Whitepaper

Construction Goes Circular

CONSTRUCTION GOES CIRCULAR

eurosac

CEPI EUROKRAFT
European Producers of Sack Kraft Paper and Kraft Paper

RI. SE

Executive summary

Construction waste is currently an underutilized resource in the transition towards a circular economy. The main challenges remain the lack of waste segregation at construction sites and scalable recycling economies for the collected material.

The Alliance *Paper Sacks Go Circular* was established in May 2024 in Spain to close the loop and create a circular economy for paper sacks in the construction industry. It became evident during the pilot phase that the same model could be applied to other types of construction waste, thus the initiative was expanded to *Construction Goes Circular*. Currently, the Spanish pilot is actively collaborating with over 70 participants representing the entire value chain – from construction companies, waste management companies, recyclers, producers of building material and paper sacks and public administration actors. Besides going circular, the Alliance is also going international by setting up pilot projects in Austria and Italy.

The end goal is to improve the valorization of the mixed construction waste, mitigate against increasing waste management costs, and identify synergies in the construction industry that will contribute to circular material flows.

The Alliance is hosted by industry associations **Eurosac** and **CEPI Eurokraft.**

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Introduction

The construction sector is responsible for nearly 40% of total emissions and almost a third of all waste generated in the EU[1]. Out of that waste, only around 40% is recycled or reused[1] - waste segregation and its cross-contamination at construction sites remain key challenges. This is also relevant for the packaging of construction materials such as paper sacks, which tend to end up in mixed waste containers and are then landfilled or incinerated. Despite the packaging industry's efforts to design recyclable packaging solutions, we have yet to see these materials being effectively collected and recycled.

Meet **Construction Goes Circular**, an alliance of companies united by a common goal: to close the loop and create a circular economy for paper sacks and other construction waste materials in the construction industry.

The Alliance is hosted by industry associations **Eurosac** and **CEPI Eurokraft** and though it initially focused on paper sacks under the initiative name *Paper Sacks Go Circular*, it now seeks to identify synergies with other construction and demolition (C&D) waste streams, aiming to increase volumes and achieve recycling economies of scale. The alliance is working on improving the recycling of paper sacks and other construction waste materials including packaging, plastics, and insulation, while balancing both environmental and economic considerations.

The Alliance was founded in May 2024 in Spain, with 12 companies involved in the initial roundtable event held in Madrid on November 17th, 2023. Since then, over 70 companies representing the entire value chain have joined the initiative, with more than 180 construction sites currently participating in the Spanish pilot project. The success of the Spanish pilot and roundtable has formalized the Alliance and defined the basis of this pioneering initiative with ongoing plans of expanding this model to other EU countries.

Why is the Alliance needed?

One of the main challenges of building a collection system for used paper sacks and construction waste is the associated cost. Despite the rising waste management expenses, particularly for materials sent to landfills, the business model for waste management in the construction sector has remained largely unchanged. Currently, costs are incurred for the management and disposal of materials that have actual market value. In other words, *we are spending money to throw away money*. Construction companies typically focus on valorization rates, which are primarily driven by the recycling of mineral materials, while the remaining mixed waste is sent to landfills. Although new regulations and green building certifications are pushing for significantly higher recycling rates and greater transparency around circularity, the costs of separation, logistics, and recycling continue to hinder the industry's ability to establish a comprehensive solution for construction waste.

However, if we recognize the significant economic potential of the construction waste materials, recovering them could create a new economy that benefits and incentivizes all parties involved.

[1] Build Up: The European Portal for Energy Efficiency and Renewable Energy in Buildings (2024). Available online at: https://build-up.ec.europa.eu/en/resources-and-tools/articles/circular-construction-and-materials-sustainable-building-sector

From Paper Sacks Go Circular to Construction Goes Circular

During the pilot programs for the collection and recycling of used paper sacks, evidence was found that a sustainable and cost-effective solution for paper sacks could be applied to other materials as well in order to achieve scalable impact. In a mixed construction waste container, paper sacks account for less than 1% of the total weight, which is the case for several other materials as well. Thus, capturing several material fractions is vital for achieving economic and logistical feasibility. At the same time, it provides an opportunity for finding synergies in collection and recycling processes to achieve closed material loops across the entire value chain.

This led to the idea of expanding the scope of the Paper Sacks Go Circular Alliance to a broader initiative, **Construction Goes Circular**, which offers greater value to all stakeholders involved. It plays a crucial role in engaging stakeholders across the value chain and defining and implementing a circular business model that meets both economic and environmental goals while ensuring regulatory compliance.

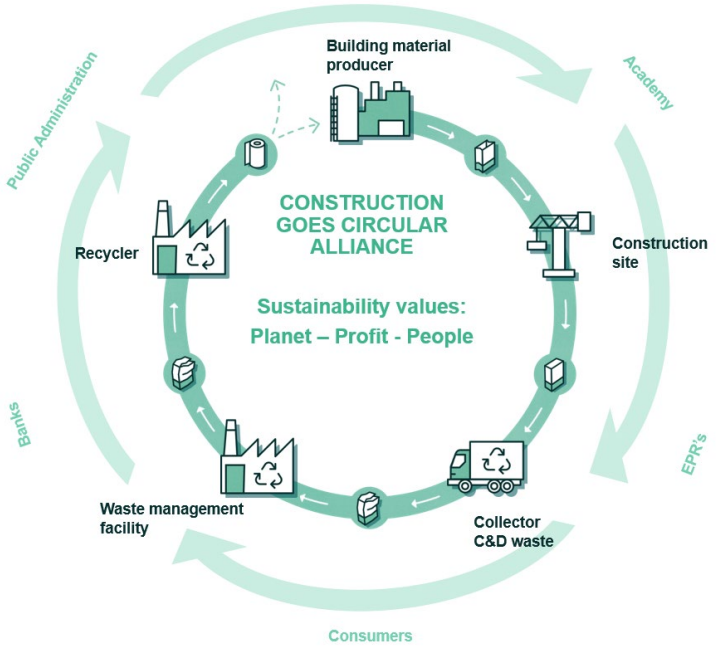
The transformation from the current linear model to a circular economy model hinges on three key steps pursued by Construction Goes Circular:

1. Identifying viable markets or end destinations for waste that generate economic value.
2. Streamlining the logistics to efficiently deliver waste to these destinations.
3. Reducing the overall waste management costs, creating savings for waste producers.

Governance model for Construction Goes Circular

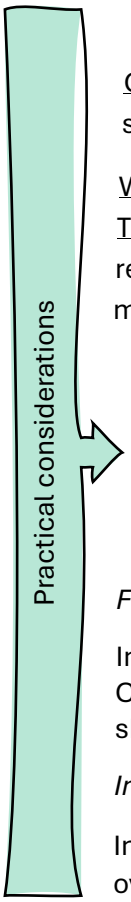
From the outset, the goal has been to build a solution collaboratively, considering the perspectives of all stakeholders across the value chain such as:

- Construction companies
- Waste management companies
- Building material producers
- Paper sack and other packaging producers
- Recyclers
- Extended Producer Responsibility (EPR) schemes
- Trade associations



- Public administration (simplification of administration related to material flows)
- Consumers, banks, academia (creating awareness of the initiative, facilitating access to funding and enabling advances in collection and recycling systems)

The model must create value for everyone involved if it is to scale up and endure over time. What started as a small roundtable initiative (see the original Manifesto on page 8 – the result of the first roundtable in Madrid in November 2023) has now expanded, inviting all interested parties to participate and form various workstreams. These workstreams focus on process optimization, traceability, training, certification, best practices, and identifying synergies with other types of construction waste materials.



Examples of workstreams' objectives:

Construction companies → develop best practice guidelines for material waste segregation, process optimization, identify needs and deviations

Waste managers → circular model implementation, logistics cost optimization
Traceability → developing an end-to-end traceability system from waste collection to recycling in compliance with the regulatory requirements and needs of a circular management system

Information sharing:

Anti-trust compliance guidelines have been introduced at the beginning of every working group meeting, creating a safe environment regarding the exchange of information.

Financing model:

In the first year of its establishment, the Alliance was primarily funded by Eurosac and CEPI Eurokraft. Currently, pay-to-play financial models are being explored to ensure a shared ownership of the initiative across the construction industry.

Implementation:

In Spain, the implementation is facilitated by a project manager, providing leadership, oversight, and follow-up for the pilots.

Construction Goes Circular internationally

The Construction Goes Circular Alliance was first implemented in Spain and is now making its way to other countries.

In **Austria**, Mondi Group hosted a roundtable in October 2024, bringing together a group of 15 leaders representing the entire value chain to discuss the development of a collection and recycling system for used paper sacks and other waste materials from the construction industry. During the session, the results of a pilot project conducted in the city of Vienna demonstrated clear evidence of opportunities similar to those identified in Spain.

In **Italy**, the ESG working group is defining the steps needed to connect the relevant local stakeholders and launch a pilot program.

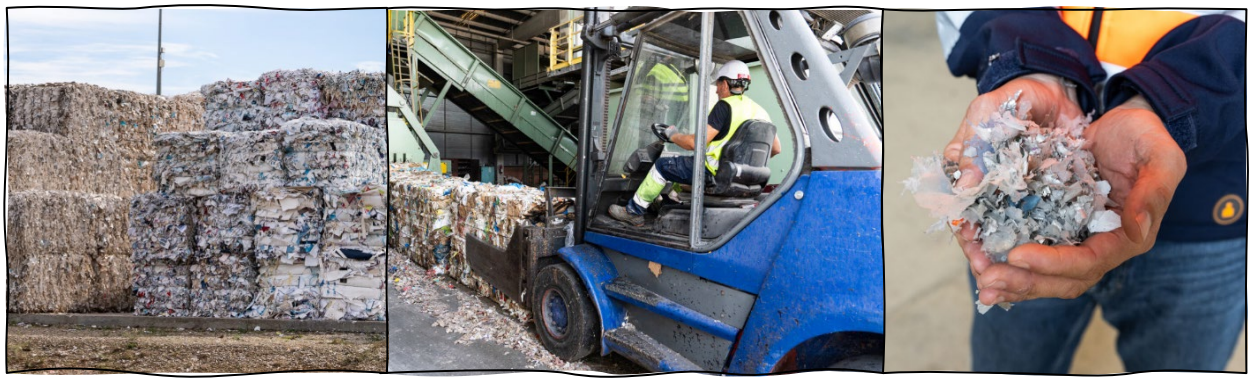
Pilot case study: Operational model for the circularity of construction waste materials in Spain

1 The circularity model begins at the **construction site**, where paper sacks and other construction materials are used. The used materials are collected in bulk bags separated by material type, such as paper sacks, insulation (expanded polystyrene (EPS) and extruded polystyrene (XPS)), cardboard, gypsum, plastic film, mineral wool, and wood – tailored to the needs of the construction project. The bulk bags are easier to handle and enable convenient separation of materials for the operators. Once filled, the bulk bags can be stored in a designated waste management area.

A key challenge at the construction site is *educating the operators* on the importance of properly segregating the materials (and in the case of paper sacks, fully emptying them). The segregation directly impacts the volumes of waste and the intermediate costs associated with preparing the materials for recycling.

2 The next step involves the collection of the bulk bags by the **construction and demolition (C&D) waste collector**, who transports them to a designated waste management facility. This approach avoids the typical mixed waste containers which often end up in landfills, along with their associated fees.

3 At the **waste management facility**, the material is consolidated and processed to meet recycling specifications. This may include shredding to remove any remaining residuals and baling the material for further processing. Overall, selected waste management facilities can serve as hubs for specific materials, optimizing logistical costs by streamlining the collection and processing.

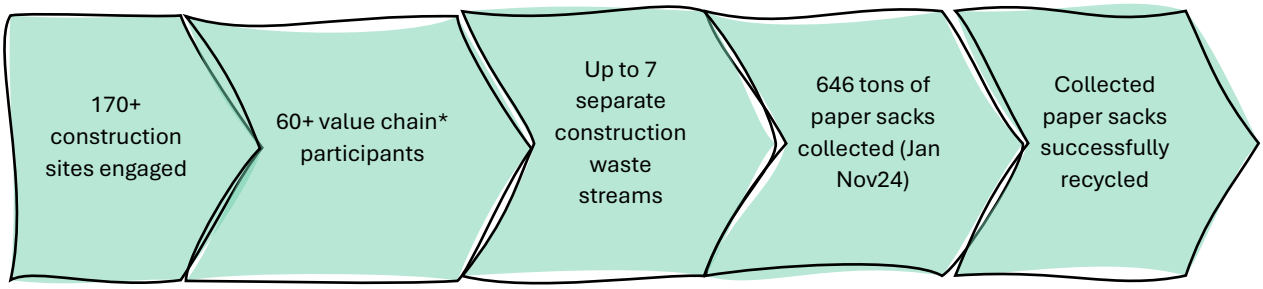


4 After processing, the material reaches the **recycler**. In the case of paper sacks, the recycler processes the paper, board, and PE film. This creates synergies starting at the construction site, where these materials can follow the same segregation model,

streamlining their collection and transport to the recycler. The recycled paper will be transformed into high-performance kraft paper, which can be used to produce recycled paper sacks or repurposed for other paper-based applications.[2]

5 Segregated collection of material creates opportunities for economic bonuses from national **extended producer responsibility (EPR) schemes** for packaging**.** Since the EPR fees aim to stimulate material recycling and circularity, recovering packaging material will benefit both waste management facilities and building material producers.

Key performance indicators from the Spanish pilot project



*Construction companies, waste management companies, trade associations, recyclers, public administration actors, paper sack converters, building materials producers, extended producer responsibility organisations, real estate developers and others.

The holistic approach of the Alliance is gaining a lot of interest from associations representing materials other than paper sacks. The Alliance is thus also exploring how to generate synergies and possibilities to engage a wider range of industries, among them also non-construction industries which are consumers of paper sacks.

Do you want to go circular with us?

We are welcoming new participants of the initiative and looking to expand to more countries.

[2]For more information on the recyclability of paper sacks refer to the following publication on Eurosac and CEPI Eurokraft's websites: *Why recycling paper sacks makes sense (2024).*

Paper Sacks Go Circular Manifesto

1

Our aim is to significantly **reduce our environmental** impact by promoting the optimisation of resources, reducing the use of raw materials and making the best use of waste

We have a clear goal: to **achieve the circularity of paper sacks, initially through the construction industry, and then beyond.**

2

3

We encourage the **recycling of paper** sacks and the adoption of selective collection practices and responsible management.

We will implement a **traceable system** to ensure transparency at every stage of the process.

4

5

We seek **efficiency in cost management,** achieving a sustainable balance between environmental and economic aspects.

We trust in this vision, with a variety of motivations but the same goal, and we collaborate with determination by combining the resources and capabilities of all stakeholders in the value chain.

6

7

We prepare for tomorrow, **we anticipate regulations, we are visionaries and explorers** anticipating the challenges of the future.

Starting from the construction sector, we seek to **extend our reach to more partners**, to new sectors, educating and raising awareness of the importance and benefits of circularity.

8

9

As ambassadors of the initiative, we commit ourselves to be **drivers of the transformation** to a more circular model.

This manifesto represents our **commitment to sustainability.** Through our dedication and collective action, we aim to create a positive and lasting impact on our environment.

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European Producers of Sack Kraft Paper and Kraft Paper

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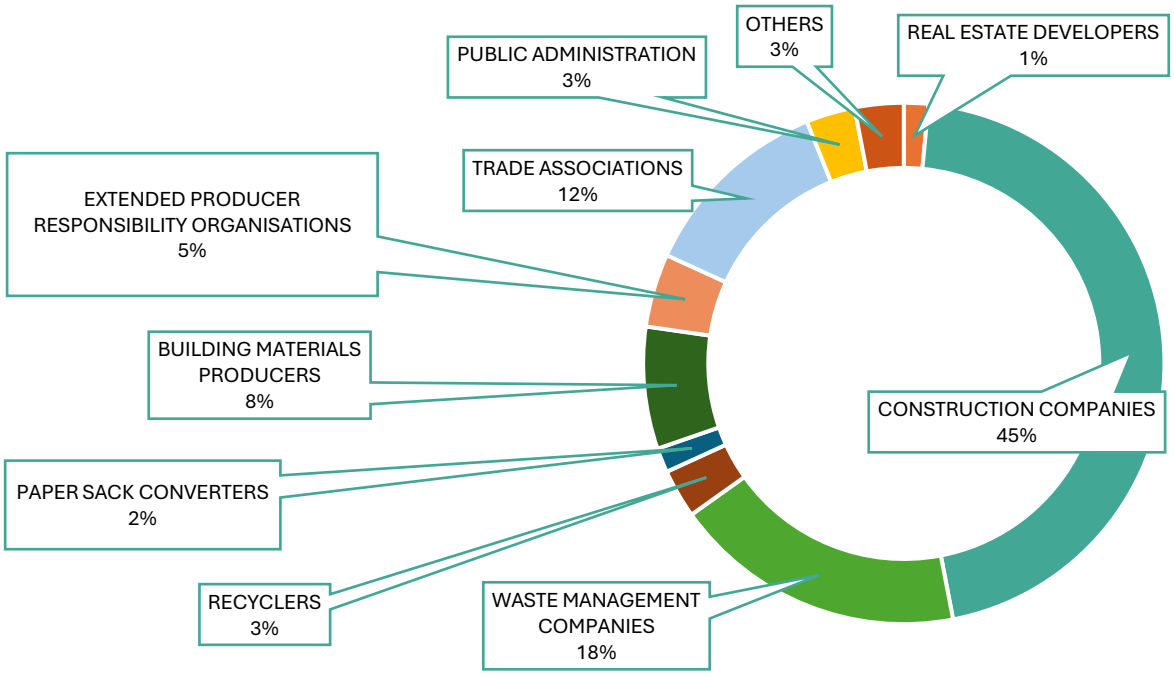
May 2025

List of participating companies in the Alliance initiative in Spain (status in January 2025):

ACCIONA
ACR
AEVAE
AGENCIA RESIDUOS CATALUNA
ALDARA
ALIER
AMENABAR
ARPADA
ARREGI
ASCH
AVINTIA
BEOTIBAR
CABBSA
CARBONELL FIGUERAS
CASALÈ
CEMEX
CEPI EUROKRAFT
CHAZAR
CHM
COCIRCULAR
CONSTRUCIA
CONTENOR
COPISA
DRAGADOS
EKOTRADE
ENVALORA
ETOSA
EUROSAC
FCC
G.CALAF
G.CEOS
G.MOYUA
G.PUMA
G.VOLTES
GYOCIVIL
HEIDELBERG MATERIALS
IHOBE
IMPLICA
IRMASOL
KNAUF
LCC
MACOTRAN
MARRONES
MONDI GROUP
NEINOR
OBRAS ESPECIALES
OHLA
RAFE
RAMÓN VILELLA
RCD ASOCIACIÓN
RETRACAT
RUBAU
RUESMA
S. SOLIS
SACYR
SAINT-GOBAIN
SOLDESER
SOPREMA
UDER
VIA AGORA
VIAS



Key dissemination activities in Spain

1) INITIAL ROUNDTABLE
Date: 17/11/2023
Place: Madrid
Action: Communication
Target: Engage initial stakeholders and create an engagement model to scale up the collection of used paper sacks in the construction sector.
Result: Paper Sacks Go Circular Manifesto.

2) ESTABLISHMENT OF THE ALLIANCE
Date: May 2024
Action type: Formalisation of the initiative
Result: Eurosac and CEPI Eurokraft's decision to formalise the Alliance.

3) WEBINAR CONSTRUCTION GOES CIRCULAR
Date: 27/06/24
Action type: Communication
Target: Presentation of the new Alliance to the market through a panel discussion with some of the founding members. Added value, functioning of the Alliance and workstreams, Alliance membership.
Result: Over 80 participants and many requests to participate in the new model.

4) CONSTRUCTION GOES CIRCULAR BARCELONA
Date: 02/10/24
Place: Mondi Abrera
Action type: Expansion
Target: Roundtable with local stakeholders to implement the new model in the Barcelona area.
Result: 20 companies representing the entire value chain committed to implement a pilot program.

5) CONSTRUCTION GOES CIRCULAR BILBAO
Date: 03/10/24
Place: Mondi Aranguren
Action type: Expansion
Target: Roundtable with local stakeholders to implement the new model in the Pais Vasco area.
Result: 14 companies representing the entire value chain committed to implement a pilot program.

6) CIRCULARITY PAPER SACKS TOUR FOR EUROSAC AND CEPI EUROKRAFT MEMBERS
Date: 08/10/24
Place: Barcelona
Action type: Communication
Target: Real process flow of used paper sacks from collection at construction site (CALAF), storing, cleaning and baling process at waste management facility (R. Vilella) and paper recycling (Alier).
Result: 30 European company members of Eurosac and CEPI Eurokraft participated. Understanding of the collection & recycling process of the paper sacks from the construction industry.

7) PANEL DISCUSION PAPER SACKS GO CIRCULAR ALLIANCE AT SUSTPACK
Date: 10/10/24
Place: Barcelona
Action type: Communication
Target: Presentation of the initiative in a panel discussion together with Eurosac, Calaf, Envalora and moderated by Mondi in the SustPack event, in the new track for industrial packaging.
Result: Sustpack has recognized the importance of the new track for industrial packaging and would like to continue promote inspiring initiatives like the one presented by the Alliance.

8) II INTERNATIONAL CONGRESS OF CONSTRUCTION AND DEMOLITION WASTE IN ZARAGOZA
Date: 13-14/11/24
Place: Zaragoza
Action type: Communication, new stakeholder engagement and expansion
Target: Presentation of the initiative from the point of view of the different actors, represented

by the co-founders of the Alliance (Arpada, Macotran, Saint-Gobain, Mondi and CoCircular).
Result: Over 250 people attended the congress, networking with new C&D collectors, trade associations (plastics, gypsum), public administration (national waste management, Catalonia waste management).

9) LAUNCH OF THE WORKING GROUPS

Action type: Implementation and optimization
Target: Optimize the system implementation and improve communication and information.
Result: First meetings held.

Next steps (Q1-Q2 2025)

The focus areas of the Spanish initiative for the next 6 months are the following:

Establishment of the model:

- Development of the working groups
- Establish alliances with trading associations
- Preparation of the launch process in Barcelona and Pais Vasco

Expansion of the model:

- Construction Goes Circular ANDALUCIA: hosted by Puma in order extend the initiative in Andalucia inviting local stakeholders
- Construction Goes Circular VALENCIA: hosted by CoCircular in order to extend the initiative in Valencia inviting local stakeholders
- Construction Goes Cicular MADRID: hosted by Arpada and Universidad Politecnica de Madrid in order to promote this initiative