

December 2021. Sector snapshot

# Circular economy

in Catalonia

## Circular economy in Catalonia | Sector snapshot

### ACCIÓ

Regional Government of Catalonia (Generalitat de Catalunya)



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### Execution

ACCIÓ Strategic and Competitive Intelligence Unit

Barcelona, December 2021

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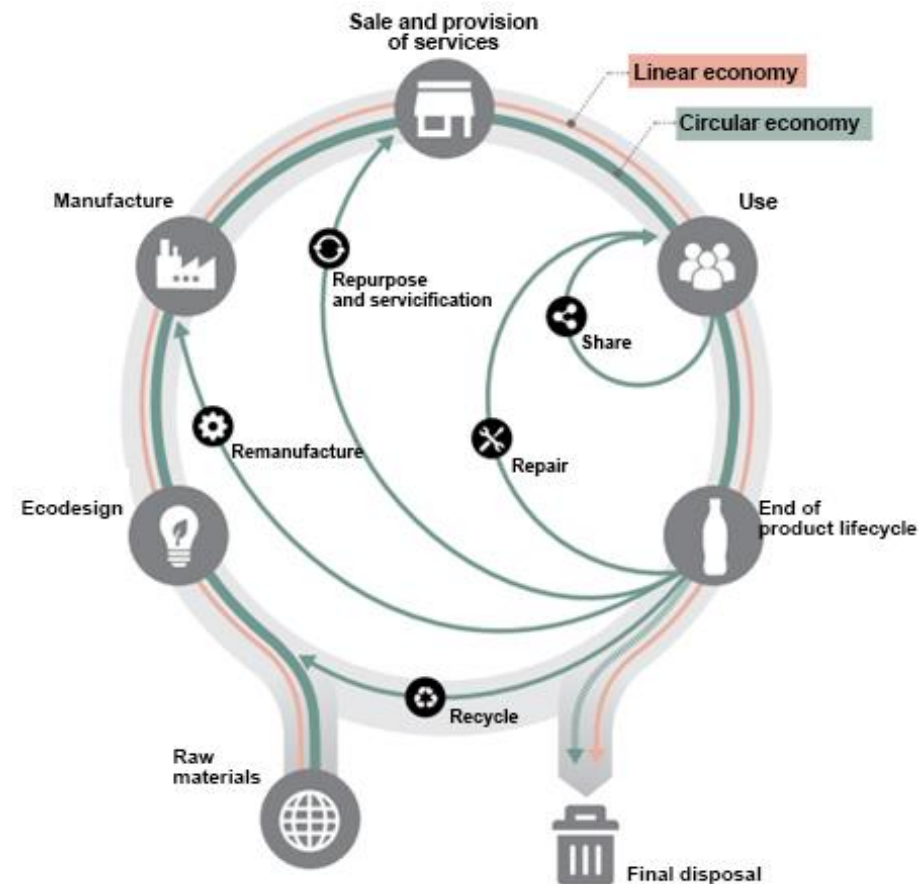
Circular economy in Catalonia | Sector snapshot

# 1. The scope of the circular economy

## Definition of the circular economy

“A circular economy aims to maintain the value of products, materials and resources for as long as possible by returning them into the product cycle at the end of their use, while minimising the generation of waste. The fewer products we discard, the less materials we extract, the better for our environment.

This process starts at the very beginning of a product’s lifecycle: smart product design and production processes can help save resources, avoid inefficient waste management and create new business opportunities”.



Source: Observatori de l’Economia Circular a Catalunya and European Commission Circular Economy Website.

## Changes in the scope of the circular economy

Social changes



Changes in the demand for circular economy solutions



Regulatory changes and support programme



Changes in the industry offering circular economy solutions



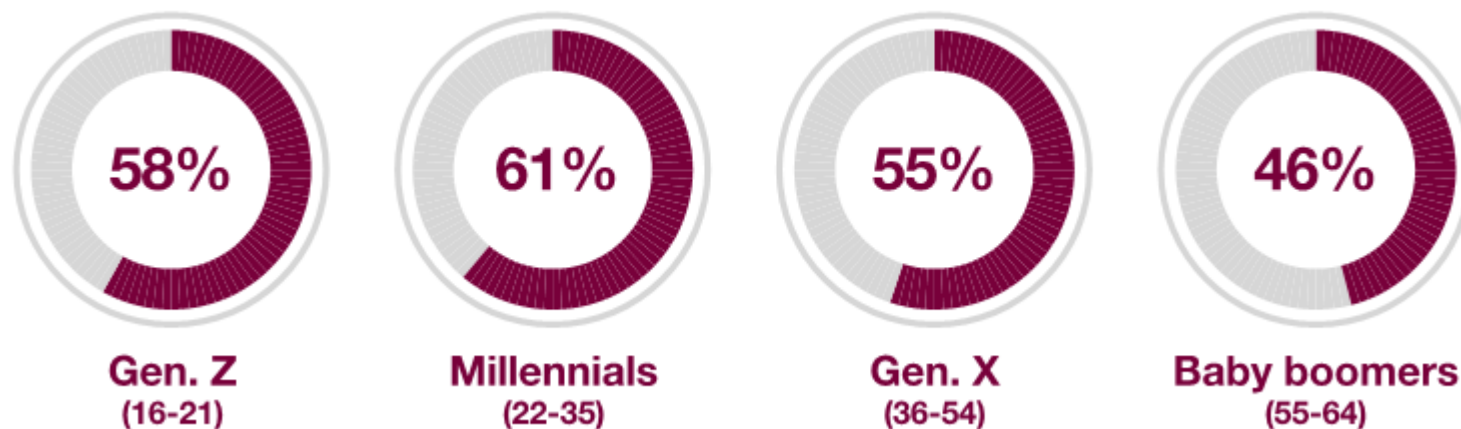
## Changes in the scope of the circular economy: social changes

The circular economy is an increasingly familiar phrase for greater environmental awareness

- Over 40% of consumers are concerned about environmental issues
- More than 70% of consumers who are concerned about the environment actively research
- Environmental problems become the center of debate, especially in the younger population



% who would agree to pay more for eco-friendly products



Source: GlobalWeb Index, 2018.

## Changes in the scope of the circular economy: social changes

Currently, only **8.6%** of the world is circular

- It is difficult to put a number to and define data on the global circular economy, but entities and organizations that focus on the circular economy have defined series of indicators to monitor its evolution.
- A study of The Circle Economy put the global economy at a degree of circularity of 8.6%, with differences being observed among countries according to the degree of development and economic growth.
- The challenge focuses on countries with greater economic development and, therefore, with a greater need for the use of resources, whether they be energy, organic or material.



Source: *The Circle Economy, Circularity Gap Report 2021.*



# Changes in the scope of the circular economy: regulatory changes and support programs (I)

## Internationals actions

European Commission Strategy



6 priorities 2019-2024

Two priorities facilitate the circular economy.

The commission's priorities include the European Recovery Plan

Research and development



## Changes in the scope of the circular economy: regulatory changes and support programs (I)

### Local actions

Spanish strategy for the circular economy (*España Circular 2030*).



Circular Catalonia, a hub for innovation and a meeting point for companies and institutions providing solutions and strategies to consolidate the circular economy in Catalonia.



The Government of Catalonia's strategy to boost the green and circular economy.



Barometer of circular economy in Catalan companies 2020.



R&D centers in Circular Economy projects: aid for circular economy projects, specifically in the field of waste. Developed via a joint collaboration between the *Catalan Waste Agency (ARC)* and *ACCIÓ*.



## Changes in the scope of the circular economy: Changes in the demand for circular economy solutions

- Growth of circular economy projects, although the most innovative are still pilots, testing and observation of consumer reaction.
- Driving role of large companies.
- Companies can develop their own solutions for the circular economy through innovation and relationships with the chain of suppliers.



More and more companies are promoting projects for the circular economy

**INDITEX**

Each chain includes large companies that act as driving forces internationally, as in the case of fashion.

**NEXTGEN  
CONSORTIUM**

In some cases, this takes place by collaborating with other companies and with partners in the chain.

Font: <https://www.closedlooppartners.com/nextgen/about/>

## Changes in the scope of the circular economy: Changes in the industry offering circular economy solutions

- Companies are expanding services and offering different solutions. They seek to hybridise with other categories of solutions to respond to a more comprehensive strategy.
- Growing trend towards market concentration and polarisation between large companies that dominate the market (in materials, waste, etc.) and small, specialist companies (especially start-ups).
- Funding is a key challenge and new players are coming forward to develop it.
- Collaboration with demand, with companies of other types of solution, etc. Critical for working in areas of innovation and for developing new markets (and gaining a foothold in relation to the major players in demand).
- Entry of new players in the energy, waste, materials industry, etc. by the demand, companies from other sectors, etc.



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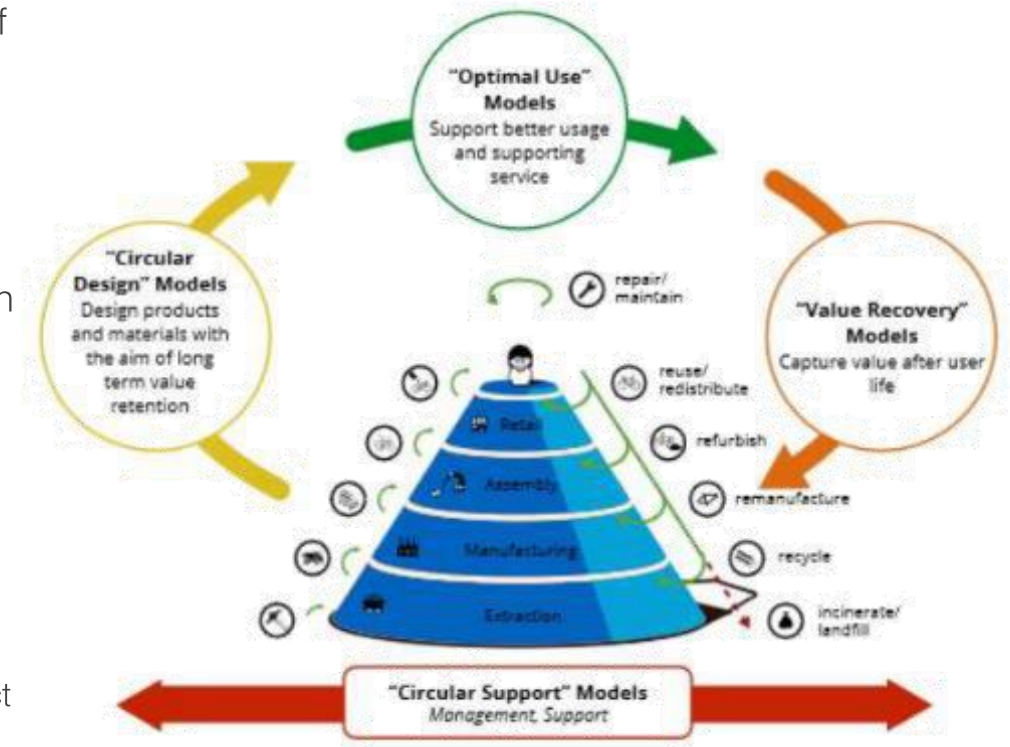
## 2. The scope of the circular economy in Catalonia

## Definition of the scope of the circular economy in Catalonia

- We can approach the circular economy in Catalonia from the perspective of supply:

Companies offering solutions to develop or facilitate the switch by other industries to circularity.

- This is, therefore, the scope of the circular economy in Catalonia, considering the different aspects or areas with which it can be developed, in addition to the models worked on by experts in circular economy (9R, new categorization by the European Commission, publications by the Ellen MacArthur Foundation, etc.):
  - Rethinking and redesigning the business model, products and processes (circular design).
  - Extending the lifecycle of an asset (optimization of use).
  - Recovering the greatest value possible once the asset or the product reaches its end (value recovery).



Source: European Commission, Categorization system for the circular economy.

## Scope for the mapping of the circular economy

Scope for the mapping of the circular economy

### SUPPLY COMPANIES

Empreses que ofereixen solucions perquè altres empreses implementin un model circular (B2B).

Circular design (product and process)

Optimisation of use

Recovery

### DEMAND COMPANIES

Companies demanding solutions to implement a circular model in their organisations.

### SECTORS



## The scope of the circular economy in Catalonia

### Circular design

Solutions to change resources and processes used to develop, make and sell a product and service, and the design of the products or services offered by companies for a lower environmental impact (ecodesign, secondary raw materials, renewable energies, etc.).

### Optimisation of use

Solutions to extend the lifecycle of a product or asset through product and asset repurposing, repair or remanufacturing services, or new models for the servicification of assets of equipment goods (repurposed equipment or products, new rental services, or servicification of equipment goods that were previously purchased, etc.).

### Value recovery

Solutions to recover the value of a product or material at the end of its lifecycle, such as the recovery of waste or energy, and all ancillary companies that provide equipment, technologies and services to implement these solutions.



## The scope of the circular economy in Catalonia

### ECOSYSTEM

Universities, business schools, and other training initiatives / Public policies and development instruments / Regional initiatives / RIS3CAT Communities / Technology centres and research groups / Technological platforms / Associations and foundations / Clusters / Business organisations / Trade Fairs

### SUPPLY COMPANIES

#### Circular design

Consulting and/or engineering to redefine the business and/or the specific products or services related to the circular economy / Suppliers of renewable energies and technologies, related systems or installations / Other resource consumption minimisation technology companies / Materials and products for the circular economy > Suppliers of new materials that can be repurposed and recycled > Suppliers of secondary raw materials and by products > Suppliers of products for the circular economy made using secondary raw materials.

#### Optimisation of use

Repair and preparation for repurposing or remanufacturing of products and assets / Servicification and technologies for the optimisation of use.

#### Value recovery

Recycling and material recovery / Energy recovery / Consulting and engineering for recovery solutions or for the reuse of water / Technologies, equipment and installations for the recovery of material or the reuse of water.

### DEMAND COMPANIES

#### Sectors

Agrifood

Automotive

Clothing and fashion

Construction

Tourism

Chemistry and plastic

Other sectors

## The scope of the circular economy in Catalonia

### ECOSYSTEM

Universities, business schools, and other training initiatives / Public policies and development instruments / Regional initiatives / RIS3CAT Communities / Technology centres and research groups / Technological platforms / Associations and foundations / Clusters / Business organisations / Trade Fairs

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### DEMAND COMPANIES

#### Sectors

Agrifood

Automotive

Clothing and fashion

Construction

Tourism

Chemistry and plastic

Other sectors

## Size of the companies offering B2B solutions for the circular economy in Catalonia



626

Companies



€11,014 M

Turnover



32,856

People  
employed

**60%** of the companies have a relevant technological component

**9%** of the companies offer knowledge-based services

*Note: turnover and people employed, estimation in circular economy. Data from 2019*

*Source: Cluster Development, based on existing data, analysis of start-ups, related activity codes and information from interviews, based on the information available at SABI Online and estimate of the % turnover and number of employees from circular economy solutions.*

## Key data of the companies offering B2B solutions for the circular economy in Catalonia

### 626 Companies

#### Type of business



- 93% of the companies are SMEs (less than 250 employees).
- 78% of the companies were established over 10 years ago.
- In comparison to 2017, there are 60% more companies offering solutions for the circular economy.

#### People employed



- 32,856 employees within the scope of the circular economy.
- This represents 30% of all employees in the companies identified.
- The number of people employed has grown at an annual average rate of 7.37% since 2015.

#### Turnover



- €11,014 M estimated turnover from solutions for the circular economy.
- This accounts for 30% of the combined total turnover of the companies identified.
- It represents 4.6% of the total Catalan GDP.
- Total turnover of the companies identified has grown since 2015 at an annual average of 3.58%.

#### Regional distribution



- More than 71% of the companies have their headquarters in municipalities of Barcelona.
- Almost 10% of the company headquarters are located in Girona, whereas the provinces of Lleida and Tarragona account for 7% and 4% of the companies, respectively.
- 7% of the companies identified do not have headquarters in Catalonia but a relevant part of their business is located here.

Source: Cluster Development, based on existing data, analysis of start-ups, related activity codes and information from interviews, based on the information available at SABI Online and estimate of the % turnover and number of employees from circular economy solutions.

	Number of companies	Turnover 2019 Circular economy (€M)	People employed Circular economy 2019
<b>Circular design (product and process)</b>	<b>263 (42%)</b>	<b>8,136 (74%)</b>	<b>6,609 (20%)</b>
Consulting to redefine the business and/or specific products or services related to the Circular economy.	28	28	408
Materials and products for the circular economy.	104	3,405	4,369
• <i>New materials</i>	13	126	154
• <i>Secondary raw materials and byproducts</i>	37	2,659	2,310
• <i>Circular economy made using SRM</i>	54	620	1,905
Suppliers of renewable energies and related technologies, systems or installations.	110	4,607	1,442
Other resource consumption minimisation Technology companies.	21	95	388
<b>Optimisation of use</b>	<b>43 (7%)</b>	<b>114 (1%)</b>	<b>883 (3%)</b>
Repair and preparation for repurposing or remanufacturing of products and assets.	31	71	547
Servicification and technologies for the optimisation of use.	12	43	336
<b>Value recovery</b>	<b>320 (51%)</b>	<b>2,764 (25%)</b>	<b>25,365 (77%)</b>
Recycling and material recovery.	226	2,377	23,180
Energy recovery.	12	26	103
Technologies, equipment and installations for the recovery of material or the reuse of water.	65	392	2,009
Consulting and engineering for recovery solutions or for the reuse of water.	17	9	72
	<b>626</b>	<b>11,014 (€M)</b>	<b>32,856</b>
	Number of companies	Circular economy	People employed

Source: Cluster Development, based on existing data, analysis of start-ups, related activity codes and information from interviews, based on the information available at SABI Online and estimate of the % turnover and number of employees from circular economy solutions.

# Circular design (product and process)

Consulting to redefine the business and/or the specific products or services related to the circular economy



# Materials and products for the circular economy



Note: the companies shown are given merely by way of an example of each category.

Circular design (product and process)

Suppliers of renewable energies and related technologies, systems or installations



Other resource consumption minimisation technology companies



Note: the companies shown are given merely by way of an example of each category.

## Optimisation of use

### Repair and preparation for repurposing or remanufacturing of products and assets



### Servicification and technologies for the optimisation of use



Note: the companies shown are given merely by way of an example of each category.



# Value recovery

## Recycling and material recovery



## Energy recovery



Note: the companies shown are given merely by way of an example of each category.

## Value recovery

Technologies, equipment and installations for the recovery of material or the reuse of water



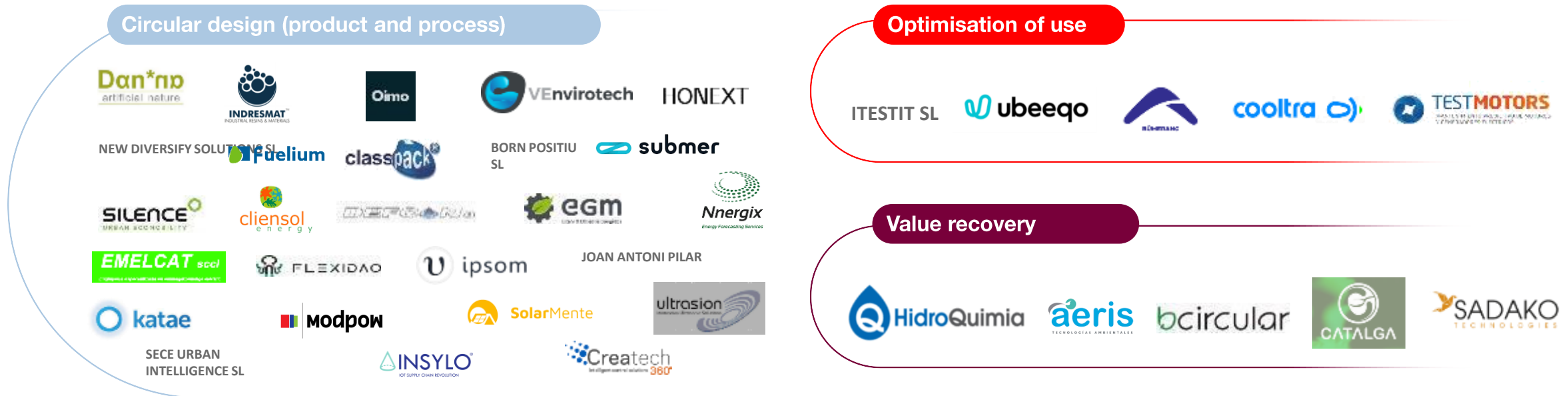
Consulting and engineering for recovery solutions or for the reuse of water



Note: the companies shown are given merely by way of an example of each category.

## Start-ups that offer solutions for the circular economy in Catalonia

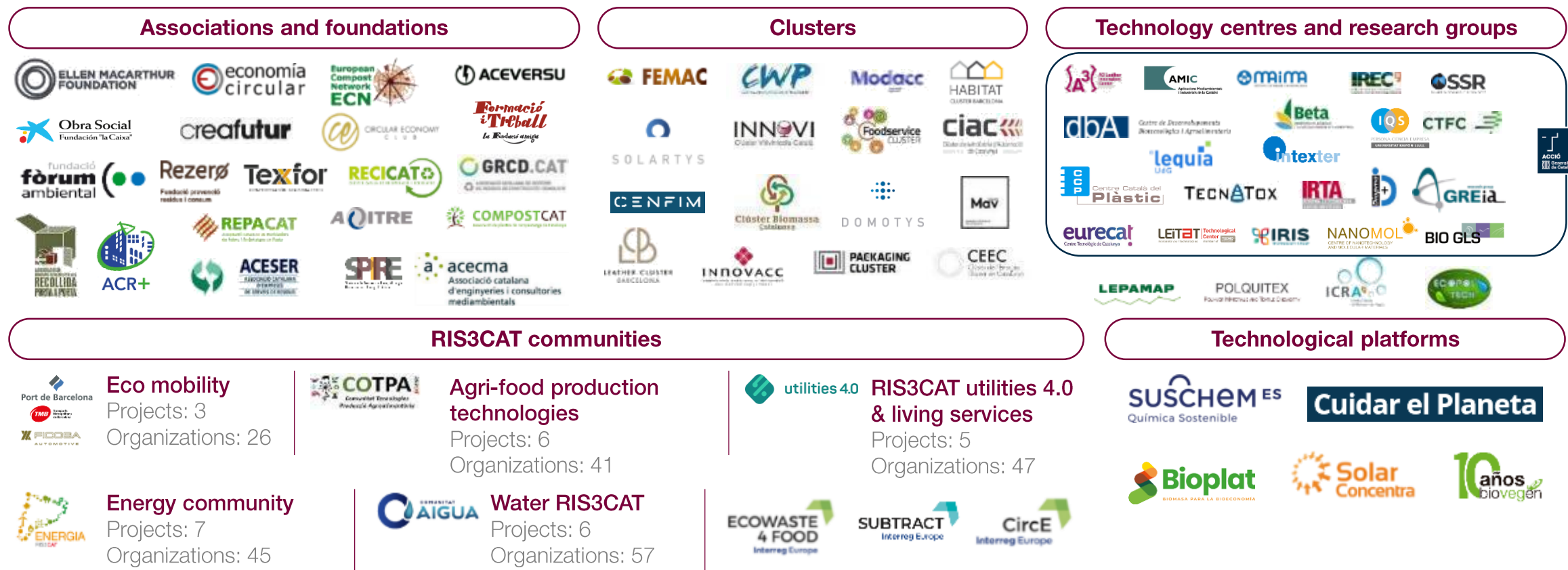
- 38 start-ups with activities relating to company solutions for the circular economy have been identified.
- 75% of the start-ups are linked to solutions for rethinking and redesigning products and processes. Suppliers of technologies for the implementation of renewable energy systems, the minimisation of energy and water consumption, and new materials must be highlighted.



Source: ACCIÓ, based on star-up hub data.



## The ecosystem of the circular economy in Catalonia (II)



Source: ACCIÓ.

## The scope of the circular economy in Catalonia

### ECOSYSTEM

Universities, business schools, and other training initiatives / Public policies and development instruments / Regional initiatives / RIS3CAT Communities / Technology centres and research groups / Technological platforms / Associations and foundations / Clusters / Business organisations / Trade Fairs

### SUPPLY COMPANIES

#### Circular design

Consulting and/or engineering to redefine the business and/or the specific products or services related to the circular economy / Suppliers of renewable energies and technologies, related systems or installations / Other resource consumption minimisation technology companies / Materials and products for the circular economy > Suppliers of new materials that can be repurposed and recycled > Suppliers of secondary raw materials and by products > Suppliers of products for the circular economy made using secondary raw materials.

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### DEMAND COMPANIES

#### Sectors

Agrifood

Automotive

Clothing and fashion

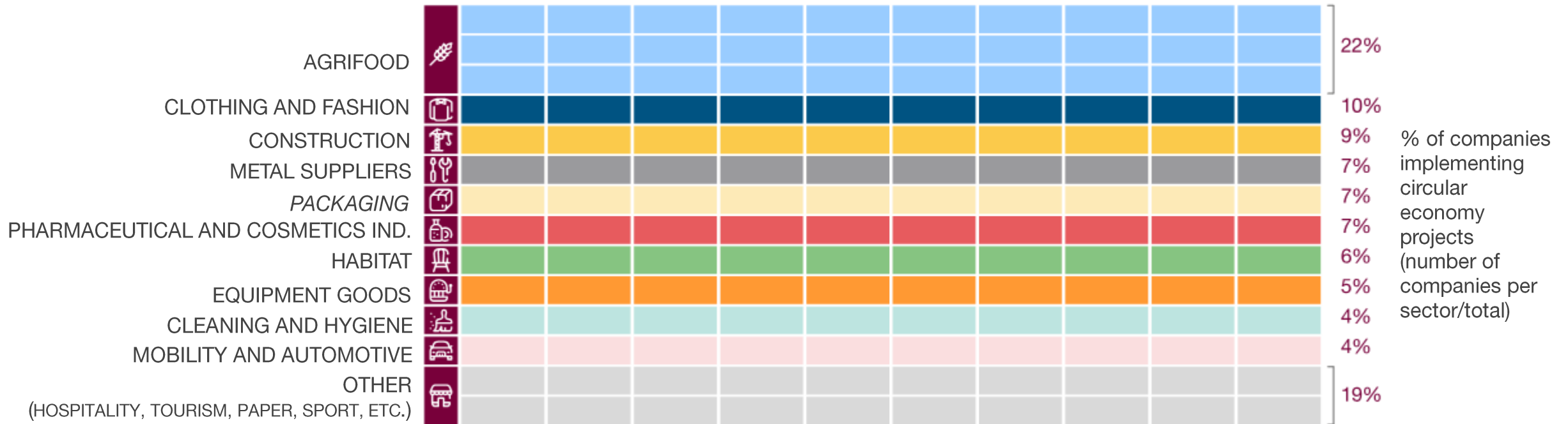
Construction

Tourism

Chemistry and plastic

Other sectors

## Agrifood, clothing and fashion, and construction, the sectors with most companies involved in circular economy projects



NOTE: there is currently no data on the degree of implementation of the circular economy in the different value chains in Catalonia. Therefore, the analysis cannot be considered an exhaustive study of all the projects and initiatives that exist in Catalonia, although it can be used as a reference for consideration.

Source: Cluster Development, based on the analysis of projects implemented within the aid programme to develop the circular economy and the programme for the prevention of and preparation for the repurposing of waste by the Catalan Waste Agency in 2017, 2018 and 2019, as well as the catalogue of circular economy solutions produced by ACCIÓ in 2020. Only the projects implemented by companies that meet the needs of improving circularity (and not for third parties) have been considered.

## Examples of the circular economy projects analysed in the main three business areas, according to the target for improvement



### Circular design (product and process)



More sustainable packaging based on replacing polyethylenes with materials made using a whey that is normally disposed of.



Innovation applied to spinning to cut the consumption of resources and prevent waste.



New construction materials based on cellulose waste.

### Optimisation of use



B2C app to reduce food wastage in shops.



Collection, repair and remanufacture of jeans for individuals.

### Value recovery



Recovery of dried fruit and nut byproducts to obtain fibre that reduces cholesterol.



Repurposing of post-industrial textile and packaging waste.



Recovery of slag to obtain new construction materials.

Source: Cluster Development, based on the analysis of projects implemented within the aid programme to develop the circular economy and the programme for the prevention of and preparation for the repurposing of waste by the Catalan Waste Agency in 2017, 2018 and 2019, as well as the catalogue of circular economy solutions produced by ACCIÓ in 2020. Only the projects implemented by companies that meet the needs of improving circularity (and not for third parties) have been considered.

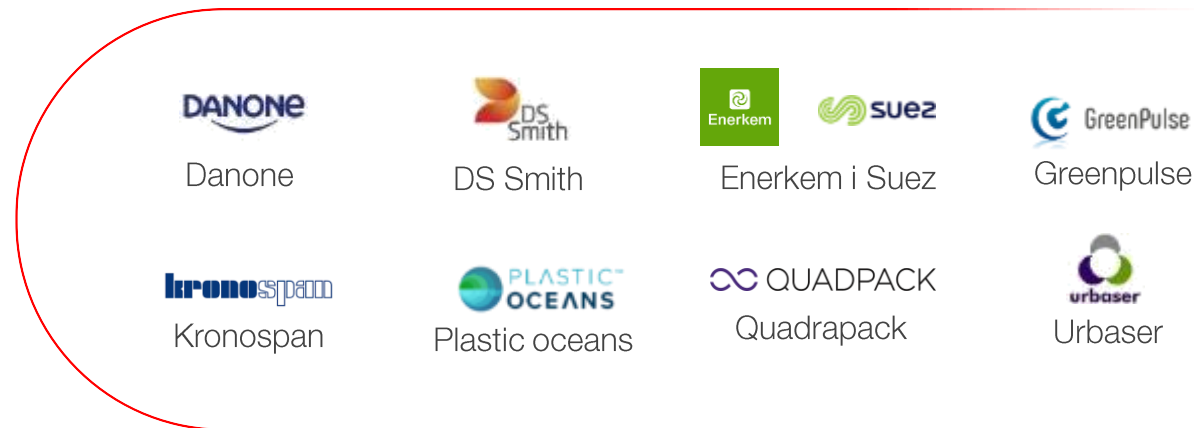


## 3. Opportunities in the circular economy in Catalonia

## Foreign companies choose Catalonia

Eight business investment projects and one non-profit organisation have chosen Catalonia in the past five years, the period between 2016 and 2021.

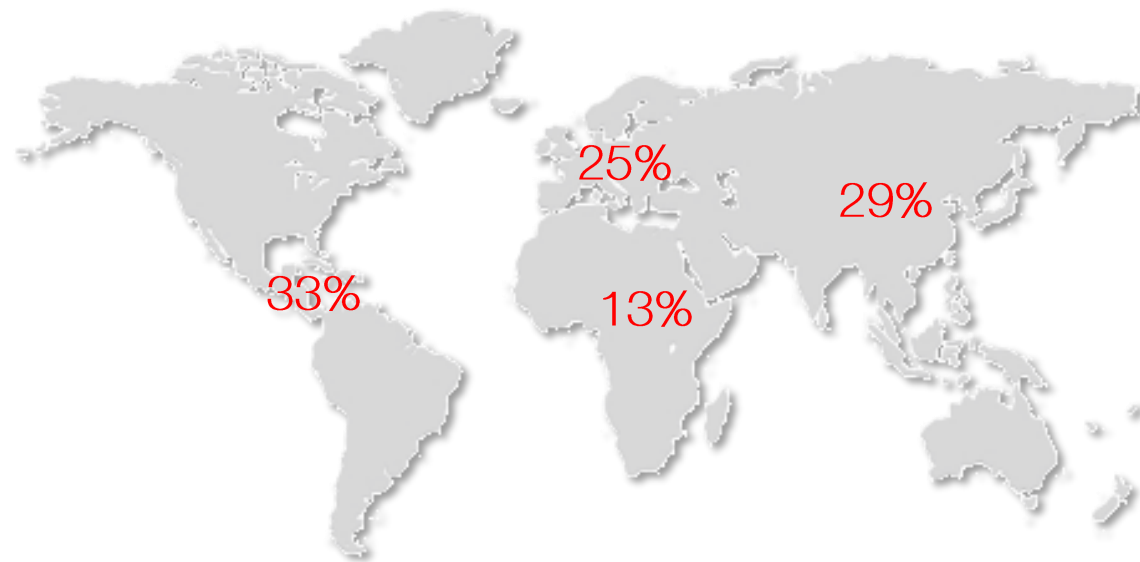
Countries of origin of the investment companies and institutions



*Note: investment projects or investment companies related to the circular economy.*

*Source: fDi Markets and Orbis Crosworder Font: fDi Markets i Orbis Crosworder.*

## 52 International circular economy business opportunities for Catalan companies



**America**  
(17 opportunities)

Brazil  
Belize (2)  
Chile  
Colombia (3)  
Costa Rica  
Ecuador  
Guatemala  
Mexico  
Panama (2)  
Peru (3)  
United States

**Asia and Oceania**  
(15 opportunities)

Australia  
Cambodia  
China  
Hong Kong  
India  
Israel  
Japan  
South Korea (3)  
Singapore (3)  
Thailand  
Taiwan

**Europe**  
(13 opportunities)

Belgium (2)  
Denmark  
France  
Germany  
Italy  
Norway  
Netherlands  
Poland  
Romania  
Russia  
United Kingdom (2)

**Africa**  
(7 opportunities)

Ghana (2)  
Morocco  
Namibia  
South-Africa (2)  
Tanzania

Source: Global map of international business opportunities 2021.

# Thank you!

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[accio.gencat.cat](http://accio.gencat.cat)  
[catalonia.com](http://catalonia.com)

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<http://catalonia.com/industries-in-catalonia/sectors/chemical-energy-and-resources/circular-economy.jsp>

