

I Catalogue of Best Practices in Circular Economy

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I Catalogue of Best Practices in Circular Economy (CBPCE)

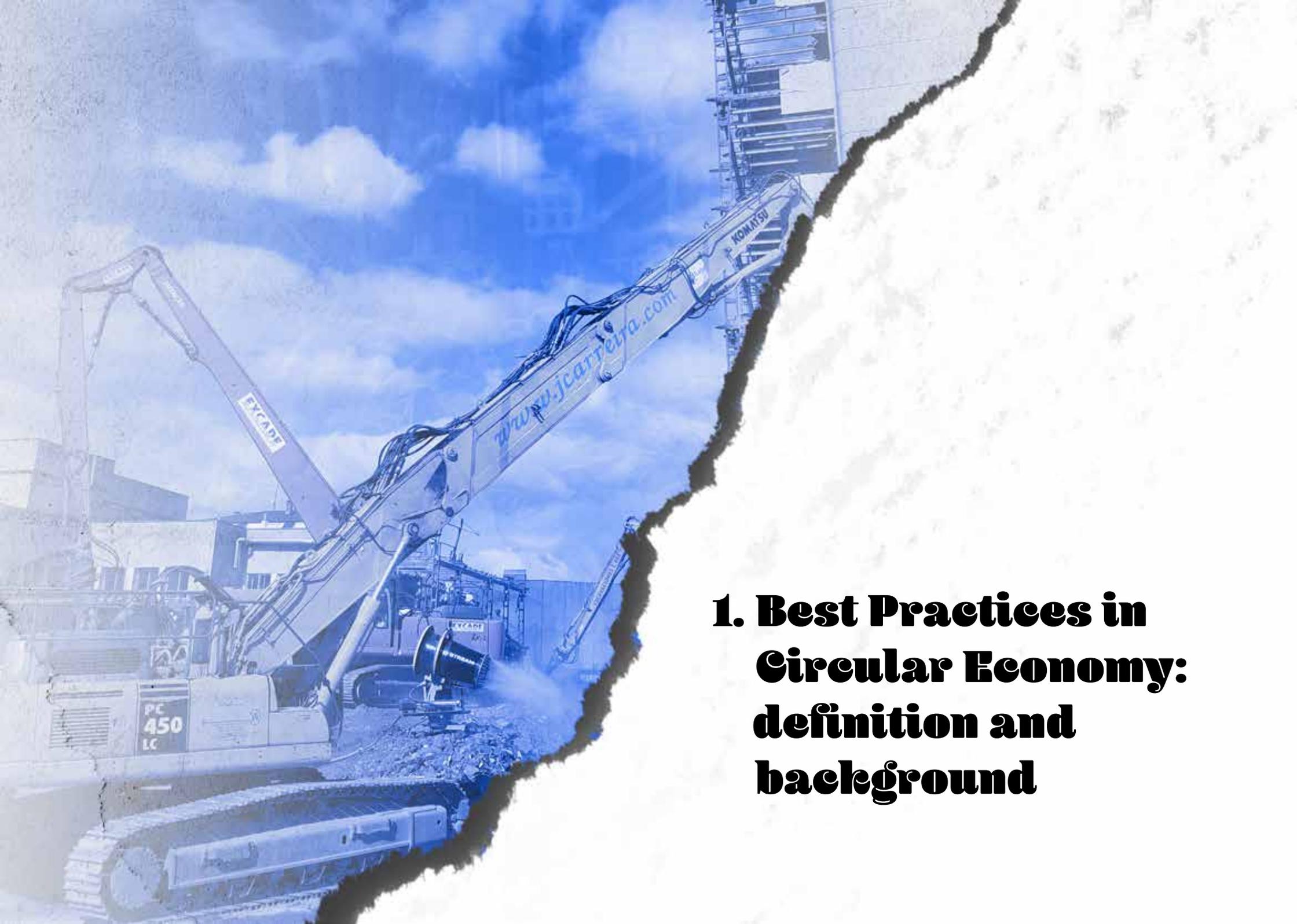




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1. Best Practices in Circular Economy: definition and background

Circular economy (hereinafter CE) is the convergence of three concepts: economy, environment and society. A systemic change is needed for the transition from a linear to a circular economy where inter-ministerial and inter-territory cooperation will be essential, as well as the sustained collaboration between the public and private sectors, in order to support and promote the exchange of information between researchers, public administrations and businesses and industries, social stakeholders and any kind of organisations and associations committed to the environment, sustainable development and growth, recycling and other pillars of the CE principles.

“Towards the Circular Economy” report made by the Ellen MacArthur Foundation, world leader in this field, defines CE as *“an industrial economy that is restorative by intention and tries that products, components and materials retain their maximum utility and value at all times, distinguishing between technical and biological cycles. This new economic model tries to decouple global economic development from the consumption of finite resources”*¹.

In 2015, the European Commission published in its Action Plan for CE that²: *“The transition to a more circular economy, where the value of products, materials and resources is maintained in the economy for as long as possible, and the generation of waste minimised, is an essential contribution to the EU's efforts to develop a sustainable, low carbon, resource efficient and competitive economy”*.

While a definition of CE appears for the first time in 2018 in a proposal for a Regulation of the European Parliament and of the Council³, it is not until 2020 that a legal definition of CE is adopted and exists at EU level, defining it as⁴: *“an economic system whereby the value of*

products, materials and other resources in the economy is maintained for as long as possible, enhancing their efficient use in production and consumption, thereby reducing the environmental impact of their use, minimising waste and the release of hazardous substances at all stages of their life cycle, including through the application of the waste hierarchy”.

Similarly, the Circular Economy Spanish Strategy *“España Circular 2030”*⁵ (hereinafter, CESS) defines CE as: *“That one where the value of products, materials and resources is maintained in the economy for as long as possible, and the generation of waste minimised, is an essential contribution to the EU's efforts to develop a sustainable, low carbon, resource efficient and competitive economy”*.

These common elements in the definitions are crucial, because they point the direction that the direct or indirect actions should take, complying with the target of a transition towards a CE. These actions shall be referred to as **Best Practices in Circular Economy** (hereinafter, BPCE). Therefore, the collection and exchange of information through BPCE between the different stakeholders is a key tool to promote the transition from the current model to a CE.

1 <https://www.ellenmacarthurfoundation.org/es/economia-circular/concepto>

2 COM (2015) 614 final: “Closing the Loop: An EU action plan for the Circular Economy”. <https://eur-lex.europa.eu/legal-content/ES/TXT/PDF/?uri=CELEX:52015DC0614&from=ES>

3 <https://eur-lex.europa.eu/legal-content/ES/TXT/PDF/?uri=CELEX:52018PC0353&from=EN>

4 Regulation (EU) 2020/852 of the European Parliament and of the Council of 18 June 2020 on the establishment of a framework to facilitate sustainable investment, and amending Regulation (EU) 2019/2088. <https://eur-lex.europa.eu/legal-content/ES/TXT/PDF/?uri=CELEX:32020R0852&from=es>

5 Ministry for Ecological Transition and Demographic Challenge (2020). “España Circular 2030: Circular Economy Spanish Strategy”. https://www.miteco.gob.es/es/calidad-y-evaluacion-ambiental/temas/economia-circular/espanacircular_2030_executivesummary_en_tcm30-510578.pdf



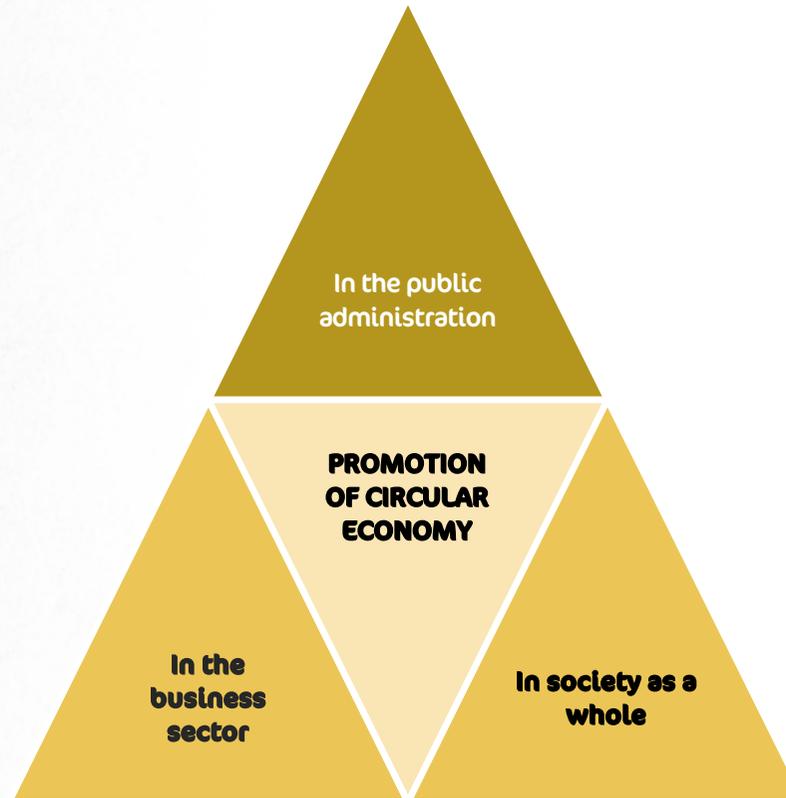
2. Objective

The transition to a CE in Spain requires a coordinated and responsible action between the Public Administration, the business sector and the society as a whole. The Spanish National Administration, through the General Sub-Directorate for Circular Economy (GSDCE) of the Ministry for Ecological Transition and Demographic Challenge (MITERD, as per the Spanish) intends to promote the exchange of BPCE between the main stakeholders in order to create synergies that foster said transition (figure 1).

In response to this requirement therefore, this catalogue aims

at compiling the different actions identified as BPCE so other stakeholders may benefit from these experiences and join the transition.

In any case, the inclusion of certain activities or materials as BPEC does not prejudice the acquisition of any legal status. With regards to the legal conditions of waste, by-products, end of waste status, recovery or recycling, among others, Act 22/2011 of 28 July on Waste and Contaminated Land shall apply.



*Figure 1: Promotion of CE among the main stakeholders.
Source: prepared by the authors.*

Aprende jugando

- Materiales educativos
- Juegos serios
 - "Ways2sort" juego para smartphones para aprender a clasificar de manera divertida
 - "Sunflower" compostadora virtual para smartphones para aprender el proceso de compostaje

3. Methodology

Phase I: Definition of criteria and identification and selection of BPCE.

In this first phase and once the general CE principles to be adopted were established, **minimum circularity criteria** were defined; these, classified by **scopes of action**, allow to identify an action as BPCE.

1. GENERAL CE principles ADOPTED TO IDENTIFY BPCE

To achieve the BPCE category, an action must focus on a series of principles interlinked and inherent to the definition of CE. These principles set the basis for entities to adopt their practices for the transition to CE:

1 Systemic and holistic thinking: global perception and analysis of reality, *“think global, act local”*.

2 Responsibility: assume (social, economic and environmental) responsibility for impacts resulting from the decisions and activities of each action. To educate and raise awareness about CE as part of said responsibility.

3 To re-think/re-generate: to renovate current models in all the scopes of action (design, production, consumption, use, business, waste management, etc.) for direct or indirect contribution to transit towards CE. To restore and recover quality of damaged ecosystems and provide value to the natural capital.

4 To innovate and virtualise: R&D&I promotion relating to CE, working on the substitution of unidirectional, single-use or non-renewable materials, products and resources with more circular and sustainable ones. Direct or indirect dematerialisation.

5 To optimise: reduction and more efficient use of resources (materials, water and energy). To increase the useful life and performance of products.

6 To “Closing the Loop” or “close the life circle” of resources, products and waste: to re-use, repair/refurbish, remanufacture (use of secondary raw materials), recover (obtention of secondary raw materials and critical materials⁶), recycle and revalue.

7 To share and collaborate: new models for collaborative consumption, use and business. Synergy between all the stakeholders.

8 Communication and transparency: to disseminate the information clearly, accurately, timely, honestly and completely. When possible, on the basis of ecologic certification standards and ecolabels.

⁶ The European Commission has included a list of critical raw materials. These materials are crucial for the economy and their supply is in risk. <https://eur-lex.europa.eu/legal-content/ES/TXT/PDF/?uri=CELEX:52020DC0474&from=EN>

2. SCOPES OF ACTION

In order to facilitate the identification of BPCE and in accordance with the different lines of action within the European framework and namely with regards to the focuses of action defined in CESS “España Circular 2030”, scopes of action

(figure 2) were defined to classify in higher category groups the minimum circularity criteria that BPCE must comply with.

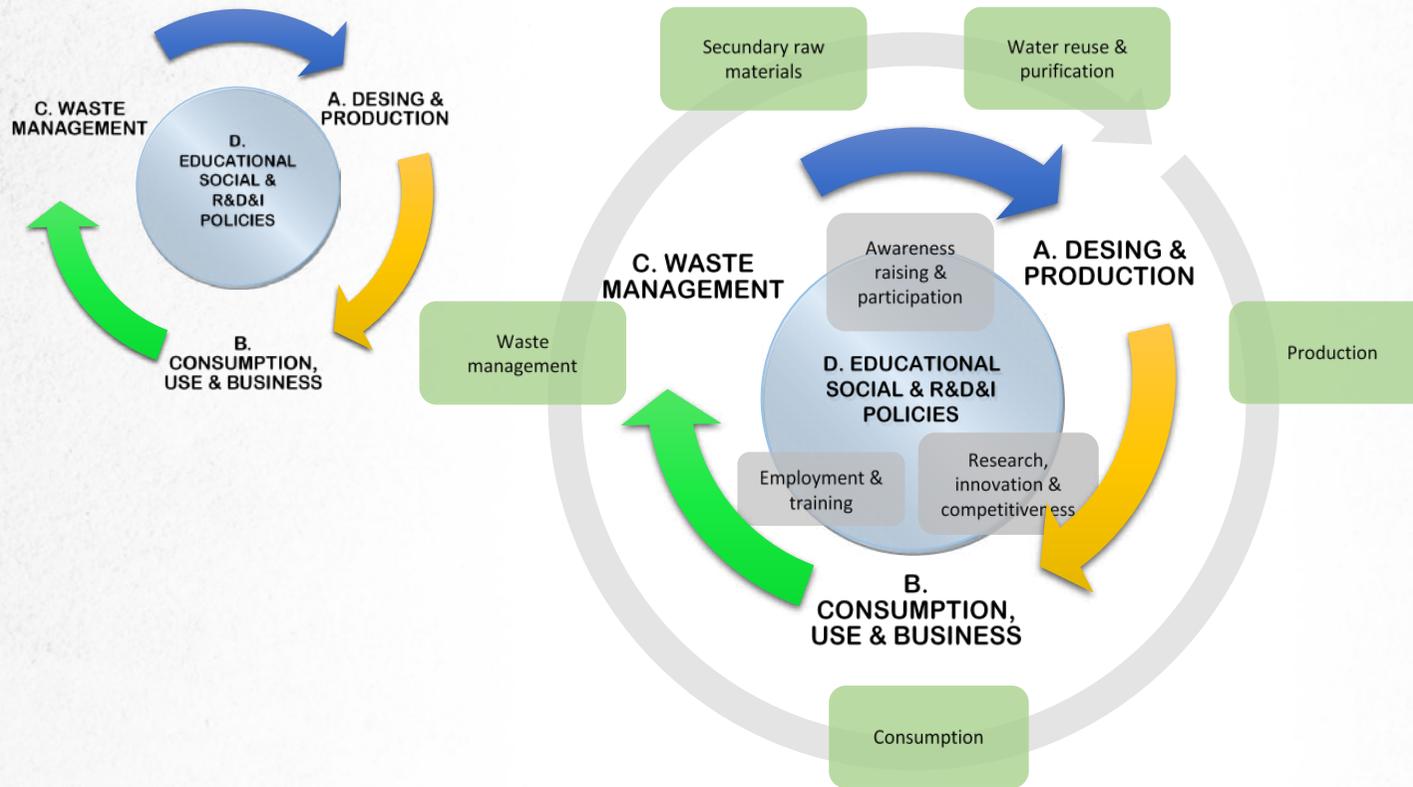


Figure 2. Superior groups or scopes of action to identify BPCE (left).
Scopes of action and focuses of action of CESS (right).
Source: prepared by the authors.

3. MINIMUM CIRCULARITY CRITERIA

Any action that intends to be considered as a BPCE must pursue and prove that it complies with the minimum circularity criteria defined for each of the scopes of action:

SCOPE OF ACTION	MINIMUM CIRCULARITY CRITERIA
GROUP A: DESIGN AND PRODUCTION.	<ul style="list-style-type: none"> a. A reduction and more efficient use of resources (raw materials, water and energy), including if: <ul style="list-style-type: none"> i. the following increases: the durability, resilience, efficiency, functionality, possibility of upgrade, repair and recycling of products (including the different materials therein) and recycling rate, ii. resources are substituted with more sustainable ones, iii. the use of secondary raw materials is increased. b. Prevention of waste, both of the product itself and those generated during the activity, including if: <ul style="list-style-type: none"> i. it provided information transparency throughout its life cycle. c. A reduction of the impacts associated with its activity.
GROUP B: CONSUMPTION, USE AND BUSINESS.	<ul style="list-style-type: none"> a. A reduction and more efficient use of products, goods and resources, including if: <ul style="list-style-type: none"> i. it creates a change towards more sustainable and circular products, goods, resources and services. b. A prevention of the waste generated during use and consumption, including if: <ul style="list-style-type: none"> i. it increases the lifetime of products and goods. c. A reduction of the impacts associated to consumption, use or business.
GROUP C: WASTE MANAGEMENT.	<ul style="list-style-type: none"> a. To encourage the effective application of waste hierarchy principle⁷, both with regards to the product and each of its parts by means of actions that increase and encourage the “<i>prevention, preparation to reuse, recycle, other type of recovery, including energy recovery and disposal</i>”⁸, including if: <ul style="list-style-type: none"> i. it improves the collection and waste sorting, ii. it improves traceability of waste. b. An increase of the recovery of the circular value, including if: <ul style="list-style-type: none"> i. it means a recovery of high-quality secondary raw materials and a promotion of its market for the reintegration into production processes, ii. it increases, improves or encourages the reuse and wastewater purification. c. A reduction of impacts associated to a waste mismanagement, including if: <ul style="list-style-type: none"> i. it means minimizing waste incineration and disposal, even in landfills.

⁷ In accordance with Act 22/2011 of 28 July on Waste and Contaminated Land.

⁸ In this sense, although the action is made based on waste hierarchy, incineration (with or without energy recovery) and disposal in landfills, it shall not be considered as BPCE.

SCOPE OF ACTION	MINIMUM CIRCULARITY CRITERIA
GROUP D: BPCE FOCUSED ON EDUCATIONAL, SOCIAL AND R&D&I POLICIES.	<ul style="list-style-type: none">a. They contribute to the transition to CE through any of the CE principles; andb. if their subject matter can be associated with groups A, B or C, which are actions whose objective is focused on the fulfilment of the minimum criteria set out for the group to which they are associated.

Phase II: Dissemination of the initiative

In order to trace and identify BPCE the General Sub-directorate for Circular Economy of the Ministry for Ecological Transition and Demographic Challenge disseminated the project of the catalogue, inviting the main stakeholders of the CE to participate sending practices that they have implemented to foster the transition to CE.

Along with the invitation, a technical sheet was provided along with the instructions and considerations needed for its proper filing.

Phase III: Collection and assessment

Once all the initiatives have been collected, each of them was individually analysed for their assessment according to the following criteria⁹:

- **Compliance with the minimum circularity criteria:** they are used to confirm if an action can be considered as a BPCE.
- **Relevance for the CE:** the BPCE directly reflect a high positive impact towards the transition to CE as a consequence of its implementation.
- **Innovation:** the BPCE constitutes an innovative response, it is a new initiative within its scope of action to attend the needs or criteria scheduled.
- **Adaptability and transferability:** BPCE that allows for reply (either fully or partially) by other entities.
- **Real and scalable applicability:** understanding as “scalable” actions that allow to increase benefits without increasing the unit production or marketing costs while the initial quality is maintained.
- **Durability:** it is used to verify that a BPCE is sustained over time.

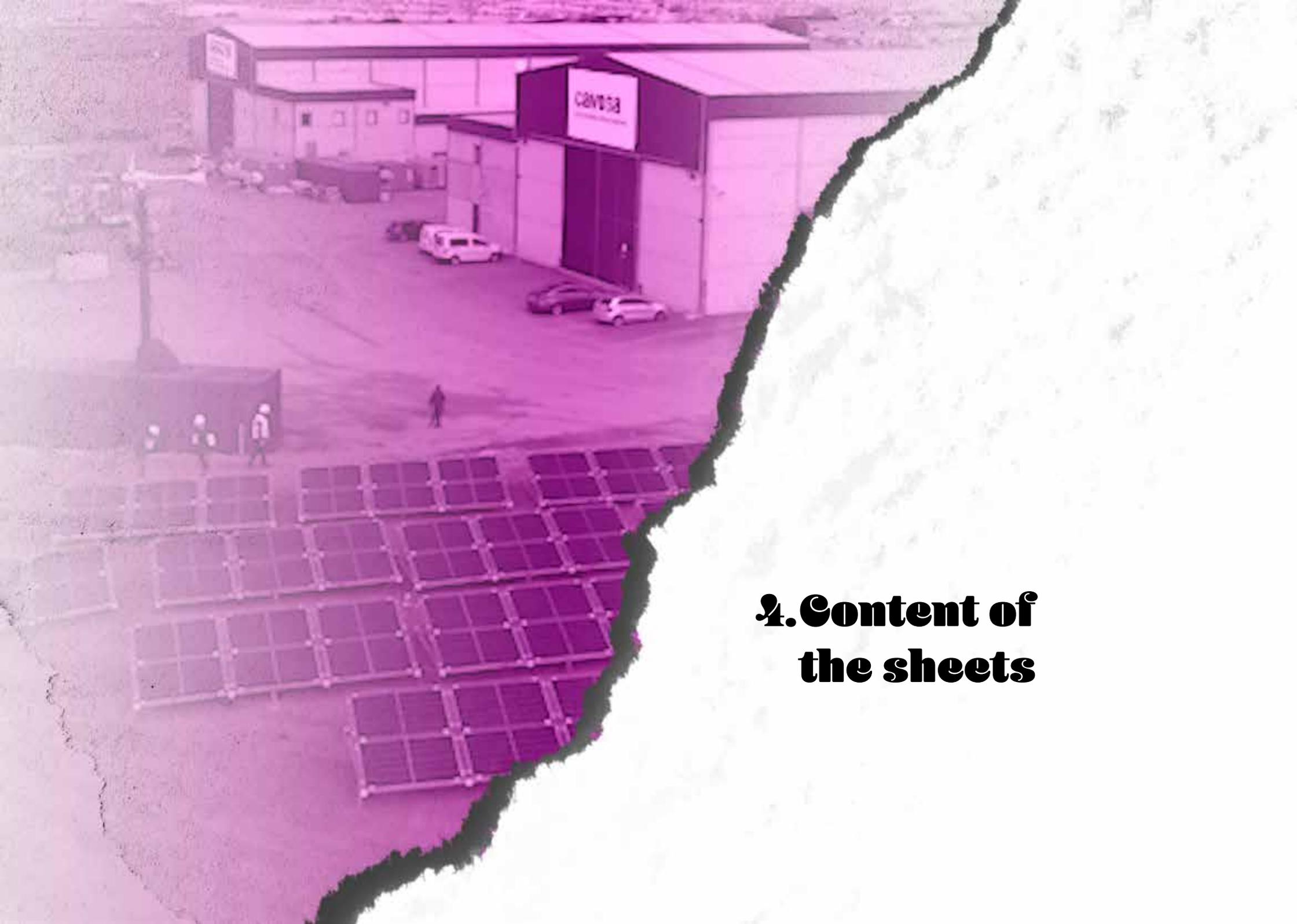
- **Relationship with society:** practices that reflect, to the extent possible, the engagement with society and how this collaborates in circularity.

Likewise, for an action to be positively evaluated, the completeness, clarity and objectivity in the submission of the information was taken into account, as well as whether it proved its viability and results through quantifiable or measurable indicators.

On this basis, a multi-criteria analysis methodology was used, allowing for an individual quantitative assessment with the greater objectivity possible of each of the practices received. Therefore, a higher score was assigned to initiatives with greater relevance and related to circular economy.

In the preparation of this catalogue, actions with the highest score were selected.

⁹ It must be noted that the valuation has been made pursuant to the information provided by entities and did not entail a verification of the economic, technical and environmental viability of the initiatives or the availability of the corresponding authorisations.



2. Content of the sheets

BPCE published in this catalogue have a common layout structure. The elements included in the sheet are:

- 1. Name of the BPCE:** title identifying the action.
- 2. Location:** place where the entity's headquarters are located.
- 3. Scope:** Global, International, European Union, National, Regional Administrations, Province, Regional, Urban/Cities, Rural...
- 4. Scope of action and relevance of the BPCE in CE:** indicates the scope of action in which the BPCE is framed (see Scopes of Action) and describes the relevance of the action in the CE.



Design and Production



Consumption, Use and Business



Waste Management



Educational, Social and R&D&i Policies

5. Objectives of the BPCE.

6. Description of the action.

7. Key results: main (environmental, economic and social) milestones achieved with the execution of the BPCE.



Economic Milestones



Social Milestones



Environmental Milestones

8. CE principles: among the general principles adopted to identify the BPCE, those with which it is identified (see CE principles Adopted for the Implementation of BPCE).

9. SDG commitments: to which the action contributes to achieve the goal.

10. Difficulties or challenges: faced by the entity to execute the BPCE.

11. Entity in charge of the BPCE: name of the entity.

12. Further Information.



5. Catalogue distribution

The catalogue was distributed according to the sector of the BPCE (classification as per the Spanish code of economic activities CNAE 2009) as follows:

B. Extractive industries	
0729 - Mining of other non-ferrous metal ores	<ul style="list-style-type: none"> • Manufacture of technosols from waste and their application in degraded soils.
C. Manufacturing Industry	
0712 - Manufacture of beer	<ul style="list-style-type: none"> • Manufacture of craft beer with bread. • Sustainable terraces. • Recycling of polyethylene from crates and pallets for reuse for the same purpose.
1107 - Manufacture of soft drinks; production of mineral waters and other bottled waters	<ul style="list-style-type: none"> • Circular Seas: collecting, raising awareness and innovating to boost the circular economy.
2399 - Manufacture of other non-metallic mineral products n.e.c.	<ul style="list-style-type: none"> • “Circularity”, integrating the circular economy into our business model.
2410 - Manufacture of basic iron, steel and ferro-alloys	<ul style="list-style-type: none"> • Recovery of metals from decanter metal sludge.
2751 - Manufacture of electric domestic appliances	<ul style="list-style-type: none"> • Collaboration for the preparation for re-use of household appliances.
E. Water supply, sewerage, waste management and remediation activities	
3600 - Water collection, treatment and supply	<ul style="list-style-type: none"> • Controlled struvite production.
3700 - Wastewater collection and treatment	<ul style="list-style-type: none"> • Integrated management model for the recovery and reuse of phosphorus from urban wastewater (PHORWater). • Thermochemical process for obtaining automotive <i>green</i> diesel from plastic waste from MSW. • WIBLE: the circular alternative to mobility.
3821 - Treatment and disposal of non-hazardous waste	<ul style="list-style-type: none"> • RARx - Asphalt mix additive made from tyre waste.
3831 - Separation and classification of materials	<ul style="list-style-type: none"> • Platform for the exchange of knowledge on municipal initiatives for the improvement of selective collection.
3832 - Recovery of sorted materials	<ul style="list-style-type: none"> • Universal substrate: We’re Closing the Loop! • The lives of a hanger

F. Construction	
4211 - Construction of roads and motorways	<ul style="list-style-type: none"> • ParqueCircular - Circular management of a construction machinery fleet.
4299 - Construction of other civil engineering projects n.e.c.	<ul style="list-style-type: none"> • Obtention of a “Zero Waste” certificate.
4399 - Other specialised construction activities n.e.c.	<ul style="list-style-type: none"> • Selective demolition of the old Xeral Hospital in Lugo with criteria of revaluation and recycling of materials. • Eco-design strategies: Lighthouse of the Port of Valencia. • APSE project for the development of circular economy models in road construction. • FISSAC project for the development of industrial symbiosis models in construction.
G. Wholesale and retail trade; repair of motor vehicles and motorcycles	
4711 - Retail sale in non-specialised stores with food, beverages or tobacco predominating	<ul style="list-style-type: none"> • Use of agricultural thermal blankets for the production of household cleaning utensils.
H. Transportation and storage	
5110 - Passenger air transport	<ul style="list-style-type: none"> • <i>Zero Cabin Waste.</i>
M. Professional, scientific and technical activities	
7010 - Activities of head offices	<ul style="list-style-type: none"> • Production of biofuels from raw materials of waste origin. • Production of lubricants from recovered industrial oils. • Reciclex®, manufacture of polyolefins with a high degree of recycled material.
7112 - Engineering activities and related technical consultancy	<ul style="list-style-type: none"> • <i>Headphones second life.</i>

7219 - Other research and experimental development on natural sciences and engineering	<ul style="list-style-type: none"> • Sustainable use of metal resources in electroplating. • Circular Economy in the Municipality of Gavà (Barcelona).
7490 - Other professional, scientific and technical activities n.e.c	<ul style="list-style-type: none"> • RECICLOS. • The Circular Lab. • Moda re-: we recycle clothes, we insert people. • SÍNER synergies platform.
N. Administrative and support service activities	
7711 - Leasing of cars and light motor vehicles	<ul style="list-style-type: none"> • ACCIONA <i>motosharing</i>.
7739 - Leasing of other machinery, equipment and tangible goods n.e.c.	<ul style="list-style-type: none"> • Circular logistics: management of reusable packaging for the transport of consumer goods.
8299 - Other business support service activities n.e.c.	<ul style="list-style-type: none"> • RECIRCULAR, a digital platform for the recovery of company waste and measurement of the benefits generated. • AEICE <i>Eco-Design Centre</i>.
O. Public Administration and defence; compulsory Social Security	
8411 - National Administration activities	<ul style="list-style-type: none"> • Provisional Proximity Housing (APROP) Ciutat Vella, circular and social economy in building. • Occupations Observatory. • Self-assessment tool on circular economy Circular labs.
S. Other services	
9411 - Activities of business and employers' membership organisations	<ul style="list-style-type: none"> • Footwear No-Trace.



6. BPCF selection

Manufacture of technosols from waste and their application in degraded soils

 Aznalcóllar, Seville

 Global

Scope of action and relevance of the Best Practices in CE



Development of products and goods that replace their materials with more sustainable ones.



Circularity in production processes.



Voluntary certifications, eco-labels and Environmental Product Declarations (EPD) focused on life cycle analysis, ecodesign or energy efficiency, which allow consumers to assume their responsibility in the circular transition.

Objectives

1. To encourage the creation of alliances with the different waste generation and management sectors and with R&D&I institutions and companies.
2. To improve waste management, encouraging its recovery.
3. To recover wasteland by immobilising pollutants and minimising erosion.
4. To generate protection and/or economic interest zones on reclaimed areas.
5. To improve water management and treatment, reducing the volume of water to be treated.
6. To recover biodiversity, creating new ecological niches.
7. To favour socio-economic development by creating business projects.
8. To fight against climate change by reducing greenhouse gas emissions and improving the carbon footprint.

Description

The first phase of the project is the characterisation and diagnosis of environmental problems, which makes it possible to establish the sectorisation of risk areas and to design and formulate the required technosols that allow for more efficient environmental recovery.

The second phase consists of the creation of alliances and the search for the necessary waste for the elaboration of the technosols.

The third phase is the application of the technosols for environmental recovery with a focus on the generation of conservation/protection zones, re-establishing native vegetation, and zones of economic interest, promoting local socio-economic development.

Throughout the project, local employment is promoted to develop the necessary activities and alliances are established with universities, research centres and companies with R+D+i development that contribute to increasing knowledge, improving the efficiency of the recovery process and disseminating results.



Key results



Emissions
Waste
Biodiversity



Saving
Income Potential



Employment
Cooperation
Sustainable Development

CE principles



SDG goals



Entity

Minera Los Frailes, S.L. in collaboration with Inproyen Consulting.

More information: <http://www.mineralosfrailes.es>

Manufacture of craft beer with bread

📍 El Barraco, Ávila

🌐 Province

Scope of action and relevance of the Best Practices in CE



Measures to promote recycling: recovery of materials from waste for reprocessing into new products, materials or substances, either for the original purpose or for other purposes.



Actions for the reuse of water in industrial processes.

Objectives

1. To reduce water consumption.
2. To minimise waste.
3. To minimise the environmental impact.
4. To increase corporate profitability.

Description

Reuse of cooling water (now hot) for cleaning, even for use as raw material in the next processing batch.

Reuse of bagasse (spent grain from processing) for animal feed.

Reuse of leftover fresh bread in the bakeries for use as a raw material in processing.

Key results



Emissions
Energy
Waste
Water



Saving
Competitiveness
Income Potential
Innovation



Awareness
Cooperation
Sustainable
Development



CE principles



SDG goals



Difficulties or challenges

- Administrative burden.
- Lack of regulations on circular economy.
- Legal harmonisation.
- Complex process to make it circular.
- Low return on investment.

Entity

Cerveza Raíz Cuadrada (Valviejo Brewery S.L.).

More information: www.cervezaraizcuadrada.com

Sustainable terraces

Seville

National

Scope of action and relevance of the Best Practices in CE



Design of products and goods based on increased life cycle, greater use of their components and reducing or counteracting premature obsolescence and single-use products.



Design and manufacture of re-manufactured products, materials from the recycling of other products, by-products or secondary raw materials, while ensuring their performance and safety.

Objectives

1. To increase the useful life of products (elongation of life) and the number of recycled materials.
2. To minimise the waste generated and collect it to give it a new life.
3. To reduce CO₂ emissions.
4. To reduce water consumption.
5. To reduce the use of paints and dyes to minimise their potential impact on the environment.
6. To collaborate in charitable causes.

Description

Heineken España, together with Ripay, are working towards making their chairs, tables and parasols 100 % recyclable and made from 100 % recycled material. Actions include:

1. Manufacture of ecological parasols, using 100 % of the necessary polyester from recycled plastic bottles.
2. Collaboration in a solidarity initiative to collect plastic caps that are used in the manufacture of ferrule for our chairs and tables. The money raised through this initiative is donated to various health-focused causes.

Key results



Materials
Emissions
Waste
Water



Competitiveness
Innovation



Awareness
Wellness



CE principles



SDG goals



Difficulties or challenges

- Access to relevant information and applicable assessments.
- Lack of legal standards and definitions.
- Lack of regulations on circular economy.
- Complex process to make it circular.
- Lack of circular infrastructure/technical or logistical barriers.
- Quality problems.

Entity

Heineken España in collaboration with Ripay.

More information: www.heinekenespana.es

Recycling of polyethylene from crates and pallets for reuse for the same purpose

Seville

International

Scope of action and relevance of the Best Practices in CE



Measures to encourage re-manufacturing: using parts of a waste product in a new product with the same function.

Objectives

1. To reuse obsolete returnable bottle crates and keg pallets made of high-density polyethylene as raw material for the production of new crates and pallets.

Description

Firstly, the crates and pallets in stock are analysed, whether they are in use and which are not (because they cannot be repaired or because there are more crates than necessary).

Subsequently, the needs for these crates for the following year are analysed, either derived from the introduction of new products or from the need to replenish the packaging stock on the market.

Finally, both variables are crossed and business decisions are made according to the necessary and available resources, always trying to generate the optimum balance under the premise of minimising the environmental impact.

Key results



Materials
Emissions
Energy
Waste
Biodiversity



Saving
Innovation



Cooperation
Sustainable
Development
Other



CE principles



SDG goals



Difficulties or challenges

- Legal harmonisation.
- Complex process to make it circular.
- Recognition of by-products/secondary raw materials.
- Lack of circular infrastructure/technical or logistical barriers.
- Quality problems.

Entity

Heineken España in collaboration with DW Plastic and Ribawood.

More information: www.heinekenespana.es

Circular Seas: collecting, raising awareness and innovating to boost the circular economy

Madrid

National

Scope of action and relevance of the Best Practices in CE



Awareness-raising and dissemination campaigns, projects, workshops, events, etc. that engage society as a whole in the adoption of more circular habits.



Improve the scientific and technical knowledge base to develop new technologies and redesign production processes, business and consumption models that shape a new economy and society.



Measures to promote recycling: recovery of materials from waste for reprocessing into new products, materials or substances, either for the original purpose or for other purposes.

Objectives

1. To contribute to cleaning coasts and marine environments of waste.
2. To promote a culture of sustainable consumption through training and awareness-raising sessions.
3. To seek solutions and move towards new models based on the circular economy supported by science and innovation.

Description

The Circular Seas project integrates tasks of cleaning up coasts, seabed and other aquatic environments, awareness-raising and training actions for citizens and the promotion of circular solutions in Spain and Portugal. It includes 3 blocks:

1. The most urgent: to remove waste found in marine environments and inland aquatic areas through intervention and volunteer actions.
2. The most important: to promote a culture of recycling through awareness-raising days on beaches, training in educational centres and for citizens, as well as visits to Coca-Cola European Partners factories in Spain and Portugal.
3. Looking to the future: all PET plastic collected is registered, stored and treated to obtain PET flakes that can be reintroduced into Coca-Cola's value chain. Two competitions are also organised each year in which three scientific studies and one *start-up* are selected.

Key results



Materials Waste



Innovation



Knowledge
Awareness
Cooperation
Sustainable
Development



Sector

CE principles



SDG goals



Difficulties or challenges

- Administrative burden.
- Cooperation with the authorities.
- Legal harmonisation.
- Behavioural change/lack of awareness or cooperation.
- Complex process to make it circular.
- Lack of circular infrastructure/technical or logistical barriers.
- Quantity problems.
- Organisational structures.
- Low return on investment.
- Transboundary shipments of waste.

Entity

Coca-Cola Iberia/Coca-Cola European Partners Iberia (co-financed by The Coca-Cola Foundation) in collaboration with the General Secretariat for Fisheries from the Ministry of Agriculture, Fisheries and Food, Asociación Chelonia, Asociación Vertidos Cero, Fundación Ecomar, Liga para a Protecção da Natureza, along with more than 400 public and private entities, city councils, NGO, universities and associations.

More information: <https://www.cocacolaespana.es/>
<https://www.ccepiberia.com/>

“Circularity”, integrating the circular economy into our business model

 Cantoria, Almería

 National

Scope of action and relevance of the Best Practices in CE



Measures to promote recycling: recovery of materials from waste for reprocessing into new products, materials or substances, either for the original purpose or for other purposes.



Actions for the reuse of water in industrial processes.

Objectives

1. To develop a waste management model that allows for the material recovery of the waste generated and its reuse as raw materials in the company's own production processes.
2. To seek new lines of waste recovery for external or tertiary uses through innovation: industrial symbiosis.
3. To achieve "zero waste" and maximum use of resources.
4. To develop a transversal vision of waste management, taking into consideration the entire value chain through the search for synergies with other industries.

Difficulties or challenges

- Lack of legal standards and definitions.
- Administrative burden.
- Lack of regulations on circular economy.
- Complex process to make it circular.
- Recognition of by-products/secondary raw materials.
- Useful application of recycled materials.

CE principles



Key results



Emissions
Waste
Water



Saving
Income Potential



Employment
Awareness
Sustainable
Development



Circular
Integrando la Eco
Circular en nuestro
Modelo de Negocio



Description

"Circularity" promotes an efficient business circular economy. The main aspects addressed are:

- the management of its own liquid and solid waste for reuse in the production chain,
- the management and recovery of these wastes for industrial symbiosis,
- research into the use of by-products from other industries as raw materials.

The "Circularity" project aims at promoting a new market for secondary raw materials. The main lines and new uses developed are:

- a. Internally: research lines aimed at the internal recovery of waste, using it as raw material in the production process (recovery of waste from the Dekton process, sludge and yew in Dekton and Silestone and by-products from other industries).
- b. Externally: use of waste as a substitute for construction and civil engineering materials (gravel, fillers, etc.), development of technosols and use of waste to manufacture ceramic products.

SDG goals



Entity

Grupo Cosentino in collaboration with Universidad de Granada/ CSIC-Estación Experimental de Zonas Áridas (EEZA).

More information: www.cosentino.com

Recovery of metals from decanter metal sludge

Loiu, Bizkaia

Regional

Scope of action and relevance of the Best Practices in CE



Measures to promote recycling: recovery of materials from waste for reprocessing into new products, materials or substances, either for the original purpose or for other purposes.

Objectives

1. To utilise the metal content of the sludge from the rolling decanter by means of briquetting process.
2. To reintroduce them into the production process.

Description

1. During the rolling process, the thin sheet of metal that is generated is carried by the cooling water to the settling pool.
2. During the August shutdown, the pool is emptied and the sludge at the bottom is extracted. This sludge is rich in metal content (Fe, Cr, Ni).
3. The sludge is sent to a prefabrication company, where it is mixed with silicon carbide and binder to be turned into briquettes (bricks).
4. These briquettes are put back into the electric arc furnace as if they were just another ferroalloy, in order to use the metals contained in the briquettes.

Key results



Materials Waste



Saving Innovation



Sustainable Development



CE principles



SDG goals



Difficulties or challenges

- Complex process to make it circular.
- Poor demand.
- Time-consuming processes.

Entity

Aceros Inoxidables Olarra, S.A.

More information: <https://www.olarra.com/>

Collaboration for the preparation for re-use of household appliances

Zaragoza

National

Scope of action and relevance of the Best Practices in CE



Measures to improve the collection and waste sorting.



Measures to repair/refurbish: repair and maintenance of the defective or old product so that it can be used for its original function (maintaining the quality level).



Measures to improve the collection and waste sorting.

Objectives

1. To know the process of preparation for the reuse of large household appliances, and to check whether there is an improvement in the appliances that can be recovered with respect to those coming from the flows of clean points and distribution.
2. To know how much of the legal obligation set out in Royal Decree 110/2015, of 20 February, on waste electrical and electronic equipment can be covered by this project.
3. To contribute to the social aspect of the company's CSR.

Description

BSH takes the used appliance, if requested by the user, when delivering new appliances. In the case of direct delivery, via online sales or direct delivery by a large retailer (e.g.: Worten), it must be indicated whether the used appliance works, and whether it can be prepared for reuse or not.

If so, these appliances are transported to the logistics platforms where the entities of the Spanish Association of Social and Solidarity Economy Recupersators (AERESS) collect them and repair them for reuse and sale in their second-hand shops.

All the profits obtained go back to the AERESS collaborating organisations (8 to date). In this way, up to 32 % of the equipment received has been recovered, compared to 3 % from clean points.

Key results



Waste



Employment
Awareness
Cooperation
Sustainable
Development



CE principles



SDG goals



Difficulties or challenges

- Administrative burden.
- Cooperation with the authorities.
- Behavioural change/lack of awareness or cooperation.
- Poor demand.
- Lack of circular infrastructure/technical or logistical barriers.

Entity

BSH Electrodomésticos España S.A. in collaboration with AERESS (Spanish Association of Social and Solidarity Economy Recupersators).

More information: www.bsh-group.com

Controlled struvite production

Madrid

Global

Scope of action and relevance of the Best Practices in CE



Measures to promote the recovery of critical raw materials.



Measures to promote recycling: recovery of materials from waste for reprocessing into new products, materials or substances, either for the original purpose or for other purposes.

Objectives

1. To improve the operation of the WWTP processes and the quality of the effluent, due to the elimination of phosphates in the stream that feeds the struvite plant. This implies a reduction in the presence of phosphorus in the process and in the effluent, and a reduction in the consumption of process reagents.
2. To improve the operation of the sludge line of a WWTP and the management of the installation, as by reducing the amount of phosphorus present in these lines, struvite precipitations and incrustations produced naturally in pipes and equipment decrease, which results in better hydraulic operation, energy optimisation and an improvement in their state of conservation.
3. To recover a critical material (phosphorus in the form of struvite) for its application as a fertiliser and economic use.

Description

The process is based on the control of struvite precipitation in an ascending fluidized bed reactor, characterized by:

1. Treatment capacity of up to 300 kg/day of phosphorus.
2. It allows the production of up to 2,000 kg of struvite per day under optimum operating conditions and feed quality.
3. The rate of struvite formation is controlled in the process, so that a high-quality granular product with the desired physical properties is obtained that can be marketed as a fertiliser.
4. The technology adopted removes much of the dissolved orthophosphate in a liquid stream, along with a small percentage of the ammonium, resulting in a higher quality product for its subsequent marketing.

Key results



Materials
Waste
Water



Competitiveness
Income Potential
Innovation



Employment
Sustainable
Development

CE principles



SDG goals



Difficulties or challenges

- Lack of legal standards and definitions.
- Cooperation with the authorities.
- Lack of regulations on circular economy.
- Legal harmonisation.
- Complex process to make it circular.
- Recognition of by-products/secondary raw materials.
- Useful application of recycled materials.
- High initial investments.

Entity

Canal de Isabel II in collaboration with Cadagua and Ferrovial Corporación S. A.

More information: <https://www.ferrovial.com>

At present, the use of struvite is subject to its approval by delegated act of the Commission and will apply to EU fertilisers according to the timetable laid down in Regulation (EU) 2019/1009 of the European Parliament and of the Council of 5 June 2019, laying down rules on the making available on the market of EU fertilising products.



Integrated management model for the recovery and reuse of phosphorus from urban wastewater (PHORWater)

Paterna, Valencia

European Union

Scope of action and relevance of the Best Practices in CE



Substitution of materials from non-renewable sources by biological raw materials which can be reused, recycled and composted.



Measures to promote the recovery of critical raw materials.

Objectives

1. To make society aware of the environmental impacts of phosphorus.
2. To provide an innovative solution to phosphorus recovery in WWTP.
3. To develop a best practices protocol to optimise phosphorus recovery in WWTP.
4. To demonstrate the benefits of its recovery as struvite.
5. To find a solution to the environmental impacts of phosphorus.

Description

In PHORWater the phosphorus present in the water of the WWTP is biologically eliminated in the generated sludge and, subsequently, extracted from it for its recovery as struvite by crystallization.

The project intended to:

- Optimise the biological phosphorus removal process in the water line
- Recover the phosphorus removed as a struvite.
- Increase the availability of phosphorus for agricultural use.

PHORWater seeks to provide a solution to the environmental impact of phosphorus by decreasing the amount of phosphorus spilled and the associated eutrophication problems and by obtaining an alternative source of phosphorus to reduce its mineral extraction.

Key results



Waste Water



Saving Income Potential



Knowledge Awareness Cooperation



CE principles



SDG goals



Difficulties or challenges

- Lack of regulations on circular economy.
- Recognition of by-products/secondary raw materials.
- Lack of incentives.

Entity

Depuración de Aguas del Mediterráneo S.L. in collaboration with Universidad de Valencia and Claude Bernard University, Lyon.

More information: www.dam-aguas.es

At present, the use of struvite is subject to its approval by delegated act of the Commission and will apply to EU fertilisers according to the timetable laid down in Regulation (EU) 2019/1009 of the European Parliament and of the Council of 5 June 2019, laying down rules on the making available on the market of EU fertilising products.

RARx - Asphalt mix additive made from tyre waste

Madrid

Global

Scope of action and relevance of the Best Practices in CE



Design and manufacture of re-manufactured products, materials from the recycling of other products, by-products or secondary raw materials, while ensuring their performance and safety.



Design and production of goods that simplify and reduce the number of materials used, thus facilitating greater performance during the recycling process.



Improve areas such as waste prevention and management, food waste, the reuse of materials and alternative raw materials/renewable energy products, sustainable industrial processes, industrial symbiosis or the bioeconomy.

Objectives

1. To improve the life of pavements and anti-crack systems.
2. To avoid ruts on asphalt with high viscosity.
3. To create ultra-thin, quieter and economically sustainable pavements, helping to reduce waste generated by society (tyres).

Description

RARx is a high-tech product made from end-of-life tyre rubber powder, pre-treated with bitumen and other mineral additives, used to produce asphalt mixtures. The rubber powder used to manufacture the additive RARx is obtained in old tyre processing plants, where:

1. After receiving and sorting, the tyres are shredded in different sizes.
2. The appropriate particles pass through a *rasper*, which separates more than 95 % of the steel from the rest of the components.
3. Once the remaining steel is released by an electromagnet, the material less than 20 mm passes through the press mill, which granulates the rubber and separates it from the textile components.
4. After re-using an electromagnet to remove the remaining steel, the textile part of the rubber is separated by suction. Finally, the materials obtained follow these proportions: 25 % steel, 65 % rubber and 10 % textile.
5. This rubber achieved in the process is divided into 30 % in each of the three granulation sizes and 10 % in powder valid for use in the preparation of the additive RARx.

Key results



Materials
Emissions
Energy
Waste
Others



Saving
Productivity
Competitiveness
Income Potential
Innovation
Others



Knowledge
Awareness
Wellness
Sustainable
Development



CE principles



SDG goals



Difficulties or challenges

- Lack of legal standards and definitions.
- Cooperation with the authorities.
- Lack of regulations on circular economy.
- Behavioural change/lack of awareness or cooperation.
- Recognition of by-products/secondary raw materials.
- Useful application of recycled materials.
- Poor demand.
- Low return on investment.

Entity

Valoriza Medioambiente - Grupo Sacyr in collaboration with Composan, Consulpav, Sacyr and FHL Group.

More information: www.sacyr.com

Thermochemical process for obtaining automotive *green* diesel from plastic waste from MSW

 Madrid

 National

Scope of action and relevance of the Best Practices in CE



Measures that promote recovery for waste-to-energy processes according to the waste hierarchy.

Objectives

1. To transform, by thermochemical process, polyolefin plastic waste from municipal solid waste treatment plants (MSW) into automotive quality diesel, which can be used in the Urbaser vehicle fleet.
2. To increase the commercial viability of poorly implemented technologies.
3. To reduce incineration and/or landfill.
4. To contribute actively to the reuse of materials.

Description

The action included a technical validation:

1. On a laboratory scale, for optimization of the process parameters (temperature, pressure, etc.) and characterization of the different liquid fractions obtained to achieve product qualities suitable for use in the engine.
2. At the pilot plant level, 125 kg/h, in an industrial environment, to demonstrate the technical feasibility (operating conditions, percentage of conversion to liquid and distribution of products), economic and environmental process.
3. In addition, engine tests have been carried out, to study effects on performance (power and consumption) and emissions generated; and actual vehicle of the Urbaser fleet, to observe conductivity problems or side effects that may damage it.

Key results



Emissions
Energy
Waste



Saving
Competitiveness
Income Potential
Innovation



Employment
Knowledge
Cooperation
Sustainable
Development



CE principles



SDG goals



Difficulties or challenges

- Behavioural change/lack of awareness or cooperation.
- Quantity problems.
- Quality problems.
- Access to financing.
- High initial investments.
- Price volatility.
- Other: comply with requirements of rd 61/2006.

Entity

Urbaser S.A.U. in collaboration with CLH, URJC, ITQ-CSIC.

More information: <https://www.urbaser.com/>

WIBLE: the circular alternative to mobility

Madrid

Urban/Municipal

Scope of action and relevance of the Best Practices in CE



Servitisation measures, in which the product is understood as a service, producers maintain ownership of the product or responsibility for its performance throughout its life cycle.



Substitution of materials from non-renewable sources by biological raw materials which can be reused, recycled or composted.

Objectives

1. To offer a service of sustainable and circular mobility in the city of Madrid and its surroundings.
2. To promote the use of 100 % renewable fuels.
3. To encourage collaborative schemes and shared use versus ownership.
4. Contribution to the commitments made in terms of CO₂ emissions.

Description

Carsharing service of plug-in hybrid cars launched jointly by Repsol and its partner Kia Motors Iberia. The initiative promotes collaborative consumption and decreases the carbon footprint of cities:

1. The fleet consists of 500 100 % electric, hybrid, and plug-in hybrid vehicles.
2. The vehicles are labelled "zero emissions".
3. We are looking for more sustainable alternatives to the displacements in urban areas of Madrid and its surroundings.

Key results



Emissions
Energy
Materials



Extension
Innovation



Cooperation
Sustainable
Development
Other



CE principles



SDG goals



Difficulties or challenges

- Lack of legal standards and definitions.
- Poor demand.

Entity

Repsol, S.A. in collaboration with Kia Motors Iberia.

More information: <https://www.repsol.com/>

Platform for the exchange of knowledge on municipal initiatives for the improvement of selective collection

 Madrid

 National

Scope of action and relevance of the Best Practices in CE



Development and implementation of tools that allow the transition to CE and its dissemination: CE strategies, best practices catalogues, etc.



Awareness-raising and dissemination campaigns, projects, workshops, events, etc. that engage society as a whole in the adoption of more circular habits.

Objectives

1. To make available to any interested municipality best practices in waste management, with detailed descriptions and examples of successful implementation, so that they can be replicated by other municipalities.

Description

The "Alliance of municipalities for the sustainability of waste", promoted by Ecovidrio since 2018, materializes in a virtual platform (<https://sostenibilidadresiduos.es/>).

Key results



Materials
Emissions
Waste
Others



Saving
Productivity
Competitiveness
Income Potential
Extension
Innovation
Others



Employment
Knowledge
Awareness
Equality
Wellness
Cooperation
Others

CE principles



SDG goals



Difficulties or challenges

- Administrative burden.
- Cooperation with the authorities.
- Behavioural change/lack of awareness or cooperation.
- Complex process to make it circular.
- Lack of application.
- Time-consuming processes.
- Organisational structures.
- Transboundary shipments of waste.

Entity

Ecovidrio.

More information: www.ecovidrio.es

Universal substrate: We're Closing the Loop!

Zaragoza

National

Scope of action and relevance of the Best Practices in CE



Measures to promote recycling: recovery of materials from waste for reprocessing into new products, materials or substances, either for the original purpose or for other purposes.



Design and manufacture of re-manufactured products, materials from the recycling of other products, by-products or secondary raw materials, while ensuring their performance and safety.



Promote the incorporation of common, transparent and accessible circularity indicators that allow to know the degree of implementation of the circular economy, as proof of its commitment to the CE Pact.

Objectives

1. To place on the market the first self-branded universal substrate made from compost made from the organic waste itself.
2. To provide a sustainable product for an increasingly environmentally conscious consumer.
3. To reintroduce waste into the production cycle.
4. To achieve the "Zero Waste" to landfill target.
5. To insert recycled low-density polyethylene (50 %) into the packaging.
6. To promote sectoral collaboration across the product value chain.

Description

In 25 Alcampo centres in Spain, organic waste is segregated into sealed containers that, once filled, are transported by Saica Natur to a composting plant belonging to Castellano Manchega de Limpiezas, for recovery. The compost obtained is subsequently used by Semillas Batllé to manufacture the universal substrate enriched with this high-quality compost, in 10 % of the final composition of the product.

In addition, the universal substrate is sold in a container made of recycled plastic (Natur Cycle Plus plant) and the water consumption in the manufacture of the shorts is reduced by 39 %.

Key results



Emissions
Waste
Water



Innovation



Awareness
Cooperation



CE principles



SDG goals



Difficulties or challenges

- Administrative burden.
- Complex process to make it circular.
- Low return on investment.

Entity

Saica Natur S.L. in collaboration with Auchan Retail España S.L., Castellano Manchega De Limpiezas S.L.U. and Semillas Batllé S.A.

More information: www.saica.com/es/saica-natur/

The lives of a hanger

Ibi, Alicante

International

Scope of action and relevance of the Best Practices in CE



Separated collection of textile, waste electrical and electronic equipment, plastics, construction and demolition waste, tyres, etc.



Measures to encourage re-manufacturing: using parts of a waste product in a new product with the same function.

Objectives

1. To create a circularity model exportable to the entire textile sector, through which all the waste generated in the distribution (logistics centres, stores) are separated and sent for reuse or recycling.

Description

Through Inditex reverse logistics, all Inditex Group store hangers arrive at Acteco's plants, where they are unloaded and separated by product type and utility (separated from the textile waste of the hangers by polymer type), reusing those in adequate condition and sending to recycling those that are not suitable for reuse.

After the recycling process a high-quality secondary raw material is obtained, used to manufacture this product again, intended for the same use. Thus, this process uses hanger residues to make new hangers, in repetitive circular processes, being recycled several times.

Key results



Materials
Emissions
Energy
Waste



Saving



Employment
Equality
Sustainable
Development

CE principles



SDG goals



Difficulties or challenges

- Lack of legal standards and definitions.
- Lack of regulations on circular economy.
- Lack of circular infrastructure/technical or logistical barriers.
- Transboundary shipments of waste.

Entity

Acteco productos y servicios S.L. in collaboration with Inditex.

More information: www.acteco.es

ParqueCircular - Circular management of a construction machinery fleet

Madrid

Global

Scope of action and relevance of the Best Practices in CE



Measures encouraging "rejection": making the product redundant by abandoning its function or by offering the same function through a radically different product or service.



Measures to repair/refurbish: repair and maintenance of the defective or old product so that it can be used for its original function (maintaining the quality level).



Use of renewable vs. non-renewable energies.

Objectives

1. To reduce energy consumption through the selection of equipment and its efficient use, the use of cleaner resources and the use of green energy.
2. To minimize the generation of waste through its recovery in valuable resources giving them a second use.
3. To extend the useful life of the equipment by means of control and prevention actions, which translates into a decrease in its manufacture and, therefore, a reduction in the consumption of raw materials, energy expenditure in the process, etc.

Description

The actions carried out within the ParqueCircular project to achieve the three objectives defined are:

1. Aurora Project: the machinery fleet does not have a connection to the electrical grid. Conventional diesel generators were replaced by a solar panel and a wind turbine. Subsequently all the luminaires were replaced by LEDs.
2. CYRYC (SURUS) Project: search to maximize the equipment to which a second life is given, either totally or partially and either for what they were intended in their manufacture or for something totally opposite, through the sale of them.
3. SacyrTracking Project: a global project to digitize a work, machine sensorisation included. This allows to have real-time knowledge of behaviour. The execution of preventive maintenance in a more efficient way and the in-depth knowledge of the corrective procedures will provide data for the execution of predictive maintenance, which will increase the useful life of the machines.



Key results



Emissions
Energy
Waste



Saving
Productivity
Income Potential
Extension
Innovation



Knowledge
Awareness
Sustainable
Development

CE principles



SDG goals



Difficulties or challenges

- Others: search of stakeholders/clients that may provide a second life to equipment and machinery managed through SURUS projects.

Entity

Sacyr Construcción - Grupo Sacyr in collaboration with Kemtecnica, Surus and Zerintia.

More information: www.sacyr.com

Obtention of a “Zero Waste” certificate

Madrid

National

Scope of action and relevance of the Best Practices in CE



Measures to improve the collection and waste sorting.



Measures to improve traceability of waste.

Objectives

1. To collect, classify and recover in the most efficient way possible all the waste generated in the project.
2. To reintegrate waste into the system as new resources or secondary raw materials, avoiding its disposal.
3. To reduce the use of new natural resources.

Description

To achieve the objectives, the following actions were carried out:

1. Study and classification of waste fractions generated on site.
2. Continuous study of the improvement in the collection, containerization, conditioning and treatment of waste, in coordination with the corresponding managers of the construction and with the authorized external managers.
3. Training of construction staff on the proper management of materials and waste.
4. Recruitment of an operator responsible for supervising the collection, sorting, conditioning and storage of waste.
5. Development of a waste management procedure on site, adapted to each work team.
6. Process for obtaining a “Zero Waste” certificate from AENOR, the Spanish Association for Standardization and Certification.

Key results



Emissions Waste



Saving Competitiveness



Knowledge Awareness Sustainable Development



CE principles



SDG goals



Difficulties or challenges

- Behavioural change/lack of awareness or cooperation.
- Lack of circular infrastructure/technical or logistical barriers.

Entity

FCC Construcción, S.A.

More information: <https://www.fccco.com/>

Selective demolition of the old Xeral Hospital in Lugo with criteria of revaluation and recycling of materials

Madrid

Regional Administration

Scope of action and relevance of the Best Practices in CE



Measures to promote recycling: recovery of materials from waste for reprocessing into new products, materials or substances, either for the original purpose or for other purposes.

Objectives

1. To get the greater number of segregated materials.
2. To maximise waste recovery and minimise the waste of resources.
3. To cause the least possible impact on the population, minimizing, at all times, dust and noise emissions during all processes.

Description

The project consists of the selective demolition of the old Xeral Hospital in Lugo, which the Tragsa Group has carried out for SERGAS (Servizo Galego de Saúde). In this action, it is proposed to obtain the greatest number of segregated materials to achieve their maximum recovery and minimize the waste of resources.

The process is executed in several phases. In a first phase the installations of voluminous and furniture are emptied, which is separated and disassembled by typologies of its components. Subsequently, all the interior installations and finishes are dismantled one by one and segregated by their different EWC Codes. In a third phase, asbestos is removed from the entire building.

Finally, the exterior mechanical demolition is carried out by separating the stone residues (ceramics and concrete) according to materials and segregating the metals from the structure for their recovery.

Key results



Waste
Others



Income Potential



Employment
Awareness
Wellness



CE principles



SDG goals



Entity

Grupo Tragsa in collaboration with SERGAS (Servizo Galego de Saúde).

More information: www.tragsa.es

Eco-design strategies: Lighthouse of the Port of Valencia

Madrid

National

Scope of action and relevance of the Best Practices in CE



Design and manufacture of sustainable products and goods, incorporating eco-design criteria aimed at increasing their durability, resilience, efficiency, functionality and possibility of upgrading, repair and recycling.



Design and manufacture of sustainable products and goods, incorporating eco-design criteria aimed at increasing their durability, resilience, efficiency, functionality and possibility of upgrading, repair and recycling.

Objectives

1. To use eco-design strategies in port infrastructures, by incorporating innovative materials with better performance from the perspective of life cycle assessment.

Description

The project consisted in the development and implementation of a lighthouse built entirely of composite material, in the port of Valencia, whose structure of 32 m high, is composed of 7 varieties of parts whose configurations have been defined according to the needs of the final application, the specific requirements of the customer and the applicable regulations in force (Technical Building Code, RD 1675/2008, RD 997/2002, etc.).

The complexity of the project lies in the combination of state-of-the-art materials and manufacturing techniques to achieve the best composite properties for a sustainable, durable and state-of-the-art maritime lighthouse. Thus, the work carried out addressed both the definition and implementation of the structural design and calculation strategy and the development and characterisation of the materials and the different manufacturing processes used, as well as the assembly and installation strategy of the structure at its final location.

Throughout the project, an optimal cost/performance/environmental performance ratio was maintained, meeting the specific requirements of the structure and applicable regulations. For this purpose, life-cycle analysis indicators were used in the assessment of the environmental impact of the structure and tests were carried out for the control and simulation of the established durability that are still ongoing.

Key results



Materials
Emissions
Energy



Saving
Competitiveness
Innovation



Sustainable
Development



CE principles



SDG goals



Difficulties or challenges

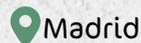
- Access to relevant information and applicable assessments.
- Lack of legal standards and definitions.
- Poor demand.
- Lack of application.
- Access to financing.
- High initial investments.

Entity

Acciona in collaboration with Autoridad Portuaria de Valencia (Developer) and AIMPLAS.

More information: www.acciona.com

APSE* Project for the development of circular economy models in road construction



Madrid



European Union

Scope of action and relevance of the Best Practices in CE



Development of products and goods that replace their materials with more sustainable ones.



Improve areas such as waste prevention and management, food waste, the reuse of materials and alternative raw materials/renewable energy products, sustainable industrial processes, industrial symbiosis or the bioeconomy.

Objectives

1. To enhance the use of waste and by-products for construction.
2. To establish relations of industrial symbiosis of a regional nature, which will allow companies to gain competitiveness.
3. To reduce the associated environmental impact.

Description

The action consists in the development of a new road safety concept for more sustainable roads, in which some well-established recycled materials are combined with other materials of more innovative "bio" origin. This product obtained in the laboratory has been validated at two levels with satisfactory results:

1. The first at prototype level, through accelerated field trials.
2. The second, through the execution of two test sections, one in Madrid (remodelling the link of the M-607 road with the M-616 road) and one in Warsaw.

Key results



Materials
Emissions
Waste



Saving
Competitiveness
Innovation



Knowledge
Sustainable
Development



CE principles



SDG goals



Difficulties or challenges

- Lack of circular infrastructure/technical or logistical barriers.
- Quality problems.
- Other: technical barriers due to regulatory limitations on the use of waste and by-products depending on the category of heavy traffic and surface layer, which makes it difficult for different technologies developed to penetrate the market.

Entity

Acciona in collaboration with the Regional Government of Madrid, AZVI, Temecal, Transport Research Laboratory, CEMEX, Warsaw University of Technology, Granar, DONG Energy, Cwarre, DONG Energy.

More information: www.acciona.com

* <https://apseproject.eu/>

FISSAC* Project for the development of industrial symbiosis models in construction

Alcobendas, Madrid

European Union

Scope of action and relevance of the Best Practices in CE



Improve the scientific and technical knowledge base to develop new technologies and redesign production processes, business and consumption models that shape a new economy and society.



Measures to promote recycling: recovery of materials from waste for reprocessing into new products, materials or substances, either for the original purpose or for other purposes.

Objectives

1. To promote industrial symbiosis along the construction value chain.

Description

The project begins with the identification of existing best practices and the basis for the industrial symbiosis model generated.

Subsequently, an exhaustive study of the selected scenario was carried out, with characterization of the waste generated in different industries and its subsequent transformation into secondary raw materials (SRM). Throughout the project, these SRM were used for the manufacture of construction products, the manufacturing of which has been demonstrated on an industrial scale. Five actual case studies have been conducted.

Finally, the replicability of the model has been transferred to different industries and it has been possible to compile a series of recommendations and policy contributions.

Key results



Materials Waste



Saving Innovation Others



Knowledge Awareness Cooperation Sustainable Development



CE principles



SDG goals



Difficulties or challenges

- Lack of legal standards and definitions.
- Lack of regulations on circular economy.
- Legal harmonisation.
- Transboundary shipments of waste.

Entity

Acciona in collaboration with Association des villes et regions pour la gestion durable des ressources, Spanish Standardisation Organisation (AENOR) and the Spanish National Research Council (CSIC), among others.

More information: www.acciona.com

* <http://fissacproject.eu/es/>

Use of agricultural thermal blankets for the production of household cleaning utensils

 Tavernes Blanques, Valencia

 National

Scope of action and relevance of the Best Practices in CE



Measures to promote recycling: recovery of materials from waste for reprocessing into new products, materials or substances, either for the original purpose or for other purposes.



Water saving and efficiency measures, especially through the reuse of water.

Objectives

1. To obtain a high-quality secondary raw materials (*upcycling*).
2. To save water.

Description

The supplier, SP Berner, has developed its own recycling system that allows to:

1. Obtain high quality polypropylene (PP) and polyethylene (PE) chippings from waste such as used thermal agricultural blankets or packaging line failures from other Mercadona suppliers.
2. This material is used as a raw material to elaborate the household cleaning utensils line sold in Mercadona (buckets, basins, brooms...).

Key results



Materials
Waste
Water



Saving
Productivity
Innovation



Sustainable
Development



CE principles



SDG goals



Difficulties or challenges

- Lack of regulations on circular economy.
- Recognition of by-products/secondary raw materials.
- Lack of circular infrastructure/technical or logistical barriers.
- High initial investments.
- Price volatility.
- Others: difficulties in obtaining raw materials and in reintegrating post-consumer materials into the process.

Entity

Mercadona S.A. in collaboration with SP Berner.

More information: www.mercadona.es

Zero Cabin Waste

Madrid

International

Scope of action and relevance of the Best Practices in CE



Measures to improve the collection and waste sorting.



Promotion of computer applications for the control and monitoring of waste to improve its traceability.

Objectives

1. To recycle 80 % of the waste generated on Iberia flights, including international waste.
2. To reduce the generation of waste per passenger by 5 %.
3. To reduce greenhouse gas emissions by 4,340 t CO₂ per year.
4. To create a replicable management model, with a special focus on international waste.

Description

The project aims at improving the management of waste from the catering service for Iberia flights, both wastes called Category 3 (that is, waste generated on EU flights, within the European Union) and Category 1 (generated on non-EU flights).

As part of the project, the different waste streams generated in the aircraft cabin have been studied, proposing waste reduction measures and implementing the separation of waste on board, as well as the collection and treatment of the different waste streams.

On the other hand, the *Life Zero Cabin Waste* project focuses on Category 1 waste, as current regulations only provide for landfill or incineration. Our objective is to propose a management that allows for alternative and sustainable treatment of these wastes.

Key results



Materials
Emissions
Waste



Competitiveness
Innovation



Employment
Knowledge
Awareness
Cooperation
Sustainable
Development



CE principles



SDG goals



Difficulties or challenges

- Administrative burden.
- Cooperation with the authorities.
- Lack of regulations on circular economy.
- Lack of circular infrastructure/technical or logistical barriers.

Entity

Iberia LAE in collaboration with Ecoembes, Gate Gourmet, Ferrovial and Esci-UPF.

More information: www.iberia.com

Production of biofuels from raw materials of waste origin

Madrid

Global



Scope of action and relevance of the Best Practices in CE



Measures to promote recycling: recovery of materials from waste for reprocessing into new products, materials or substances, either for the original purpose or for other purposes.



Design and manufacture of re-manufactured products, materials from the recycling of other products, by-products or secondary raw materials, while ensuring their performance and safety.

Objectives

1. To develop innovative solutions that allow the production of biofuels in a more circular and sustainable way, taking into account new developments in R&D&I and the introduction of new raw materials of residual origin.
2. To help reintroduce these raw materials into production cycles by extending their useful life and optimizing the use of resources.
3. To collaborate on the goal of becoming a net "zero emissions" company by 2050.
4. To double the number of high-quality biofuels produced from plant origin (*Hydrotreated Vegetable Oil*) to reach 600,000 tons by 2030.
5. To comply with European regulations (RED II) and provisions at national level.
6. To support and promote the Circular Economy Package, the European Green Deal and the "España Circular 2030" Strategy.

Description

The process uses residual plastic material (pyrolysis oil, from the chemical recycling of plastic waste not suitable for mechanical recycling) for the production of low-emission circular fuels. Used cooking oil and wine alcohols from residues from the wine industry are also used. The use of these raw materials of residual origin makes it possible to significantly reduce CO₂ emissions from fuels, around 85-90 %, compared to the use of the fossil raw materials they replace.

Key results



Materials Emissions Waste



Extension Innovation



Awareness Sustainable Development

CE principles



SDG goals



Difficulties or challenges

- Lack of regulations on circular economy.
- Legal harmonisation.
- Access to financing.
- Others: difficulties in converting waste into renewable fuels due to the lack of regulation regarding the end of waste status. There is also a need for harmonisation of legislation to facilitate access to this waste.

Entity

Repsol S.A. in collaboration with pre-dealers, waste managers, technology licensors, universities and research centres.

More information: <https://www.repsol.com>

Production of lubricants from recovered industrial oils

Madrid

National

Scope of action and relevance of the Best Practices in CE

 Design and manufacture of re-manufactured products, materials from the recycling of other products, by-products or secondary raw materials, while ensuring their performance and safety.

 Measures to promote recycling: recovery of materials from waste for reprocessing into new products, materials or substances, either for the original purpose or for other purposes.

Objectives

1. To develop innovative solutions that allow the production of biofuels in a more circular and sustainable way, taking into account new developments in R&D&I and the introduction of new raw materials of residual origin.
2. To help reintroduce used oils into the production cycles, extending their useful life by avoiding and optimizing the use of resources.
3. To collaborate on the goal of becoming a net "zero emissions" company by 2050.
4. To offer lubricants that reduce the carbon footprint, maintaining the qualities and functionality of those manufactured with virgin raw materials.
5. To comply with European regulations and provisions at national level.
6. To support and promote the Circular Economy Package, the European Green Deal and the "España Circular 2030" Strategy.

Description

The project consists of the production of lubricants with regenerated bases from used oils that maintain the same qualities and properties of lubricants made from virgin raw materials. By using used oils, reintroducing them into the production process, it is possible to:

1. Give a second life to this hazardous waste by avoiding its management as waste.
2. Reduce consumption of virgin raw materials.
3. Reduce carbon footprint.

With the rest of lubricant manufacturers, the company participates in SIGAUS, guaranteeing the collection and reintroduction of used oils in production cycles.

Key results



Waste



Saving
Income Potential



Awareness
Sustainable
Development



Sector 

CE principles



SDG goals



Difficulties or challenges

- Legal harmonisation.
- Behavioural change/lack of awareness or cooperation.
- Useful application of recycled materials.
- Poor demand.
- Quantity problems.
- Quality problems.
- Others: the absence of a harmonised international regulatory framework and the acceptance of the basis regenerated by the market.

Entity

Repsol S.A. in collaboration with SIGAUS (Used Oil Management System in Spain) and Ecoembes (Used Packaging Management System).

More information: <https://www.repsol.com>

Reciclex®, manufacture of polyolefins with recycled materials

Madrid

Global

Sector 

Scope of action and relevance of the Best Practices in CE



Measures to promote recycling: recovery of materials from waste for reprocessing into new products, materials or substances, either for the original purpose or for other purposes.



Design and manufacture of re-manufactured products, materials from the recycling of other products, by-products or secondary raw materials, while ensuring their performance and safety.

Objectives

1. To develop innovative solutions to manufacture new polyolefins using as raw material a percentage of post-consumer plastic, reducing the consumption of virgin raw materials (fossil).
2. To reduce the amount of plastic waste that ends up in a landfill (European Strategy for Plastics) by giving it a new life by reintroducing it into the production process.
3. To reduce CO₂ emissions by reducing the consumption of virgin raw materials (transport, manufacturing, etc.).
4. To strengthen the commitment of the company and its value chain with the CE.
5. To comply with the EU CE Package and the commitments made with the Circular Plastics Alliance, which aims at reaching 10 million tonnes of recycled plastic by 2025.

Description

The project consists of the production of high-quality plastic raw materials that incorporate a maximum percentage of post-consumer plastic while maintaining the properties of the virgin raw material. To do this, the residual plastic is recycled mechanically from a physical separation and chopping process, and is then incorporated into the production processes of the company's industrial complexes.

In this whole process, collaboration with the different agents of the value chain is essential: waste managers, waste pickers (who supply the raw material), transformers and developers.

As a result, Repsol has developed a new range under the brand name Repsol Reciclex® that has more than 10 degrees for different applications and final markets.

Key results



Materials
Emissions
Waste



Competitiveness
Income Potential
Extension
Innovation



Awareness



CE principles



SDG goals



Difficulties or challenges

- Useful application of recycled materials.
- Poor demand.
- Quantity problems.
- Quality problems.
- Low return on investment.
- Others: the preliminary development of the market is one of the most pressing challenges and reflects an insufficient demand today that serves as a stimulus to production and greater return on investment.

Entity

Repsol in collaboration with the entire value chain (suppliers, clients, transformers, waste managers, etc.).

More information: www.repsol.com

Headphones second life

Barcelona

Urban/Municipal

Scope of action and relevance of the Best Practices in CE



Servitisation measures, in which the product is understood as a service, producers maintain ownership of the product or responsibility for its performance throughout its life cycle.

Objectives

1. To develop a new business model based on the servitisation of headphones in tourism, leisure and transport services, which can compete in quality and price, and which is endowed with the added value associated with a circular economy and third sector initiative.
2. To collect, transport, process, re-manufacture and re-market the collected headphones in one month.
3. To test various hygienic options and product life cycles.
4. To incorporate servitisation as a viable option.
5. To reduce the carbon footprint of the linear system by 17 %.
6. To avoid the generation of waste.
7. To minimize the problems of incivility at transport stops.
8. To reduce economic costs for the customer.
9. To facilitate that the Fundació Rubricatus can be accredited as a provider of the headphones service for large operators, with the consequent creation of local occupation and vulnerable groups.

Description

To ensure the achievement of the proposed objectives, the following tasks have been carried out:

- Task 1. Conceptualization of the new circular headphones service system, identifying the challenges of each stage, exploring possible technical solutions and defining the functioning of each stage.
- Task 2. Pilot test of the new circular earphones service system: includes earphone collection, re-manufacturing, user survey, etc.
- Task 3. Technical, economic, social and environmental evaluation of the pilot.
- Task 4. Assessment of the viability and commercial potential of the new business model.

Key results



Materials
Energy
Waste
Others



Productivity
Income Potential



Employment
Awareness
Equality
Cooperation
Sustainable
Development



Sector

CE principles



SDG goals



Difficulties or challenges

- Lack of legal standards and definitions.
- Behavioural change/lack of awareness or cooperation.
- Lack of circular infrastructure/technical or logistical barriers.
- Quality problems.
- Time-consuming processes.
- Organisational structures.

Entity

Inédit in collaboration with Fundació Rubricatus.

More information: www.ineditnova.com

Sustainable use of metal resources in electroplating

Valencia

European Union

Scope of action and relevance of the Best Practices in CE



Measures to promote recycling: recovery of materials from waste for reprocessing into new products, materials or substances, either for the original purpose or for other purposes.



Actions for the reuse of water in industrial processes.

Objectives

1. To recover and reuse zinc and iron obtained from waste, to promote the efficient use of resources and revalue these flows.
2. To reduce the environmental impact generated in the galvanization processes through the efficient management and treatment of their waste.
3. To demonstrate that the procedure is technologically and economically efficient and promote its application in the industry to contribute to the improvement of the environmental indicators defined.

Description

Demonstration of an efficient and sustainable technology that is easily scalable and replicable for the selective recovery of zinc and iron chloride from acid rust removal plating generated in galvanizing processes, thus minimizing the environmental impact of this sector.

The waste stream generated can be reused in the galvanisation process, and the water resulting from the recovery procedure can be used to reformulate rust removal plating in the same companies.

Key results



Materials
Emissions
Waste
Water



Knowledge
Sustainable
Development



Sector

CE principles



SDG goals



Difficulties or challenges

- Recognition of by-products/secondary raw materials.
- Quality problems.

Entity

AIDIMME in collaboration with AIAS, APRIA Systems, GALESA, MARE, UC and UPV.

More information: <https://www.aidimme.es/>

Circular Economy in the Municipality of Gavà

Cornellà de Llobregat, Barcelona

Urban/Municipal



Scope of action and relevance of the Best Practices in CE



To enable and promote the creation of appropriate channels for the exchange of information and coordination with Public Administrations, the scientific and technologic community and economic and social stakeholders, in order to create synergies that promote transition.

Objectives

1. To assist a territory in its transition in the circular economy, based on the involvement of all key stakeholders in the circular economy, both in the public and private spheres.
2. To obtain an agenda/strategy by diagnosing circular opportunities on issues related to water, energy, other resources and waste.

Description

The action is based on data collection on water and energy consumption and waste generation from all key stakeholders.

Subsequently, these data are analysed and information is crossed to identify gaps and multisectoral synergies, seeking with this the definition of circular opportunities and detailing the steps to follow for its implementation, evaluating its technical feasibility, economic and social, as well as the administrative barriers they encounter.

Finally, these opportunities and synergies are monitored by circularity indicators.

Key results



Materials
Emissions
Energy
Waste
Water
Biodiversity
Others



Saving
Competitiveness
Income Potential
Extension
Innovation



Employment
Knowledge
Awareness
Cooperation
Sustainable
Development

CE principles



SDG goals



Difficulties or challenges

- Access to relevant information and applicable assessments.
- Administrative burden.
- Cooperation with the authorities.
- Complex process to make it circular.
- Recognition of by-products/secondary raw materials.
- Lack of circular infrastructure/technical or logistical barriers.
- Organisational structures.
- Access to financing.
- High initial investments.
- Other: legislative/administrative barriers on the application of reclaimed water in different municipalities, difficulty in giving circularity to certain wastes, and high investment in infrastructures.

Entity

Cetaqua in collaboration with the City Council Gavà and Aguas de Barcelona.

More information: www.cetaqua.com

RECICLOS

Madrid

National

Scope of action and relevance of the Best Practices in CE



Measures to improve the collection and separation of waste, to improve the traceability of waste and to obtain high-quality secondary raw materials and their market, thereby recovering the circular value of waste (products, parts or materials) whose generation could not be avoided.

Objectives

1. To increase the selective collection rate for packaging by means of a model that complements the current system, ensures the management of the packaging at the point of consumption, at home or outside the home, provides incentives to the citizen and meets the objectives of the directives at an economic cost, as efficient as possible for society, without generating negative externalities for municipalities or for the packaging value chain.

Description

Reciclos is a project that rewards the citizen's commitment to the environment through recycling, offering local sustainable or social incentives ("green mobility", responsible consumption, donations to NGOs). That is, it rewards waste pickers, while promoting an environmental and/or social improvement of their immediate environment, while giving greater visibility to their efforts and strengthening the concept of community.

This is the only current system that rewards responsible environmental performance, as the Reciclos' *webapp* turns the habit of recycling into points redeemable for local sustainable, tangible and nearby incentives. The technological development of Reciclos incorporates innovation in blockchain, artificial intelligence and image recognition, in line with the strategy of Industry 4.0.

Key results



Waste



Productivity
Innovation
Others



Employment
Equality
Wellness
Cooperation
Sustainable
Development



CE principles



SDG goals



Difficulties or challenges

- Access to relevant information and applicable assessments.
- Administrative burden.
- Lack of regulations on circular economy.
- Legal harmonisation.
- Time-consuming processes.
- High initial investments.

Entity

Ecoembalajes España, S.A.(ECOEMBES).

More information: www.ecoembes.com

The Circular Lab

Madrid

Global

Scope of action and relevance of the Best Practices in CE



Design and manufacture of sustainable products and goods, incorporating eco-design criteria, product development and goods that replace their materials with more sustainable ones, circularity in production processes and introduction and promotion of technology-intensive design and production.



Measures to improve the collection and separation of waste, to improve the traceability of waste and to obtain high-quality secondary raw materials and their market, thereby recovering the circular value of waste (products, parts or materials) whose generation could not be avoided.



Awareness-raising, training and dissemination tools for the achievement of a CE, measures to encourage behaviour change towards CE, creation of "green jobs" and employment policies linked to and in favour of CE and the promotion of research, development and innovation (R&D&I) in CE.

Objectives

1. To promote a circular economy that allows for sustainable development and reduces the environmental footprint of packaging throughout the value chain.
2. To promote innovation applied to materials and processes.
3. To disseminate knowledge and training, as well as promote eco-entrepreneurship.

Description

The Circular Lab is a project that aims at bringing together all the proposals that, framed under the concept of circular economy, seek to promote the best lines of innovation in the field of packaging and its subsequent recycling. In short, it is a laboratory for packaging innovation that seeks to study, design, test and apply best practices in a real environment. All this in a framework of close cooperation between companies, public administrations and citizens.

The Circular Lab affects all phases of the packaging life cycle, that is, from its conception, through eco-design, until its reintroduction to the consumption cycle through new products. All this with the commitment of the citizen when recycling and the application of the best technologies to waste management, which are developed not only thanks to the activity of the centre itself, but also by the hand of the entrepreneurial ecosystem through four strategic lines of work: the packaging of the future, smart waste, citizen awareness and eco-entrepreneurship.

Key results



Materials
Emissions
Waste



Saving
Productivity
Competitiveness
Income Potential
Innovation



Employment
Knowledge
Awareness
Cooperation
Sustainable
Development



Sector

CE principles



SDG goals



Difficulties or challenges

- Access to relevant information and applicable assessments.
- Lack of legal standards and definitions.
- Administrative burden.
- Cooperation with the authorities.
- Lack of regulations on circular economy.
- Legal harmonisation.
- Behavioural change/lack of awareness or cooperation.
- Complex process to make it circular.
- Recognition of by-products/secondary raw materials.
- Useful application of recycled materials.
- Lack of circular infrastructure/technical or logistical barriers.
- Lack of application.
- Lack of incentives.
- Quantity problems.
- Quality problems.
- Time-consuming processes.
- Organisational structures.

Entity

Ecoembalajes España, S.A.(ECOEMBES).

More information: www.ecoembes.com

Moda re-: we recycle clothes, we insert people

Madrid

International

Scope of action and relevance of the Best Practices in CE



Measures to encourage the reuse of a product that is still in good conditions and still serves its original purpose (and is not waste) for the same purpose it was designed.



Separated collection of textile, waste electrical and electronic equipment, plastics, construction and demolition waste, tyres, etc.



Measures to encourage re-manufacturing: using parts of a waste product in a new product with the same function.

Objectives

1. To generate a positive environmental impact saving water, energy, waste, natural resources and emissions.
2. To promote social and solidarity-based economy and the creation of social and sustainable employment, namely for persons in a situation or at risk of social exclusion.
3. To encourage transparency through the entire process, as well as to guarantee the ethical destination of the pieces collected.
4. To raise awareness regarding our excessive consumption, which is unsustainable and must be reduced.
5. To reinvest all the benefits to increase the social and environmental scope of the practice, as it is developed on a non-profit making basis.

Description

The action consists on the collection of second-hand clothes to give them a second life, which means a used clothes management model that includes their collection, classification, reuse, recycling and sale, through the creation and promotion of second-hand clothes.

The action arises within the promotion of social and solidarity-based economy, focused in labour insertion in standardized jobs, dignification of the submission of clothes to persons in need, environmental care, promotion of circular economy and water, energy and raw materials saving, reducing waste and emissions. Thus, this action also intends to reduce the current consumption levels and to transform this consumption into a more circular and ecological consumption. All of the above in terms of innovation and environmental and economic sustainability, allocating all revenue of the project to its own development and growth, as it is a non-profit initiative.

Key results



Materials
Emissions
Energy
Waste
Water
Biodiversity



Innovation
Others



Employment
Awareness
Equality
Cooperation
Sustainable
Development



Sector

CE principles



SDG goals



Difficulties or challenges

- Lack of regulations on circular economy.
- Behavioural change/lack of awareness or cooperation.
- Recognition of by-products/secondary raw materials.
- Useful application of recycled materials.
- Poor demand.
- Lack of incentives.
- High initial investments.
- Low return on investment.
- Price volatility.

Entity

Moda Re- Sociedad Cooperativa de Iniciativa Social in collaboration with Cáritas Española, Inditex, Universidad Politécnica de Cataluña (UPC), Mango, Alcampo, Carrefour, El Corte Inglés, Decathlon, Tragsa, Metrovacesa, El Circo du Soleil, Hilaturas Ferré, etc.

More information: <https://www.modare.org/>

SINER synergies platform

Barcelona

Global

Scope of action and relevance of the Best Practices in CE



To enable and promote the creation of appropriate channels for the exchange of information and coordination with Public Administrations, the scientific and technologic community and economic and social stakeholders, in order to create synergies that promote transition.



Development and implementation of tools that allow the transition to CE and its dissemination: CE strategies, best practices catalogues, etc.

Objectives

1. To detect opportunities to exploit the value of surplus resources in the territory, and identify companies that can implement them.
2. To concentrate current knowledge and innovations on synergies and opportunities in circular economy, and share them among companies.
3. To promote collaboration between companies, entities and administrations in aspects of resource efficiency and sustainable development.
4. To establish territorial indicators of circularity and measure the impact of projects at an economic, social and environmental level.
5. To promote innovation in sustainable consumption, as well as the shared use of infrastructures and services.

Description

SYNER is a digital platform that allows to detect potential business/synergies between companies through their surplus resources, by linking companies in a territory, thanks to a coding system and successful mathematical algorithms and big data processing.

With SYNER, the opportunities for the recovery of waste, which can potentially be converted into resources through industrial symbiosis, are known as opportunities for economic and sustainable development of the territory. It is a useful transversal proposal for companies, municipalities, local entities, business associations...

This platform allows to answer questions such as: Which companies potentially have some synergy with our company? Which companies may be generating as waste something that may be needed in others?

Key results



Materials
Energy
Waste
Water



Saving
Income Potential
Innovation



Knowledge
Awareness
Cooperation
Sustainable
Development



Sector

CE principles



SDG goals



Difficulties or challenges

- Access to relevant information and applicable assessments.
- Behavioural change/lack of awareness or cooperation.
- Recognition of by-products/secondary raw materials.
- Useful application of recycled materials.
- Lack of incentives.
- Time-consuming processes.
- Organisational structures.
- Access to financing.
- Other: difficulty in making big data on quality industry resources available. Problems with data confidentiality. Difficulty in changing the culture of industries to adapt their processes to the circular economy and efficiency in the use of resources. Lack of a market sensitive to the circular culture of companies. Lack of budget for the automation of processes for the search for synergies and the massive collection of open data.

Entity

SÍMBIOSY Simbiosis Industrial, S.L.

More information: www.simbiosy.com

ACCIONA motosharing

Madrid, Barcelona, Valencia, Zaragoza, Sevilla  International

Scope of action and relevance of the Best Practices in CE

 Servitisation measures, in which the product is understood as a service, producers maintain ownership of the product or responsibility for its performance throughout its life cycle.

 Energy saving and efficiency measures.

Objectives

1. To reduce the manufacture/purchase of new vehicles for private use.
2. To minimise the space occupied by private vehicles.
3. To reduce carbon footprint by replacing conventional vehicles with electric motorbikes.
4. To reduce heavy traffic on major roads.

Description

This is a shared electric mobility service that has an impact on city planning, reducing vehicle traffic, the occupation of space by private vehicles and the pollution generated. The action consists of acquiring the motorbikes and the necessary infrastructure to ensure the recharging of the batteries used for their propulsion, as well as the development of the necessary technological applications to allow the motorbike to communicate with the user.

Key results



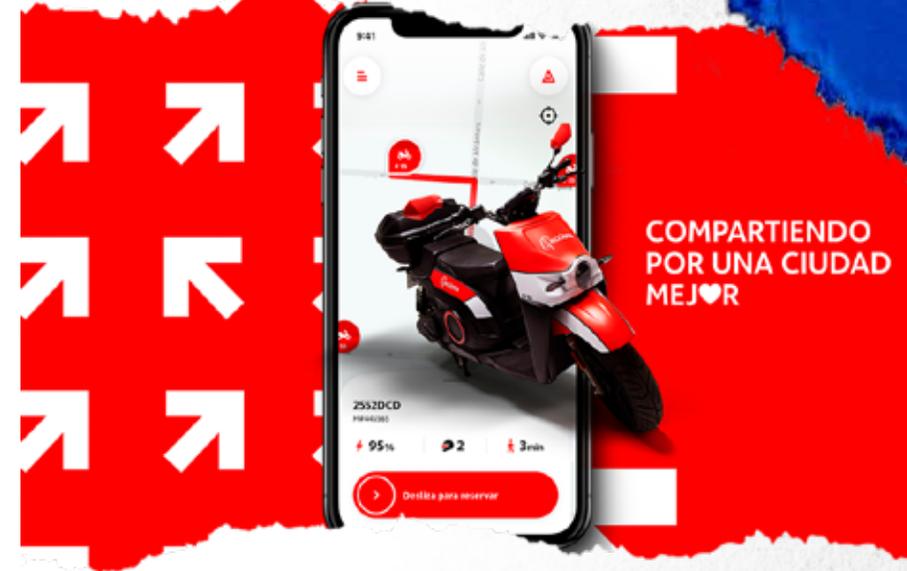
Emissions
Materials



Saving
Productivity
Competitiveness



Awareness
Wellness
Cooperation
Sustainable
Development



CE principles



SDG goals



Difficulties or challenges

- Cooperation with the authorities.
- Lack of incentives.
- High initial investments.
- Low return on investment.

Entity

Acciona Movilidad.

More information: <https://movilidad.acciona.com/>

Circular logistics: management of reusable packaging for the transport of consumer goods

Valencia

International

Scope of action and relevance of the Best Practices in CE



Promotion of goods, products or services that meet the design and manufacturing criteria for sustainable products and goods.



Measures to repair/refurbish: repair and maintenance of the defective or old product so that it can be used for its original function (maintaining the quality level).



Application of circularity measures included in business values through their incorporation in CSR (Corporate Social Responsibility) actions and reports.

Objectives

1. To make the best use of resources and processes.
2. To reduce waste generation and inefficiencies, resulting in lower costs while preserving the environment.
3. To secure the economic future of the business through sustainable growth, which is passed on to partners.
4. To offer customers highly competitive services and prices, with an efficient closed circuit for the management of their assets, which also has the added value of constituting an environmentally responsible logistics service.

Description

Logifruit follows a circular economy strategy in both its internal and external processes. In its internal process, eco-design is key to reducing the use of raw materials, facilitating the reuse of packaging, its repair to extend its useful life and recycling for the manufacture of new packaging. Thus, crates and pallets are sanitised and repaired, if necessary, after each use, to be reintroduced into the logistics circuit. At the same time, in its external process, the packaging follows a closed circuit. Their assets travel from your premises to those of your customers, who use them to transport their products to the distribution chain. Once the distribution chain has disposed of the products, the crates are returned to Logifruit's facilities. Furthermore, the folding crates allow for maximum optimisation in their transport, while also facilitating the replacement and repair of moving parts to make the best use of them.

Key results



Materials
Emissions
Waste



Saving



Knowledge
Equality
Wellness



CE principles



SDG goals



Difficulties or challenges

- Lack of regulations on circular economy.
- Legal harmonisation.
- Lack of incentives.
- High initial investments.

Entity

Logifruit in collaboration with Mercadona.

More information: www.logifruit.es

RECIRCULAR, a digital platform for the recovery of company waste and measurement of the benefits generated

Getxo, Vizcaya

Global

Scope of action and relevance of the Best Practices in CE



Promotion of computer applications for the control and monitoring of waste to improve its traceability.



Measures to promote recycling: recovery of materials from waste for reprocessing into new products, materials or substances, either for the original purpose or for other purposes.



Creation of “green jobs” and labour policies that foster CE.

Objectives

1. To introduce sustainability and social innovation in industrial environments based on waste recovery.
2. To demonstrate that the generation of environmental and social benefits can be accompanied by economic savings and democratise access to circular opportunities for companies.
3. To identify recovery opportunities including collaboration with social entities.
4. To measure the derived social, environmental and economic impact and contribute to the digital transformation of companies.

Description

Recircular is an active platform for connecting companies and businesses for the recovery of waste as raw materials, based on an algorithm that informs in a simple way about the reuse possibilities of each waste and by-product, and connects generating users with potential consumers to replace their needs for virgin raw materials.

Users close transactions in the system itself, so it is possible to automatically calculate the environmental and social benefits generated. It also allows the calculation of indicators such as carbon footprint reduction, water and energy consumption and life expectancy improvement, and generates the corresponding reports to be used in the fulfilment of the company's environmental and social objectives, non-financial reports and green communication strategies, among others.

Key results



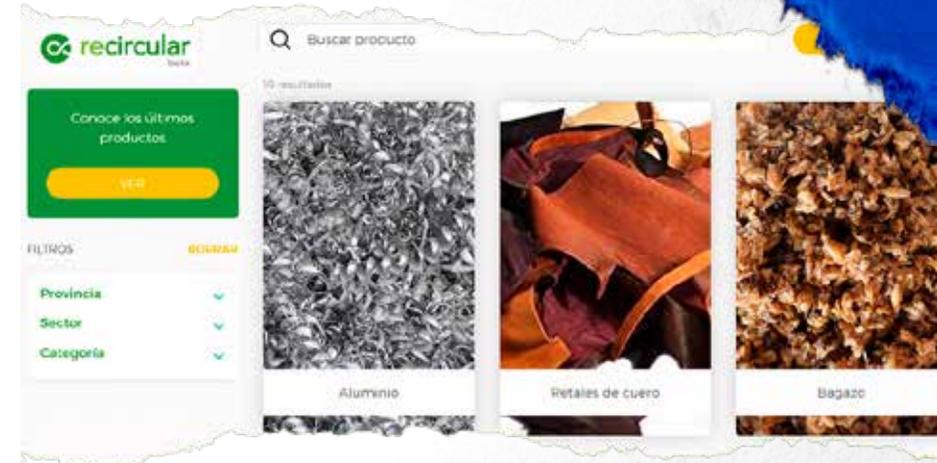
Materials
Emissions
Energy
Waste
Water



Saving
Productivity
Competitiveness
Income Potential
Innovation



Employment
Equality
Wellness
Sustainable
Development



CE principles



SDG goals



Difficulties or challenges

- Administrative burden.
- Legal harmonisation.
- Recognition of by-products/secondary raw materials.
- Lack of incentives.
- Time-consuming processes.
- High initial investments.

Entity

Recircular Servicios Ambientales S.L.

More information: www.recircular.net

AEICE Ecodesign Centre

Valladolid

Province

Scope of action and relevance of the Best Practices in CE



Improve the scientific and technical knowledge base to develop new technologies and redesign production processes, business and consumption models that shape a new economy and society.

Objectives

1. To strengthen the competitiveness of companies through the acquisition and application of cutting-edge knowledge in eco-design.
2. To promote product innovation through collaboration between companies, universities and leading national and international technology centres.
3. To integrate the environmental factor in the supply chain of companies.

Description

This is a space for collaboration and co-creation aimed at training and detecting opportunities with the aim of generating innovation projects and initiatives in eco-design throughout the value chain of the habitat industry.

The action includes the creation of the AEICE *Ecodesign Centre*, which will serve as an innovation centre and meeting point to launch initiatives that will make the Regional Administration of Castile-Leon and its industry a national benchmark in eco-design and eco-innovation. To this end, training is provided to managers of the habitat value chain in eco-design and circular economy, and opportunities are sought for the generation of ideas, with the aim of germinating business innovation projects linked to eco-design and circular economy.

Key results



Competitiveness



Knowledge
Awareness
Sustainable
Development



CE principles



SDG goals



Difficulties or challenges

- Organisational structures.

Entity

AEICE, Innovative Business Group for the Efficient Construction.

More information: www.aeice.org

Provisional Proximity Housing (APROP) Ciutat Vella, circular and social economy in building

Barcelona

Urban/Municipal

Scope of action and relevance of the Best Practices in CE



Design and manufacture of re-manufactured products, materials from the recycling of other products, by-products or secondary raw materials, while ensuring their performance and safety.

Objectives

1. To design habitable spaces for families at risk of social exclusion.
2. To maximise efficiency and sustainability in the consumption of resources (materials, water and energy).
3. To guarantee a high standard of comfort and quality of the interior environment.

Description

The APROP Ciutat Vella project consists of the construction of temporary buildings for community facilities on the ground floor and protected collective accommodation on the upper floors.

The building is constructed through the installation of groups of reused maritime containers for temporary accommodation, in spaces of opportunity located in the areas where residents in the process of housing exclusion spend their time.

Key results



Materials
Emissions
Waste



Saving
Productivity
Innovation



Knowledge
Equality
Wellness
Sustainable
Development



CE principles



SDG goals



Difficulties or challenges

- Legal harmonisation.

Entity

City Council of Barcelona.

More information:

<https://ajuntament.barcelona.cat/dretssocials/ca>

Occupations Observatory

Madrid

National

Scope of action and relevance of the Best Practices in CE



Creation of “green jobs” and labour policies that foster CE.

Objectives

1. To know the labour market trends, employment prospects in the different activities related to the circular economy, the occupations or jobs with the best prospects, as well as the skills and training needs required by workers and companies in this transition towards a sustainable and responsible model.
2. To contribute to the updating and orientation of the training offer and employment opportunities, thus collaborating in the fight against unemployment.
3. To provide initial reference information on these factors and to serve as indicators to measure their evolution in the future.

Description

The action consists of carrying out and publishing a prospective study of economic activities related to the circular economy, classified as follows:

1. Wastewater collection and treatment.
2. Waste collection, treatment and recovery.
3. Decontamination activities.
4. Maintenance of motor vehicles.
5. Repair of machinery and equipment, as well as computers, household goods and personal effects.
6. Rental of vehicles, machinery and other tangible goods.
7. Wholesale trade of scrap and waste products and retail trade of second-hand goods.

It mainly deals with the situation and evolution of the labour market (affiliation, unemployment, recruitment) of these activities, as well as their future prospects, the most outstanding innovations and strategies, the most relevant occupations and the most urgent training needs. On the other hand, as it is a cross-cutting strategy for all sectors, the study makes a qualitative incursion, based on the opinion of experts consulted, to find out the trends, occupations and training needs of those considered priority sectors for adopting circular economy strategies, such as agri-food, construction, industry (in this case, chemical and automotive), consumer goods (textiles and footwear in this study) and tourism-hospitality. In essence, this study highlights the main trends and strategies, the most important innovations, the occupations with the best prospects and the most urgent training needs.



Sector

Key results



Employment Knowledge

CE principles



SDG goals



Difficulties or challenges

- Access to relevant information and applicable assessments.
- Lack of legal standards and definitions.

Entity

Spanish Public Employment Service (SEPE).

More information: www.sepe.es

Self-assessment tool on circular economy

Circular labs

Valladolid

European Union

Scope of action and relevance of the Best Practices in CE



Awareness-raising, training and dissemination tools to achieve a CE.

Objectives

1. To provide companies, entrepreneurs and other institutions with a reflection and evaluation on the application of circular economy criteria in their organisation or business.
2. To offer clear conclusions and guide users in their transition towards a circular economy model.
3. To bring the concept of circular economy closer to businesspersons and entrepreneurs.
4. To compile best practices in circular economy.

Description

The tool is part of the Interreg-Poctep Circular Labs project (<https://patrimonionatural.org/proyectos/circularlabs>), whose main objective is to promote the circular economy in the cross-border area between Spain and Portugal.

Specifically, this action is included among those aimed at supporting the transition to the circular economy of companies, entrepreneurs and other entities.

To this end, an online self-assessment tool has been developed, in calculator format and based on the principles of the circular economy, which offers a final assessment of the practice analysed and suggestions for improvement.

Key results



Materials
Emissions
Energy
Waste



Saving
Productivity
Competitiveness
Innovation



Employment
Knowledge
Awareness
Sustainable
Development



Sector

CE principles



SDG goals



Difficulties or challenges

- Behavioural change/lack of awareness or cooperation.

Entity

Fundación Patrimonio Natural de Castilla y León in collaboration with Fundación EOI, Fundación Patrimonio Natural de Castilla y León, Regional Government of Ávila, City Council of Valladolid, Universidad de Salamanca, MAIUTICA - Cooperativa de Enseñanza Superior, Insituto Orensano de Desarrollo Económico, Asociación para el desarrollo y la innovación tecnológica, Municipality of Montalegre and Fundación Paideia Galiza.

More information: <https://patrimonionatural.org>

Calzado No-Trace

Arnedo, La Rioja

Regional

Scope of action and relevance of the Best Practices in CE



Design and manufacture of re-manufactured products, materials from the recycling of other products, by-products or secondary raw materials, while ensuring their performance and safety.

Objectives

1. To comply with the eco-design methodology, considering environmental aspects at all stages of the product development process.
2. To achieve footwear with the lowest possible environmental impact, with a 70 % reduction.
3. To implement and introduce directly into the market a collection with a lower carbon footprint and, therefore, achieve competitive advantages for the company.
4. To reuse waste elements, avoiding their deposition in landfills.
5. To transform resources of biological origin into useful new products.
6. To validate the technical properties of the eco-designed elements and, therefore, demonstrate their viability for everyday use.

Description

The No-Trace footwear collection is the result of an exhaustive and innovative eco-design project, which has led to the creation of a new line of shoes, achieving a 70 % reduction in the impact of its environmental footprint. This has been achieved by redesigning a totally handmade product, such as espadrilles, and incorporating ecological and sustainable materials throughout the production process, to achieve a collection that respects the environment.

The search for "eco" alternatives has been the key: used tyres for the sole, crushed cork and recycled foam for the midsole, natural fabric made from 100 % pineapple fibre for the instep, fabric made from sheets of wood, cork or EVA, produced in a sustainable way and joined with a non-polluting adhesive, as a cutting material, and fabric made from recycled cotton and polyester for the instep, among others.

Key results



Materials
Emissions
Energy



Saving
Productivity
Competitiveness
Income Potential
Extension
Innovation



Knowledge
Awareness
Sustainable
Development



CE principles



SDG goals



Difficulties or challenges

- Access to relevant information and applicable assessments.
- Other: sale of sustainable materials which are not.

Entity

Footwear Technology Centre of La Rioja in collaboration with Calzados ZEL's.

More information: www.ctcr.es

I Catalogue of Best Practices in Circular Economy (CBPCE)

