabel

EU Ecolabel is a voluntary label that helps to identify products and services that

Circular economy = value chain = life cycle

have reduced their environmental impact throughout their entire life cycle. It allows consumers to make informed choices and rewards producers who practice making efforts to create sustainable products.

EMAS - Eco-Management and Audit Scheme

EMAS is the official European environmental management instrument that helps organisations improve their environmental performance and demonstrate their efforts to implement "reduce, reuse and recycle" practices.

GPP - Green Public Procurement

GPP is a powerful circular economy instrument that encourages demand for green products and services by promoting green markets and setting strong examples for public bodies to follow.

Circular economy that is restorative and regenerative by design, and which aims to keep products, components and materials at their highest utility and value at all times, distinguishing between technical and biological cycles [SOURCE: ISO 20400:2017, 3.1]

BENCHMARKS FOR CE TOURISM

<http://susproc.jrc.ec.europa.eu/activities/emas/documents/TourismBEMP.pdf>

- European hotels consume, on average, 72-519 kWh of energy per m², depending on the location and services offered,
- Consumption of water, depending on the hotel standard - guests typically use between 90 and 150 litres of water per night
- A typical hotel guest produces 1 kg of waste per day. Resort hotels were shown to create the highest amount of waste, approximately 6 kg/guest night!

Benchmarks of excellence:

- Installed lighting capacity <10 W per m² or lighting electricity consumption <25 kWh/m²yr, total electricity consumption ≤80 kWh/m²yr (heated and cooled floor area).
- total water consumption of ≤94 litres per guest-night on fully serviced four-and five-star campsites, and water consumption of ≤58 litres per guest-night on all other campsites
- total waste generation (sorted plus unsorted) of ≤0.6 kg per guest-night, and residual waste sent for disposal of ≤0.2 kg per guest-night

TAKE A GREEN STEP

<http://ec.europa.eu/environment/emas/takeagreenstep/bemp.html>

- This website is a goldmine of information on how to save resources and attract more clients. All big changes start with small steps, and we invite you to take your first green step with us.
- Supply chain management - All tourism organisations depend on external suppliers to provide materials and services. The environmental impacts arising from the production and delivery of these materials and services can be substantial compared with environmental impacts directly arising from activities occurring within, or directly managed by, tourism organisations .



EUROPEAN RESOURCE EFFICIENCY KNOWLEDGE CENTRE



EREK is an initiative of the European Commission and it is implemented by a consortium of organisations including Technopolis Group, VDI Zentrum Ressourceneffizienz (DE), WRAP (UK), Motiva (FI), Enviros (CZ), WAAT and Arctik (BE).

EREK - your reference point on business competitiveness through resource efficiency

The European Resource Efficiency Knowledge Centre (EREK for short) is here to help European companies, especially SMEs, save energy, material and water costs. We provide tools, information and business opportunities demonstrating new and better ways to be resource efficient and benefit from circular economy business models which turn waste into assets.

EREK also supports national, regional and local organisations across Europe that work with SMEs to improve their environmental performance, helping them to become more resource efficient.

SMEs can get the following benefits thanks to EREK's tools and services:

- Access to knowledge on the best available technologies and business models
- Better management of energy, water and material costs
- Compliance checks for upcoming regulations

- Become less dependent on suppliers
- Demonstrate return on investment when adopting resource efficient measures
- Information on funding sources and technology providers
- Help building a green image which helps target new customer markets

EREK offers the following to SME intermediaries:

- Tools and instruments for businesses to assess their savings potential
- Access to top international knowledge, technical expertise and practices on resource efficiency
- Capacity-building workshops and networking events
- Online training opportunities to learn from resource efficiency experts
- Overview of relevant support programmes available on European, national and regional levels
- Updates on professional events within the community

EREK 2019,
www.resourceefficient.eu/en/about



ISO STANDARDS

ISO standards help organizations reduce the negative impacts of tourism accommodation on the natural environment.

- **ISO 21401**, Tourism and related services – Sustainability management system for accommodation establishments – Requirements
- **ISO 20611**, Adventure tourism – Good practices for sustainability – Requirements and recommendations

ISO 21416, Recreational diving services – Requirements and guidance on sustainable practices in recreational diving

- **ISO/TC 228**, Tourism and related services. One example is technical specification
- **ISO/TS 13811**, Tourism and related services – Guidelines on developing environmental specifications for accommodation establishments,

THE GLOBAL SUSTAINABLE ENTERPRISE SYSTEM GSES®

is an international standard for sustainable enterprises. Circular, sustainable and socially responsible entrepreneurship measured according to international standards such as ISO 20400, ISO 26000,

ISO 14064 and BS 8001 – transparent supply chain in all areas of sustainable business (<https://certifications.controlunion.com/en/certification-programs/certification-programs/gses-circular-economy>)

THE CRADLE TO CRADLE CERTIFIED™ PRODUCT STANDARD

guides designers and manufacturers through a continual improvement process that looks at a product through five quality categories — material health, material reutilization, renewable energy and carbon management, water stew-

ardship, and social fairness. A product receives an achievement level in each category — Basic, Bronze, Silver, Gold, or Platinum (<https://www.c2ccertified.org/get-certified/product-certification>)



EMAS

EMAS 5 key benefits for tourism operators – value chain - direct and indirect aspects

- **Be attractive:** Sustain the quality of your destination's environmental attractions. More than 1/3 of travellers favour environmentally-friendly tourism and are willing to pay up to 40% more for this experience.
- **Be profitable:** Save money by using less resources, electricity, heating, water, etc.
- **Be credible:** Use the most robust environmental management instrument worldwide
- **Be strategic:** You can only improve what you can measure! EMAS gives

you a set of core indicators to systematically track your environmental performance

- **Be responsible:** Improve your indirect environmental impacts. Tourism businesses interact with many actors outside their own organisation, such as suppliers, subcontractors and of course guests. Their behavior is part of your environmental footprint! EMAS helps you select and positively influence your partners according to environmental criteria (http://ec.europa.eu/environment/emas/pdf/factsheets/EMASFactsheet_Tourism.pdf)



THE GLOBAL SUSTAINABLE TOURISM COUNCIL

The Global Sustainable Tourism Council

<https://www.gstcouncil.org/gstc-criteria/gstc-industry-criteria-for-tour-operators/>

The organisation is a UN-endorsed independent organization playing a critical role as the leading global authority in providing guidance for the development and management of sustainability practices in travel and tourism.

Global Sustainable Tourism Council Criteria for Hotels and Tour Operators

SECTION A: Demonstrate effective sustainable management

- A1 Sustainability management system
- A2 Legal compliance
- A3 Reporting and communication
- A4 Staff engagement
- A5 Customer experience
- A6 Accurate promotion
- A7 Buildings and infrastructure
- A7.1 Compliance
- A7.2 Impact and integrity
- A7.3 Sustainable practices and materials
- A7.4 Access for all
- A8 Land water and property rights
- A9 Information and interpretation
- A10 Destination engagement

SECTION B: Maximize social and economic benefits to the local community and minimize negative impacts

- B1 Community support
- B2 Local employment
- B3 Local purchasing
- B4 Local entrepreneurs
- B5 Exploitation and harassment
- B6 Equal opportunity
- B7 Decent work
- B8 Community services
- B9 Local livelihoods

SECTION C: Maximize benefits to cultural heritage and minimize negative impacts

- C1 Cultural interactions
- C2 Protecting cultural heritage
- C3 Presenting culture and heritage
- C4 Artefacts

Section D: Maximize benefits to the environment and minimize negative impacts

- D1 Conserving resources
- D1.1 Environmentally preferable purchasing
- D1.2 Efficient purchasing
- D1.3 Energy conservation
- D1.4 Water conservation
- D2 Reducing pollution

- D2.1 Greenhouse gas emissions
- D2.2 Transport
- D2.3 Wastewater
- D2.4 Solid waste
- D2.5 Harmful substances
- D2.6 Minimize pollution
- D3 Conserving biodiversity, ecosystems and landscapes
- D3.1 Biodiversity conservation
- D3.2 Invasive species
- D3.3 Visits to natural sites
- D3.4 Wildlife interactions
- D3.5 Animal welfare
- D3.6 Wildlife harvesting and trade



EXERCISES

Exercise 1.

The ReSOLVE model gives entrepreneurs and governments tools to build strategies and initiatives compatible with the idea of CE. These activities allow to increase the efficiency of resource use physically, extend their lifespan, and move away from the use of non-renewable resources renewable resources. Please indicate as many examples of good practice (z special focus on the tourism industry) in each of the six model activities Resolve.

Action	Examples
Regenerate	
Share	
Optimise	
Loop	
Virtualise	
Exchange	

Identification of industrial symbiosis based on publication A1.3 Good practice guide and benchmarking guidelines on ecosystems of byproduct and energy exchanges (https://www.interregeurope.eu/fileadmin/user_upload/txtevprojects/library/file_1502280065.pdf)

Exercise 2.

Identify the implementation of based on EREK tool (www.resourceefficient.eu/).

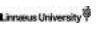


TRAINING
MATERIAL

Starting the Journey to
Circular Economy
Module 1 - Guide for Trainers

LEAD PARTNER

PARTNERS



INTRODUCTION

By Circular Economy Module we wish to raise knowledge, shape the right attitudes and inspire to implement the concept of circular economy in small and medium-sized enterprises from the tourism industry of the southern Baltic Sea region. Knowledge about mechanisms and benefits of the functioning of an innovative company in the Circular Economy promoted, among others by the EU and Poland - should make it easier for you to follow next modules of CIRTOINNO workshops.

The training can be delivered to decision-makers as well representatives responsible for e.g. energy efficiency of a building, supplies of materials, kitchen operation, etc.

Circular economy is a general concept that influences all the aspects of the business. It is recommended that participants of the training be able to convey this idea to the whole company's team. An introduction to the circular economy should be the first to attend before other workshops of CIRTOINNO project

OBJECTIVES

The goal of the workshop is to present effective mechanisms of business management in the aspect of promoting the CE concept, and thus increasing the level of innovation organisations.

The workshops is divided into three parts:

- Presentation of the CE assumptions (discussion of the CE idea, presentation of CE in the world – legal initiatives, specific CE practical principles).
- Discussion of the Circular Economy model in the economic, environmental and social aspect in order to effectively implement the CE assumptions in tourism SMEs. Exchange of experiences will be supported by real-life examples from tourism sector.

- Presenting tools and instruments supporting implementation of CE in tourism and among them - the EREK (European Resource Efficiency Knowledge Center) tool aimed at the effective use of raw materials in the area of water, waste, energy and materials management.

Furthermore, participants should be able to:

- assess development opportunities for innovative products and services
- prepare for the effective management of waste, raw materials, products,
- increase the attractiveness of a brand
- strengthen links with the business environment and clients



WORKSHOP AGENDA

DAY I – 9:00-15:30

Time Topics

Introduction

09:00 - 09:15	Getting to know each other (the trainer and participants)
09:15 - 09:45	Brief Introduction to the CE concept
09:45 - 10:05	CE in the world – legal initiatives
10:05 - 10:45	CE principles – how to introduce CE
10:45-11:00	Refreshments

Circular economy in tourism – model and good practices

11:00 - 11:30	Brief introduction - CE and tourism
11:30 - 11:50	CE in tourism - benefits
11:50 - 13:00	CE in tourism - case studies
13:00 - 14:00	Lunch

Tools and instruments supporting implementation of CE

14:00 - 14:40	Circular Economy Tools and instruments developed by e.g. EU
14:40 - 15:10	Quality standards supporting introduction of CE
15:10 - 15:30	Summary of the workshop



- Expectations, hopes, risks, motivation
- Why we are here (agenda, end goals, relation to the participants business activities, etc.)
- Different approaches in economy
- Top-down initiatives and perspectives
- Practical level of CE – how CE works in practice and how this approach develops
- Different sustainable business approaches in tourism
- Benefits for SME and different groups of stakeholders – from CE presence in tourism
- Good practices base on real-life examples
- Different practical solutions supporting CE practically, supporting exchange of knowledge and experience
- Quality and CE – how different quality standards may motivate and support transition to CE in tourism sector.



LIST OF SLIDES

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GUIDE OF SLIDES

**Slide 1
Welcome**

Welcome participants, share the goals of the day - familiarize participants with the concept of circular economy, encourage SMEs to implement circular economy in their business activities, inspire with specific examples from the tourism industry and identify tools that companies can support in the process.



**Slide 2
About the Trainer**

After introducing yourself and your professional background, ask also the participants to introduce themselves briefly. It is a good time to ask about their expectations with regard to training.



**Slide 3
Agenda**

Present the expected agenda for the day. Focus only on the range you will be talking about during this meeting. We also encourage you to briefly present/list issues covered by individual training blocks, indicate breaks and their duration, as well as discuss other logistical matters related to the training.



**Slide 4
What is Circular Economy**

Increasing demand and consumption of raw materials causes the search for new solutions in the field of environmental protection. Therefore, the majority of units at the local, regional and national level decide to implement a CE. This idea is holistically related to maximizing the value of the product or service in the closed circuit and

increasing the share of recycling at the end of the product life. Circular economy is an economic concept that interacts with sustainability, and whose objective is that the value of products, materials and resources is maintained in the economy for as long as possible and that to minimize waste generation.



Each year in Europe, an average of 16 tons of materials per person are used and besides, around 6 tonnes per person becomes waste. Moreover, almost half of the waste ends up in landfills.

**Slide 5
Why do we need circular economy?**



**Slide 6
Linear Economy vs. Circular Economy**



One of the main aspect of the CE is transition from linear economy (where materials the EU approach are extracted to manufacture the product, use it and eliminate it) to circular economy (where waste and products, from the end of life of used products, go back into the production cycle as secondary raw materials) with regards to social, economy and environmental aspects. It is implementing a new economy -not linear- based on the principle of „closing the life cycle“ of goods, services, waste, materials, water and energy. As defined by Ellen MacArthur Foundation (which was launched to accelerate the transition to the circular economy): “A circular economy is based on the principles of designing out waste and pollution, keeping products and materials in use, and regenerating natural systems”.

**Slide 7 – 8
Profits from circular economy**



The transition towards CE increases investments, value added and jobs and stimulates innovation.

Slide 9
Social, environmental and economic benefits from circular economy

The diagram comes from the article "Circular Economy: The Concept and its Limitations" (Korhonen, Jouni & Honkasalo, Antero & Seppälä, Jyri. (2018). Ecological Economics 143:37-46) and illustrates three dimensions of possible "wins" based on circular economy. According to the authors "successful circular economy contributes to all the three dimensions of sustainable development, economic, environmental and social. Circular economy should adapt to the natural ecosystem cycles and utilize these in economic cycles by



Slides 10 – 11
Sustainable development and circular economy



Slides 12 – 13
circular economy – its origin and evolution



In the EU level CE is introduced by three main communiqués:

- Towards a circular economy: A zero waste programme for Europe
- Closing the loop - An EU action plan for the Circular Economy



- Monitoring framework for the circular economy.
- All are described in detail in the training material for SMEs.

For this slide we encourage you to adapt the content and its scope to the level of knowledge of the participants, their interests and expectations regarding the training.

Note: The material was created in the 2018-2019 period and will not be updated after this time. Therefore, we suggest the trainer to update knowledge in this area before each training.

Slides 14 – 17
circular economy - the presence of a system in national systems



CE is a concept currently promoted by the EU, by several national governments including China, Japan, UK, France, Canada, The Netherlands, Sweden and Finland as well as by several businesses around the world.

Slide 18
Polish way towards a circular economy



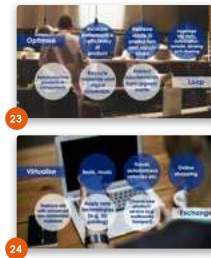
Note: Adjust the content of this slide to the country where the training takes place.

Slide 19 – 20
Main principles related to the circular economy

There are few ways to transform linear economy to CE. One of the most important is increasing resource efficiency and decoupling by smarter product use and manufactures, extend lifespan of product and its parts, useful application of materials, waste minimization.

CE rests in several principles:

- Eco-design: considers and integrates in its conception the environmental impacts throughout the life cycle of a product.
- Industrial and territorial ecology: establishment of an industrial organizational method in a territory characterized by an optimized management of stocks and flows of materials, energy and services.
- "Functionality" economy: favour the use versus possession, the sale of a service versus a good.
- Second use: reintroduce in the economic circuit those products that no longer correspond to the initial consumer's needs.
- Reuse: reuse certain products or parts of those products that still work to elaborate new artefacts.
- Reparation: find damage products a second life.
- Recycle: make use of materials founded in waste.
- Valorisation: harness energy from waste that can't be recycled.



Share: the 'sharing economy' is a concept that overlaps with the circular economy. Sharing gets the full use out of goods and eliminates waste and duplication. The average European car is only driving for 5% of the time, for example, spending the vast majority of the time parked up and out of use. Car-sharing schemes, tool hire, or libraries all help get more value out of products by sharing them. The second-hand market and repair are also filed under 'share', as they similarly reduce the 'loop speed' of goods passing through the economy, ensuring that they're only sent back for recycling or reprocessing when they really need it.

Optimise: this is about removing waste energy and materials in the manufacture of goods, and in the use of them as well. It also entails using technology to maximise resource use. For example, fertilizer use is destabilising the nitrogen cycle, but 70% of the fertiliser that is spread on crops is washed away or goes into the soil, and never ends up being used by the plant. Precision farming techniques can deliver exact quantities of fertiliser directly to the roots at just the point that plants look for it, ensuring that as little as possible is wasted.

Loop: where organic materials are composted in a circular economy, inorganic (or 'technical') materials are reused. They may be recycled, or even better, goods or parts can be remanufactured. Either way, resources are processed, looped around and put back into the economy, rather than lost to it through landfill.

Virtualise: if you have an e-reader or a Netflix subscription, you're taking part in the virtualisation of the economy. Think how many different gadgets have been displaced by the apps on your phone – alarm clocks, maps, a daily newspaper. McKinsey also include driverless cars here and I'm not sure why, as the car itself is hardly dematerialised, even if the driver is.

Exchange: the final category describes the processes of swapping in new technologies, upgrading or replacing older ways of doing things. Electric motors will replace internal combustion engines, for example. We may exchange ways of doing things too – perhaps swapping out private motoring, electric or otherwise, in favour of public transport and autonomous car-sharing.

Slide 21 – 24
ReSOLVE Model

One of the main business model for CE was developed by Ellen MacArthur Foundation, the framework takes the core principles of circularity and applies them to six actions: Regenerate, Share, Optimise, Loop, Virtualise, Exchange.

Regenerate: a broad set of actions that maintain and enhance the earth's biocapacity. That includes the transition from finite fossil fuels to renewable energy. It includes reclaiming land and restoring or protecting ecosystems. Returning biological resources to nature also falls into this category, through composting for example.



Slide 25
Discussion

Ask participant which innovation the circular economy needs the most in their point of view? After this part of training do they have any first ideas on how their companies can become more circular?



Slide 26
Second part of the workshop



Slides 27-28
Introduction to circular economy in tourism



Slide 29
Tourism service inputs and outputs

For identification of CE environmental aspects it's important to consider all input factors (energy use, water use, material use, land use and landscaping, guest behaviour) and output factors (air emissions, effluent discharge, waste generation, odour and noise generation, biodiversity implications).



Slides 30-32
Profits for tourism industry from implementing CE



How tourism businesses may benefit from implementing circular economy's principles?

Slide 33-37
circular economy in tourism – case studies – Avocado Vegan Bistro



This example of using circular economy principles in business solutions comes from Avocado Vegan Bistro, located in Gdańsk (Poland).

Slides 38-41
circular economy in tourism – case studies – NOTERA Hotel SPA



Notera Hotel SPA in Bory Tucholskie, Charzykowy (Poland) is the example of how solutions based on circular economy, can be successfully implemented in accommodation and wellness services. Detailed information can be found on their website: <https://hotelnotera.pl/en/hotel/#eco-friendly-hotel>

Slides 42-48
Circular economy in tourism – case studies – Green Solution House



Slides 49-52
Circular economy in tourism – case studies - SPA



Slide 53
Third part of the workshop



Slide 54
Circular economy as a system



CE is not the new aspect of environmental protection. It is important to take into account the whole system such as: sustainable development, economic growth, eco-innovations, and to analyse it from value chain perspective.

Slide 55
Tools supporting the change towards circular economy



Slide 56
European Circular Economy Stakeholders Platform



One of the most important tool for collect good practices in EU is The European Circular Economy Stakeholder Platform. The platform is a joint initiative of the European Commission and the European Economic and Social Committee. It creates a "network of networks" going beyond sectorial activities and highlighting cross-sector opportunities and challenges. It is a place for sharing knowledge and expertise, addressing circular economy challenges, collecting existing initiatives at local, regional and national level and facilitating the collaboration of various stakeholders interested in CE issues.
Learn more:
<https://circulareconomy.europa.eu/platform/>

Slide 57 Circular Economy Tools and instruments



To facilitate the transformation into CE European Commission published few indicators for support just transition:

- **Building sustainable performance - Level(s)** is a voluntary reporting framework to improve the sustainability of buildings. Using existing standards, Level(s) provides an EU-wide approach to assessing environmental performance in the built environment. It encourages life cycle thinking for the whole building by offering a step by step approach to life cycle assessment.
- **EU Environmental Technology Verification - ETV** is a new tool that helps innovative environmental technologies reach the market. This CE tool provides third-party verification of the performance of technologies, building trust among potential customers whilst reducing technological risk.
- **Product Environmental Footprint and Organisation Environmental Footprint - (Product Environmental Footprint (PEF) and Organisation Environmental Footprint (OEF)** are comprehensive tools that measure and inform customers about the environmental impact of products and organisations. Their approach of assessing life-cycles reflects the essence of the CE.
- **EU Ecolabel** - is a voluntary label that helps to identify products and services that have reduced their environmental impact throughout their entire life cycle. It allows consumers to make informed choices and rewards producers who practice making efforts to create sustainable products.
- **EMAS Eco-Management and Audit Scheme** - EMAS is the official European environmental management instrument that helps organisations improve their environmental performance and demonstrate their efforts to implement „reduce, reuse and recycle“ practices.
- **Green Public Procurement - GPP** is a powerful circular economy instrument that encourages demand for green products and services by promoting green markets and setting strong examples for public bodies to follow.

Slide 58 Take a green step



“Take a green step” website is a goldmine of information on how to save resources and attract more clients. Supply chain management. All tourism organisations depend on external suppliers to provide materials and services. The environmental impacts arising from the production and delivery of these materials and services can be substantial compared with environmental impacts directly arising from activities occurring within, or directly managed by, tourism organisations. Please follow on: <https://ec.europa.eu/environment/emas/takeagreenstep/index.html>

Slide 59 Monitoring framework for circular economy



There is no indicator that can be a single measurement for the CE. A number of existing indicators can help to measure performance in several areas that directly or indirectly contribute to the CE development. They can be grouped into 4 presented groups: production and consumption, waste management, secondary raw materials, competitiveness and innovation.

Slide 60 EREK – European Resource Efficiency Knowledge Centre



EREK supports European SMEs in creation of real models that saves materials, resources and energy. It provides information, business solutions and support tools for more efficient resource management through a circular business model. EREK also supports national, regional and local initiatives in Europe Europe, supporting SMEs in their way toward CE. For more and current information visit <https://www.resourceefficient.eu/en>

Slides 61-62
ISO standards



Based on the ISO 20400:2017, it is really important to consider the CE in whole value chain. There are some ISO standards which regulate the sustainable tourism such as:

- ISO 21401, Tourism and related services – Sustainability management system for accommodation establishments – Requirements
- ISO 20611, Adventure tourism – Good practices for sustainability – Requirements and recommendations
- ISO 21416, Recreational diving services – Requirements and guidance on sustainable practices in recreational diving
- ISO/TC 228, Tourism and related services. One example is technical specification
- ISO/TS 13811, Tourism and related services – Guidelines on developing environmental specifications for accommodation establishments

Slides 63-65
The Global Sustainable Enterprise System GSES®



The Global Sustainable Enterprise System GSES® is an international standard for sustainable enterprises. Circular, sustainable and socially responsible entrepreneurship measured according to international standards such as ISO 20400, ISO 26000, ISO 14064 and BS 8001 – transparent supply chain in all areas of sustainable business

<https://certifications.controlunion.com/en/certification-programs/certification-programs/gses-circular-economy>

<https://gses-system.com/>



Voluntary process guidelines that recommend transparency and disclosure and promote integrity in the debt and equity market for the circular economy. This document is a common work of ABN Amro, Banco Intesa San Paolo, BNP Paribas, CDC, Circle Economy, Circularity Capital, Danish Business Authority, EBRD, EIB, Ellen Macarthur Foundation, ING, KPMG, PGGM, Rabobank, Sitra, Suez.

It was developed with the ambition to create a joint framework for financing the circular economy. According to the ABN Amro website "the new guidelines should help financial services companies establish whether or not initiatives are truly circular, for instance by monitoring recycling of products and materials and so ensuring that these retain the best possible value".

<https://www.abnamro.com/en/newsroom/press-releases/2018/abn-amro-ing-and-rabobank-launch-financial-guidelines-for-circular-economy.html>



https://www.abnamro.com/nl/images/Documents/040_Duurzaamheid/Publications/ABN_AMRO_Circular_Economy_Finance_Guidelines_2018.pdf
Circular Economy Finance Guidelines propose According the Guidelines, in the circular assessment of the company two aspects should be considered: business model and the socio-economic impacts (that includes environmental impact)

The guidelines propose to consider the following one typical business models of the CE:

- Circular Inputs: substitute virgin raw materials with secondary (recycled)
- Circular design: eliminate/reduce input of hazardous/toxic materials, easy disassembly and repair to facilitate recycling, reuse, life time extension.
- Sharing business models: increase the capacity utilisation of a product or asset during its useful life,
- Product-as-a-service
- Life Time Extension
- Material/resources recovery
- Circular facilitators and enablers – establish networks and collaborate with facilitators in CE, i.e. reverse logistic.

Slide 66
Cradle to Cradle Certified™ Product Standard



The Cradle to Cradle Certified™ Product Standard guides designers and manufacturers through a continual improvement process that looks at a product through five quality categories — material health, material reutilization, renewable energy and carbon management, water stewardship, and social fairness. A product receives an achievement level in each category — Basic, Bronze, Silver, Gold, or Platinum (<https://www.c2ccertified.org/get-certified/product-certification>).

Slide 67-69
EMAS



67 Key benefits for tourism operators - a value chain - direct and indirect aspects. It identifies 5 benefits for tourism operators:

- Be attractive: Sustain the quality of your destination's environmental attractions. More than 1/3 of traveller 's favour environmentally-friendly tourism and are willing to pay up to 40% more for this experience.
- Be profitable: Save money by using less resources, electricity, heating, water, etc.
- Be credible: Use the most robust environmental management instrument worldwide.



68 • Be strategic: You can only improve what you can measure! EMAS gives you a set of core indicators to systematically track your environmental performance.

- Be responsible: Improve your indirect environmental impacts. Tourism businesses interact with many actors outside their own organisation, such as suppliers, subcontractors and of course guests. Their behaviour is part of your environmental footprint! EMAS helps you select and positively influence your partners according to environmental criteria



69 EMAS Awards 2017 theme - "contributing to the make the European economy more circular" – winner the Belgian Hotel Chain Martin's Hotels demonstrates CE on a larger scale. Martin's Hotels, with 350 employees, has achieved significant cost and material savings through its purchasing policy (sourcing local and eco-labelled products, leasing equipment) and waste management (preference for rechargeable products, bulk purchases and donation or reuse of furniture).

Slide 70
Tourism certification



As there are many different standards and certificates related to ecology and sustainable tourism, we advise the trainer to adapt the scope of information related to this slide to the needs of participants and the country in which the training is conducted. Specific certificates used in particular countries should be discussed in details.

Slide 71
Global Sustainable Tourism Council



The Global Sustainable Tourism Council is a UN-endorsed independent organization playing a critical role as the leading global authority in providing guidance for the development and management of sustainability practices in travel and tourism.

Slides 72 – 73
CE inspirations in tourism



72

Sustainable cruise –LIFE - Led by one of the largest cruise companies (Costa Crociere), the project aimed to demonstrate the potential for waste prevention, recovery and recycling on a cruise ship. It has assessed the environmental impacts of three waste streams (packaging, biodegradable waste and paper) and the technical/economic viability of the large scale waste management solutions. It has also suggested a standardised approach to waste management on - board. Last but not least, it provided guidelines for an advanced certification scheme and assessed the possibility of converting CO2 emissions reductions into tradable carbon credits. EU contribution: € 1.314.623 (2011-2014) - Level of EU funding: 50%



73

Cluster GOazen („let's go" in Basque) – 2008 is a collaborative space between tourism companies in the Basque Country, - a network of more than 580 companies in the sectors of accommodation, catering, recreation, entertainment provider, museums, receptive and transport. Together they share a collective vision and engage in the fields of marketing, human resources, innovation, quality, cross-border tourism and the synergy of public / private actions.

Slides 74-76
Waste management inspirations



Slide 77
Reducing food waste in the hospitality – HOTREC Guidelines

HOTREC Guidelines is worth of mentioning when it is a great example how association supports its members and simultaneously introduces top-down some standards to the (tourism) sector. This kind of (international) cooperation as well participation in transnational organization helps to flow a knowledge and innovations. Source: https://u.profitroom.com/2017/ghp.pl/uploads/pdf_aktualnosci/hotrec_brochure_-_reduce_food_waste.pdf



Slide 78
Thank you and contact data

