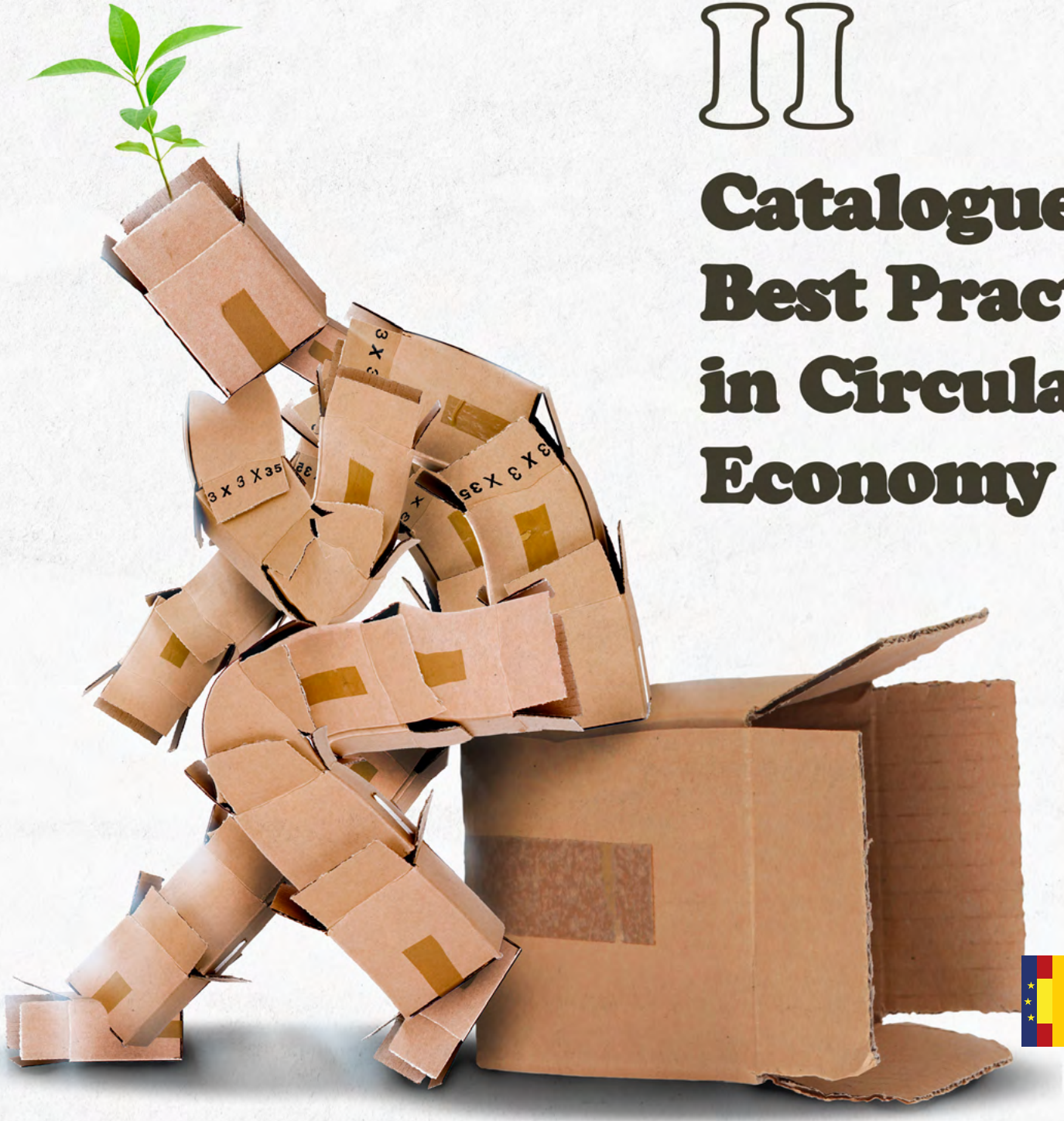
II

Catalogue of Best Practices in Circular Economy



GOBIERNO DE ESPAÑA
MINISTERIO PARA LA TRANSICIÓN ECOLÓGICA Y EL RETO DEMOGRÁFICO

The General Directorate of Quality and Environment Assessment, through the General Sub-Directorate for the Circular Economy (GSDCE) of the Ministry for Ecological Transition and Demographic Challenge, thanks the collaboration of the people and institutions that have contributed to this document.

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II Catalogue of Best Practices in Circular Economy (CBPCE)

Contents

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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.

The "*Towards Circular Economy*" report by the Ellen MacArthur Foundation, world leader entity in this field, defines CE as "*an industrial economy that is restorative by intention and tries to make 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's Action Plan for CE[2] stated that: "*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 appeared for the first time in 2018 in a proposal for a Regulation of the European Parliament and Council[3], it was not until 2020 that a legal definition of CE was adopted and existed in the EU[4], defining it as : "*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 Spanish Circular Economy Strategy "*España Circular 2030*"[5] (hereinafter, CESS) defines CE as: "*The strategy whereby 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 mark 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://archive.ellenmacarthurfoundation.org/circular-economy/what-is-the-circular-economy

2 COM (2015) 614 final: "Closing the Loop: the 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/EN/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 establishing a framework to facilitate sustainable investments and amending Regulation (EU) 2019/2088. https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32020R0852&from=es

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

Taking into account the aforementioned premises, in the year 2020, the following was elaborated the 1st Catalogue of Best Practices in Circular Economy[6], which was very well received by a wide range of productive sectors, with a total of 279 BPCE proposals from 107 entities, demonstrating Spain's great commitment to the transition to a Circular Economy. After an exhaustive evaluation of all the proposals received, the 42 BPCEs that obtained the best evaluation according to the previously established criteria were finally published. In addition, in order to achieve the widest possible dissemination, the Catalogue was published in both Spanish and English.

Such was the scope of this first exchange of information on BPCE that the first Circular Economy Action Plan 2021-2023[7] (hereinafter, PAEC 2021-2023), developed on the basis of the EEEC, incorporated, within the line of awareness and participation, the following measure *6.1.5. Best Practices in Circular Economy (BPCE)*, where it is stated that MITERD, within the framework of public-private collaboration, will develop the aforementioned Catalogue, thus making this II CBPCE even more relevant.

6 Ministry for Ecological Transition and the Demographic Challenge (2020) "I Catalogue of Best Practices in Circular Economy"- https://www.miteco.gob.es/es/calidad-y-evaluacion-ambiental/temas/economia-circular/fichas-bpec_en_web_tcm30-525011.pdf

7 Ministry for Ecological Transition and the Demographic Challenge (2021). "I Circular Economy Action Plan 2021-2023" https://www.miteco.gob.es/es/calidad-y-evaluacion-ambiental/temas/economia-circular/plan_accion_economia_circular_tcm30-529618.pdf

2. Objective

The transition to a CE in Spain requires a coordinated and responsible action between the Public Administration, the business sector and 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).

Therefore, in response to this requirement, this catalogue aims to compile 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 BPCE does not prejudge 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, Law 22/2011 of 28th July, on Waste and Contaminated Land shall apply.

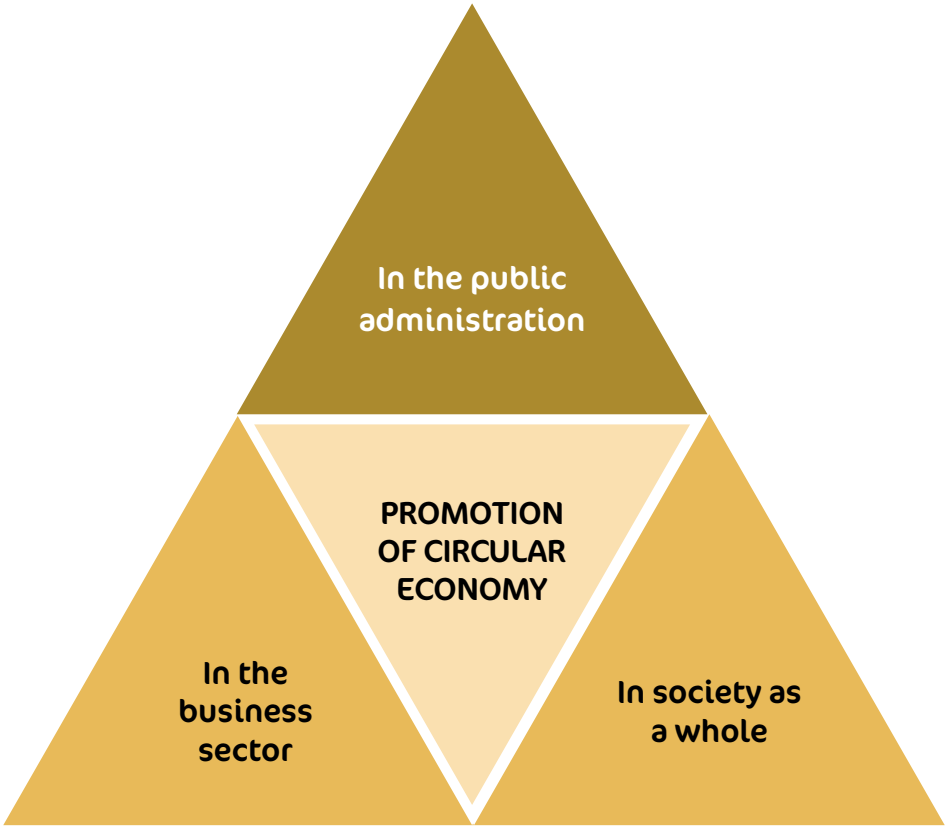


Figure 1: Promotion of CE among the main stakeholders.
Source: Authors.

3. Methodology

Phase I: Identification and selection of BPCE.

In order to identify an action as BPCE, it must be based on the established general principles of CE and comply with the minimum circularity criteria defined for each area of action.

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 establish 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. Educate and raise awareness about CE as part of said responsibility.

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

4. **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. **Optimising**: reduction and more efficient use of resources (materials, water and energy). Increase the useful life and performance of products.

6. **"Closing the Loop"** or "closing the life cycle" of resources, products and waste: to re-use, repair/refurbish, remanufacture (use of secondary raw materials), recover (obtention of secondary raw materials and critical materials[8]), recycle and revalue.

7. **Sharing and collaborating**: new models for collaborative consumption, use and business. Synergy between all stakeholders.

8. **Communication and transparency**: relaying information clearly, accurately, timely, honestly and fully. When possible, on the basis of ecologic certification standards and ecolabels.

8 The European Commission has included a list of critical raw materials. These materials are crucial for the economy and their supply is at risk. https://eur-lex.europa.eu/legal-content/EN/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 lines of action defined in CESS "España Circular 2030", scopes of action (Figure 2) were defined to classify the minimum circularity criteria that BPCE must comply with in higher category groups.

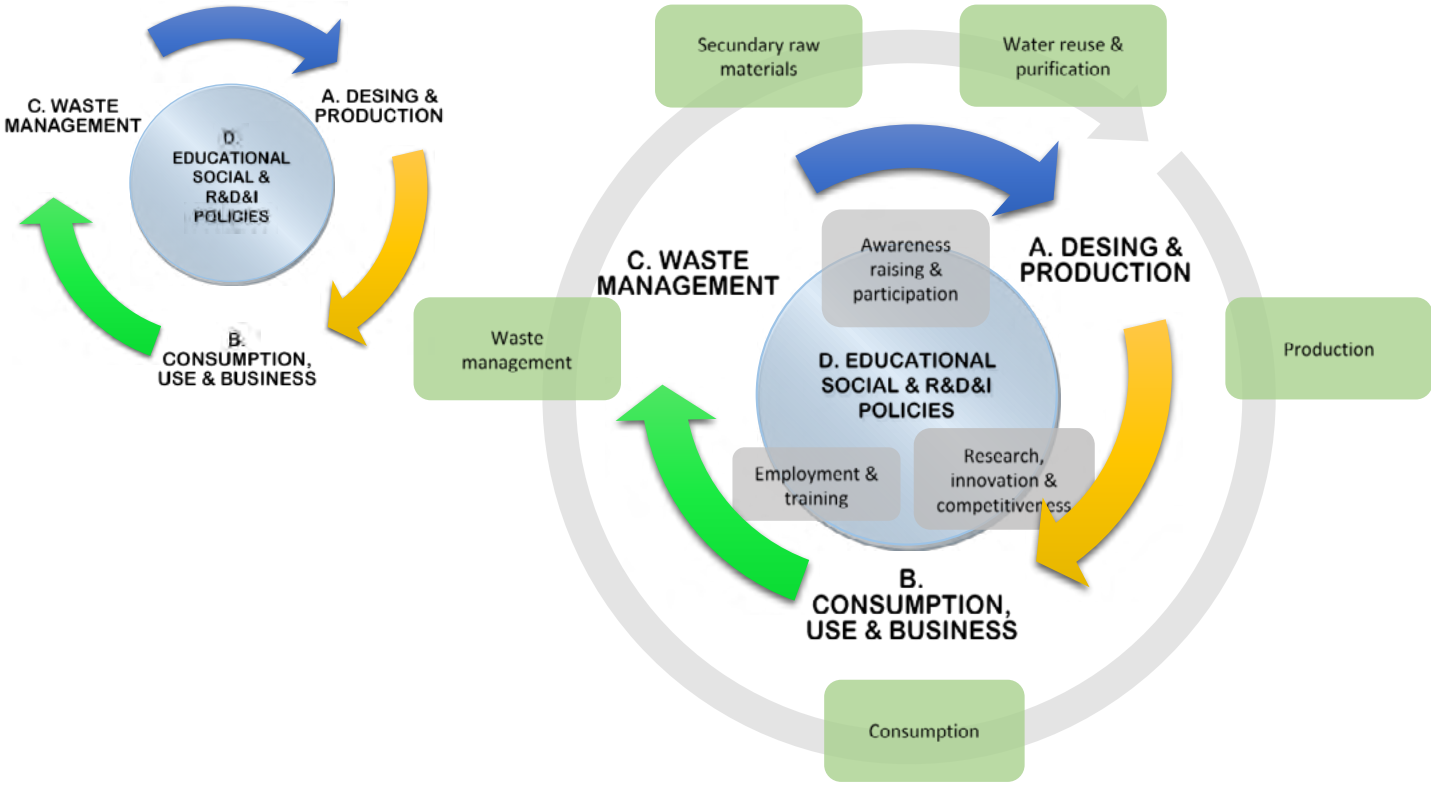


Figure 2: Superior groups or scopes of action to identify BPCE (left).
Relationship between the areas of action and the EEEC's main lines of action (right).
Source: Authors.

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	a. A reduction and more efficient use of resources (raw materials, water and energy), including if: 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: 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	a. A reduction and more efficient use of products, goods and resources, including if: 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: i. it increases the lifetime of products and goods. c. A reduction of the impacts associated with consumption, use or business.
GROUP C: WASTE MANAGEMENT	a. To encourage the effective application of waste hierarchy principle[9], both with regards to the product and each of its parts by means of actions that increase and encourage the "*prevention, preparation to reuse, recycle, other type of recovery, including energy recovery and disposal*"[10], including if: i. it improves collection and waste sorting, ii. it improves waste traceability. b. An increase of the recovery of the circular value, including if: i. it means a recovery of high-quality secondary raw materials and a promotion of its market for the reintegration into production processes[11], ii. it increases, improves or encourages the reuse and purification of wastewater. c. A reduction of impacts associated to waste mismanagement, including if: i. it means minimising waste incineration and disposal, even in landfills.

9 In accordance with Law 22/2011, of 28th July, on Waste and Contaminated Land.

10 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 BPCE.

11 More information: https://www.miteco.gob.es/es/calidad-y-evaluacion-ambiental/temas/prevencion-y-gestion-residuos/comision-coordinacion/Procedimiento-Evaluacion-Subproducto.aspx

SCOPE OF ACTION	MINIMUM CIRCULARITY CRITERIA
GROUP D: BPCE FOCUSED ON EDUCATIONAL, SOCIAL AND R&D&I POLICIES	a. They contribute to the transition to CE through any of the CE principles.

Phase II: Dissemination of the initiative

The MITERD's GSDCE issued the call for the second edition of the Catalogue, once again inviting the main agents involved in CE to participate by sending in the practices, they were carrying out to accelerate the transition to CE.

Along with the invitation to participate, a technical sheet was provided along with the instructions and considerations needed for its correct completion.

Phase III: Collection and assessment

Once all the initiatives have been collected, each of them was individually analysed for their assessment according established criteria.

Firstly, and as a prerequisite for its assessment, it was verified that the entity had signed the "responsible declaration" and, in the event that the BPCE so required, had provided the corresponding legal information.

The practice was then evaluated according to the following criteria[12]:

- **Compliance with the minimum circularity criteria**: they are used to confirm whether 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.
- **Scalability**: actions that allow benefits to increase 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, engagement with society and how this collaborates in circularity.

In addition, other aspects were evaluated positively, such as: whether the company is a member of the Pact for a Circular Economy[13], whether it has any environmental certification, whether it has an active sustainable purchasing policy or whether the practice is carried out in collaboration with companies from other sectors, thus encouraging the creation of new value chain models.

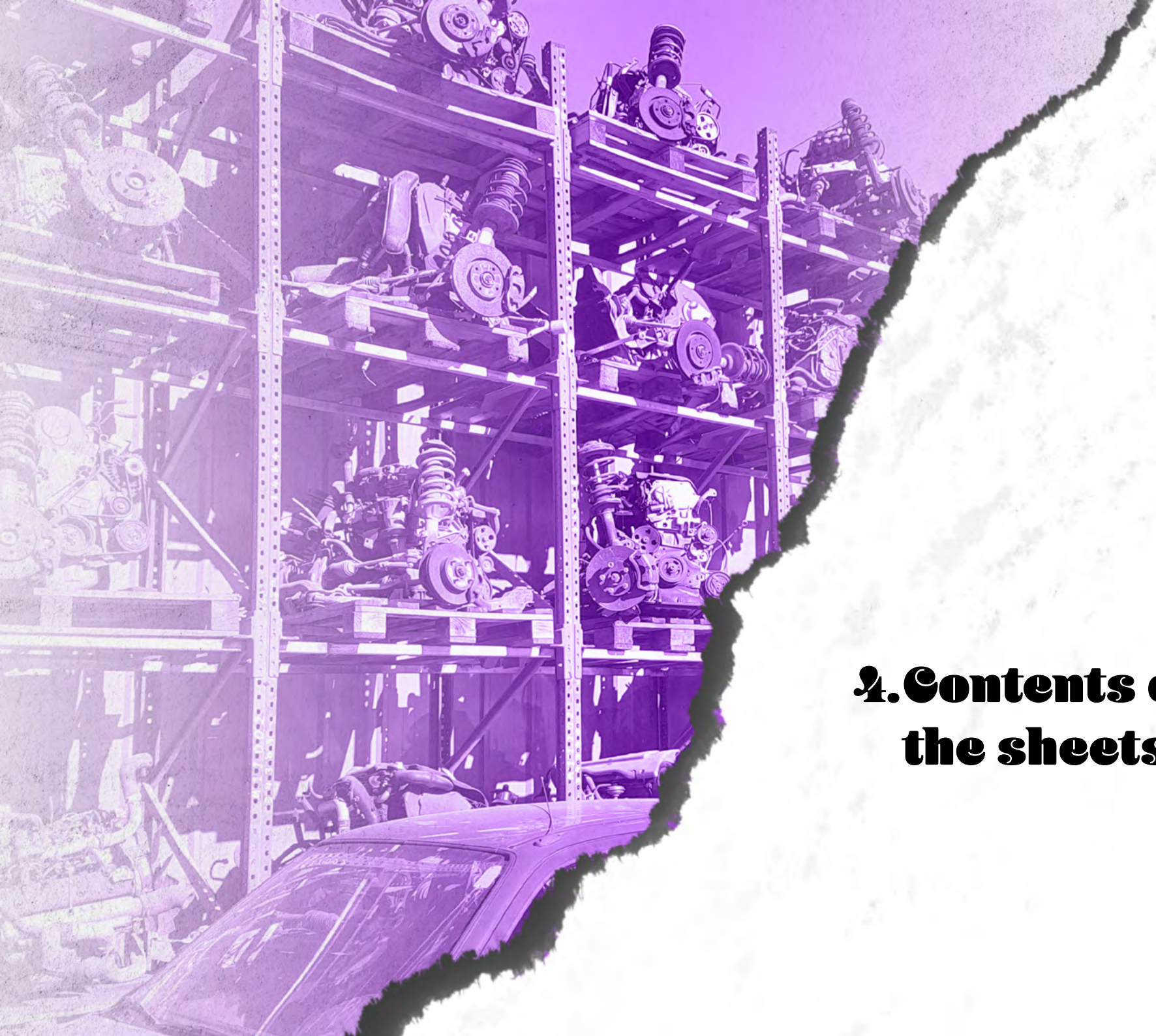
Finally, in order for an action to have obtained a favourable evaluation, it was taken into account that the information had been presented with adequate completeness, clarity and objectivity; that its feasibility could be demonstrated and that results were provided through **quantifiable or measurable indicators**.

On this basis, and in a similar way to what was done with the first Catalogue, a multi-criteria analysis methodology was used, allowing a quantitative assessment to be made as objectively as possible of each of the practices received. Therefore, a higher score was assigned to initiatives with greater relevance and related to circular economy.

In order to create this 2nd CBPCE, actions with the highest score were selected.

12 It should 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. These criteria were provided along with the data sheet.

13 https://www.miteco.gob.es/es/calidad-y-evaluacion-ambiental/temas/economia-circular/pacto/



4.Contents of the sheets

The 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**: where the BPCE is located.
3. **Scope**: Global, International, European Union, National, Regional Administrations, Province, County, 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. **BPCE Objectives**.
6. **Description of the action**.
7. **Key results**: main (environmental, economic and social) achievements 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 BPCE**: name of the entity and contact information of the contact person for the entities that requested it when submitting the information.
12. **Further information:** this section will include additional information to be highlighted in the catalogue.

5. Catalogue distribution

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

A. Agriculture, forestry and fishing	
0147-Aviculture	• Lurretik Lurrera
B. Mining and quarrying	
0899-Other mining and quarrying industries n.e.c.	• Reuse of pallets for the manufacture of furniture and decorative structures
C. Manufacturing	
1105-Manufacture of beer	• Elimination of plastic at Mahou San Miguel • Reuse of by-products derived from brewing processes at HEINEKEN Spain
1107-Manufacture of soft drinks; production of mineral waters and other bottled waters	• A responsible solution for the HORECA channel • ReNueva
1320-Manufacture of weaving of textiles	• Close Loop: from waste to thread
2013-Manufacture of other inorganic basic chemicals	• BASF Circular Economy Awards
2014-Manufacture of other organic chemical commodities	• Compostable coffee capsules: BASF Ecovio
2059-Manufacture of other chemical products n.e.c.	• Circular economy in advanced plastics recycling: TACOIL® • Repair and maintenance of plastic objects
2362-Manufacture of plaster products for construction porpuses	• Gypsum plasterboard recycling
2370-Cutting, carving and finishing of stone	• Restoration of degraded areas by valorisation of suitable inert waste from natural stone working and processing discards
2751-Manufacture of electric domestic appliances	• Environmental and technical analysis of the use of recycled polypropylene in BSH kitchens
2910-Manufacture of motor vehicles	• Refloat: re-motorisation and recycling of urban transport fleets
D. Electricity, gas, steam and air conditioning supply	
3514-Trade of electricity	• Car e-sharing • Zero Plastics
3516-Conventional thermal electricity generation	• Circular demolition of the silo at the Los Barrios port terminal
3519-Other electricity production	• Repair and reuse of wind power plant equipment

E. Water supply, sewerage, waste management and remediation activities	
3600-Water collection, treatment and supply	• Transfomem: valorisation of reverse osmosis membranes
3700-Sewerage	• H2020 Run4Life Project
3811-Collection of non-hazardous wastes	• Wastebot: robotics in waste management • Ambiplace: social marketplace for electronics donation • Ecotech: healthy cleaning and hygiene, sustainable and efficient
3821-Treatment and disposal of non-hazardous waste	• Recycling of siliconised paper (label backing paper) • Manufacture of bags from film plastic waste
3900-Remediation activities and other waste management services	• T-KnowCAT. Transfer of remanufacturing know-how between scrapyards
F. Construction	
4121-Construction of residential buildings	• ReUtiliza
4212-Construction of railways and underground railways	• Life Gain: steel aggregate for railway bedding layers
4399-Other specialised construction activities n.e.c.	• Reuse of demolition waste in the project of a housing development in Puerto de Santa María (Cádiz)
G. Wholesale and retail trade; repair of motor vehicles and motorcycles	
4531-Wholesale trade of motor vehicle parts and accessories	• ECCAT- Remanufacturing of contaminant retention systems
4677-Wholesale of waste and scrap	• Green CD and DVD Destruction, the alternative to landfilling
4711-Retail sale in non-specialised stores with food, beverages or tobacco predominating	• Strategy 6.25
4791-Retail sale via mail order houses or via Internet	• Too Good To Go App
H. Transportation and storage	
4920-Freight rail transport	• Use of discarded goods
5221-Service activities incidental to land transportation	• DRS for car cleaning product containers

I. Accommodation and food service activities	
5610-Restaurants and food stalls	• Cafestore versus food waste
J. Information and communications	
6110-Cable telecommunications	• Eco Rating
K. Financial and insurance activities	
6420-Holding companies activities	• The repair shop SGRE
M. Professional, scientific and technical activities	
7010-Head office activities	• Promoting water recirculation at the Puertollano industrial complex
7219-Other research and experimental development in natural sciences and technology	• Material valorisation of plastic waste recovered from the sea • Turns used oil into soap • Tools to promote recyclability and packaging eco-design
7490 - Other professional, scientific and technical activities n.e.c.	• Circular campus
O. Public Administration and defence; compulsory Social Security	
8411-National Administration activities	• Batuecas - rural laboratory of circular economy
S. Other service activities	
9411-Business and employers' organisation activities	• Product environmental footprint calculation tool

6. BPCE Selection

Lurretik Lurrera

Gamiz-Fika, Bizkaia, Basque Country

Local/Regional

Scope of action and relevance of the Best Practices in CE

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

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

Research, Development and Innovation (R&D&I) in CE.

Objectives

1. Valorise ABPs waste (animal by-products not intended for human consumption) such as poultry manure and broken eggs through intensive composting.
2. Create a new business model for poultry farms, based on the circular economy.
3. Produce quality organic fertilisers that can replace synthetic fertilisers to promote more sustainable food production.
4. Reduce the environmental impact of poultry manure management.

Description

The action consists of the valorisation of poultry manure and broken eggs generated in a poultry farm in the Basque Country through an innovative composting technology (COMPO S-90ET), which produces an organic fertiliser NPK 4-4-4 (registered in the register of fertiliser products). No other material is added.

The composting technology used allows for the continuous treatment of poultry manure without the need for stockpiling or storage. In addition, the space and time of the composting process are considerably reduced, as it is an intensive and closed vertical equipment, which also reduces odours and emissions and avoids the generation of leachates.

Key Results

Cost savings
Revenue potential
Innovation

Knowledge
Awareness
Cooperation
Sustainable development

Materials
Emissions
Waste
Biodiversity

Sector A

CE principles

2 4 6 7 8

SDG goals

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

15 LIFE ON LAND

Difficulties or challenges

- Absence of legal standards and definitions.
- Administrative burden.
- Cooperation with the authorities.
- Recognition of by-products/secondary raw materials.
- High initial investments.
- Price volatility.

Entity

Larrabe Oilotegia, S.A.T. in collaboration with Compo Global Solutions S.L., Cooperativa Agrícola Garlan, Centro Tecnológico Neiker and Ekonek.

More information:

https://ec.europa.eu/eip/agriculture/en/find-connect/projects/2017-006-compos-gallinaza-valorizaci%C3%B3n-de-la

https://www.youtube.com/watch?v=hKJpkrU8nL0&t

https://www.youtube.com/watch?v=X8kiuchxmn4&t

Reuse of pallets for the manufacture of furniture and decorative structures

Sector B

Huesca, Aragon

National

Scope of action and relevance of the Best Practices in CE

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

Measures that promote recovery in accordance with the waste hierarchy (the term does not include incineration, with or without energy recovery).

Objectives

1. Recover, recycle and reuse products from pallets to give them a second life.

Description

The action consists of recovering material from used and discarded pallets to convert them into wooden furniture and decorative installations and, if these materials and the disused wood cannot be used in the previous process, crushing them and transforming them into pellets.

Key Results

Competitiveness
Innovation

Employment
Awareness
Sustainable development

Materials
Waste
Other

CE principles

1 2 3 4 5 6 7 8

SDG goals

12 RESPONSIBLE CONSUMPTION AND PRODUCTION
13 CLIMATE ACTION
15 LIFE ON LAND

Difficulties or challenges

- Administrative burden.
- Lack of incentives.
- Quality problems.
- Organisational structures.
- Access to financing.

Entity

Gudwud - Arcadia S.L. (ISEM-ADECEM).

More information: www.gudwud.es

http://gudwud.es/wp-content/uploads/2019/11/CATALOCO.pdf

Elimination of plastic at Mahou San Miguel

Sector

Burgos, Castille Leon

National

Scope of action and relevance of the Best Practices in CE

Substitution of materials from non-renewable sources with raw materials of biological origin that are reusable, recyclable or compostable.

Objectives

1. Minimise the environmental impact of packaging while ensuring the quality and safety of our products.
2. Reduce the weight of packaging, ensuring that it is 100 % reusable and/or recyclable.
3. Eliminate 100 % of virgin plastic by 2030, reducing its use by more than 60 % by 2025.

Description

In 2020, Mahou San Miguel eliminated plastic from the containers and packaging of more than 12 different product references and groupings of its main brands: Mahou, San Miguel and Alhambra. Among the materials discontinued are plastic shrink-wraps, which have been replaced by biodegradable cardboard boxes, and the rings that hold the cans, which are a challenge due to the scarcity of alternatives currently on the market, will have their own version made from cardboard from sustainably managed forests. This initiative has saved more than 90 tons of plastic per year and 40 % of electrical energy in the can packaging process.

Key Results

Innovation

Awareness
Sustainable development

Materials
Emissions
Waste

CE principles

2 3 4 6

SDG goals

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

14 LIFE BELOW WATER

15 LIFE ON LAND

Difficulties or challenges

- Harmonisation of legislation.
- Lack of circular infrastructure/technical or logistical barriers.
- Time-consuming processes.
- High initial investments.

Entity

Mahou San Miguel.

More information:

https://www.mahou-sanmiguel.com/en-gb/

Reuse of by-products derived from brewing processes at HEINEKEN Spain

Seville, Madrid, Valencia and Jaén

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.

Objectives

1. Give a second life to by-products derived from the brewing process.
2. Contribute with this line of action to the aim of maximising the circularity of all resources and materials that come into play along the entire value chain.

Description

Brewer's yeast and waste bagasse, by-products of brewing, are sold to local livestock and agricultural industries (located in Seville, Madrid, Valencia and Jaén) for use as animal feed or fertiliser, while the hydroalcoholic solutions generated by the production of non-alcoholic beer are used to make beer vinegar in the agri-food industry. As a result of these processes, 178,500 tons of by-products have been reincorporated into other sectors during 2020.

During the COVID-19 pandemic, the alcohol derived from the brewing process began to be transformed into hydroalcoholic disinfectant gel, which was donated to medical centres, nursing homes and hospitality customers when they reopened their doors.

Key Results

Potential income

Awareness
Cooperation
Sustainable development

Materials
Emissions
Waste

Sector

CE principles

1 2 3 4 5 6 7 8

SDG goals

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

Difficulties or challenges

- Useful applications of recycled materials.

Entity

Heineken Spain in collaboration with farmers, ranchers and vinegar manufacturers.

More information: www. heinekenespana.es

A responsible solution for the HORECA channel

Balearic Islands and occasionally in the Iberian Peninsula

Autonomous

Scope of action and relevance of the Best Practices in CE

Actions that promote consumption according to real needs (paying special attention to food, textiles, and new technologies for domestic use) and aimed at waste prevention.

Objectives

1. Offer a circular solution to the use of plastic in HORECA establishments in the form of single-use plastic.
2. Promote the sustainability of bulk purchasing by substituting the use and consumption of single doses.
3. Provide a response and commitment to HORECA customers who seek circularity and are committed to the sustainability of their products.

Description

HORECA channel customers (mainly hotels and catering in the Balearic Islands and, occasionally, some other establishments in the Peninsula) are offered a refillable, engineless, wireless and easy-to-handle dispenser for its dairy product offer, preserving its quality through water covers that maintain the right temperature. The dispenser is offered free of charge to customers and the said customers agree to purchase in bulk from the company. This solution allows customers to reduce the packaging waste generated. As well as being an economical and sustainable solution, it prevents food waste by the end consumer and responds to some customers' motivation for sustainability. The commitment by both parties contributes to the HORECA channel to reduce plastic pollution and over-packaging.

Key Results

Cost savings

Awareness
Cooperation

Materials
Waste

Sector

CE principles

1 2 3 4 5 7

SDG goals

12 RESPONSIBLE CONSUMPTION AND PRODUCTION
13 CLIMATE ACTION

Entity

Danone S.A.

More information: www.danone.es/es

ReNueva

National level

National

Scope of action and relevance of the Best Practices in CE

Separate collection of textiles, waste electrical and electronic equipments (WEEEs), plastics, construction and demolition waste, tyres, etc.

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

Objectives

1. Recover and give a second chance to packaging that is discarded in the out-of-home consumption channel by reincorporating it into the Aguas Danone value chain in the form of recycled plastic.
2. Empower, train and create employment for people at risk of social exclusion through training in waste management.
3. Minimise the environmental impact of waste disposal through the use of renewable raw materials such as rPET.
4. Raise awareness and educate consumers and customers on the importance of implementing circular economy projects.

Description

ReNueva is a circular economy project that aims to recover post-consumer packaging from the out-of-home channel (hotels, cafes, restaurants, festivals, etc.). It focuses on the recovery and circularity of PET, which is recycled and introduced into the Aguas Danone España value chain in the form of recycled PET (rPET) for the manufacture of new bottles, thus contributing to the reduction of the amount of virgin plastic introduced into the market, closing the circle of PET bottles and creating green jobs in disadvantaged groups.

Together with the Trinijove Foundation and Ecoembes, employment is generated in waste management for people at risk of social exclusion or with some type of disability. Trinijove, as a waste manager, collects waste (yellow and blue containers) from its customers in the metropolitan area of Barcelona and then manually sorts and separates the material at the ReNueva plant.

Key Results

Competitiveness
Innovation

Employment
Knowledge
Awareness
Equality

Materials
Emissions
Waste

Sector

CE principles

1 2 3 4 6 7 8

SDG goals

8 DECENT WORK AND ECONOMIC GROWTH
12 RESPONSIBLE CONSUMPTION AND PRODUCTION
13 CLIMATE ACTION

Difficulties or challenges

- Quantity problems.
- Quality problems.
- Organisational structures.
- High initial investments.

Entity

Danone S.A. in collaboration with Trinijove Foundation, Ecoembes and Danone Ecosystem Fund.

More information: www.danone.es/es

http://ecosysteme.danone.com/projectslists/renueva/

https://www.fundacionseres.org/Publicaciones/proyectos-de-colaboracion/beneficios-del-reciclaje/

Close Loop: from waste to thread

Banyeres de Mariola, Alicante, Valencian Community 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.

Objectives

1. Provide a sustainable response to textile waste management.
2. Promote sustainable practices within the fashion and home textile industry, where major brands have a strong influence on the future of progress.
3. Produce synergies between the fashion and home textile industries towards a sustainable circular economy model.
4. Generate a positive environmental impact by saving water, energy, chemicals and CO_2 emissions.

Description

Spinning recycled cotton fibre from the recycling of used jeans produces yarns that are used to make new denim fabrics, which are then put to a completely different use as sofa covers. This project highlights the usefulness of waste as a raw material and the suitability of its recycling, with environmental benefits for the planet.

Key Results

Innovation

Awareness
Sustainable development

Materials
Emissions
Energy
Waste
Water

Sector

CE principles

3 6 7 8

SDG goals

9 12 15

Difficulties or challenges

- Complex process to circulate it.
- Lack of circular infrastructure/technical or logistical barriers.
- Time-consuming processes.

Entity

Hilaturas Ferre, S.A. in collaboration with Recover Textile Systems, IKEA, Tejidos Royo and MUD Jeans.

Paqui Ferrer (paqui.ferrer@ferreyarns.com).

More information: www.ferreyarns.com

BASF Circular Economy Awards

National level

National

Scope of action and relevance of the Best Practices in CE

Measures to encourage behavioural change towards CE.

Objectives

1. Recognise projects and research that, based on the circular economy, contribute or have the potential to contribute substantially to the development of business competitiveness in Spain, with special attention to any projects that include the perspective of environmental and social sustainability in their development and purpose.

Description

The initiative, now in its third edition, has established itself as the Spanish benchmark awards in the circular economy sector. The call is aimed at research projects and initiatives that contribute to circularise the economy and address the challenge of limited natural resources through different circular business models. The awards are divided into 6 categories: large companies, SMEs, start-ups, public administration, academia, and outreach.

Key Results

Knowledge
Awareness
Cooperation

Sector

CE principles

1 2 3 4 5 6 7 8

SDG goals

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

17 PARTNERSHIPS FOR THE GOALS

Difficulties or challenges

- Others

Entity

BASF in collaboration with the Sustainability Excellence Club and EFE Agency.

Iván Albertos (ivan.albertos@basf.com).

More information: www.basf.com/es

Compostable coffee capsules: BASF Ecovio

Barcelona, Catalonia

National

Scope of action and relevance of the Best Practices in CE

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

Objectives

1. Provide a circular solution to a product that is increasingly used and has recycling problems.
2. Provide a solution to a customer with a very specific demand for coffee capsules from waste.

Description

Through innovation, collaboration between the two companies and numerous studies by independent research institutions, the advantages of using Ecovio in the manufacture of coffee capsules were confirmed, given its certified biodegradability for industrial and domestic composting, as well as in soil.

In this way, if coffee capsule waste is managed correctly, quality compost can be obtained, thus closing the circle and making the best use of resources.

Key Results

Productivity
Competitiveness
Revenue potential
Innovation

Knowledge
Awareness
Awareness
Cooperation
Sustainable development

Materials
Waste

Sector

CE principles

1 2 3 4 5 6 7 8

SDG goals

12 RESPONSIBLE CONSUMPTION AND PRODUCTION
17 PARTNERSHIPS FOR THE GOALS

Difficulties or challenges

- Lack of circular regulation.
- Harmonisation of legislation.
- Complex process to circulate it.

Entity

BASF Spain in collaboration with Cafés Novell.

Iván Albertos (ivan.alberto@basf.com).

More information: www.basf.com/es/es.html

Circular economy in advanced plastic recycling: TACOIL®

Community of Madrid and Andalusia International

Scope of action and relevance of the Best Practices in CE

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

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

Use of Best Available Techniques (BAT), related to the transition to a CE, in the processes (without prejudice to what is dictated by current legislation for certain activities to comply with the emission limit values (ELV), set in the Comprehensive Environmental Authorisation (CEA)).

Objectives

1. Develop a long-term, global and sustainable solution for low-value plastic waste that cannot be mechanically recycled.
2. Contribute to the improvement of the environment and waste management by giving value to plastic waste that is not recycled. By converting it into raw material and preventing it from ending up in landfills, incinerated or polluting the oceans, through a solution that generates low carbon emissions.
3. Create a Circular Economy for plastics; enabling countries to become less dependent on fossil fuels and providing an additional secure source of plastic raw material to industries.

Description

Advanced recycling is carried out, using a chemical process, to convert end-of-life plastic waste into secondary raw material, TACOIL®, for the manufacture of new plastics (Plastic2Plastic). This reduces dependence on fossil fuels and contributes to sustainability and circularity objectives.

Key Results

Competitiveness
Expansion
Innovation

Employment
Knowledge
Awareness
Sustainable development
Others

Energy
Waste

Sector

CE principles

1 2 5 6 7 8

SDG goals

Difficulties or challenges

- Absence of legal standards and definitions.
- Administrative burden.
- Recognition of by-products/secondary raw materials.
- Lack of circular infrastructure/technical or logistical barriers.
- High initial investments.

Entity

Plastic Energy S.L.
Carlos Prieto Menéndez (carlos.prieto@plasticenergy.com).

More information: www.plasticenergy.com

Repair and maintenance of plastic objects

Sector

Tajonar, Autonomous Community of Navarre International

Scope of action and relevance of the Best Practices in CE

Measures to repair/remodel: repair and maintenance of defective or old products so that they can be used for their original function (maintaining the quality level).

Objectives

1. Encourage plastic repair instead of buying, discarding and recycling.
2. Extending the useful life of plastic objects.
3. Reduce CO_2 emissions (repairing a plastic object produces 187 times less CO_2 than recycling it).

Description

The Plastic Repair System (PRS) method, certified and patented, is based on thermowelding repair. A welding wire is manufactured with high-density virgin material (own and exclusive) and suitable for use in the food sector, in accordance with European standards.

The network of workshops is distributed nationwide and in Mexico. In addition, some of its centres are special employment centres that help people with disabilities to integrate into the labour market.

Key Results

Cost savings

Emissions
Energy
Waste

Employment
Welfare

CE principles

6

SDG goals

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

13 CLIMATE ACTION

17 PARTNERSHIPS FOR THE GOALS

Difficulties or challenges

- Behavioural change/lack of awareness or cooperation.
- Lack of incentives.

Entity

Plastic Repair System 2011, S.L.

Mikel Ayesa (mayesa@plasticrepair.es).

More information: www.plasticrepair.es/en

Gypsum plasterboard recycling

Madrid, Community of Madrid

National

Scope of action and relevance of the Best Practices in CE

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

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.

Separate collection of textiles, waste electrical and electronic equipment (WEEE), plastics, construction and demolition waste, tyres, etc.

Objectives

1. Promote the circularity of the construction sector.
2. Educate and sensitise the construction sector on the recyclability of gypsum products.
3. Design more sustainable products by increasing the % use of secondary raw materials.
4. Decrease the amount of waste that ends up in landfill.
5. Demonstrate that the recycling of gypsum products is possible.
6. Involve all stakeholders (developer, architect, building material distributors, builders, etc.) in the recycling of gypsum waste and its responsible consumption, promoting sustainable construction (sustainable seals such as LEED, BREEAM, VERDE, LEVELS...).

Description

To close the circle of gypsum plasterboard products, the following action plan was designed:

1. Design and construction of a recycling plant to transform laminated gypsum board construction waste into secondary gypsum.
2. Promotion, education and awareness of the construction sector for the segregation of this type of waste on site, and its reverse logistics to production centres.
3. Transformation of this waste into secondary raw material in those facilities authorised for operation R5 (recycling).
4. Consumption of recycled raw material in our gypsum product manufacturing centres, for which it is necessary to adapt all processes and quality controls associated with the introduction of this new material.

Sector

Key Results

Competitiveness
Revenue potential
Innovation

Employment
Knowledge
Sustainable development

Materials
Waste
Biodiversity

CE principles

2 3 6 7

SDG goals

9 11 12

Difficulties or challenges

- Cooperation with the authorities.
- Behavioural change/lack of awareness or cooperation.
- Recognition of by-products/secondary raw materials.
- Low return on investment.
- Others.

Entity

Saint-Gobain Placo Ibérica in collaboration with the Getafe City Council.
Fernando Pardo Cobo (fernando.pardo@saint-gobain.com).

More information: www.placo.es

https://www.placo.es/sostenibilidad/reciclaje-de-placa-yeso-laminado
https://www.servimedia.es/noticias/1228902
https://www.adip-as.com/campus-acciona-reciclaje-pyl-placo/

Restoration of degraded areas by valorisation of suitable inert waste from natural stone working and processing discards

Agost, Alicante, Valencian Community Local/Regional

Scope of action and relevance of the Best Practices in CE

Measures to promote recovery in accordance with the waste hierarchy (the term does not include incineration, with or without energy recovery).

Objectives

1. Reduce the deposit of waste in landfills through alternatives that allow the valorisation of natural stone discards with a sufficient volume.
2. Recover degraded natural areas with geomorphology that is difficult to recover.
3. Improve the natural environment of the locality where the action is carried out.

Description

The processing of natural stone entails the generation of waste or stone discards, the valorisation of which is one of the great challenges of the industry due to its volume. By considering these as suitable inert waste, the active ecological restoration of closed clay quarries pending restoration that do not have a restoration project or the possibility of self-recovery is carried out.

The first stage of the project consists of geomorphological restoration, by backfilling with suitable inert waste. Once achieved, forest restoration is carried out and monitored together with the Miguel Hernández University of Elche and environmental awareness and volunteer actions are carried out. This provides a viable solution to the sector's greatest environmental challenge, which is a major logistical, environmental and operational challenge due to its magnitude.

Key Results

Cost savings

Employment
Awareness

Waste
Biodiversity

Sector

CE principles

1 2 3 6

SDG goals

Difficulties or challenges

- Absence of legal standards and definitions.
- Harmonisation of legislation.
- Access to financing.
- High initial investments.

Entity

Levantina y Asociados de Minerales, S.A. in collaboration with Sindiform Levante, S.L.

More information: www.levantina.com/en/

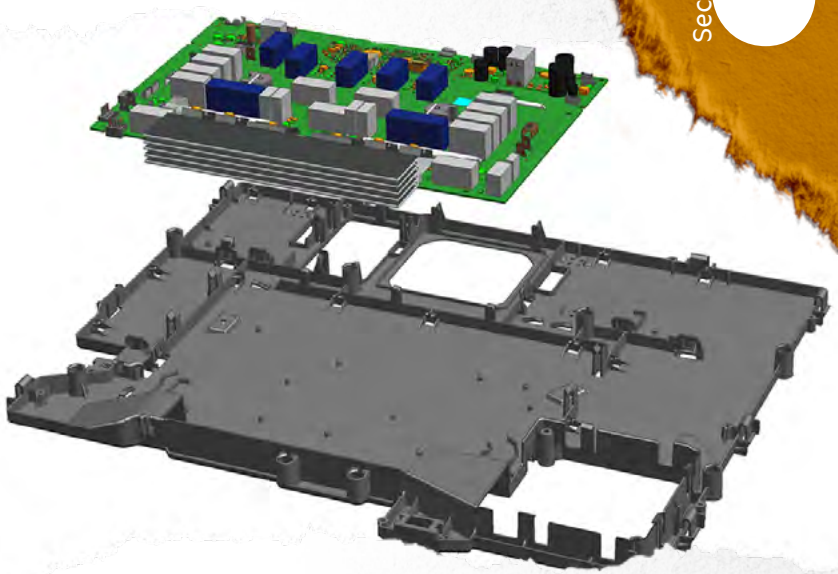
https://www.youtube.com/watch?v=zZsOC8cMYmM

Environmental and technical analysis of the use of recycled polypropylene in BSH kitchens

Zaragoza, Aragon

National

Sector



Scope of action and relevance of the Best Practices in CE

Processes that reduce its environmental footprint and are related to the transition to a 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. Reducing the environmental impact of induction cooktops.
2. Characterise and validate the performance of recycled materials.
3. Replacing virgin polypropylene with recycled polypropylene as a highly complex component of induction cooktops.

Description

The action consists of the characterisation of recycled polypropylene, verifying that its dimensional behaviour at induction worktops temperatures is adequate, without deformations or contractions different from those suffered by a virgin material. In the same way, its mechanical properties have been characterised, comparing them with the virgin material and obtaining a similar result for the recycled material. Once its performance has been validated, this material has been introduced in a part dedicated to the electronic board support and wiring management.

Finally, the reduction of the environmental impact produced by the introduction of this material has been evaluated, showing a decrease in the tons of CO_2 with respect to virgin material.

Key Results

Cost savings
Innovation

Awareness
Sustainable development

Materials
Emissions
Waste

CE principles

2 3 4 5 6

SDG goals

9 12 13

Difficulties or challenges

- Useful applications of recycled materials.
- Quantity problems.
- Quality problems.

Entity

BSH Electrodomésticos in collaboration with the University of Zaragoza.
José Eduardo Galve (jose.galve@bshg.com).

More information: www.bsh-group.com/es/

Refloat: re-motorisation and recycling of urban transport fleets

Amorebieta, Bizkaia, Basque Country and San Agustín de Guadalix, Community of Madrid

National

Scope of action and relevance of the Best Practices in CE

Processes that reduce its environmental footprint and are related to the transition to a CE.

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

Measures that encourage the reuse of a product that is still in good condition and fulfils its original function (and is not a waste) for the same purpose for which it was conceived.

Objectives

1. Promote the use and recycling of urban bus and truck fleets when they still have all their features.
2. Prevent the vehicle from becoming an end-of-life vehicle (ELV) by replacing the engine.
3. Contribute to the improvement of air quality and promote the use of renewable fuels in heavy urban transport.

Description

BeGas replaces conventional fuel engines in trucks and urban buses with BeGas AVG 100 % autogas or biopropane engines, promoting the reuse and recycling of vehicles and thus preventing them from becoming ELVs. This commitment promotes the use of fleets destined for urban freight and passenger transport with the installation of an engine that reduces polluting emissions.

Key Results

Cost savings
Competitiveness
Revenue potential
Innovation

Employment
Knowledge
Awareness
Cooperation
Sustainable development

Emissions
Energy
Waste

Sector

CE principles

1 2 3 4 5 6 7

SDG goals

11 12 13

Difficulties or challenges

- Lack of circular regulation.
- Recognition of by-products/secondary raw materials.
- Lack of incentives.

Entity

BeGas Motor in cooperation with Repsol, Ctdi, Thermal Engines Centre of the Polytechnic University of Valencia, Atlántica Guarantee, Urbaser and ANEPMA, among others.

Pedro Silva (info@begasmotor.com).

More information: www.begasmotor.com/en/

https://www.youtube.com/watch?v=fAr58SHlVrg

Car e-sharing

Madrid, Barcelona, Zaragoza, Seville, Malaga, Palma de Mallorca, Santa Cruz de Tenerife and Las Palmas de Gran Canaria

National

Scope of action and relevance of the Best Practices in CE

Collaborative consumption measures that, facilitated by digital platforms and communities, share and exchange resources, thus making more efficient use of them.

Objectives

1. Promote shared-use business models.
2. Promote electric mobility among Endesa employees and the general public.
3. Contribute to the reduction of transport emissions and the improvement of air quality in cities.

Description

Endesa makes 22 shared-use vehicles available to all its employees in 7 territorial headquarters in the Peninsula, Balearic and Canary Islands, accessible through a digital platform. In order to optimise the use of these electric vehicles, semi-fast recharging points have been installed at the sites. Employees can reserve the vehicle for commuting and business purposes.

Key Results

Cost savings
Innovation

Knowledge
Well-being
Sustainable development

Energy

CE principles

2 4 7

SDG goals

Difficulties or challenges

- Behavioural change/lack of awareness or cooperation.
- High initial investments.

Entity

Endesa Group

Virginia Ocio de la Fuente (sostenibilidad@endesa.es).

More information: www.endesa.com/en

Zero Plastics

National level

National

Scope of action and relevance of the Best Practices in CE

Measures to improve waste collection and separation.

Measures to encourage behavioural change towards CE.

Objectives

1. Promote a cultural and habit change among Endesa employees in relation to the use of plastics, as well as reduce plastic consumption in the company as much as possible.

Description

The Zero Plastics project promotes a change of habits among the company's employees in relation to the use of plastics. The project promotes the sustainable management of plastics based on the principles of the waste hierarchy, prioritising the prevention of waste generation. In office centres, the use of plastic was widespread in the form of cups for coffee or water machines, take-away items in cafés and restaurants, and vending machines. This reduction has been achieved through the use of reusable materials and, in cases where disposal was not possible, plastic has been replaced by other new generation materials that are less harmful to the environment. The initiative has been accompanied by actions to raise awareness of the proper use of plastics, their recycling and their effect on the environment.

Key Results

Cost savings

Knowledge
Awareness
Sustainable development

Materials
Waste

Sector D

CE principles

1 2 3 8

SDG goals

12 14 15

Difficulties or challenges

- Absence of legal standards and definitions.
- Lack of circular regulation.
- Quantity problems.
- Quality problems.
- Others. The lack of knowledge and regulation on new materials such as bioplastics, both in terms of knowledge of their environmental footprint and their management as organic waste.

Entity

Endesa Group in collaboration with Selecta, Mediterranea-Group.
Virginia Ocio de la Fuente (sostenibilidad@endesa.es).

More information: www.endesa.com/en

Circular demolition of the silo at the Los Barrios port terminal

Algeciras, Cádiz, Andalusia

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.

Objectives

1. Valorise as much demolition waste as possible for reuse on site.
2. Reduce waste sent to landfill, minimising the environmental impact of demolition.
3. Increase business profitability, avoiding consumption of new raw materials and landfill costs.

Description

The initiative consists of the demolition of the silo located at the port terminal near the site where the Liquefied Natural Gas (LNG) pressure tanks will be installed. After a study of the facilities and through agreements with the entities involved in demolition and blasting and waste treatment, the demolition was carried out from the perspective of a circular economy project. A plan was developed to minimise landfill waste and reuse demolition waste in part of the nearby LNG bunkering facility.

In the terminal area, the necessary machinery was installed to segregate demolition waste, mainly rebar (recovered through external agents) and concrete (crushed "in situ" for reuse in the adaptation works of the port terminal itself, replacing materials such as aggregates and gravel).

Thus, with a circular approach from the outset, the objective of recovering almost 100 % of demolition waste has been achieved.

Key Results

Cost savings

Knowledge
Awareness
Cooperation
Sustainable development

Waste

CE principles

3 5 6

SDG goals

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE
12 RESPONSIBLE CONSUMPTION AND PRODUCTION
13 CLIMATE ACTION

Difficulties or challenges

- Administrative burden.
- Lack of circular infrastructure/technical or logistical barriers.

Entity

Endesa Group in collaboration with Holcim and Recifemetal.

Virginia Ocio de la Fuente (sostenibilidad@endesa.es).

More information: https://www.endesa.com/en

https://andaluciainformacion.es/campo-de-gibraltar/998023/la-voladura-del-silo-en-los-barrios-se-hace-con-uno-de-los-premios-de-la-aeded/

Repair and reuse of wind power plant equipment

Galicia, Aragon and the Basque Country National

Scope of action and relevance of the Best Practices in CE

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

Objectives

1. Extend the useful life of wind farm equipment through repair and maintenance actions.
2. Reduce raw material consumption and waste generation in the operation and maintenance of wind farms by prioritising equipment repair over equipment replacement.
3. Increase business profitability, demonstrating the economic viability of the application of circular economy criteria in the business.
4. Promote industrial and socioeconomic development by supporting the business fabric of the Spanish SME sector. Specifically, from specialist repair companies in the wind energy sector.

Description

The initiative promotes the circular economy by addressing a change in the management of wind plant maintenance. It implies a new paradigm that prioritises the repair of small, damaged equipment such as motors, pumps, hydraulic cylinders or electronic cards, and their subsequent reuse, rather than their replacement with new equipment. This extends the useful life of the equipment, reduces the consumption of raw materials associated with the supply and installation of new equipment and reduces the waste generated.

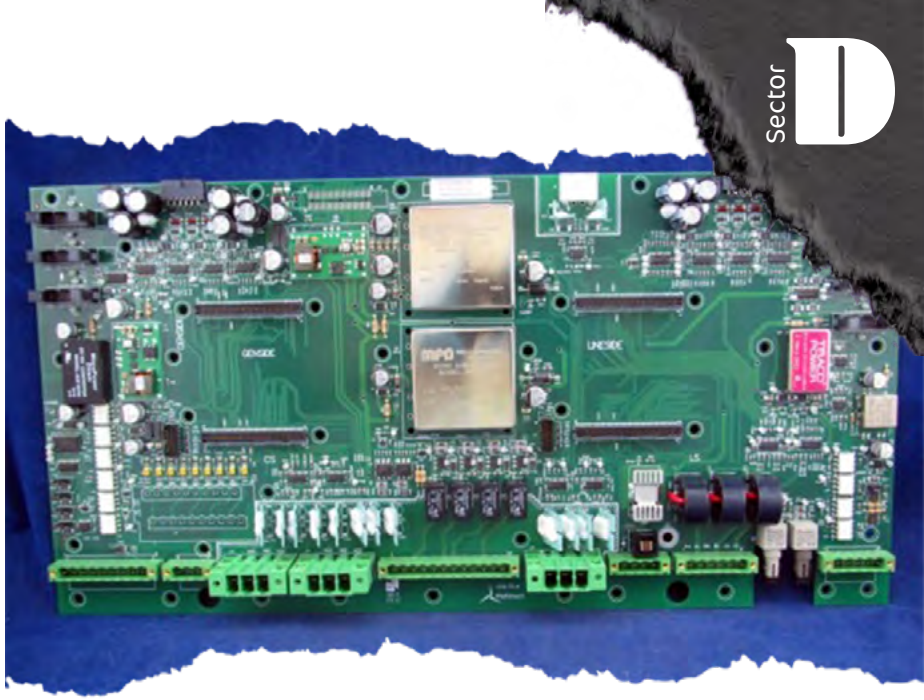
Defective equipment can be reused with its original function in a second life, avoiding recycling and reintroducing it back into the production system.

Key Results

Cost savings

Knowledge
Sustainable development

Materials
Emissions



CE principles

3 5 6

SDG goals

Difficulties or challenges

- Quality problems.
- High initial investments.
- Other: reliability difficulties (search for suppliers, scope of repairs, testing, definition of procedures, etc.).

Entity

Endesa Group.
Virginia Ocio de la Fuente. (sostenibilidad@endesa.es).

More information: www.endesa.com/en

Transfomem: valorisation of reverse osmosis membranes

Madrid, Community of Madrid Global

Scope of action and relevance of the Best Practices in CE

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

Measures that encourage the reuse of a product that is still in good condition and fulfils its original function (and is not a waste) for the same purpose for which it was conceived.

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

Objectives

1. Valorise discarded reverse osmosis membranes used in desalination and transform them into recycled ultrafiltration (UF) and nanofiltration (NF) membranes.
2. Demonstrate the feasibility of the transformation process.
3. Determine the types of membranes and the type of fouling suitable for the valorisation process.
4. Validate the membranes valorised in different water treatment processes.
5. Increase the degree of automation and industrialisation of the valorisation process.
6. Develop a low-cost pressure tube for housing the valorised membranes.
7. Optimise and automate the UF process with valorised membranes.

Description

The action began with the LIFE13 ENV/ES/000751 TRANSFOMEM project, in which the technical and economic feasibility of the membrane valorisation process, which consists of the controlled degradation of the active layer of the membrane with free chlorine was verified transforming them into NF or UF membranes, depending on the degree of exposure of the membrane to chlorine. Two transformation technologies have been developed: passive transformation (which consists of immersing the membranes in a hypochlorite solution under static conditions for the time necessary for transformation) and active transformation (which consists of recirculating the hypochlorite solution through the membrane at low pressure).

The valorised membranes have been validated in different water treatment processes: seawater pre-treatment, tertiary wastewater treatment and brackish water treatment, and their scope may be wider in applications such as leachate/industrial water treatment or for humanitarian purposes, for example, by building transportable plants for water treatment in emergency situations.

Sector

Key Results

Cost savings

Knowledge
Sustainable development

Materials
Emissions
Waste
Water

CE principles

3 4 5 6 8

SDG goals

8 DECENT WORK AND ECONOMIC GROWTH
9 INDUSTRY, INNOVATION AND INFRASTRUCTURE
12 RESPONSIBLE CONSUMPTION AND PRODUCTION

Difficulties or challenges

- Access to financing.
- High initial investments.

Entity

Sacyr Agua, S.L. - SACYR Group in collaboration with IMDEA Water Foundation.

More information: www.sacyr.com/en/environment/water

http://www.life-transfomem.eu/?lang=en
https://www.youtube.com/watch?v=mBpUA2dpd-Y

H2020 Run4Life Project

Nigrán, Pontevedra, Galicia European Union

Scope of action and relevance of the Best Practices in CE

Voluntary certifications, eco-labels and Environmental Product Declarations (EPD) focused on Life Cycle Assessment (LCA), eco-design or energy efficiency, allowing consumers to assume their responsibility in the circular transition.

Solutions to increase, improve and promote wastewater reuse and treatment. 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. Propose a change of concept in domestic wastewater treatment so that a more circular model is used.
2. Propose the segregation of flows at source: grey water, black water and water with food waste.
3. Promote decentralised treatment of these segregated flows.
4. Develop innovative technologies for the treatment of segregated streams.
5. Recover/reuse 100 % of nutrients and more than 90 % of water. Recover energy (biogas) from waste.
6. Ensure the safety of recovered products (fertiliser test), assessing the risk and environmental impact.
7. Ensure social and market acceptance.

Description

Run4Life has been demonstrated on a large scale in 4 locations: Belgium, Spain, the Netherlands and Sweden. At the plant operated by Aqualia in Spain, 100 % of the grey water generated in an office building is recovered and used to refill toilet cisterns by means of an aerobic membrane reactor (MBR). This provides a second use for grey water and reduces the building's water footprint.

In addition, separately collected sewage is treated in an anaerobic membrane reactor (AnMBR) to recover energy as biogas and nutrients for fertigation or other fertiliser products. Micropollutant, pathogen and virus elimination studies are also carried out, both in grey and black water, as well as a life cycle analysis (LCA) for the environmental evaluation of the proposal.

The project involves a change from conventional, centralised and linear treatment to decentralised treatment of segregated flows, which facilitates local resource recovery through the application of innovative treatments and technologies. All this favours the application of a circular economy concept to wastewater treatment.

Sector

Key Results

Cost savings
Revenue potential
Innovation

Employment
Knowledge
Awareness
Equality
Cooperation
Sustainable development

Emissions
Energy
Waste
Water

CE principles

1 2 3 4 5 6 7 8

SDG goals

9 6 11

Difficulties or challenges

- Absence of legal standards and definitions.
- Lack of circular regulation.
- Harmonisation of legislation.
- Recognition of by-products/secondary raw materials.
- Quantity problems.

Entity

FCC Aqualia S.A. in collaboration with the Consorcio Zona Franca de Vigo and the University of Santiago de Compostela.

More information: www.aqualia.com/web/aqualia-en

https://run4life-project.eu/
https://run4life-project.eu/documents/
https://www.youtube.com/watch?v=taxpTHB9UkY

Wastebot: robotics in waste management

Els Hostalets de Pierola, Barcelona, Catalonia

Urban/Municipal

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.

Measures that promote recovery in accordance with the waste hierarchy (the term does not include incineration, with or without energy recovery).

Objectives

1. Increase recycling rates at waste sorting facilities.
2. Digitise waste treatment facilities.
3. Avoid direct contact of workers with waste in sorting facilities that process special waste (e.g. pharmaceutical, hospital).
4. Encourage collaboration between entities from different fields, taking advantage of synergies that lead to circular solutions.

Description

The Wastebot project has succeeded in applying artificial intelligence and robotic technology to urban waste sorting through the implementation of a sorting robot at the Ecoparc 4 integrated municipal waste treatment plant in Els Hostalets de Pierola (Barcelona). This has resulted in greater performance in the selection and classification of waste and an improvement in the health and safety of workers since automation minimises accidents among staff. The project has enabled the company to incorporate sorting robots in four more facilities, including pharmaceutical and hospital waste treatment facilities, where health and safety improvements are important.

Key Results

Innovation

Welfare
Sustainable development
Other

Waste

Sector

CE principles

4 5

SDG goals

Difficulties or challenges

- High initial investments.
- Others. Lack of preliminary experience in the use of robots for waste sorting and the need for specific developments with a high innovative component.

Entity

Ferrovial Services in collaboration with Wuppertal Institute for Climate, Environment and Energy; NTU International and Centre for Innovation of Intelligent Infrastructures (Ci3).

Jaume Cabré Alcoverro (jaume.cabre@ferrovial.com).

More information: www.ferrovialservicios.com
https://www.ferrovial.com/en-gb/

Ambiplace: social marketplace for electronics donation

National level

National

Scope of action and relevance of the Best Practices in CE

Measures that encourage the reuse of a product that is still in good condition and fulfils its original function (and is not a waste) for the same purpose for which it was conceived.

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. Prevention of waste generation from brand new electrical and electronic equipment that, due to market circumstances, become surplus stock and are normally treated as waste.
2. Contribute to the fight against climate change, avoiding the emission of greenhouse gases from industrial recycling activities.
3. Anticipate regulatory and policy guidelines regarding the management of surplus stock.

Description

Ambiplace has developed a digital marketplace where producers and distributors of electrical and electronic equipment donate their surplus stock/returns in perfect condition instead of managing them as waste as is currently the case. Through this space, NGOs and/or educational centres receive these devices, in a responsible and effective exercise of waste prevention, extending their useful life and helping both vulnerable groups and the improvement of technical education in Spain.

Key Results

Cost savings

Awareness

Emissions
Waste

Sector

CE principles

2 3 5 6 7 8

SDG goals

Difficulties or challenges

- Behavioural change/lack of awareness or cooperation.
- High initial investments.

Entity

Ambilampen in collaboration with AFME, ADIME, ECOTIC, ECOASIMELEC,ERP Recycling, Ecofimática and ECOLEC.

Lucas González Sánchez (lgonzalez@ambilamp.com).

More information: www.ambiplace.es

Ecotech: healthy cleaning and hygiene, sustainable and efficient

Salinas, Alicante, Valencian Community International

Scope of action and relevance of the Best Practices in CE

Through the EU Ecolabel, the EU Energy Label or eco-design or Sustainable Forest Management certifications, among others.

Objectives

1. Put on the market healthy, sustainable and effective products whose use implies fewer health risks, substituting and reducing the most dangerous and toxic ingredients.
2. Increase sustainability, ensuring a reduced impact throughout its life cycle by using plant-based biodegradable ingredients and packaging made from recycled plastic.
3. Demonstrate that the efficacy of the products is equal to or superior to that of conventional products in the same category.

Description

Ecotech seeks to provide healthy, sustainable and toxic-free hygiene that respects health and the environment through personal hygiene, household and professional cleaning products that meet the criteria established by the European Commission to reduce impacts throughout their life cycle, from the selection of raw materials to their management as waste.

This initiative has 18 products certified with the European Ecolabel (EEE) since 2007, being the first company in the Valencian Community to launch organic products certified under the Ecolabel seal.

Key Results

Productivity

Awareness

Waste
Water
Other

Sector

CE principles

1 2 3 5 6 8

SDG goals

3 GOOD HEALTH AND WELL-BEING
6 CLEAN WATER AND SANITATION
12 RESPONSIBLE CONSUMPTION AND PRODUCTION

Difficulties or challenges

- Administrative burden.
- Cooperation with the authorities.
- Harmonisation of legislation.
- Useful applications of recycled materials.

Entity

Endemic Biotech S.L.

More information: www.ecotech.es

Recycling of siliconized paper (label backing paper)

Aranda de Duero, Burgos, Castilla y Leon 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.

Measures that promote recovery in accordance with the waste hierarchy (the term does not include incineration, with or without energy recovery).

Objectives

1. Valorise a waste product, siliconized paper, which is mostly disposed of in landfills.
2. Produce, from the waste, a secondary raw material that is used in the paper industry for the production of recycled paper.
3. Reduce the carbon footprint of the companies that generate the waste.
4. Promote new circular alternatives to waste management.

Description

In Spain there are no facilities capable of recovering siliconized paper waste, which is managed in landfills. Ferrovial Services sought alternatives and identified the company Cycle4Green (Finland), which has the technology to recover this waste by producing recycled paper from it. The project is therefore able to give a new life to a waste that has not been valorised until now.

Key Results

Cost savings

Sustainable development

Emissions Waste

Sector

CE principles

1 2 3 4 5 6 7 8

SDG goals

Difficulties or challenges

- Lack of application.
- Quality problems.
- Shipment of transboundary waste.

Entity

Ferrovial Servicios in collaboration with Glaxo Welcom S.A.

Igor González Galván (igorgonzalez@ferrovial.com).

More information: https://www.ferrovial.com/en-gb

Manufacture of bags from film plastic waste

Seville, Andalusia

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.

Measures that promote recovery in accordance with the waste hierarchy (the term does not include incineration, with or without energy recovery).

Objectives

1. Recovery of low-density polyethylene film.
2. Reuse. Transformation into final product (bags).
3. Self-consumption. The company consumes the final product generated.
4. Reduce the carbon footprint of its activities.

Description

Cespa has established a collaboration agreement with a garbage bag manufacturer located in Seville. Within the framework of this agreement, part of the film recovered at Cespa's industrial waste treatment plants throughout Spain is sent to this manufacturer, which transforms it into a final product (bags of different colours and sizes) that is returned to the different contracts the company has nationwide. In this way, the company is at the beginning and the end of the chain, starting the process by recovering the waste and ending it with the consumption of the finished product.

Key Results

Sustainable development

Emissions
Waste

Sector

CE principles

3 4 5 6 7 8

SDG goals

11 12 17

Difficulties or challenges

- Absence of legal standards and definitions.
- Behavioural change/lack of awareness or cooperation.
- Quantity problems.
- Quality problems.

Entity

Cespa Gestión de Residuos in collaboration with Plásticos del Condado, S.A. (CONDAPLAST).

Mónica Ramos Monge (monica.ramos@ferrovial.com).

More information: https://www.ferrovial.com/en-gb/

T-KnowCAT. Transfer of remanufacturing know-how between scrapyards

Mataró, Barcelona, Catalonia Regional

Scope of action and relevance of the Best Practices in CE

Measures to repair/remodel: repair and maintenance of defective or old products so that they can be used for their original function (maintaining the quality level).

Development and implementation of tools to enable the transition to CE and its dissemination.

Objectives

1. Increase the knowledge of remanufacturing techniques that in some cases are unknown in the end-of-life vehicle (ELV) treatment sector.
2. Increase the level of technification of ELV managers.
3. Increase the recovery of ELV parts, reducing the need to manufacture new parts.
4. Create a network for the exchange of knowledge and experience.
5. Disseminate and share knowledge with stakeholders (manufacturers, workshops, remanufacturing companies, ELV managers and end users).
6. Encourage the involvement of all agents in the value chain.
7. Help position the sector in terms of competitiveness and innovation.

Description

T-KnowCAT is presented as a solution to the growing volume of waste generated by the automotive sector, demonstrating that it is possible to repair and remanufacture parts to give them a second life so that they can be reintroduced back into the market.

The project consisted of 4 phases:

- Phase 1: Analysis of remanufacturing techniques and technologies, as well as parts susceptible to remanufacturing.
- Phase 2: Testing of ELV parts and analysis of technical, environmental and economic feasibility of the remanufacturing process.
- Phase 3: Transfer of acquired knowledge and exchange of experiences between manufacturers, workshops, remanufacturing companies and VFU managers.
- Phase 4: Issuance of a practical guide with remanufacturing protocols, which can help other CATs (Authorised Treatment Centres or scrapyards) as a competitive tool for their business.

Sector

Key Results

Competitiveness
Revenue potential

Employment
Knowledge
Awareness

Emissions
Energy
Waste

CE principles

1 2 3 4 5 6 7 8

SDG goals

9 12 15

Entity

Recycling Escolano S.L. (RECICLAUTO) in collaboration with Auto-desballestaments La Gleva, S.L., Desguaces Fontantet, S.L. and Desguaces y chatarras Pedrós, S.L.

Meritxell Barroso Saura (mbarroso@econia.net).

More information: www.reciclauto.com/

ReUtiliza

Menorca, Balearic Islands;
Moralzarzal, Community of Madrid.

Urban/Municipal

Scope of action and relevance of the Best Practices in CE

Measures that encourage the reuse of a product that is still in good condition and fulfils its original function (and is not a waste) for the same purpose for which it was conceived.

Objectives

1. Reuse the waste that is delivered to traditional civic amenity.
2. Increase recycling rates in the city and decrease waste going to landfill.
3. Encourage citizen participation and involve citizens through a scoring system for turning in and removing objects.
4. Inform about the environmental benefits through awareness campaigns.

Description

The ReUtiliza platform is a Ferrovial Services initiative to promote the circular economy through the exchange of objects deposited by users at the traditional civic amenity, preventing waste from ending up in landfills.

The platform works as follows: the user uploads a photo and a brief description of the object to be deposited and delivers it to one of the 16 traditional civic amenity in Madrid. If a user is interested in an object published in the system, they can reserve it and go to the clean point to pick it up. For each of the activities you perform, you will earn a number of points that can be used to purchase new products.

Key Results

Knowledge
Awareness
Cooperation

Waste

Sector

CE principles

1 2 4 5 6 7 8

SDG goals

Difficulties or challenges

- Harmonisation of legislation.
- Others. Data Protection Policy: one of the difficulties has been to comply with data protection legislation since the user must provide a series of personal data when registering.

Entity

Ferrovial Services.

David Pocero Málaga (dpocero@ferrovial.com).

More information: https://www.ferrovial.com/en-gb/

https://www.reviumenorca.es/
https://www.moralreutiliza.es/

Life Gain: steel aggregate for railway bedding layers

Castellbisbal, Barcelona, Catalonia 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.

Objectives

1. Create an ecological aggregate (with less environmental impact) for road construction.
2. Improve the performance of this new aggregate (more resistant to abrasion, erosion and chemical attacks), as well as giving it a longer service life and less need for maintenance.
3. Reduce the large volume of steel aggregates that are deposited in landfills.
4. Reduce environmental pressure on quarries.
5. Produce this new aggregate in valorisation plants close to blast furnaces and railway infrastructures to reduce their environmental footprint.

Description

Steel production generates large quantities of steelmaking aggregates which, despite new revaluation efforts, are still largely deposited in landfills. In order to avoid this, their application as aggregates in the construction of railways was studied. This solution is presented as an ecological alternative thanks to the reduction of the pressure of these remains in landfills, as well as the reduction of the need for natural aggregates, reducing the environmental impact produced by quarries. The production of this new material has been carried out in the vicinity of the furnaces, so that the ecological footprint linked to its transportation has also been reduced. In addition to these benefits, its application in a test section has demonstrated that the properties offered by this new material, in terms of strength and service life, are superior to those of conventional aggregates, so it has great potential.

CE principles

1 3 4 5 6 7

Sector F

Key Results

Cost savings
Revenue potential
Innovation

Employment
Knowledge
Awareness
Welfare
Sustainable development

Materials
Emissions
Energy
Waste

SDG goals

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE
12 RESPONSIBLE CONSUMPTION AND PRODUCTION
13 CLIMATE ACTION

Entity

COMSA Corporación de Infraestructuras S.L. in collaboration with ADEC Global S.L.

More information: https://www.comsa.com/en/

Reuse of demolition waste in the project of a housing development in Puerto de Santa María (Cádiz)

Puerto de Santa Maria, Cádiz, Andalusia

Urban/Municipal

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. Collect, sort and recover as efficiently as possible all waste generated in demolition.
2. Reintegrate the material treated on site as new raw material for urbanisation, avoiding its disposal.
3. Reduce the use of new natural quarry resources.
4. Generate the least possible impact on the population, minimising, at all times, dust and noise emissions during all processes.
5. Minimise the environmental impact, especially derived from CO_2 emissions from transport and waste recycling.

Description

The project consists of the reuse of material from the demolition of existing buildings for the execution of urbanisation works, so that there is no need for its transit or treatment in the plant as construction and demolition waste. Once it has been verified that there is no hazardous waste inside the buildings, they are mechanically demolished and the metallic elements are segregated for recovery.

The material obtained is crushed by a mobile jaw crusher and used as an embankment base in successive and levelled layers of uniform thickness, with similar granulometric characteristics. This process was tested both with the material obtained by crushing and with the finished unit, with satisfactory results in both cases.

Key Results

Cooperation

Materials
Waste

Sector

CE principles

2 3 5 6

SDG goals

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE
12 RESPONSIBLE CONSUMPTION AND PRODUCTION
13 CLIMATE ACTION

Difficulties or challenges

- Administrative burden.
- Quality problems.
- Others.

Entity

Acciona Construcción S.A. in collaboration with Acciona Inmobiliaria.
Roberto García Berruguilla (roberto.garcia.berruguilla@acciona.com).

More information: www.acciona.com

ECCAT- Remanufacture of contaminant retention systems

Lérida, Catalonia

Regional

Scope of action and relevance of the Best Practices in CE

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

Objectives

1. Perform advanced repair of catalytic converters and particulate filters that are currently disposed of as waste.
2. Introduce circular economy actions in the automotive repair shop sector.
3. Create a real circular market channel, involving the main generators of vehicle waste during their useful life (workshops) and at the end of their useful life (Authorized Treatment Centers or scrapyards).
4. Significantly increase the amount of contaminant retention systems that can be reused.
5. Reduce the amount of this waste generated in workshops and CATs.
6. Increase collaboration and knowledge transfer between sector agents.

Description

Thanks to the advanced repair of catalytic converters and particulate filters from end-of-life vehicles, the amount of these elements that can be recovered, repaired and reused has been considerably increased, thus reducing the waste generated by the automotive sector.

The project has been divided into 5 phases:

1. Initial diagnosis of the types of catalytic converters and particulate retention filters in the automotive sector and the existing repair technologies.
2. Testing of advanced repair systems.
3. Environmental, technical and economic feasibility analysis of advanced repair of catalytic converters and particulate filters; choose the most efficient technology.
4. Elaboration of a working protocol for the transfer of knowledge of all the actions described and developed throughout the project, which will be distributed to the sector of workshops and managers of end-of-life vehicles.
5. Dissemination of the project among different stakeholders in the sector.

Key Results

Income potential

Awareness Cooperation

Emissions Waste

Sector

CE principles

1 2 3 4 5 6 7 8

SDG goals

Difficulties or challenges

- Behavioural change/lack of awareness or cooperation.
- High initial investments.

Entity

Asistencias y Suministros Mecánicos, S.A. in collaboration with Inter-Lleida, Desguaces el choque Lleida and Econia Empresarial S.L.

Meritxell Barroso Saura (mbarroso@econia.net).

More information: www.asysum.com

https://econia.net/eccat-un-nuevo-proyecto-de-reparacion-avanzada-que-conecta-empresa-de-remanufactura-talleres-y-cat-a-traves-de-la-economia-circular/

https://www.asysum.com/eccat-extraccion-y-reparacion-faps/

https://econia.net/acaban-las-pruebas-de-regeneracion-de-sistemas-de-retencion-de-contaminantes-en-el-marco-del-proyecto-eccat/

Green CD and DVD Destruction, the alternative to landfilling

Madrid, Community of Madrid

Scope of action and relevance of the Best Practices in CE

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

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. Reintroduce waste into the system as new resources.
2. Seek an alternative to the traditional system that consisted of sending to landfill.
3. Manage production surpluses and discontinued products in a social and environmental manner.
4. Reduce the use of new natural resources.

Description

Green Destruction is a service offered to companies, producers and warehousing companies that have stock of audio-visual or graphic material that must be destroyed, either for copyright reasons, due to deficiencies or because it is unmarketable. This system replaces the traditional service of shredding and subsequent shipment to landfill or incineration, with the separation and recovery of 100 % of the basic components found in CDs or DVDs, which in some cases makes it possible to achieve positive prices for customers.

This project is carried out in collaboration with foundations for people with intellectual disabilities, which gives the company an important social component.

Key Results

Cost savings
Revenue potential

Equality

Waste

Sector

CE principles

1 2 3 6 7

SDG goals

10 REDUCED INEQUALITIES
12 RESPONSIBLE CONSUMPTION AND PRODUCTION
13 CLIMATE ACTION

Difficulties or challenges

- Cooperation with the authorities.
- Lack of circular regulation.
- Lack of incentives.
- Quantity problems.

Entity

EcoCuadrado, S.L. in collaboration with Granja San José, belonging to the Gil Gayarre Foundation.

More information: www.ecocuadrado.com/en

Strategy 6.25

Spain and Portugal

European Union

Scope of action and relevance of the Best Practices in CE

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

Measures to encourage behavioural change towards CE.

Objectives

1. Reduce the amount of virgin plastic in own-brand packaging by 25 %.
2. Make all plastic packaging recyclable.
3. Recycle all plastic waste generated by Mercadona supermarket.

Description

Strategy 6.25 is a strategy currently in place and with a five-year horizon, focused on reducing the packaging materials of Mercadona's brand products and increasing their recyclability. It is articulated through 3 objectives that are specified in 6 different actions to be achieved by 2025.

The 6 actions of the strategy seek to:

- Eliminate single-use plastic bags from the departments, replacing them with compostable bags (currently implemented throughout the chain).
- Eliminate single-use disposable products (currently implemented throughout the chain).
- Reduce plastic in packaging where it does not add value (through elimination, reduction, reuse or incorporation of recycled material).
- Encourage packaging to be recyclable.
- Recycle all in-store plastic waste and guarantee it a new life.
- Train and inform the customer on how to separate for recycling at home.

Key Results

Cost savings
Productivity
Innovation

Knowledge
Awareness
Well-being
Sustainable development

Materials
Emissions
Waste

Sector

CE principles

1 2 3 4 5 6 7 8

SDG goals

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE
12 RESPONSIBLE CONSUMPTION AND PRODUCTION
13 CLIMATE ACTION

Difficulties or challenges

- Harmonisation of legislation.
- Useful applications of recycled materials.
- Lack of circular infrastructure/technical or logistical barriers.

Entity

Mercadona S.A.

More information: www.mercadona.es

Too Good To Go App

Madrid, Community of Madrid

Global

Scope of action and relevance of the Best Practices in CE

Actions to promote consumption based on real needs (paying special attention to food, textiles and new technologies for domestic use) and aimed at waste prevention.

Measures that encourage the reuse of a product that is still in good condition and fulfils its original function (and is not a waste) for the same purpose for which it was conceived.

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

Objectives

1. Contribute in various ways to building a global movement against food waste.
2. Helping to dispose of surplus food in those businesses in the food chain and thus reduce food waste.

Description

Under the slogan #Lacomidanosetira, the Too Good To Go movement has materialised in a mobile app that allows restaurants, hotels, supermarkets, bakeries or greengrocers, among other establishments, to sell their daily food surplus, which users can buy in packs at a reduced price. By doing so, quality food in good condition is prevented from going to waste, and establishments and users react actively to food waste while helping to protect the environment.

Key Results

Cost savings
Productivity
Competitiveness
Revenue potential
Innovation

Knowledge
Awareness
Cooperation
Sustainable development

Materials
Emissions
Energy
Waste
Water
Biodiversity

Sector

CE principles

2 3 4 5 6 7 8

SDG goals

12 RESPONSIBLE CONSUMPTION AND PRODUCTION
13 CLIMATE ACTION
17 PARTNERSHIPS FOR THE GOALS

Difficulties or challenges

- Access to relevant information and applicable assessments.
- Cooperation with the authorities.
- Harmonisation of legislation.
- Lack of incentives.

Entity

Too Good To Go Spain in collaboration with establishments and producers.

Carlos García (prensa@toogoodtogo.es).

More information: https://toogoodtogo.org/en

Use of discarded goods

Sector

Madrid, Community of Madrid

National

Scope of action and relevance of the Best Practices in CE

Measures to reduce waste and extend the useful life of products or goods.

Objectives

1. Avoid food waste.
2. Avoid waste generation.
3. Generation of alliances for a common objective.
4. Strengthen the pride of belonging through transversal actions with a sustainable impact.

Description

Transfesa Logistics moves and stores all types of goods, including foodstuffs. On certain occasions, when these foods reach their final destination, they do not pass the commercial criteria and are discarded, automatically becoming waste.

But the fact that they do not meet commercial criteria does not mean that they are not perfectly valid for consumption, which is why these foods are given a second chance through food banks, non-profit associations, confessional centres, etc.

Key Results

Innovation

Awareness
Welfare
Cooperation
Sustainable development

Materials
Waste

CE principles

1 2 3 6 7

SDG goals

2 ZERO HUNGER
12 RESPONSIBLE CONSUMPTION AND PRODUCTION
17 PARTNERSHIPS FOR THE GOALS

Difficulties or challenges

- Absence of legal standards and definitions.
- Administrative burden.
- Lack of circular regulation.
- Behavioural change/lack of awareness or cooperation.

Entity

Transfesa Logistics.

More information: https://www.transfesa.com/en/home-en

DRS for car cleaning product containers

Madrid, Community of Madrid Regional

Scope of action and relevance of the Best Practices in CE

Measures that encourage the reuse of a product that is still in good condition and fulfils its original function (and is not a waste) for the same purpose for which it was conceived.

Initiatives that expand extended producer responsibility or the implementation of DRS (Deposit and Return System).

Objectives

1. Reduce the amount of hazardous waste generated during the activity.
2. Reduce consumption of raw materials in the production of new packaging.
3. Reduce the cost associated with the proper management of hazardous waste.
4. Reduce the carbon footprint associated with the production and transportation of packaging.
5. Reuse containers for the same purpose for which they were created.
6. Reformulate processes to make them more sustainable and in line with the circular economy.

Description

In line with the Transfesa Group's corporate environmental strategy, its subsidiary SEMAT carried out an exercise to integrate circular economy criteria in the redefinition of processes, finding an opportunity for improvement in the useful life of washing product containers. In this way, a Deposit and Return of Containers System (DRS) is proposed to the supplier and the system is explained to them. As a result, a win-win partnership is created in line with the circular economy by reducing the amount of hazardous packaging waste generated and the consumption of raw materials to produce new packaging. It also means cost savings both for SEMAT, by avoiding waste management, and for the supplier, by not having to purchase new packaging, and a reduction in the carbon footprint associated with the production, transport and management of the packaging.

Key Results

Cost savings

Cooperation
Sustainable development

Materials
Energy
Waste

Sector H

CE principles

3 6

SDG goals

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

17 PARTNERSHIPS FOR THE GOALS

Difficulties or challenges

- Absence of legal standards and definitions.
- Lack of circular regulation.
- Behavioural change/lack of awareness or cooperation.
- Recognition of by-products/secondary raw materials.
- Quality problems.

Entity

Semat

More information:

https://www.semat.es/semat_ingles/index

Cafestore versus food waste

Madrid, Community of Madrid

National

Scope of action and relevance of the Best Practices in CE

Measures that encourage the reuse of a product that is still in good condition and fulfils its original function (and is not a waste) for the same purpose for which it was conceived.

Promotion of short circuits and self-sufficiency in consumption (local economy).

Objectives

1. Reduce waste in centres, with the aim of combating food waste.
2. Change the trend of waste generation through better planning of merchandise purchases and processing.
3. Implement a user satisfaction control system to analyse user tastes and modify the offer based on the results.
4. Create an efficient management model for waste adjustment and reuse.

Description

In 2019, the need arose to quantify the food waste generated by Cafestore in order to set targets for its reduction. Priorities were defined according to the impact they could have and, based on this, the following actions were established:

a) Revaluation of wastage through sale at a symbolic cost, reuse of products suitable for consumption in other preparations and revision of the recipe book, including the creation of recipes based on the reuse of preparations with maximum health guarantees.

b) Inclusion of criteria in the selection of local suppliers to reduce the carbon footprint.

c) Optimisation of the use of natural resources and equipment, through the revision of menu planning, promoting their common use.

Key Results

Cost savings

Awareness

Emissions
Waste

Sector

CE principles

1 2 3 5 7

SDG goals

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

Difficulties or challenges

- Absence of legal standards and definitions.
- Administrative burden.
- Cooperation with the authorities.
- Behavioural change/lack of awareness or cooperation.
- Quantity problems.

Entity

Cafestore SAU-Grupo Sacyr in collaboration with Compañía Too Good To Go.

More information:

https://www.sacyrservicios.com/en/cafestore

Eco Rating

In 24 European countries

International

Scope of action and relevance of the Best Practices in CE

Voluntary certifications, eco-labels and Environmental Product Declarations (EPD) focused on Life Cycle Assessment (LCA), eco-design or energy efficiency, allowing consumers to take responsibility in the circular transition.

Design of products and goods with the aim of increasing their life cycle, greater use of their components and reducing or counteracting premature obsolescence and single-use products.

Promoting the consumption of goods, products or services with environmental and social information systems that provide transparency in order to provide consumers with information related to environmental characteristics and social criteria for making better informed consumption decisions.

Objectives

1. Encourage manufacturers to reduce the environmental impact of their devices.
2. Improve transparency and provide robust and accurate information on the environmental impact of mobile phones in relation to their production, use, transport and disposal.
3. Help raise awareness of the environmental impact of the phones people choose.

Description

Based on information provided by mobile device manufacturers, the Eco Rating methodology evaluates the environmental performance of cell phones throughout their life cycle: production, transport, use and end-of-life disposal.

The evaluation is performed by combining 13 different environmental indicators and 6 material efficiency criteria, resulting in a unique score for each device. It provides information in five key areas: durability, repairability, recyclability, climate efficiency and resource efficiency.

Key Results

Competitiveness
Innovation

Knowledge
Awareness
Cooperation
Sustainable development

Materials
Waste

CE principles

1 4 5 6 7 8

SDG goals

Difficulties or challenges

- Access to relevant information and applicable assessments.
- Absence of legal standards and definitions.
- Administrative burden.
- Harmonisation of legislation.

Entity

Telefónica in collaboration with Deutsche Telekom, Orange, Telia Company, Vodafone and IHOBE.

More information: www.telefonica.com/en/

The repair shop SGRE

Navarre

Global

Scope of action and relevance of the Best Practices in CE

Design in waste prevention: that are easier to reuse, repair, upgrade, remanufacture, increase their readiness for recycling and facilitate the recovery of secondary raw materials (including the dismantling of the various materials contained in those products) and high-quality recyclability or composting rate.

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

Objectives

1. Repair and/or upgrade electrical components and minor components of the wind turbine nacelle in order to extend their useful life and give them a second chance of use.
2. Minimise waste generation by recovering and reusing nacelle components that are in good condition or can be repaired.
3. Reduction of impacts in the manufacture of a new product, with lower consumption of raw materials, energy consumption and generation of emissions.

Description

This initiative focuses on repairing and upgrading nacelle components so that they can be reused in wind turbines, giving them a second useful life. The refurbished nacelles minimise waste generation. In addition, this avoids the production of new nacelles, which avoids the consumption of raw materials, energy consumption and the generation of CO_2 emissions during the production processes.

Key Results

Productivity
Competitiveness

Employment
Knowledge
Sustainable development

Materials
Emissions
Energy

Sector

CE principles

3 5 6

SDG goals

7 12 13

Difficulties or challenges

- Access to relevant information and applicable assessments.
- Lack of circular infrastructure/technical or logistical barriers.
- Lack of incentives.
- Time-consuming processes.
- Organisational structures.

Entity

Siemens Gamesa Renewable Energy, S.A. in collaboration with wind farm operators.

More information: www.siemensgamesa.com

Promoting water recirculation at the Puertollano industrial complex

Puertollano, Ciudad Real, Castille-La Mancha Local/Regional

Scope of action and relevance of the Best Practices in CE

Processes that reduce its water footprint and involve the reuse of wastewater (the reduction of water consumption or water efficiency is not considered as BPCE).

Actions for water reuse in industrial processes.

Objectives

1. Increase water recirculation, minimise freshwater intake and improve discharge quality.
2. Improve water footprint.
3. Minimise environmental footprint and impacts on ecosystems and biodiversity.

Description

A water treatment plant has been developed, specifically for the secondary effluent of the industrial wastewater treatment plant (IWWTP) using micro-sand filters (Veolia's Actiflo Technology). This has resulted in a 23 % increase in water recirculation, a reduction in freshwater withdrawal and an improvement in the quality of discharged water, thus improving the water footprint. This process, which is introduced in the last phase of the treatment plant (WTP), consists of applying this technology to clarify the water by means of ballasted settling with micro-sand as a precursor for the formation of heavy floccules that are easier to settle. In this way, the quality of the discharged water is improved with a suspended solids removal efficiency of 60 %

Key Results

Expansion
Innovation
Other

Awareness
Sustainable development

Water
Biodiversity

Sector

CE principles

1 3 4 5 6

SDG goals

Difficulties or challenges

- Lack of incentives.
- High initial investments.
- Low return on investment.

Entity

Repsol, S.A. in collaboration with Veolia.
Fernando Ruiz Fernández (repsolsma@repsol.com).

More information:

https://www.repsol.com/en/index.cshtml

Material valorisation of plastics waste recovered from the sea

Paterna, Valencian Community

National

Scope of action and relevance of the Best Practices in CE

Separate collection of textiles, waste electrical and electronic equipment (WEEE), plastics, construction and demolition waste, tires, etc.

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

Objectives

1. Reduce the amount of garbage present in the sea in the project area.
2. Increase technical knowledge regarding the waste extracted from the sea.
3. Identify, demonstrate and evaluate the possibilities for the valorisation of plastic waste.
4. Study the ecotoxicological impact of marine debris.
5. Transfer the methodology to other coastlines.
6. Disseminate the results of the project.

Description

The work plan for the development of the project consists of several phases: creation of a working group, collection of marine debris, waste characterisation, analysis of the characterised waste, transfer of results and dissemination of the project.

Once the plastic waste has been collected from the sea and characterised, it will be analysed to estimate the possibilities for its valorisation, mainly to obtain recycled materials for different applications. Finally, an analysis will be made of the patterns, most frequent objects, their ecotoxicity and whether there are differences between different dates or fishing gear.

Key Results

Innovation

Knowledge
Awareness
Well-being
Sustainable development

Materials
Waste
Biodiversity

Sector

CE principles

3 4 6

SDG goals

14 LIFE BELOW WATER

Difficulties or challenges

- Absence of legal standards and definitions.
- Behavioural change/lack of awareness or cooperation.
- Lack of circular infrastructure/technical or logistical barriers.
- Lack of incentives.
- Quality problems.

Entity

Asociación de Investigación de Materiales Plásticos y Conexas (AIMPLAS) in collaboration with Asociación Vertidos Cero, Cofradía de Pescadores de Gandía, Cofradía de Pescadores de la Restinga, Fundación Valenciaport, Puerto de Marín and Universidad de Vigo, Fundación Global Nature, Fundación Biodiversidad.

Sergio Giménez Bueno (info@aimplas.es).

More information: www.aimplas.es

https://www.youtube.com/watch?v=l4IsNo0O4s8

https://www.programapleamar.es/proyectos/repescaplas-valorizacion-material-de-residuos-plasticos-recuperados-del-mar-1

https://www.programapleamar.es/proyectos/repescaplas2-valoracion-material-de-residuos-plasticos-recuperados-del-mar-protocolo-de

https://www.programapleamar.es/proyectos/repescaplas-3-valorizacion-material-de-residuos-plasticos-recuperados-del-mar-protocolo-de

Turn used oil into soap

Majadahonda, Community of Madrid International

Sector

Scope of action and relevance of the Best Practices in CE

Design in waste prevention: that are easier to reuse, repair, upgrade, remanufacture, increase their readiness for recycling and facilitate the recovery of secondary raw materials (including the dismantling of the various materials contained in those products) and high-quality recyclability or composting rate.

Actions to promote consumption based on real needs (paying special attention to food, textiles and new technologies for domestic use) and aimed at waste prevention.

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. Minimise the impact of used oil in seas, rivers, sewage treatment plants and pipelines.
2. Give a second life to a highly polluting waste, transforming it into a useful and environmentally friendly product.
3. Recycle used cooking oil, reuse it as an ecological and multipurpose detergent, reduce the impact of waste oil, common detergents and traditional packaging.
4. Close a cycle of sustainability, without the need for transportation and high handling or energy costs.

Description

SOUJI is a 100 % Spanish liquid based on minerals and vegetables, which when mixed and shaken with used cooking oil transforms in just 1 minute into an ecological, multipurpose detergent with a pleasant aroma. No caustic soda or handling risks. The idea is to offer an alternative for the management and reuse of this waste, and to implement a circular model from the origin of the waste.

Key Results

Cost savings
Productivity
Revenue potential
Innovation

Employment
Knowledge
Awareness
Equality
Sustainable development

Materials
Emissions
Energy
Waste
Water

CE principles

1 2 3 4 5 6 7 8

SDG goals

6 CLEAN WATER AND SANITATION
11 SUSTAINABLE CITIES AND COMMUNITIES
12 RESPONSIBLE CONSUMPTION AND PRODUCTION

Difficulties or challenges

- Administrative burden.
- Cooperation with the authorities.
- Lack of circular regulation.
- Behavioural change/lack of awareness or cooperation.
- Access to financing.

Entity

Samsarapps S.L. (SOUJI) in collaboration with Ramón Llul University of Barcelona, IQS.

Catalina Trujillo Villa (catalina@souji.es).

More information: www.souji.es

Tools to promote recyclability and packaging eco-design

Zaragoza, Aragon

International

Sector

circpack

FROM WASTE TO RESOURCE

Scope of action and relevance of the Best Practices in CE

Development and implementation of tools to enable the transition to CE and its dissemination.

Objectives

1. Provide clear information on how to improve the recyclability of plastic and cardboard packaging.
2. Present the basic principles of eco-design applied to packaging.
3. Improve the environmental performance of the packaging value chain.

Description

This is the launch of an online tool that allows designers and/or producers of packaging (plastic and cardboard) to evaluate the recyclability and circular economy indicators of their products. The tool is free and provides advice on how to improve by applying eco-design actions.

Key Results

Competitiveness
Innovation

Knowledge
Awareness
Equality
Sustainable development

Waste

CE principles

2 4

SDG goals

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

17 PARTNERSHIPS FOR THE GOALS

Difficulties or challenges

- Absence of legal standards and definitions.
- Lack of circular regulation.

Entity

Centre for Research on Energy Resources and Consumption (CIRCE).

Sara Zarazaga Navarro (szarazaga@fcirce.es).

More information: www.fcirce.es

https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/horizon-results-platform/23373

https://www.youtube.com/watch?v=fis5iMczkSk&t=8s

Circular campus

Madrid, Community of Madrid

National

Sector

Scope of action and relevance of the Best Practices in CE

Design and manufacture of sustainable products and goods, incorporating eco-design criteria to increase their durability, resilience, efficiency, functionality and upgradeability, reparability and recyclability.

Objectives

1. Promote training and knowledge in the field of packaging circularity.
2. Encourage companies to move beyond recycling by offering them relevant information, technical and strategic training and a space for networking and participation to share ideas and initiatives that can help other companies.

Description

The Circular Campus is a space for knowledge and training in the circular economy to promote the sustainability and circularity of the packaging of the companies that make up the organisation. It helps companies in their transition to the circular economy through knowledge, innovation and networking among them to foster the generation of initiatives that promote sustainability by achieving the circularity of packaging.

Key Results

Cost savings
Competitiveness
Innovation

Knowledge
Awareness
Cooperation
Sustainable development

Materials
Emissions
Energy
Waste
Water

CE principles

1 2 3 4 5 6

SDG goals

Difficulties or challenges

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

Entity

Ecoembalajes España, S.A.

More information: www.ecoembes.com

www.ecoembesthecircularcampus.com

www.ecoembes.com/es/empresas/como-podemos-ayudarte/thecircularcampus

Batuecas - rural laboratory of circular economy

La Alberca, Salamanca, Castilla y Leon Rural

Scope of action and relevance of the Best Practices in CE

Substitution of materials from non-renewable sources with raw materials of biological origin that are reusable, recyclable or compostable.

Promotion of short circuits and self-sufficiency in consumption (local economy).

Measures to repair/remodel: repair and maintenance of defective or old products so that they can be used for their original function (maintaining the quality level).

Objectives

1. Create spaces for entrepreneurship in circular economy in a rural environment.
2. Promote circular economy entrepreneurship.
3. Facilitate entrepreneurs' access to new technologies and a collaborative workspace.
4. Offer circular economy training to entrepreneurs and promote networking activities.

Description

In the Batuecas-Sierra de Francia Natural Park House, a circular economy laboratory has been created based on the collaborative economy and shared equipment and the development of a rural ecosystem of circular entrepreneurship focused on the repair of products, the fight against food waste and the recovery and enhancement of local rural products (food, natural textile fabrics, etc.).

For this purpose, a 3D printing repair workshop, a food workshop for the transformation of food surpluses and a textile workshop for the recovery and transformation of local natural fibres have been installed.

The laboratory is a space for collaborative entrepreneurship, generating synergies between users and facilitating common learning and the development of new circular economic activities. In addition, specific training courses are developed in each of the laboratory areas.

Key Results

Cost savings
Productivity
Income potential

Employment
Awareness
Sustainable development

Materials
Waste
Biodiversity

Sector

CE principles

1 2 6 7

SDG goals

4 QUALITY EDUCATION
8 DECENT WORK AND ECONOMIC GROWTH
12 RESPONSIBLE CONSUMPTION AND PRODUCTION

Difficulties or challenges

- Administrative burden.
- Lack of circular regulation.
- Organisational structures.

Entity

Fundación Patrimonio Natural de Castilla y León in collaboration with Escuela de Organización Industrial (EOI), Diputación de Ávila, Ayuntamiento de Valladolid, Universidad de Salamanca (USAL), MAIEUTICA - Cooperativa de Enseñanza Superior (ISMAI), Instituto Politécnico de Bragança (IPB), Instituto Ourensano de Desarrollo Económico (INORDE), Asociación para el desarrollo y la innovación tecnológica (ADITEC), Municipality of Montalegre, Fundación Paideia Galiza.

Jesús Díez Vázquez (jesus.diez@patrimonionatural.org).

More information: www.patrimonionatural.org

https://patrimonionatural.org/proyectos/interreg-circularlabs
https://marketplace.circularlabstoolkit.eu/node/117

Product environmental footprint calculation tool

Madrid, Community of Madrid

National

Scope of action and relevance of the Best Practices in CE

Measures that provide transparency of information on goods, products (as well as each of their component parts) or services based on Life Cycle Assessment (LCA).

Objectives

1. Familiarise companies in the mineral water sector with the new methodology for calculating the product environmental footprint (PEF).
2. Practical application of the product category rules of the product environmental footprint for bottled water.
3. Quantify the environmental impact of a product and its variation according to the changes introduced in the different phases of production and distribution.

Description

The Spanish Mineral Water Association and Ihobe have developed a simplified product environmental footprint calculation tool based on the European Commission's PEF methodology and the Product Category Rules for bottled water. This tool for internal use and confidentiality, programmed in Excel, allows Spanish bottlers to quickly estimate the impact of the entire bottled water life cycle, facilitating the preparation of the corresponding inventory and the main results. The calculation is made for a type of packaging, format and marketing channel. From the results, possible process improvements can be identified and a first assessment of their impact on the environmental impact can be made.

Key Results

Cost savings
Productivity
Innovation

Awareness
Sustainable development

Materials
Emissions
Energy
Waste
Water

Sector

CE principles

2 3 5

SDG goals

Difficulties or challenges

- Access to relevant information and applicable assessments.
- Time-consuming processes.

Entity

Asociación de Aguas Minerales de España (ANEABE) in collaboration with Ihobe, Sociedad Pública de Gestión Ambiental del Gobierno Vasco.

More information: www.aneabe.com

II Catalogue of Best Practices in Circular Economy (CBPCE)